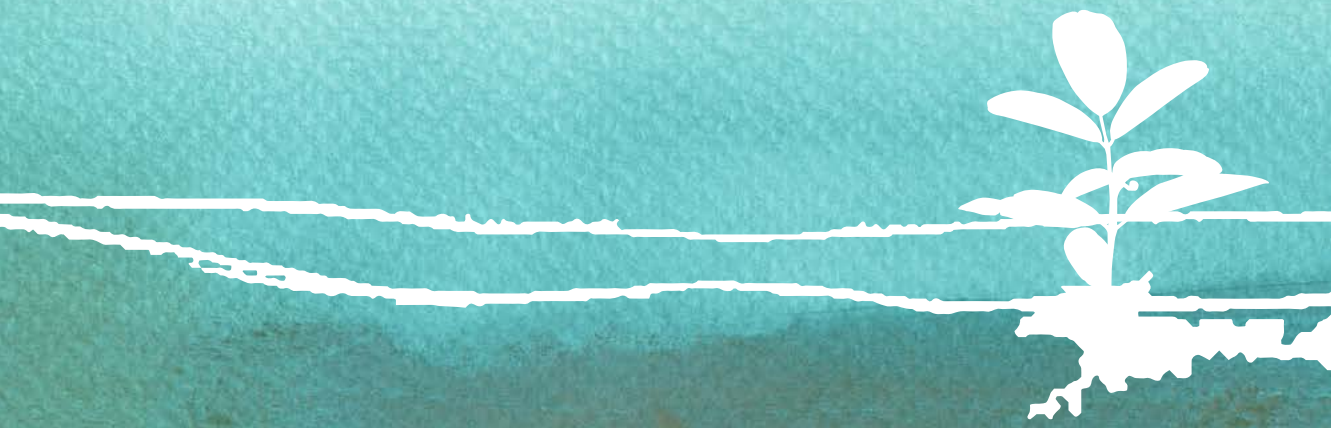
Australian Government
Australian Centre for
International Agricultural Research

# Building global sustainability through local self-reliance

## Lessons from landcare



Monograph 219

# Building global sustainability through local self-reliance

## Lessons from landcare

**Editors**
Allan Dale, Jayne Curnow, Andrew Campbell and Michael Seigel

2022

The Australian Centre for International Agricultural Research (ACIAR) was established in June 1982 by an Act of the Australian Parliament. ACIAR operates as part of Australia's international development assistance program, with a mission to achieve more productive and sustainable agricultural systems, for the benefit of developing countries and Australia. It commissions collaborative research between researchers in Australia and developing countries, in areas where Australia has special research competence. It also administers Australia's contribution to the International Agricultural Research Centres.

The Chief Executive Officer of ACIAR reports directly to the Australian Government Minister for Foreign Affairs. ACIAR operates solely on budget appropriation from Australia's Official Development Assistance (ODA).

The use of trade names constitutes neither endorsement of nor discrimination against any product by ACIAR.

**ACIAR MONOGRAPH SERIES**

This series contains the results of original research supported by ACIAR, or material deemed relevant to ACIAR research and development objectives. Publications in this series range from detailed scientific reports and analysis, written for researchers, extension agents and policymakers, to guides and manuals to support new or improved practices for smallholder farmers, fishers and foresters. Publications in the series are available as hard copy, in limited numbers, and online from the ACIAR website at aciar.gov.au

Dale A, Curnow J, Campbell A and Seigel M (eds) (2022) *Building global sustainability through local self-reliance: lessons from landcare*, ACIAR Monograph No. 219, Australian Centre for International Agricultural Research, Canberra.

ACIAR Monograph No. 219 (MN219)



ISSN 1031-8194 (print)
ISSN 1447-090X (online)
ISBN 978-1-922787-23-1 (print)
ISBN 978-1-922787-24-8 (online)

Illustrations by Whitefox Design Studio, based on original artwork by Rob Youl
Technical editing by Lorna Hendry
Proofreading by Joely Taylor
Design by WhiteFox Design Studio
Printing by CanPrint Communications

# Dedication

We dedicate this book to Professor Michael Seigel of Nanzan University, Nagoya, who died on 4 July 2019. Michael Seigel led the International Conference of Landcare Studies in Nagoya in November 2017, which this book comprehensively records. A retired Catholic priest and lecturer in ethics, peace studies, theology and environmental policy and action, his fertile intellect and broad vision still offered much to his wide circle of colleagues and collaborators and far beyond.

Aged 14, Michael left the Murray River village of Barooga, New South Wales, Australia, for a small provincial seminary run by the Society of the Divine Word. By that time, his compassion had already been shaped by his family life. Front-line service in the Middle East in World War II had severely affected his father, but his mother was a loving counterbalance. Michael moved upwards through his order, studying in Marburg (Queensland, Australia), Chicago (USA) and Birmingham (UK), before becoming a Tokyo parish priest in 1975. He mastered Japanese and started lecturing at Nanzan University, a Catholic college in Nagoya. Michael loved Japan, scholastic life, his family and friends and all aspects of his vocation, especially writing and guiding students from several Asian countries. (From 2009, I saw him often in this latter role: patient, thoughtful and accessible.) Similarly, he esteemed his fellow Nanzan academics.

On visits home in the early 1990s, he encountered Landcare, a newly established and very widespread Australian community environmental movement of local groups and regional networks that puts into perspective the underrated slogan 'Think globally, act locally'. His rich agrarian home region had been scarred by salinity, but, through Landcare planning and action, farmers, governments, technicians and the general community had cooperated and greatly ameliorated the problem. Michael was impressed.

In 2005 he brought environmental policy students from Japan to Australia, introducing them to Landcare to encourage them to become opportunistic and to innovate. Collaboration ensued with Australian Landcare International, a small community network specialising in overseas connections and programs. Further student excursions and exchanges, media coverage and useful conversations motivated Michael to inaugurate the Secretariat to Promote the Establishment of Landcare in Japan.

Michael believed Landcare's philosophies offered much to Japanese farming, which had been drained and standardised by post-war industrialisation and the lure and scale of technical cropping and metropolitan commerce. Landcare could draw young people back to the countryside, he believed, and revive traditional practices and help communities prepare for and recover from major disasters. One such disaster, the massive 2011 tsunami in Japan, still overshadows the nation.

In 2017, Australian Landcare International and the Secretariat to Promote the Establishment of Landcare in Japan raised funds from Nanzan University, the Australia–Japan Foundation and the World Business Council for Sustainable Development for the first international Landcare conference outside Australia. Michael led the organising committee of Kazuki Kagohashi, Taro Okuda, Karin Moriyama, Stefanus Winibaldus Mere, Andrea Mason, Jennifer Quealy, Allan Dale and me. It was a great experience for all. Releasing this book, edited by Michael, Professor Allan Dale, Doctor Jayne Curnow and Professor Andrew Campbell, is its last milestone. Another legacy was Michael's recent book (in Japanese) on issues related to addiction. This was a major achievement of great value to society.

Complex surgery for oesophageal cancer in 2016 seemed successful, but in early 2019, just after he had competed in the annual Murray River canoe paddle in Australia, the condition recurred, fatally. My admirable fellow Australian had thrived in and contributed impressively to a distant country and culture. Three practical facets of Michael's intellectual life stand out to me, each reflecting his Antipodean and Landcare connections.

- He valued subsidiarity, considering that public matters ought to be handled at the most immediate level consistent with their resolution, often the lowest or least centralised forum. This is cost-effective, empowers people, promotes better decision-making processes and consolidates democracy.
- He recognised that, as with academia, constant, compulsive and creative communications (that is, networking) characterise Landcare. Michael wanted Japan's grassroots environmental initiatives and projects, of which there are many, to become far better known to the broader populace.
- Concurrently, much wider and more creative use of growing information technology would generate identity, enthusiasm and financial and political support, and disseminate technical, administrative and cultural knowledge and efficiencies as they emerged. A Landcare ethos would evolve, promoting better farming, greater biodiversity and happier, healthier communities.

Finally, and importantly, the Nagoya conference catalysed the institutional consolidation of the three active overseas Landcare entities:

- Australian Landcare International
- the Secretariat for International Landcare
- Landcare International.

In October 2020, they formed a single body called Global Landcare. My colleague Andrea Mason, who skilfully steered this amalgamation, is its first chair.

**Rob Youl**
Deputy Chair
Global Landcare

1 February 2022

# Foreword

We face urgent imperatives to transform food and farming systems to feed growing human populations better, within environmental limits, while managing climatic extremes, military conflict and disease risks. Meeting these imperatives requires fantastic science and innovation. Equally, it requires communities at a local level to develop and implement their own responses to their own deeply contextual challenges.

Centralised, top-down, technocratic 'solutions' are unlikely to be effective or durable in helping humanity wrestle with these complex and dynamic challenges. Governance systems that are explicitly designed for and facilitate effective responses at multiple scales – that respect the principle of subsidiarity – seem more suited for a world of wicked, intersecting problems.

In such a context, it seems timely to revisit landcare. Almost 30 years ago, I concluded my term as Australia's first National Landcare Facilitator. From 1989 through 1992, I travelled around Australia, looking at what local groups were doing in response to environmental problems, cross-pollinating ideas between groups and jurisdictions, and reporting back to the federal Minister for Agriculture and the heads of the national farming and conservation organisations.

The empowerment of neighbourhood groups to take ownership of environmental problems and solutions both catalysed and reflected a grassroots revolution in environmental management and agricultural extension in Australia. By the end of the 1990s, farming families and other rural and coastal landholders saw themselves as active agents in the stewardship of their district, environment and community. The social benefits of landcare were evident.

The Australian Centre for International Agricultural Research (ACIAR) works with partners across our region to generate the knowledge and technologies that underpin improvements in agricultural productivity, sustainability and food systems resilience. The distinctive Australian expertise of landcare has informed several ACIAR projects over the last 30 years, and many others have emerged across more than 20 countries.

This book builds on the 2017 International Conference of Landcare Studies. Like the conference delegates and landcare itself, the chapters of this book are diverse in style and content, and the authors a mix of voluntary practitioners, para-professionals who have turned their passion into paying jobs, policymakers and academics.

Thanks to my fellow authors and editors for their persistence in closing the loop from the 2017 conference to produce this rich, eclectic volume. For me, it also feels like closing a larger loop, from the early origins of Australian landcare to now seeing the concept find new relevance in diverse international contexts.

The challenge of feeding a growing global population, in healthy, sustainable and equitable ways, is more acute than ever. Food security is intricately intertwined with water security, energy security, health security, biosecurity and, ultimately, national and global security.

Hopefully the lessons of landcare will inform people and organisations at all levels in designing governance systems fit for purpose in managing the converging insecurities of the 21st century.

**Andrew Campbell**
Chief Executive Officer, ACIAR

# Contents

## List of tables



## List of figures

# Preface

The starting point of this book goes back to the first International Conference of Landcare Studies held in Nagoya, Japan on 5–8 November 2017.

In 2015, Professor Michael Seigel, from Nanzan University Institute for Social Ethics (NUISE), proposed publishing a journal of landcare studies to provide a platform for academics, practitioners, municipal and non-government organisation staff to share their knowledge of landcare. Before launching a journal, NUISE thought that it would be helpful to invite researchers and practitioners of landcare to an international conference on landcare studies.

In 2016, an organising committee was set up with Rob Youl, Andrea Mason and Jennifer Quealy from Australian Landcare International, Allan Dale from James Cook University, and Professor Michael Seigel and Kazuki Kagohashi from NUISE. Through the organising committee, the structure of the conference and contents of each session were planned out. An executive team was also set up within NUISE, with Kazuki Kagohashi as the leader, and Taro Okuda, Karin Moriyama, Winibaldus Stefanus Mere, and Akiko Tsuzuki participating in specific logistics. The organising committee and the executive team worked closely in running the conference.

The conference was jointly organised by NUISE and Australian Landcare International (now Global Landcare). NUISE was responsible for the arrangement and preparation of the venue, the management of the conference, accommodation and travel documents of the participants. Australian Landcare International selected most of the speakers and raised substantial funds from the Australia–Japan Foundation, the World Business Council for Sustainable Development and the Global Agribusiness Alliance, while further funding for the conference came from NUISE. The Secretariat to Promote the Establishment of Landcare in Japan also helped organise the pre-conference and post-conference tours. Japanese designers Takuya Murakami and Yumi Matsunaga produced the distinctive conference artwork.


The conference aimed to deepen the understanding of the ideas and principles of landcare, the role of landcare in improving local self-reliance and sustainability, and future challenges. Researchers and practitioners from 11 countries were invited to share their expertise and experience and explore the common ground for landcare studies.

This book inherits the idea of the 'journal of landcare studies' that Professor Seigel envisioned in 2015, establishing the basis for this ACIAR monograph. We hope that this book will contribute to developing a global platform that is available to anyone who is interested in landcare around the world.

**Kazuki Kagohashi**
Nanzan University Institute for Social Ethics

### Landcare and landcare

The word 'landcare' is used throughout this book as both a noun and an adjective. As a general rule, the capitalised term 'Landcare' refers to formal government programs and authorised groups, network and activities associated with these programs. The lower-case term 'landcare' is used when the discussion is generic and refers to landcare as an ethic, approach, philosophy, movement or principle. In some instances, the specific and the generic forms may be interchangeable.

# Authors

**Andres Arnalds** retired from his 37-year career with the Icelandic Soil Conservation Service in December 2018. He served as a project manager (2016 to 2018) and assistant director (1992 to 2015), and was in charge of vegetation protection (1981 to 1992). Andres received a PhD in rangeland science from Colorado State University, a Master of Science in rangeland ecology from Washington State University, and a Bachelor of Agricultural Science from the Agricultural University of Iceland. Andres has played a leading role in the development of strategies for conservation of soil and vegetation in Iceland, with a special emphasis on fostering involvement at the grassroots level, sustainable land use, land literacy and the exploration of the potential of carbon sequestration as a financial incentive for restoring land health. Andres facilitated the successful Landcare program Farmers Heal the Land, as well as other programs aimed at increasing farmer involvement in Landcare. He is also involved in the development of strategies for minimising the impact of tourism on Icelandic nature.

**Andrew Campbell** is the chief executive officer of the Australian Centre for International Agricultural Research (ACIAR), appointed by the Minister for Foreign Affairs in 2016. Among his many influential roles in sustainable agriculture and research management in Australia for over 30 years, Andrew was Australia's first National Landcare Facilitator, and was the chief executive officer of Land & Water Australia for seven years from 2000. He is also an elected fellow of the Australian Academy for Technology and Engineering, a professorial fellow at the Australian National University Fenner School for Environment and Society and a fellow of the Australian Institute for Company Directors. He represents Australia on the System Council of CGIAR, and is the recent past chair of the Global Research Alliance on Agricultural Greenhouse Gases. Andrew is also a councillor, ACT Division, in the Institute for Public Administration Australia and a director of the Peter Cullen Water and Environment Trust. Andrew has written widely on landcare, sustainability and the science–policy interface. He trained in forestry at the University of Melbourne, and then in agricultural knowledge systems at Wageningen University in the Netherlands. Andrew is still involved in his farm in south-eastern Australia, where his family has been farming since the 1860s.

**Ross Colliver** has been a consultant, facilitator and social researcher in the natural resource management (NRM) field in Australia for 30 years. He has helped local Landcare groups set priorities, Landcare networks build their capacities, and regional NRM bodies form their strategies. At state and national government levels, he has led projects to develop measures for the social dimensions of environmental management, develop the skills of NRM practitioners, and facilitate learning within and between organisations. His 2010 PhD research used action research to help Landcare network staff and leaders work out why Landcare had been marginalised in Australia's NRM system, and how they could have more influence. His principal interest is now in facilitating projects that enable people in a system to redesign governance arrangements and shift to practices of learning that revel in complexity and uncertainty. As a member of Riddell's Creek Landcare, he is using his local situation to find a way to connect care for place with advocacy for place.

**Jayne Curnow** is passionate about Landcare and has been involved with Trees Please! since its inception in 1998. Trees Please! protects the native remnant bush at The Cedars, the home and artistic inspiration of the late Sir Hans Heysen in Hahndorf, South Australia. Currently, her main role is as a governance adviser in the mining sector at Freeport Indonesia, in partnership with the Foundation for the Empowerment of Amungme and Komoro Communities. This work supports the landholder-based organisation transition from being a direct spend to a grant-making organisation. During her tenure at ACIAR, Jayne led the development and implementation of the first ACIAR Gender Equity Strategy and Policy, encompassing corporate business and research programs in addition to her role as a research program manager for the social sciences. Before joining ACIAR, Jayne was a research scientist at the International Water Management Institute based in Sri Lanka, a lecturer in anthropology and development studies at the University of Adelaide, a qualitative evaluation coordinator with the World Bank in Indonesia, and a program manager with the Australian Government's Department of Health and Ageing. She has also worked with several non-government organisations in East Timor to address gender-based violence. A graduate of the Australian Institute of Company Directors, Jayne has been a director of Volunteering ACT since 2018. She holds a PhD in anthropology and is a visiting fellow at the Australian National University.

**Allan Dale** is a professor of tropical regional development at the Cairns Institute, James Cook University, and the chief scientist for the Collaborative Research Centre for Northern Australia. He explores integrated societal governance, with a particular focus across the tropical world, northern Australia and the Great Barrier Reef. Allan has extensive policy and practical expertise in building strong societal governance systems in regional, rural, social development and NRM contexts. Allan is the former chair of Regional Development Australia Far North Queensland and Torres Strait, and the former chief executive officer of Terrain NRM. Before that, he was responsible for natural resource policy and social impact assessment in Queensland. He is also an honorary professorial research fellow with Charles Darwin University's Northern Institute.

**Michele Dale** has a scientific background and a strong personal commitment to education and capacity building in the community (both non-profit organisations and businesses) and professional groups, with interests in equitable education, the purposeful use of technology and environmental science. Michele's career is informed by years of experience in higher education, in both a capital city and regional towns, as well as teaching across a broad spectrum of learners in private enterprise and community organisations in regional areas. She was a project manager for a successful Australian Government–funded two-year digital enterprise program, working with government, business and community stakeholders to deliver training in digital technologies to enable non-profits and businesses across Far North Queensland. She has extensive experience in executive roles in community groups, including a community bank, two parent and citizen associations and two Landcare groups. She is currently an academic developer at James Cook University, Cairns, leading curriculum development and online educational and instructional design.

**Beatrice Dossah** has 10 years of experience in environmental auditing assessment with the Environmental Protection Agency of Ghana. In 2017 she became a fellow at the Land Restoration Training Programme under the auspices of the United Nations Educational, Scientific and Cultural Organization (UNESCO) in Iceland, building her capacity in ecological restoration and project management. In 2014, Beatrice founded an environmental non-government organisation called Hipsters of Nature, with a mission to raise awareness about plastic pollution and urban gardening by leveraging the arts and community empowerment. Hipsters of Nature obtained the trust of international partners like the German Corporation for International Cooperation, the European Union Delegation to Ghana and PricewaterhouseCoopers to execute corporate social responsibility activities such as beach cleanings, educational workshops and larger-scale urban gardening projects in the slums of Accra, Ghana. She has been awarded a scholarship to commence her master degree in environment and natural resources at the University of Iceland. She is also an artist (known as Alewa) and uses her arts in the form of music, video and play to raise awareness among young people about pressing environmental issues.

**Nick Edgar** has a doctoral background in applied freshwater management, with past research efforts focused on improving the water quality of lake ecosystems. Nick has worked as an environmental scientist for regional government (Waikato Regional Council, New Zealand), as a natural resource specialist in academia (Central Queensland University, Australia) and as a research manager for NZ Landcare Trust. He has been the chief executive officer of NZ Landcare Trust since 2007 and has been involved in a range of catchment management and biodiversity projects and initiatives in New Zealand and internationally. Most recently, NZ Landcare Trust partnered with WWF-NZ to deliver Reconnecting Northland, an innovative landscape-scale ecological restoration program. Nick has a keen interest in community involvement in resource management decision-making and action, in particular, working with farmers to implement practical land and water management projects.

**Naomi Edwards** is currently a non-executive director at Landcare Australia, and has been an active member of the landcare movement in Australia in various capacities for over a decade. In 2015, Naomi co-founded Intrepid Landcare to reimagine how to engage people and communities in NRM. Through Intrepid Landcare, she was instrumental in bringing a team together to create a community that has enabled a different kind of participation, empowering people to lead on matters that are important to them. In 2016, Naomi was recognised for her achievements and awarded National Young Landcare Leader of the Year. She has been the recipient of several awards that have celebrated her achievements and actions for the environment and the community. Naomi is in the final stages of her PhD in coastal politics at Griffith University. Her thesis investigates the role of the coastal professional in current coastal governance systems. Her passion for coastal and marine matters currently sees her in a role managing behaviour change campaigns for community-based fisheries management in the Pacific with the creative communications non-government organisation cChange.

**Evy Elago-Carusos** is the former executive director of the Landcare Foundation of the Philippines Inc., a non-profit, non-stock organisation based in Northern Mindanao in the Philippines that initiates, supports and facilitates local initiatives on NRM, livelihood development and social capital improvement in marginalised farming communities. Previously, Evy was involved in managing research and development programs relating to agriculture and NRM in areas around Mindanao and some parts of the Visayas region. She has wide experience in working with different communities (including Indigenous peoples and Muslim groups) and collaborating with different government agencies and private institutions to advocate for the improvement of livelihoods of poor farmers in the Philippines.

**Yvonne Everett** is a professor of environmental and natural resources planning at Cal Poly Humboldt in California, USA. She received a Bachelor of Arts from Pomona College in International Relations and her master and PhD degrees in forest and landscape ecology from the University of California, Berkeley. Her research focuses on community-driven collaboratives and cross-jurisdictional efforts to sustain ecosystem services and promote resilient landscapes and livelihoods. In California, her work has centred on community-based fire and hazard management planning, forest and watershed restoration and management of non-timber forest products. Recent work has centred on the impacts of cannabis cultivation on rural communities and ecosystems. Over the last three decades, she has spent several years living as a researcher in Sri Lanka, including two stints as a Fulbright scholar, where she has worked with colleagues on forest and watershed restoration efforts and disaster rehabilitation through developing farmer-to-farmer extension models using local Indigenous knowledge and agroecology-based forest gardening techniques. She has followed the emergence of landcare in Australia and Germany and community-based resource management in the United States of America with interest, seeing parallels in comparing community needs and challenges and intriguing differences in institutional responses.

**Tokihiko Fujimoto** is an associate professor in the School of Political Science and Economics at Meiji University in Tokyo, Japan. He received his PhD in engineering in 2013 from Kyushu University, Japan. His research focuses on community development through installing small-scale renewable energy through community ownership and design processes. His research and development fields are in Japan and South-East Asia (Indonesia, Vietnam and Cambodia). He was appointed to undertake the mission of technical review for the standard setting for the International Centre on Small Hydro Power. He is a member author of the World Small Hydropower Development Report 2019 (Japan), which is edited and published by the United Nations Industrial Development Organization. Tokihiko started to research landcare studies from 2012 after he met Professor Michael Seigel and has published widely about landcare's relationship to renewable energy since then.

**Terry Hubbard** is a farmer on a property near Yea in Victoria and is the immediate past president of the Strath Creek Landcare Group and past president of the Upper Goulburn Landcare Network. He held both positions for over 15 years. Terry is the immediate past chair of Landcare Victoria Inc. (the peak body representing landcarers in Victoria) and a past chair of the National Landcare Network (the peak body representing the interests of landcarers across the nation). Terry currently serves on several advisory committees in Victoria, including the Bendigo Bank and the Victorian Blackberry Taskforce. His keen interest in water quality drives the partnership of the Strath Creek Landcare Group with the Goulburn Broken Catchment Management Authority in their endeavours to install riparian fencing and restore creekside native vegetation. Terry was awarded the medal of the Order of Australia in the 2016 Queen's Birthday Honours list for services to conservation and the environment. More recently Terry received the prestigious Joan Kirner Award at the 2017 Victorian Landcare Awards for his services to Landcare.

**Pip Job** is the director of engagement at the NSW Department of Primary Industries and leads a diverse range of programs that focus on the department's connections with primary producers, industry and community to build stronger primary industries. Pip has led teams and programs to support people impacted by drought, bushfires and more recently, COVID-19 and flooding events. Pip served as the NSW Government's state drought coordinator in 2018, a role for which she was awarded a Public Service Medal. Pip has had a strong focus on business and social resilience since completing a bursary study as part of winning the 2014 National Rural Women's Award. Pip has been a beef cattle producer, has worked in the not-for-profit sector as the chief executive officer of the Little River Landcare Group and has extensive experience in sustainable agriculture, community engagement and resilience-building strategies. She was inducted into the Australian Businesswomen's Hall of Fame and was the winner of the 2015 NSW Landcare Facilitator Award.

**Mary Johnson** is an RMIT University social science research fellow. She has worked extensively in agriculture, NRM, education and community development. Mary's work focuses on community capacity, building strategic partnerships and networks, working with Indigenous peoples and cross culturally, and livelihood improvement. Mary was RMIT's chief investigator for the ACIAR Mindanao Agricultural Extension Project. This project explores how community-based agricultural extension methods, developed in conflict-vulnerable areas, can enhance smallholder farmer livelihoods. Mary also leads a six-country study investigating the potential of the landcare approach for contributing to development outcomes.

**Kazuki Kagohashi** is an associate research fellow of the Institute for Social Ethics and an associate professor in the Department of Global Liberal Studies, Nanzan University. He studied environmental economics and received a PhD in global environmental studies in 2012 from Kyoto University. His research interests include sustainable development theory, water resource management, drought adaptation, community-based resource management, landcare governance and local community revitalisation in Japan. After he joined the Institute for Social Ethics in 2012, he started his research on landcare with Professor Michael Seigel. Kazuki is also involved in the activities of Landcare. He has worked as a vice-chairperson of the Secretariat to Promote the Establishment of Landcare in Japan for several years. In 2020, he became a board member of Global Landcare.

**Megan Lee** is a co-founder of Intrepid Landcare and has worked with various local, state, national and international landcare organisations in a range of roles and capacities. Specialising in youth and community engagement, community development, leadership and personal development, Megan has been running programs that inspire meaningful participation in environmental conservation for over a decade. In recognition of her work, Megan was awarded National Young Landcare Leader of the Year in 2012. Her work inspired a national movement of young people leading locally through Intrepid Landcare. She is currently working on the Sunshine Coast, Queensland, looking at ways to inspire a more coordinated approach to threatened species recovery, inviting more collaboration between researchers, practitioners and the broader community. Megan is passionate about community resilience and sees the importance of connection on many levels when it comes to interacting with the natural world and each other. She is particularly interested in authentic and meaningful collaborations with First Nations communities and sees this connection as being an important guide to the way communities can work together.

**Lisa Lobry de Bruyn** is an associate professor, researcher and educator in the School of Environmental and Rural Science at the University of New England, New South Wales. For over 30 years, Lisa has researched the intersection between biophysical soil processes and farmer management of soil condition. Her recent research focuses on farmers' understanding of soil health. She is also exploring soil information seeking behaviours that will improve how Landcare and service agencies share soil information and build genuine partnerships with land managers. Into the future, such research will improve the monitoring of land condition for sustainable land management and soil use.

**Stewart Lockie** studied agricultural systems as an undergraduate at Hawkesbury Agricultural College before undertaking a PhD in rural sociology at Charles Sturt University, New South Wales. Over time, his research has extended from its original focus on community-based NRM to include studies of biodiversity conservation, assisted ecosystem evolution, environmental policy, food security, social impact assessment and the management of natural and industrial hazards. Understanding and informing a range of potential futures is a key theme in Stewart's work. He is lead author of a recent report by the Australian Council of Learned Academies on the implementation of advanced technologies in agriculture, and the author of *Failure or reform? Market-based policy instruments for sustainable agriculture and resource management,* published by Routledge. Stewart is currently a distinguished professor of sociology and director of the Cairns Institute at James Cook University. He is a fellow of the Academy of the Social Sciences in Australia and an adjunct professor at the Australian National University.

**Tomomi Maekawa** received her doctorate from the Tokyo Institute of Technology in 2016 and is currently a lecturer in the Faculty of International Social Studies at Kyoai Gakuen University and a part-time lecturer in the Graduate School of Engineering at Mie University. Her specialties are consensus building (decision-making) theory and the theory of community-based NRM. She conducted research for her PhD dissertation in Australia from 2013 to 2014, based at the Institute for Land, Water and Society, Charles Sturt University, with great support from Rob Youl (then chair of Australian Landcare International). Her dissertation focused on the social structure and the spirit of Australian Landcare. More recently, she has been working voluntarily with community networks that care for their local environment, looking to build a methodology for promoting mutual learning in the community.

**Graham Marshall** is an adjunct associate professor in the School of Environmental and Rural Science at the University of New England, New South Wales. His research explores the institutional economics of governing and managing natural resources for sustainable development. An emerging focus for his research is on the governance of fire management by Australian Aboriginal peoples prior to European colonisation.

**Paul Martin** directs the Australian Centre for Agriculture and Law and has substantial experience in leading research on natural resource governance (including water) and on law and policy issues affecting rural people, including Aboriginal people. Among these have been leading multiyear projects for the Irrigation Futures Cooperative Research Centre and the Invasive Animals Cooperative Research Centre on the institutional aspects of water policy, community engagement and the management of invasive species. He has published about natural resource governance in Australia and comparatively, including on Aboriginal and Torres Strait Islander people's interests in land and water. He has also worked with many agricultural and community organisations (including Landcare and other community-led bodies). Professor Martin has extensive experience as a director of listed and unlisted companies and is on government advisory board and senior executive roles. One of these roles was as chair of a regional NRM body in New South Wales that worked closely with local Landcare organisations.

**Andrea Mason** believes that we are all connected. This led her from medical research into the fields of environmental management, sustainable living and community education. She is the director and principal consultant for her business, Finding North, which is a freelance consultancy specialising in project management, strategic writing, community engagement, communications and sustainable living. She is based near Ballarat, Victoria, where she lives on a small rural property with her husband. Andrea is a long-time landcarer and former Landcare facilitator. Six years ago, Andrea joined Australian Landcare International and is currently the chair of its recently formed successor, Global Landcare. These roles have included projects in the Caribbean, Fiji, Japan, Zambia and being part of the organising team for the 2017 International Landcare Conference in Nagoya. Outside the Landcare world, Andrea is a founding member and former chair of Buninyong Sustainability, and for the past seven years, has been the director of the Smart Building and Living Expo. In 2018 Andrea was appointed director of the Buninyong Community Bank.

**Clinton Muller** previously coordinated the Africa Landcare Network and Landcare International, hosted at the World Agroforestry Centre in Nairobi, Kenya. Clinton worked with smallholder farmer groups through collective action and institutional strengthening for improved NRM and livelihood outcomes through a landcare-based approach. Currently based in Australia, Clinton works as a consultant. He has a strong background in resource economics, NRM and agricultural extension systems. Clinton continues to work on international landcare projects and is on the board of Global Landcare.

**Liddy Nevile** has retired as a doctoral academic researcher in the fields of education, technology and information science. She is currently concerned mostly with the inclusive accessibility of information for all people, including those with visual disabilities. She works with Standards Australia and several other standards-based institutions, and chairs several agencies for technical support of people with disabilities. Liddy's interest in sustainability is not new. Her association with Aboriginal colleagues dates back many years, including work with Cape York Elders to protect the extremely old rock art of the region. Liddy is a board member of Global Landcare.

**Peter Pigott** is one of the founding members of Intrepid Landcare. Peter brings a passion for working with others and co-creating spaces where meaningful collaboration happens. Peter also holds a wealth of knowledge and expertise in community engagement, leadership and personal development, culture building, facilitation and event hosting. Peter has a long history of involvement with the landcare movement. As a regional Landcare facilitator, Peter worked with communities on a range of leadership and community development programs for over a decade. This involved strengthening regional partnerships, supporting primary producers and working with local community leaders to design and lead NRM programs across south-east New South Wales. Peter has most recently brought his skills to communities affected by natural disasters, in particular the 2019–20 Australian Black Summer bushfires. Through his work with Resilience NSW, Peter has provided well-designed, compassionate and intentional services that have supported communities to heal and move forward with their recovery.

**Jennifer Quealy** is completing her Master of Research at Western Sydney University's School of Social Sciences. She is a landcarer and social geographer, with 30 years of experience in Australian Landcare networks and programs. Jen's skills are both visionary and pragmatic, and she works through community-led project co-design with the aim of generating creative responses to social and environmental challenges facing communities. Jen has practical skills in complex recovery and landcare challenges, and is particularly influenced by Japanese responses to major disasters. Jen has written and produced many Landcare publications and social media marketing initiatives. She has created and delivered Australia-wide community grants and sponsorship partnerships, generating funding that directly assisted landcare practitioners across Australia with their initiatives. Jen helped create and deliver and worked on major post-disaster repair projects, including marketing and broadcasts, the Burke's Landcare Backyard Blitz Cyclone Larry Project in Innisfail, Queensland and the Pozible Landcare and Environment Challenge Crowdfunding initiative. She was a cyclone and flood recovery outreach worker with Australian Red Cross in north and central Queensland.

**Lisa Robins** has 30 years of experience working in NRM as a researcher, science communicator, facilitator and program manager. She has been an affiliate at the Australian National University Fenner School for Environment and Society since 2009. In addition to an extensive record of engagement and publishing in Australia, she has worked in the Indo-Pacific region (especially the Mekong region and Indonesia), Canada and the United Kingdom. Lisa holds a Master of Science in environmental change and management with distinction from Oxford University and a PhD on NRM governance and capacity building from the Australian National University. Recent projects include preparing a synthesis report for the World Bank on lessons from Australia's Murray–Darling Basin on valuing water, co-leading a project for ACIAR on COVID-19 and food systems, managing knowledge to improve community-based management of peat fires in Indonesia, and synthesising research to inform the Australian Government's Department of Foreign Affairs and Trade's approach to achieving the Sustainable Development Goals in the Asia-Pacific region.

**Kaye Rodden** is a past non-executive director at National Landcare Network and a retired partner in a farm business on the Barwon River, west of Geelong, Victoria. She has been involved in Landcare and NRM for over 40 years. Kaye is a founding member of Barrabool Hills Landcare Group, established in 1994, and is its immediate past president. She also sat on the boards of the Geelong Landcare Network and the Victorian Rabbit Action Network and is the immediate past president of the Friends of the Barwon. She spent nine years as a board member of the Corangamite Catchment Management Authority, retiring in 2009. From 2010 until 2019 Kaye represented Corangamite on the Victorian Landcare Council and then the newly formed Landcare Victoria Inc. Kaye was awarded a doctorate for her research into trace element nutrition of sheep and holds an honours degree in agricultural science, a Diploma of Education, and a Master Tree Grower Certificate. She has recently been inducted as a member of the prestigious US-based Academy of Community Engagement Scholarship.

**Joseph Runzo-Inada** is the chief resilience officer for Toyama, Japan. He was previously the mayor's senior policy adviser, the first American to serve as a senior policy adviser for a major Japanese city. As head of Toyama's Office of Strategic Planning and Resilience, he oversees the city's 30-year resilience strategy. A former American university professor, he was educated at the University of California, the University of Michigan and Harvard University. He is the author of 10 books and 50 scholarly articles and has directed four documentaries as a filmmaker. He has lectured in over 30 countries on five continents, is the recipient of seven awards from the United States National Endowment for the Humanities and was elected a life member of Cambridge University's Clare Hall College. Joseph works closely with the Rockefeller 100 Resilient Cities and the World Bank City Partnership programs and represents Toyama at international meetings such as the World Cities Summits in Singapore, the 2017 New Cities Summit in Inchon, and recent Organisation for Economic Co-operation and Development (OECD) resilience summits in Paris, Lisbon, Tampere and Athens, and United Nations Environment Programme and ECLEI (Local Governments for Sustainability) conferences.

**Michael Seigel** was a senior research fellow of the Nanzan University Institute for Social Ethics (2003 to 2015) and professor of the Faculty of Policy Studies (2008 to 2015) at Nanzan University, Japan. He moved to Japan in 1973 after being ordained as a Catholic priest at Barooga, Australia in 1972. In Japan, he was involved in various social activities, including supporting Indochinese refugees through the late 1970s and 1980s and supporting homeless people and alcohol addiction groups. He was also involved in poverty reduction in developing countries in Asia and environmental conservation. Mick completed his PhD in theology at Birmingham University in 1993, and studied multifaceted academic fields, such as theology, economics, international relations, peace studies and environmental studies. Landcare was one of the most relevant topics in his later years. He was convinced that the landcare approach embodied the principle of subsidiarity, through which autonomous grassroots activities can effectively tackle modern environmental crises. Mick fought cancer of the oesophagus in his last years but sadly passed away on 4 July 2019.

**Brian Slater** is professor and associate director of the School of Environment and Natural Resources at Ohio State University, USA. Brian received bachelor and master degrees in agricultural science from the University of Queensland, and a PhD in soil science from the University of Wisconsin-Madison. His early professional career in the Queensland Government's departments of Primary Industries and Natural Resources provided him with many valuable cooperative learning experiences working with farmers in the Roma area of Queensland during the early days of Landcare. This influenced his ongoing interest in community and participatory approaches to research, and experiential approaches to teaching and learning. Brian's research interests include pedometrics and digital soil mapping, soil hydrology and the enhancement of soil physical conditions. He leads extension programs in sustainable soil and land management, teaches courses in pedology and urban soils, and leads international environmental study opportunities for American students in Iceland and Australia.

**Francis Steyn** is an experienced project manager in NRM, ecological infrastructure and conservation, with 41 years of experience in project implementation in the Western Cape province of South Africa, including extensive partnerships. He has a good understanding of the project management cycle from initiation, implementation and evaluation. He has hands-on experience conducting project management in community-based NRM. These projects include a very successful multi-impact Green Economy project in the Berg River, a successful holistic community-based Koup project and an essential SmartAgri climate change project. He has extensive skills in managing and motivating people, and specialised technical knowledge in sustainable agriculture, climate change, disaster management, irrigation, NRM, legislation and conservation. He has a proven track record of performance in leadership and management, implementing numerous projects, including projects to address drought and water management. He studied land use management, irrigation and sustainable agriculture at academic institutions in South Africa and he has work extensively in landcare in South Africa and in the international landcare movement.

**Jonina Thorlaksdottir** is a PhD student in environmental studies at the Agricultural University of Iceland. She is researching the role of stakeholder engagement within rangeland management. Jonina holds a master degree in environment and natural resources and a Bachelor of Science in biology from the University of Iceland. Her master's thesis revolved around the effectiveness of land improvement measures and participation processes within a quality management scheme for sheep farming in Iceland. From 2015 to 2020, Jonina was the manager of Rif Field Station in Melrakkaslétta, north-east Iceland. The station is intended to encourage ecological research and monitoring in this Low Artic area that has a long history of sheep grazing. The station is involved in various community projects in the region related to environmental education and sustainable tourism. Jonina was raised on a sheep farm in north-east Iceland, where her family has been living for four generations. She remains very much involved in the farming operations.

**Joy Tukahirwa** is an NRM specialist involved in research and development towards building socioecological resilience among small-scale farmers. Joy has a doctorate and is a founder and trustee of Uganda Landcare Network, a national platform for promoting landcare stewardship in that country. She is a representative of Beyond Subsistence, an organisation that undertakes agroforestry and development including customising the Master Tree Grower Program in Africa.

**Kip Werren** has significant experience in professional legal practice and professional accounting practice in Australia. He continues to provide advice in the areas of business structures, estate planning, property law, corporations law and commercial law. His research areas are funding NRM, law and agriculture and property law. Kip completed his PhD at Western Sydney University. His dissertation was titled *Utilising taxation incentives to promote private sector funded conservation* and he has a keen interest in the resourcing of the landcare sector. He is the course coordinator and lecturer in property and tax law at the University of New England in northern New South Wales. He is a fellow of the Institute of Public Accountants and a solicitor of the Supreme Court of New South Wales.

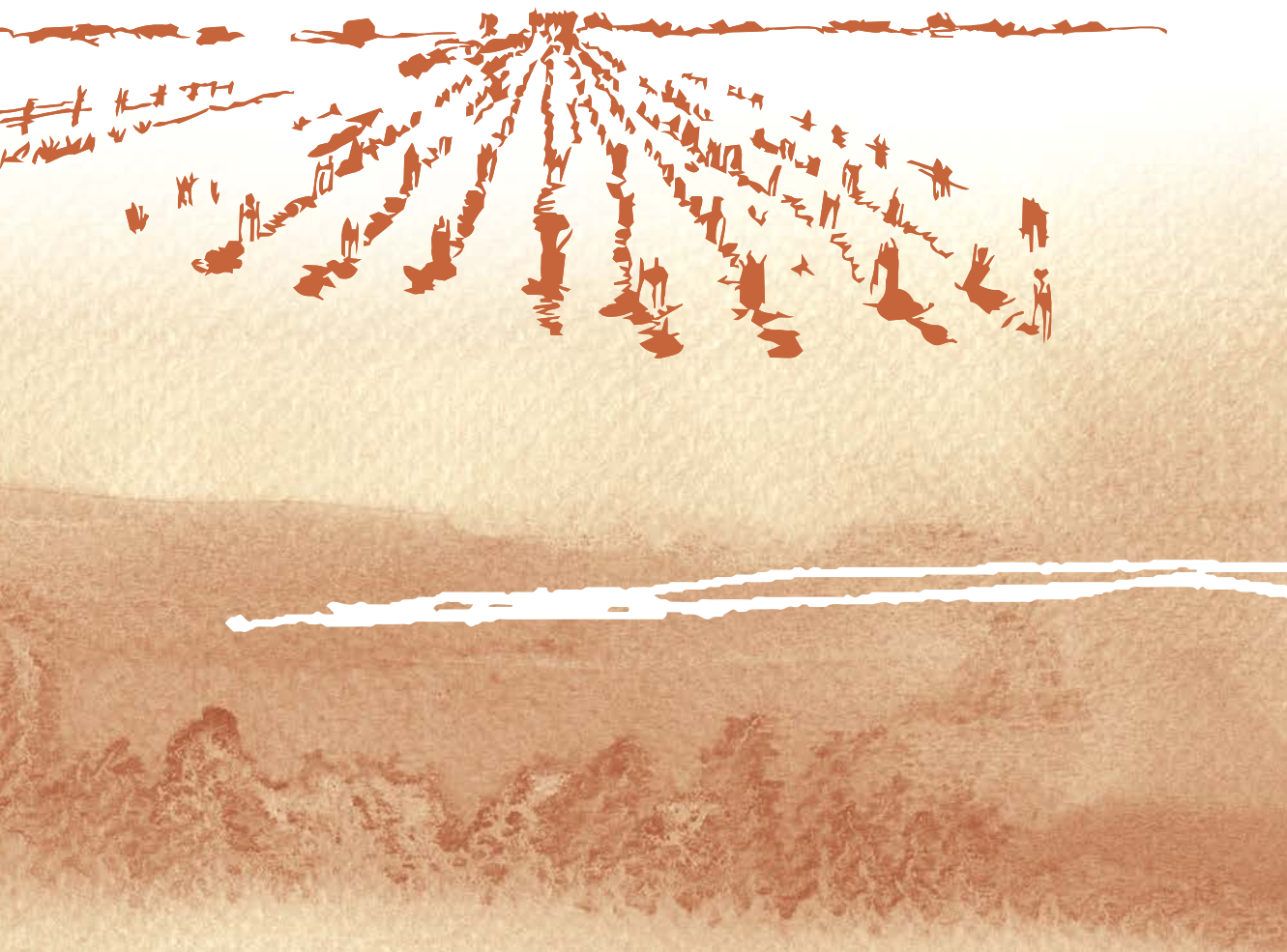
**Sonia Williams** has been involved with Landcare in Australia for over 27 years. Her enthusiasm and passion for landcare stems from the difference collective action makes, not only to the environment but to the social fabric of the communities involved. Sonia, her husband, Ted, and daughter, Katie, run a 1,600-hectare sheep and cattle farm near Uralla on New South Wales's Northern Tablelands. She holds a degree in rural science, a graduate diploma in company directorship and is a commissioned officer with the Australian Army Reserve. Her initial involvement with Landcare was as a landholder member and voluntary project officer for the local Harnham Landcare group. Her experience in Landcare includes roles as a coordinator, project manager and executive officer with district and regional Landcare networks. She has also worked for Landcare NSW, first as its general manager, and then as the state Landcare coordinator. She delivered a project resulting from Landcare NSW's successful lobbying of the state government to reinstate funding for local Landcare coordinators. She also worked with the Landcare community to build networks and partnerships to support and to improve the ability of Landcare to deliver at the local scale, while improving opportunities to link to regional, state and federal initiatives.

**Fred Yikii** is an assistant lecturer in the Department of Environmental Management at the School of Forestry, Environmental and Geographical Sciences, Makerere University, Uganda. He holds a Master of Science in agroforestry and a Bachelor of Community Forestry from Makerere University in Uganda. He received an Advanced Certificate in Land Restoration and Sustainable Land Management from the United Nations University in 2009, where his special project dealt with research approaches for maximising knowledge gain and adoption. Fred has over 10 years of teaching experience spanning fields such as environmental communication, landscaping and urban forestry, conflict resolution in NRM and food security. He coordinates the Bachelor of Environmental Sciences program at Makerere University. His current research activities are based on food security and wetland policy.

**Rob Youl** is a forester who has worked since 1981 in farm forestry, revegetation, urban ecology and community action. That period included service and collaboration with several Victorian Government environment departments, Greening Australia, Conservation Volunteers Australia and especially Landcare Australia Limited for over 13 years. From 1996 to 2007, as Landcare Australia's Victorian projects officer, he assisted groups and networks to initiate and source corporate funds for major and minor programs, including Computershare's eTree program, which promoted major landscape change across Australasia. From 2007 to 2009 he helped run CarbonSMART, Landcare Australia's greenhouse gas sequestration program. Rob has written numerous articles and pamphlets on landcare. Now retired, he recently edited a book on the history of forestry education in Victoria and published another on the vegetation of Victoria before European settlement. He is deputy chair of Australian Landcare International, now renamed Global Landcare, which he helped found in 2008. Rob received an Order of Australia in the 2012 Australia Day honours list and in 2017 he was awarded a Jolly Medal, which is Forestry Australia's highest honour.

# List of shortened forms

| | |
|---|---|
| ACIAR | Australian Centre for International Agricultural Research |
| AMAEP | ACIAR Mindanao Agricultural Extension Project |
| AT Uganda | Appropriate Technology Uganda |
| CAO | City Agriculture Office |
| CBDRR | community-based disaster risk reduction |
| CBRM | community-based resource management |
| CENRO | City Environment and Natural Resources Office |
| CGIAR | formerly the Consultative Group on International Agricultural Research |
| CLEA | Community Learning for Environmental Action |
| CSIRO | Commonwealth Scientific and Industrial Research Organisation |
| FAC Net | Fire Adapted Communities Learning Network |
| GDP | gross domestic product |
| ICM | integrated catchment management |
| ICRAF | International Centre for Research in Agroforestry |
| IUCN | International Union for Conservation of Nature |
| KADLACC | Kapchorwa District Landcare Chapter |
| KCLID | Kagawa Canal Land Improvement District |
| Landcare Australia | Landcare Australia Limited |
| LID | land improvement district |
| LIFE | Livelihood Improvement through Facilitated Extension |
| NAACP | National Association for the Advancement of Colored People |
| NAADS | National (Uganda) Agricultural Advisory Services |
| NRM | natural resource management |
| NUISE | Nanzan University Institute for Social Ethics |
| OBLA | Olo-clofe B'laan Landcare Association |
| OECD | Organisation for Economic Co-operation and Development |
| PCAARRD | Philippines Council for Agriculture, Aquatic and Natural Resources and Development |
| PULL | PCAARRD-UP Mindanao-Landcare LIFE |
| ROCP | Regional Onsite Conservation Program |
| RMIT | Royal Melbourne Institute of Technology |
| SDGs | Sustainable Development Goals |
| TOFA | Tuban Organic Farmers Association |
| UN | United Nations |
| UNESCO | United Nations Educational, Scientific and Cultural Organization |
| UNHCR | United Nations High Commissioner for Refugees |
| UNU-LRT | United Nations University Land Restoration Training Programme |
| WWF | World Wide Fund for Nature |



# PART A

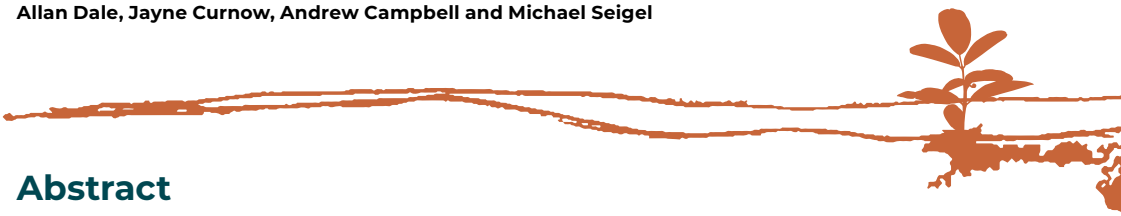
## Introduction to subsidiarity and landcare concepts

Photo: Conor Ashleigh

# CHAPTER 1

# Introduction to subsidiarity and landcare: building local self-reliance for global change

**Allan Dale, Jayne Curnow, Andrew Campbell and Michael Seigel**



## Abstract

From addressing climate change and associated disasters to overcoming poverty, societies across the globe are currently tackling deep and complex problems that require grassroots action in local communities as a basis for making genuine progress. Despite this, decision-making power has become more centralised in many governance systems. This chapter makes the case for the principle of subsidiarity in the development of healthy governance systems that aim to deliver sound social, economic and environmental outcomes for society. Subsidiarity requires effective and appropriate decision-making at all scales in complex polycentric governance systems, from global to local scales. It also requires a strong focus on empowered local decision-making that is partnered and supported by strong policy, planning and facilitative resource allocation at higher scales. This principle underpins this book's focus and interest in the role of subsidiarity in governance to deliver strong community resilience and local self-reliance in the face of change. This chapter also outlines why this book uses the landcare movement as an exemplar of decision-making on environmental issues with a high level of subsidiarity.

## Introduction

Societies across the globe are currently tackling deep, complex problems that require grassroots action in local communities if genuine progress is to be achieved. As just one example, emerging success across the globe in neutralising the COVID-19 pandemic has required the informed action of individuals, families and communities to prevent the spread of a new, unpredictable and terrible disease. Tackling the global problem of climate change has required individuals, businesses and local communities to address their own carbon emissions. Coping with climate-related disasters (for example, wildfires, cyclones, floods and sea-level rise) will mean building resilience and self-reliance at local scales. Ongoing poverty reduction across the globe will continue to require the development of microstrategies for economic development at local scales and within local enterprises. Securing sustainable agriculture and reducing global biodiversity loss will rely on the development of realistic and local decisions and actions. Importantly, all of these issues are deeply intertwined; at the local level, they are inseparable.

While global, national, provincial and local governments need to set the vertically integrated policies that are needed to enable us to deal with these unprecedented problems within incredibly short timelines, centralising power in the decision-making process will hinder the capacity of local communities to think, plan, act and review the actions that they need to deliver necessary global change. Despite this, there has been a growing tendency across nations to centralise decision-making, reducing the flexibility, resources and autonomy needed for purposeful action that delivers results locally. At the same time, in all walks of policy life, there are signs of declining trust in governments. This is a clear indicator that communities and individuals feel that they have less autonomy in the way they operate locally. The likely result of this will be grand policies and lofty global agreements, and even substantive government expenditures, that fail to deliver change on the ground as envisaged by policy.

The dominant approach to reviewing policy failure, however, often fails to explore the key principles of good societal governance needed to achieve positive outcomes. Commissions, reviews and audits of systemic policy failure often suggest that the way to achieve better results is to further centralise decision-making power and intensify the micromanagement of key program activities at higher levels of decision-making (see Dale 2015). Accountabilities for policy and program failure are often pushed further up the decision-making chain, rather than being spread across the many scales (global, regional, national, provincial, local and even business and family levels) at which decisions and actions are required. This could drive a vicious cycle of worsening policy outcomes and further divide governments and their grassroots constituencies, creating a more fractured and fractious society.

If the concept of subsidiarity was applied as a measure of good governance in any of these areas of critical policy importance, a very different management trend might emerge. The delivery arrangements designed to deliver on key policy visions might be better positioned to achieve their intended outcomes. Governments would rebuild trust among their constituent local communities. At the local scale, economic, social and environmental resilience would become intertwined and inseparable. Some people think of subsidiarity as just being about the devolution of power. However, we view subsidiarity as the need for appropriate decisions to be made at the appropriate scale. Relative to the subsidiarity principle, centralising power will generally deliver poorer policy and program

outcomes. At the same time, simply devolving decision-making to local scales could result in fragmentation, duplication, powerlessness and a loss of policy focus. Building subsidiarity means strong and integrated decision-making at global, national, provincial and local and/or community scales, with constant feedback up and down that polycentric chain. By focusing on the subsidiarity principle, local communities are likely to become more self-reliant while genuinely delivering on intended global, national and provincial policy settings. Policymakers can also become more strategic and less bound by the micromanagement of local effort.

**We view subsidiarity as the need for appropriate decisions to be made at the appropriate scale.**

The emergence of landcare and the early formalisation of these ideas in the Australian context provides a foundational exemplar of subsidiarity in action. Landcare envisages, and in many cases has successfully achieved, a strong policy framework aimed specifically at supporting or standing behind the grassroots community groups that are looking to improve the sustainability of Australian landscapes and food production systems. These concepts have slowly infused their way into regional and rural landscapes in more than a dozen countries across the globe, delivering economic, social and environmental benefits to participating communities. This book seeks to recognise and celebrate the potential application of the subsidiarity concept in helping to deal with many complex contemporary challenges. It uses landcare to explore how this principle can be usefully applied. It suggests that this principle has value in tackling multiple global problems, from climate change and public health improvement to post-disaster recovery and resilience building.

Part of the motivation and intention behind this book is the lack of recent critical exploration of landcare and other global subsidiarity-based movements for local action in contexts as diverse as disaster recovery, post-conflict reconciliation, public health, sustainability and poverty reduction. This is despite the fact that emerging global crises will rely on governance systems that are deeply and richly infused with subsidiarity-based concepts and designs. This book seeks to bring together the voices of academics and practitioners from a range of countries. While we will mainly explore these concepts through the landcare lens, we will also turn our attention and analysis to landcare-like approaches in other fields of endeavour and in other regions and localities across the globe.

This first chapter introduces the concept of subsidiarity and its key role in delivering global, national and provincial policies, while also improving self-reliance within communities. We then explore why we consider that the Australian concept of landcare, and its increasingly international application, provides an exemplar worthy of discussion and analysis. We discuss the potential for international aid (from Australia and other countries) in building local self-reliance, particularly the capacity of local communities to identify, assess and respond to the many global challenges they face.

## Subsidiarity in governance: the key to local self-reliance

Most national policy aspirations and efforts can only be achieved through the cumulative impact of thousands of purposeful actions of individuals, families, businesses and, most importantly, local communities. While having global, national, provincial and regional policies is critical in determining the key focus for action to avoid problems, centralising decision-making has two major negative impacts. It tends to constipate the decision-making processes, increasingly making community leaders at local scale less willing to make decisions and take decisive action, even if these are consistent with the higher-level policy environment. This, in turn, can undermine community self-reliance. Communities increasingly wait for decision-makers at higher levels to make decisions for them or provide them with resources. Alternatively, poorly conceived policies that don't account for the day-to-day reality and needs of local communities are likely to be resisted or even subverted at local scales. For example, environmental policies that don't account for or accommodate local economic needs are destined to face significant political resistance, fracturing broad societal consensus building.

We see subsidiarity as an essential principle in the design of any public policy and program agenda that attempts to deal with dynamic challenges that have place-based dimensions. Subsidiarity embedded in global and national policymaking sets the scene for effective policy design and delivery. Importantly, however, strong subsidiarity in governance systems results in more responsive policymaking. The issues being faced passionately by local communities become bottom-up drivers, rather than nations just responding to the policy agenda at global, national, provincial and regional scales. Subsidiarity sets the scene for policy responsiveness. High levels of subsidiarity in societal governance systems are the key to developing more self-reliant, and ultimately more resilient, communities. This buttresses the overall robustness of societal governance at all these scales.

Societies tend to fracture or break apart when local autonomy is threatened. As communities become less able to make decisions for themselves or to mobilise their own resources to respond to the challenges they face, they become less self-reliant. Less self-reliant communities in turn tend to become less resilient to environmental, social and economic shocks. It takes longer for them to recover from natural disasters. The risk of social unrest and civil conflict increases. Deep poverty and cross-generational disadvantage can emerge.

## Subsidiarity, self-reliance and resilience: definitions and discussion

As Michael Seigel outlines in Chapter 3, there are many interpretations of the principle of subsidiarity. We seek to go beyond simply stipulating that, as much as possible, decision-making should be at the most local or most grassroots level feasible for a particular decision. This way of thinking about subsidiarity can often be confused with concepts or approaches to the devolution or the regionalisation/localisation of decision-making power. In our view, in a governance system that displays a high level of subsidiarity, it is very important to stress that appropriate decisions are made at all scales in the governance system, from the global scale down to local communities, enterprises, families and individuals. Another way of framing this is that, for any given decision, there is an appropriate or an optimum scale at which such a decision should be made. This generally means that higher levels in the system focus their attention on policy and strategy, middle scales focus on planning and coordination, and more localised scales focus on decisions about

actual delivery and getting things done on the ground. In a system with a high level of subsidiarity, policymaking is deeply informed by those on the ground, and those on the ground have a deep understanding of and commitment to higher level policies and plans.

With greater subsidiarity comes greater local ownership, autonomy and self-reliance. This increases the capacity of communities to take proactive action under their own steam and resources, and to respond effectively to the stresses that they face (for example, natural disasters; economic, social and environmental problems and/or opportunities). More self-reliant communities don't wait around for someone at a higher level in the governance system to tell them what to do. Their proactive, empowered responses may even prevent emerging issues from becoming major national or global policy problems. While local communities appreciate, and are enabled by, resources from the outside, they are not rendered helpless without the higher-level allocation of external resources from governments. They jump in and mobilise their own internal resources for change, as well as seeking partnerships with higher scales.

**With greater subsidiarity comes greater local ownership, autonomy and self-reliance.**

All of this contributes to greater community resilience in the face of change – changing climate, changing economies and changing social and cultural circumstances. Adger (2000) defines social or community resilience as the ability of communities to withstand external shocks to their social infrastructure. Just like the resilience of individual people to change, community resilience must account for the economic, institutional, cultural, social and ecological dimensions of a community in an integrated way. Consequently, and over different periods of time, community resilience in particular localities is related to the resilience of the local population; it is integrally linked to individual resilience. In this context, the concept of disaster-based recovery is important. This means considering how well people and social institutions and structures bounce back from challenge (Masten 2001). People who are resilient display a greater capacity to quickly regain their physiological, psychological and social equilibrium following stressful events, which supports community resilience. In return, healthy, adaptive communities confer a capacity for resilience to their individual constituents (Dale et al. 2011).

Subsidiarity, local self-reliance and increased community resilience are essential ingredients to the achievement of global good and the resolution of the key problems facing the future of humanity and the planet. These challenges are real and ever-present and must be tackled comprehensively. Globally, there is clear scientific consensus about the threat of increasing greenhouse gas emissions and the resultant impacts on global and local climates. The global decline of both terrestrial and marine biodiversity and bioproductivity is well understood. Ongoing global declines in the availability and quality of fresh water are understood. Global poverty reduction remains a critical humanitarian need. There is a constant threat of civil and political fracturing and the resultant risk of international terrorism and civil unrest. The current COVID-19 crisis has reminded nations of the need for local self-reliance, and more localised (but still globally integrated) agrifood value chains. These agendas cannot be tackled effectively in the absence of highly subsidiary governance systems.

## Landcare as an exemplar of subsidiarity

Landcare in Australia did not emerge from an enlightened top-down policy guided by the principle of subsidiarity. Indeed, most people involved in landcare have probably never heard of the term. Rather, community-based approaches to tackling land degradation problems that extend over the boundaries of multiple farms emerged in parallel in several Australian states during the early 1980s (Campbell 1994). Problems such as dryland salinity, feral animals (for example, rabbits, foxes and wild dogs) and noxious weeds like ragwort can rarely be addressed effectively within the boundaries of a single farm, even in Australia where average farm sizes are large. They demand coordinated action across multiple farms, or whole catchments in the case of dryland salinity or river water quality problems. Most land in the agricultural zones of Australia is privately owned, and private property rights are very important in rural Australia. Farmers see themselves as tough, self-reliant, independent small businesspeople, autonomous in their decision-making. As a general rule, they resent being told what to do on their own land by other people, especially by governments.

In this context, farmers who realise that they have a land degradation problem affecting the productivity and amenity of their farm, and that they can only fix that problem if their neighbours all work on it at the same time, in a coordinated way, will be more amenable to working collaboratively in group approaches on these shared problems. However, their natural inclination is to remain in the driver's seat, especially when it comes to the actions that need to be taken on their own land. Moreover, there is a strong sense of community solidarity in most farming districts in Australia, exemplifying what the philosopher Edmund Burke, reflecting on the French Revolution, saw as our natural attachment to 'little platoons':

> To be attached to the subdivision, to love the little platoon we belong to in society, is the first principle (the germ as it were) of public affections. It is the first link in the series by which we proceed towards a love to our country, and to mankind (Burke 1790).

In the early 1980s in Western Australia and Victoria, and to a lesser extent in other Australian states and territories, groups of farmers began to form voluntarily to work together on shared land degradation problems, especially salinity, weeds and pests. At the same time, government agencies were realising that centralised, technocratic and regulatory approaches to these problems (which also have significant public good dimensions) were not working or were no longer consistent with the smaller-government, public-management thinking that was becoming dominant within governments in the English-speaking world. State government agencies were seeking to rationalise service provision to farmers and rural communities (Campbell 1996).

In Western Australia in 1982 and Victoria in 1986, policymakers in state soil conservation agencies realised that they could harness the energies and local credibility of voluntary community groups in more organised approaches to tackle land degradation problems at a neighbourhood, district or catchment scale, with the role of government shifting from one of control to one of facilitation and support (Campbell 1994). The Land Conservation Districts program in Western Australia and the Victorian LandCare Program both highlighted the importance of 'community ownership of problems and solutions' as being central to effective responses to pervasive land degradation challenges. They did not mention subsidiarity, but their programs were explicitly designed to foster local

ownership of local problems, and local decision-making about how best to address those problems, with varying levels of technical advice and financial support from government. The principle of subsidiarity was implicit in the framing of these policies and programs, consciously or otherwise.

Campbell (1994) outlines the evolution of Australian landcare in its early years, from a disparate parallel development of subnational initiatives into a national movement with explicit support from the Australian Government, as well as state and territory governments and some large corporations. A striking feature of the early years of landcare was its joint 'ownership' by the National Farmers' Federation and the Australian Conservation Foundation (the highest-profile and most powerful lobby groups for farmers and conservationists respectively), and its bipartisan political support. At the launch of the Decade of Landcare Plan in April 1989 by prime minister Bob Hawke, it was noteworthy that the then shadow minister for agriculture, Bruce Lloyd, was also on the podium, publicly supporting the new initiative.

By 1994, there were more than 6,000 Landcare groups in Australia, involving more than one-third of all farming families (Campbell 1994). This was an extraordinary level of community engagement and buy-in compared with most government programs. Robins (2018) describes five phases of landcare in Australia, from the early 'childhood phase' covered in depth by Campbell (1994) to the current 'mid-life phase'. In Chapter 30, Lisa Robins describes the contemporary understanding of landcare as simultaneously comprising the landcare ethic (the philosophy of living in and caring for the land), the landcare movement (local community volunteers putting the philosophy into practice) and the landcare model of support mechanisms and structures, many funded by government, but with the primary role of government being seen as fostering self-reliance. In Chapter 26, Rob Youl describes many facets of the landcare model, and the lessons that have been learned along the 40-year journey of landcare in Australia about how best to support and sustain local community ownership, engagement and grassroots action.

The development of landcare in Australia has been far from linear (Curtis and Lefroy 2010; Campbell 2016; Robins 2018). Many of the original landcare leaders are now in their retirement years, and the extent to which the next generation has picked up the baton is patchy. Many Landcare groups are moribund, but others have rejuvenated, and new forms of landcare (such as those targeting demographics rather than neighbourhood groups) have emerged (see Megan Lee, Naomi Edwards and Peter Pigott in Chapter 27). The national landcare movement and landcare ethic have proven to be remarkably resilient in Australia.

The landcare model, however, has arguably suffered most from policy adhockery and discontinuities. Campbell (2016) describes three major reforms in natural resource management (NRM) policies and programs over the 20 years since 1995. The first was 'localism', characterised by promotion of and support for the emerging community-based landcare movement. The second was 'regionalism', which supported the emergence of a regional (subnational) NRM delivery model based around 56 catchment management/NRM organisations (Robins and Dovers 2007). The third was a return to 'centralism', based on targeted national environmental investment programs with increasing use of market-based mechanisms for allocating resources.

Campbell (2016) argued that, in principle, these three approaches could and should have been complementary and implemented in parallel, each reinforcing the others. But in

practice, with static or declining levels of overall public investment and in-built incentives for each level of government to shift costs on to the others, they were implemented in sequence. Each claimed to build on its predecessors, but in effect, each development tended to compete with and undermine the pre-existing programs. In budgetary terms, the regional NRM delivery model cannibalised Landcare funding and community leadership in the early 2000s. After a change in government in 2007, the national Caring for our Country program was funded in part by a 40% cut to the budget for regional NRM bodies. In 2013, after another change in government, $500 million was removed from the Landcare budget at the same time as the new national $480 million Green Army program was launched (Rutherfurd and Campbell 2014). In effect, this was like trying to build a tall building, with each additional storey constructed using materials removed from lower floors.

These obvious trade-offs between what should have been complementary and even synergistic NRM policy approaches led to an erosion of social capital, especially in the form of 'vertical trust' between the different layers of NRM governance. More explicit attention to the principle of subsidiarity, especially if resource allocation to each level of governance was not seen as a zero sum '*Hunger games*' exercise, would have sought to sustain and build vertical trust up and down the system, strengthening the whole system.

Despite fragmented, inconsistent and sometimes unhelpful changes in the policy and institutional context within which Landcare has operated in Australia over the last 40 years, it has proven to be resilient at a community level in many parts of Australia, and appears to be enjoying a resurgence of political support. For example, the Victorian Government recently committed a further $13 million funding for 80 part-time Landcare facilitators that support 650 voluntary Landcare groups and networks in a program that has been running since 2011 and has been estimated to generate a benefit:cost ratio of more than 7:1 (Landcare Victoria 2021). New legislation is being enacted (for example, the *Landscape South Australia Act 2019*) that attempts to integrate voluntary community involvement with more formal planning and regulatory functions for the management of land, water and marine resources across all tenures (DEWSA 2021). At the national level, a new Parliamentary Friends of Landcare group was launched in 2020, which has representatives from all political parties who are eager to align themselves with landcare and community volunteerism.

Moreover, as many chapters in this book attest, the principles of Australian Landcare have inspired and informed landcare-like approaches in at least 20 other countries, with limited promotion or assistance from Australia. As Youl observes in Chapter 26, the Secretariat for International Landcare and Australian Landcare International have facilitated visits and provided moral and technical support to local landcare leaders in the South Pacific, New Zealand, Africa, the Philippines, India, Indonesia, the Caribbean and North America. ACIAR has funded research into the application of landcare principles in resource-poor and conflict-vulnerable contexts, particularly in the Philippines (Mary Johnson and Evy Elago-Carusos in Chapter 17; Metcalfe 2004; ACIAR 2009; Vock 2021) and more generically (Johnson and Muller 2020). That research suggests that landcare principles, exemplifying subsidiarity, have much to offer in meeting the contemporary challenges of improving food and water security, human health and nutrition, and biosecurity – all issues that are amplified by climate change.

## Intent and structure of this book

We want this book to illuminate the importance of subsidiarity in the development of strong governance systems across the global policy and practice discourse. We consider that subsidiarity in governance systems drives local self-reliance and community-scale resilience in the face of change. We focus our attention on landcare as an Australian concept with global reach that provides an exemplar worthy of analysis and discussion. In responding to the COVID-19 pandemic, managing economic recovery and tackling climate change, there could not be a better time to revisit past and present successes and failures in the landcare system in Australia and internationally. In line with landcare principles, this monograph brings together policy thinkers, local practitioners and academics in a shared dialogue.

- **Part A: Introduction to subsidiarity and landcare concepts** unpacks the concept of subsidiarity and its relationship to local self-reliance and community resilience in the face of change. This section strongly aligns the landcare concept with the subsidiarity principle.
- **Part B: Developing local resilience and sustainability** explores the importance of self-reliance building as the foundation for local resilience, particularly if we are to achieve global sustainability.
- **Part C: Landcare as an integrative concept** celebrates the value of the landcare approach as an integrative concept in local communities that brings together environmental, social, economic and social needs and opportunities.
- **Part D: Landcare as a transformative agent in crises** explores the role of landcare and similar approaches to subsidiarity for transformative recovery in crises such as natural disasters and civil conflict.
- **Part E: Developing community learning and social cohesion** explores the role of landcare-style approaches in developing community learning and promoting social cohesion.
- **Part F: Laying the groundwork for landcare's future** explores the opportunity to further enhance landcare in the future.
- **Part G: Landcare's message for the wider world** unpacks what all this means for the achievement of global public goods.

## References


ACIAR (2009) *Landcare in the Philippines: a practical guide to getting it started and keeping it going*, ACIAR Monograph No. 138, ACIAR, Canberra, accessed 3 September 2021. https://www.aciar.gov.au/publication/books-and-manuals/landcare-philippines-practical-guide-getting-it-started-and-keeping-it-going

Adger W (2000) 'Social and ecological resilience: are they related?', *Progress in Human Geography,* 24(3):347–364.

Burke E (1790) 'Reflections on the French Revolution *The Harvard Classics',* 24(3):Paras 75–99, accessed 3 September 2021. https://www.bartleby.com/24/3/4.html

Campbell A (2016) 'Two steps forward, one step back: the ongoing failure to capture potential synergies in natural resource management (Australia)', *in* Young M and Esau C (eds) *Transformational change in environmental and natural resource management: guidelines for policy excellence*, Routledge, Oxon.

Campbell A (1996) 'Regionalism and regionalisation: participatory approaches for sustainable natural resource management at the regional level in Australia', *Centre for Resource and Environmental Studies Working Paper,* 1996/2, Australian National University, Canberra.

Campbell A (1994) *Landcare: communities shaping the land and the future;* with case studies by Greg Siepen, p. 344, Allen and Unwin, Sydney.

Curtis A and Lefroy T (2010) 'Beyond threat and asset-based approaches to natural resource management in Australia', *Australasian Journal of Environmental Management,* 17(3):134–141.

Dale AP (14 November 2015) 'If you have a pulse, you're a politician' [video], TEDxJCUCairns, YouTube, accessed 4 October 2020. https://www.youtube.com/watch?v=ZdSWFe89grk

Dale AP, Vella KJ, Cottrell A, Pert PL, Stephenson B, King D, Boon H, Whitehouse H, Hill R, Babacan H, Thomas M and Gooch M (2011) *Conceptualising, evaluating and reporting social resilience in vulnerable regional and remote communities facing climate change in Tropical Queensland,* Marine and Tropical Sciences Research Facility Transition Project final report, Reef and Rainforest Research Centre, Cairns.

DEWSA (Department for Environment and Water South Australia) (2021) Landscape boards, accessed 3 September 2021. https://www.environment.sa.gov.au/about-us/boards-and-committees/landscape-boards

Johnson M and Muller C (2020) Investigating the potential of international landcare: Final Report – Project ASEM/2018/117, ACIAR, Canberra, accessed 3 September 2021. https://www.aciar.gov.au/publication/technical-publications/investigating-potential-international-landcare-final-report

Landcare Victoria (2021) Landcare groups receive $13m in facilitator funding, *Landcare Victoria Inc.* [website], accessed 3 September 2021. https://www.landcarevictoria.org.au/LVI/News-Events/Latest-News/2021/Landcare-groups-receive-13M-in-facilitator-funding.aspx

Masten AS (2001) 'Ordinary magic: resilience processes in development', *American Psychologist*, 56(3): 227–238.

Metcalfe J (ed) (2004) *Landcare in the Philippines: stories of people and places*, ACIAR Monograph No. 112, ACIAR, Canberra, accessed 3 September 2021. https://www.aciar.gov.au/publication/books-and-manuals/landcare-philippines-stories-people-and-places

Robins L (2018) 'More than 30 years of "Landcare" in Australia: five phases of development from "childhood" to "mid-life" (crisis or renewal?)', *Australasian Journal of Environmental Management*, accessed 1 September 2021. https://doi.org/10.1080/14486563.2018.1487342

Robins L and Dovers S (2007) 'NRM regions in Australia: the "haves" and the "have nots"', *Geographical Research,* 45(3):273–290.

Rutherfurd I and Campbell A (2014) Another broken promise: budget switches Landcare for Green Army, accessed 3 September 2021. https://theconversation.com/another-broken-promise-budget-switches-landcare-for-green-army-26818

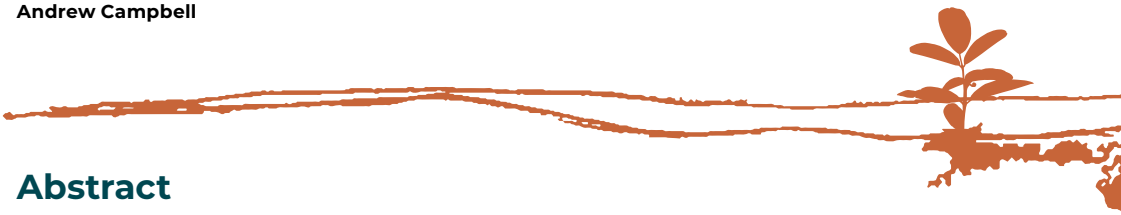
Vock N (2021) *The facts of LIFE: Livelihood Improvement through Facilitated Extension*, ACIAR Monograph No. 213, ACIAR, Canberra, accessed 3 September 2021. https://www.aciar.gov.au/publication/books-and-manuals/improving-livelihoods-conflict-vulnerable-areas

Photo: Andrew Campbell

# CHAPTER 2

# Landcare: exemplifying subsidiarity as a governance principle for the Anthropocene

**Andrew Campbell**



## Abstract

The Anthropocene is the name of a new geological epoch. It is based on the proposition that the influence of human behaviour on the composition of Earth's atmosphere and the basic biogeochemical cycles of the planet is now so pervasive and profound that humanity itself is the dominant force shaping the planet. The most obvious manifestation of the Anthropocene is anthropogenic global warming causing global climate change and ocean acidification. There are, however, many others, including deforestation, groundwater depletion, eutrophication of rivers, nitrification of aquifers, pollution of oceans, biodiversity loss and accelerated rates of species extinction.

Halting and reversing these processes to maintain a 'safe operating space for humanity' will require changes in human behaviour at all levels. Those changes will be deeply contextual, varying across ecosystems, societies and cultures. The dynamic and disruptive nature of processes such as climate change and associated extreme weather events, and zoonotic pandemics (like COVID-19) mean that highly centralised, 'top-down' responses are increasingly ineffective and often counterproductive. Decisions need to be made and responses designed at multiple levels, often quickly.

This chapter proposes that, in the Anthropocene, we need to revisit and explore the concept of subsidiarity in governance (the notion that decisions need to be made and resources allocated at the right level for a given context). It also suggests that landcare, whether purposefully or not, at its best, exemplifies subsidiarity. Landcare approaches have enormous potential, well beyond their antecedents in local environmental management and sustainable agriculture. We can learn from four decades of landcare lessons to develop subsidiary governance models to build sustainability and resilience for these challenging times.

## Introduction

As outlined in Chapter 1, landcare in Australia emerged endogenously and in parallel in several jurisdictions in the 1980s (Campbell 1994:344). It emerged as farmers sought to work collectively in neighbourhood groups to tackle shared environmental problems, and as state governments sought to rationalise agricultural extension services, favouring group approaches over the provision of free advice to individual farmers. Agricultural policymakers in Victoria and Western Australia were no doubt aware of contemporary literature around participatory 'bottom-up' and 'farmer-first' models of agricultural research and community development (for example, Chambers 1983). The early landcare approaches in Australia, however, were pragmatic responses to the opportunities and urgent needs of the time, rather than being top-down prescriptions informed by theories emanating from scientific literature.

As the first National Landcare Facilitator, and later as a postgraduate student trying to make sense of this exciting period, I cannot recall any mention of subsidiarity in the early days of Landcare in Australia. Yet in our language about getting the right balance between bottom-up community voluntarism and top-down public policy frameworks and resource allocation, we were unconsciously navigating the contours of the subsidiarity principle as articulated in Chapter 1.

I have previously argued (Campbell 2016) that Australia has, at various times and in various places, developed all the essential ingredients for a world-leading framework for managing natural resources sustainably in a highly variable climate, improving food security and building community resilience in the face of extreme events. In this idealised formulation, voluntary local Landcare groups and associated citizen science, schools-based education and community education programs all provide a place-based framework for people of all ages to get involved in hands-on learning and action on matters that directly affect them and their communities, thus building social capital. Regional (subnational) natural resource management (NRM) and catchment bodies develop strategies and secure resources for managing environmental problems (water, biodiversity and vegetation management) at appropriate ecological scales that guide local actions, so that, in aggregate, they achieve the agreed objectives. State and national governments establish policy and institutional frameworks (for example, planning, laws, regulations, taxes, markets, property rights and incentives) that reward activities that enhance sustainability and penalise activities that cause pollution and degradation. Global agreements ensure that countries work together on global problems (like climate change and COVID-19) that cannot be solved by individual nations on their own, and that rich countries assist low-income and middle-income countries.

As discussed in Campbell (2016), unfortunately this idealised formulation is just that. In reality, in Australia at least, these ingredients have rarely operated together in the same place for long enough to demonstrate their transformative potential to gain traction against complex, contested, multidecadal, intractable challenges. All the pixels for a beautiful big picture have been demonstrated in various places at various times, but they have never been brought together at one time, at sufficient scale for long enough, to work their magic.

## Why is subsidiarity important?

In such a formulation, each level of agency (local, subnational, national, regional, global) is empowered to make decisions that are best made at that level. Each level of agency allocates resources to and enables appropriate decision-making at the levels below it, trusting lower levels to make wise decisions and getting out of their way. This is not just about benign paternalism from top to bottom, it also relies on each level of agency informing, supporting and making demands of the levels above it. The concept of subsidiarity is thus not just about decision-making happening at appropriate levels, and each level being empowered and resourced to be able to make the decisions it is best suited to make. It is equally about interactions and relationships up and down the hierarchy, and about the levels of vertical trust in the whole system. Subsidiarity implies that higher levels of agency deliberately create the space and authority to authorise, or at least enable, institutions at lower levels of agency to exercise their own autonomy. This means policy and institutional frameworks that are enabling and empowering, not disabling and disempowering.

In the Australian context, local Landcare group leaders often also 'move up' to leadership roles, for example, by sitting on the boards of regional catchment/NRM bodies, and on state and national level advisory groups. This is a good mechanism for ensuring that local concerns inform higher-level policies, decisions and resource allocation, and that local community groups are able to get a firsthand perspective on how and why policies and decisions at higher levels are made. Such vertical cross-fertilisation is more likely to be sustained where the subsidiarity principle is understood, observed and honoured. If there is meaningful resource allocation to and empowerment of the grassroots level, talented community members are more likely to stay engaged at that level. But if power is concentrated at higher levels, talented, ambitious people will gravitate to those levels, hollowing out lower levels and reinforcing a vicious circle of disempowerment. This reduces vertical trust in the system and leaves local communities less receptive to suasive policy instruments designed centrally and delivered from above.

In the 1980s, it was already obvious to some Australian farmers that there were some environmental problems that they could only solve through coordinated action with their neighbours at a district scale. It was also obvious to policymakers that they could not deliver their policy objectives around rural sustainability and agricultural extension with technocratic, top-down approaches targeted at leading farmers – they needed voluntary behaviour change across whole communities. If your policy objective is simply to increase aggregate agricultural production, working with the top 20% of farmers will get you a long way. But land degradation problems are not disproportionally 'owned' by the biggest or most productive farmers. In fact, in some contexts, the opposite may apply. Landcare emerged from neighbourhood groups that were trying to involve all landholders within a district, albeit voluntarily, blending top-down and bottom-up approaches and accidentally exemplifying subsidiarity.

## The Anthropocene

A concept that was previously an arcane proposition among a handful of theoretical ecologists and atmospheric chemists in the 1980s is now entering popular discourse. The Anthropocene is the proposition that the influence of human behaviour on the composition of Earth's atmosphere and the basic biogeochemical cycles of the planet is now so pervasive and so profound that it constitutes a new geological epoch (Crutzen and Stoermer 2000; Steffen et al. 2007). The most obvious manifestation of the Anthropocene is anthropogenic global warming causing global climate change and ocean acidification. But there are many others, including deforestation, groundwater depletion, eutrophication of rivers, nitrification of aquifers, pollution of oceans, biodiversity loss and accelerated rates of species extinction. Habitat loss and fragmentation, and the reliance of forest-dwelling people on wild-caught 'bushfoods', is increasing contact between humans and other species, and consequently the risks of zoonotic diseases like Ebola, SARS, MERS and now of course COVID-19. In a seminal paper, Rockstrom et al. (2009) proposed the related concept of planetary boundaries: the notion that the Earth has finite resources and a finite capacity to absorb pollution, with thresholds for each that together define a 'safe operating space for humanity'. They argued (since consolidated by Steffen et al. 2015) that human activities have already exceeded two of these thresholds and are approaching several others, in effect, contending that human activities are an existential threat to humanity itself.

The Anthropocene foregrounds human activities and human behaviour at all scales as being the primary drivers of the living conditions for human beings, and consequently for other species as well. The Anthropocene is also characterised by uncertainty and surprise, for example, the increasing frequency, scale and intensity of extreme events such as cyclones and hurricanes, floods, wildfires and droughts. COVID-19, commonly referred to as a 'once in a century' event, is in fact the sixth zoonotic pandemic since 1980. Extreme weather events and associated food and water security crises are among the primary causes of unregulated mass movements of people, and consequently of regional conflict. The Anthropocene is seeing regional food security, water security, biosecurity and health security problems morph into national security threats. The Anthropocene is also posing fundamental challenges to the relatively open markets and integrated global economy that evolved from the late 20th century into the early 2000s. The vulnerabilities associated with open borders, convoluted global supply chains, centralised energy grids and 'just in time' inventory management have all been exposed by COVID-19 and increasing climate volatility (Sanderson et al. 2020). In such a context, concepts such as sovereignty, self-sufficiency, self-reliance and decentralisation are finding new advocates, and interest in resilience as an essential complement to sustainability has intensified.

For the purposes of this discussion, sustainability is about living within our environmental means over the very long term, leaving options open for future generations and focusing innovation and technology on the replacement of depletable resources and depleting/polluting processes, with renewable resources and regenerative/restorative processes. Resilience is about the ability of a given system to bounce back or recover from a major shock or disturbance (whether climatic, environmental or sociopolitical) without changing to a fundamentally different state. I see sustainability and resilience as equally important and complementary concepts. Developing new farming systems that are more 'sustainable' in a narrow sense around nutrients, water, energy or carbon, is of little use if they collapse in severe drought or flood events. Having systems that are highly resistant to shocks, but reliant on ongoing resource depletion, is equally unhelpful in the long run.

## Landcare and the Anthropocene

In thinking about the Anthropocene and the notion of living within 'a safe operating space for humanity', it quickly becomes clear that agriculture is central. Growing, processing, distributing and consuming food and fibre is the single biggest thing that humans do on planet Earth. Agriculture, forestry and pastoralism uses most of the ice-free, non-desert land and consumes about two-thirds of diverted freshwater. It is the biggest driver of deforestation, and hence biodiversity loss, and is the biggest contributor to eutrophication of streams and nitrification of groundwater (Willett et al. 2019). The boundaries of the agrifood sector are fuzzy, but most analyses suggest that its global greenhouse gas emissions are one of the three largest contributing sectors, along with stationary energy and transport.

Encouragingly, emissions intensity is already starting to decline in energy and transport, but this is not the case in the agrifood sector (IPCC 2019). The centrality of agriculture means that most of the agreed Sustainable Development Goals under the United Nations 2030 Agenda for Sustainable Development (as discussed by Lisa Robins in Chapter 30) cannot be achieved without a transformation of the global agrifood system. Given that around half the world's food is produced by more than 500 million smallholder farmers, who themselves make up a disproportionate share of the world's poorest people, it is equally clear that such transformation needs to 'work', not just among well-resourced leading farmers in industrialised countries, but for resource-poor smallholders in low-income countries, and everyone in-between. By 'work', I mean improving livelihoods as well as environmental and productivity metrics. Obviously, responses and solutions need to be tailored to their contexts (environmental, socioeconomic, cultural and political), so they will be highly varied and emergent within and across countries and agroecological zones.

This book is a timely stocktake of landcare approaches in diverse contexts. The perspectives presented here illustrate the parallel evolution of landcare experiences around the world, with varying types and degrees of 'top-down' government support. In most contexts, such government support has been very modest, and efforts have been sustained by a large degree of volunteerism. This could be seen as both a missed opportunity by governments, and also evidence that the landcare value proposition is robust in diverse contexts, with or without external resourcing. In contrast, in the southern Philippines, landcare has been adopted very effectively by government as a framework for a new delivery model for extension in post-conflict situations where rebuilding social capital is critical (see Chapter 17 and Vock 2021).

My contention here is that the intertwined challenges of the Anthropocene (climate change, water security, food security, energy security, biosecurity and health security) all accentuate the need for subsidiary governance and engaged citizenry. These challenges all require local communities to have agency, to be capable of making sensible, well-informed decisions and to have the resources to implement them. All this should happen within supportive policy and institutional frameworks at higher levels, informed by the best available science. Attention to subsidiarity means that each level makes the decisions appropriate to that level, while ensuring that the levels below are empowered and enabled, and the levels above are informed and supported.

## Conclusion: revitalising the landcare concept

Forty years on from the emergence of the earliest Landcare groups in Australia, landcare, or at least the concept of subsidiarity, should not be seen as a tired, nostalgic, 'been there and done that' approach to agricultural and NRM extension. Rather, landcare is a durable, adaptable concept that is ripe for replenishment and rejuvenation, with compelling relevance for the Anthropocene, across a broader canvas than just agricultural and environmental extension. This is especially so if it is harnessed to and buttressed by a governance scaffolding rooted firmly in the principle of subsidiarity.

Most of the contexts presented in this book relate to sustainable agriculture, natural resources and environmental management. I think the landcare model of empowering and supporting local neighbourhood groups with a facilitative framework to harness local voluntary effort and leadership on shared problems is ripe for re-examining, rethinking, rejuvenation and reinvestment – in these contexts and across a broader canvas.

**Landcare is a durable, adaptable concept that is ripe for replenishment and rejuvenation**

Landcare approaches, within subsidiarity-focused governance, still have huge potential to make a positive difference in developing, promoting and extending more sustainable and resilient farming systems, and hence in improving livelihoods and food security at multiple scales. However, I believe we should be more ambitious in scope. Other compelling challenges and policy objectives would also benefit from such approaches, including:

- rethinking agricultural extension for the digital age, with digital delivery of services, including fintech and insurance
- providing a framework for grassroots environmental monitoring and management through citizen science, again made much cheaper and more sophisticated through digital technologies including global positioning systems, wi-fi, smart sensors (local and remote) and cameras
- using the above frameworks for an engaged, informed citizenry as a buffer against 'fake news' and misinformation, by giving local communities trusted local sources of information that they understand and 'own'
- promoting carbon farming, including blue carbon, where there is a need for consistent frameworks and to build trust in data and property rights, that are nevertheless relevant to diverse local contexts (i.e. one size will not fit all)
- mobilising disaster risk reduction and responses, which require mobilisation and harnessing of massive voluntary efforts in the immediate response phase, and would benefit from landcare approaches in improving preparedness and resilience ahead of events, and in sustaining recovery long after the event
- managing biosecurity, including minimising risks of zoonotic diseases through a more integrated approach to environmental, animal and human health, and coordinated efforts at local community levels
- providing a welcoming, supportive entry point for women and girls to demonstrate leadership and have their skills and abilities better recognised at local and higher levels.

Many contemporary public policy challenges are made more difficult where there is a loss of social cohesion, erosion of trust in institutions and a lack of authoritative voices informed by best available science. Having well-organised groups working together on shared problems at local levels, within supportive frameworks that enable them to access, interrogate and use data and information, some of which they have generated themselves, seems to me to be a promising avenue for rebuilding social cohesion and social capital, and ultimately the levels of vertical trust in the system that are central to subsidiarity.

The experiences and perspectives shared in this book provide encouragement that landcare approaches have stood the test of time over the last 40 years, and also that – with some imagination – landcare, complemented by subsidiary-based governance, has enormous potential to help in tackling the existential challenges of the Anthropocene.

## References


Campbell A (1994) *Landcare: communities shaping the land and the future*, Allen and Unwin, Sydney.

Campbell A (2016) 'Two steps forward, one step back: the ongoing failure to capture potential synergies in natural resource management (Australia)', *in* Young M and Esau C (eds) *Transformational change in environmental and natural resource management: guidelines for policy excellence*, Oxon, Routledge.

Chambers R (1983) *Rural development: putting the last first*, Harlow, UK: Longman Scientific & Technical.

Crutzen PJ and Stoermer EF (2000) The 'Anthropocene', *Global Change Newsletter,* 41:17–18.

International Panel on Climate Change (IPCC) (2019) *Climate change and land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems*, IPCC, Geneva, accessed 7 January 2022. https://www.ipcc.ch/srccl/

Rockström J [additional authors: Rockström J, Steffen W, Noone K, Persson Å, Chapin FS, Lambin III E, Lenton TM, Scheffer M, Folke C, Schellnhuber H, Nykvist B, De Wit CA, Hughes T, van der Leeuw S, Rodhe H, Sörlin S, Snyder PK, Costanza R, Svedin U, Falkenmark M, Karlberg L, Corell RW, Fabry VJ, Hansen J, Walker B, Liverman D, Richardson K, Crutzen P and Foley J] (2009) 'Planetary boundaries: exploring the safe operating space for humanity', *Ecology and Society,* 14(2):32.

Sanderson T, Chapman G, Walker D, and Horne P (2020) *Food systems security, resilience and emerging risks in the Indo-Pacific in the context of COVID-19: a rapid assessment*, ACIAR Technical Report No. 95, ACIAR, Canberra, accessed 7 January 2022. https://www.aciar.gov.au/publication/technical-publications/food-systems-rapid-assessment

Steffen W, Crutzen PJ and McNeill JR (2007) 'The Anthropocene: are humans now overwhelming the great forces of nature?', *Ambio,* Dec 2007 36(8).

Steffen W, Richardson K, Rockström J, Cornell SE, Fetzer I, Bennett EM, Biggs R, Carpenter SR, de Vries W, de Wit CA, Folke C, Gerten D, Heinke J, Mace GM, Persson LM, Ramanathan V, Reyers B and Sörlin S (2015) 'Planetary boundaries: guiding human development on a changing planet', *Science,* 347:6223.

Vock N (2021) *The facts of LIFE: Livelihood Improvement through Facilitated Extension*, ACIAR Monograph No. 213, ACIAR, Canberra.

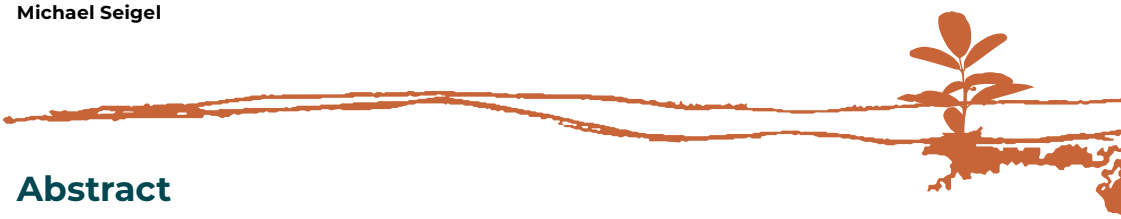
Willett W, Rockstrom J, Loken B, Springmann M, Lang T, Vermeulen S, Garnett T, Tilman D, DeClerck F, Wood A, Jonell M, Clark M, Gordon L, Fanzo J, Hawkes C, Zurayk R, Rivera J, de Vries W, Sibanda LM, Afshin A, Chaudhary A, Herrero M, Agustina R, Branca F, Lartey A, Fan S, Crona B, Fox E, Bignet V, Troell M, Lindahl T, Singh S, Cornell S, Reddy S, Narain S, Nishta S and Murray C (2019) 'Food in the Anthropocene: the EAT-Lancet Commission on healthy diets from sustainable food systems', *Lancet*, 393:447–492.

Photo: Andrea Mason

# CHAPTER 3

## Exploring landcare as a means of implementing the principle of subsidiarity

**Michael Seigel**




## Abstract

Based on the experiences and insights of landcare, this chapter explores a preferable interpretation of the principle of subsidiarity and examines how it can be operationalised in complex governance systems. Rejecting narrow interpretations of the principle as mere decentralisation or the devolution of power to appropriate levels for decision-making, this chapter argues that subsidiarity advocates a system for organising the whole of society that should be guided by common good, and ordered towards sustaining, supporting and empowering the individual, the local, the grassroots or the communal. Experience in poverty reduction, conflict resolution and the treatment of addiction strongly suggests that the combination of autonomy and connectedness forms the specific characteristics of subsidiarity, and that, in practice, it is beneficial to tackle intractable problems.

In dealing with environmental problems, landcare provides an active and concrete model of subsidiarity as it promotes connectedness among various entities without compromising the autonomy of local people. Both networking and partnership are essential for the implementation of subsidiarity. In addition to this, the experience of landcare demonstrates the need for creating a feedback loop for good governance systems to ensure that the realities and perceptions of the grassroots are reflected at the higher governing levels of society. The experience of Australian landcare also underlines the importance of the deliberate program of government support delivered under that country's Decade of Landcare, which in turn reminds us that an alignment of policy vision, strategies and delivery systems should be polycentric and vertically integrated.

## Introduction

The principle of subsidiarity strongly relates to landcare. Because subsidiarity is not defined by a standardised policy or delivery system, there is no manual to explain how it is to be implemented. Instead, it is a principle that can guide the development of policy and delivery systems that are adapted to the circumstances of each application case. There will never be one specific plan for how subsidiarity is to be implemented. However, that does not mean we have to live with vagueness and ambiguity about the concept.

Probably the best way to gain insight into how to implement the principle of subsidiarity is to look at activities where it is being explicitly implemented (consciously or not). In this chapter, I explore landcare as an example of how the principle of subsidiarity may be implemented. I will explore two practices of landcare: networking and partnership building, and what I will call the creation of a feedback loop. Both ideas are helpful, and indeed even necessary, for guiding how subsidiarity can be implemented in other policy or practice areas.

## The principle of subsidiarity

The principle of subsidiarity, as a basic principle in social ethics regarding how society should be organised, was first articulated in the early 1930s in response to the rise to power of the Fascists in Italy and the Stalin regime in the Soviet Union and the increasing strength of the Nazi Party in Germany. The concept is rooted in a Christian understanding of the human being and of society, but not in any exclusive way. It has roots in various aspects of Western thought and is not strongly associated with one religion. It was brought to wider public attention when it was adopted as a guiding principle by the European Union.

Historically, the principle has a deep history within the Catholic Church in that an early formulation of the principle was made in a papal encyclical in 1931. The fact that its higher profile roots lie in one Christian denomination has probably not helped it gain wider acceptance. However, later in this chapter, I will give some examples of the implementation of the principle, including Landcare, that not only have no association with Catholicism or Christianity, but that were established without even formal awareness of the principle itself. This suggests that that the core of the principle falls within the range of good human common sense and is accessible to anyone. I will discuss the principle from two aspects – whether it is a principle that aims to point out the appropriate level at which decisions should be made, and whether it is a positive or a negative normative principle (whether it positively stipulates something that should be done or negatively stipulates something that should not be done).

### The principle as defining levels of decision-making

Many interpretations of the principle of subsidiarity treat it as simply pointing to appropriate levels for decision-making, stipulating that as much as possible, decision-making should be at the most local, most grassroots level feasible for the decision. The higher governing body (for example, the central or regional government) would have the right to act only when a particular matter cannot be dealt with at a more local, more grassroots level. This is basically (not necessarily exclusively) the way the principle has been understood in the European Union.

Article 5.3 of the Treaty on European Union says that:

> Under the principle of subsidiarity, in areas which do not fall within its exclusive competence, the Union shall act only if and in so far as the objectives of the proposed action cannot be sufficiently achieved by the Member States, either at central level or at regional and local level, but can rather, by reason of the scale or effects of the proposed action, be better achieved at Union level (European Union n.d.).

As an example at the national scale, prefectural governments in Japan also tend to define the principle in terms of appropriate levels of decision-making, arguing that it indicates that decision-making should be at the smallest scale or the most local level possible for the decision. Aichi Prefecture, for example, defines the principle as:

> a principle derived from Christian social ethics that says that decision-making should be at as close a level as possible to the citizens and communities that are affected by that decision (Aichi Prefectural Government 2004: Chapter 3(8)).

The argument of this chapter is that, while the above describes a very important dimension of the principle, it remains a highly truncated explanation. It should be remembered that support for Brexit in the United Kingdom was driven by the sense that the United Kingdom itself, and individuals and communities within it, had been disempowered by their membership in the European Union – precisely the feeling that the principle of subsidiarity should have obviated. This national sentiment could, of course, have emerged because the principle was not sufficiently implemented. But it could also be that this understanding of the principle of subsidiarity only as a matter of determining levels of decision-making was too limited. In Chapter 31, Allan and Michele Dale describe subsidiarity as 'the making of decisions at the most appropriate scale to effect positive outcomes for society', indicating that the issue of different levels of decision-making emerge as a practical implication of the principle, rather than being essential to its meaning.

### A positive or negative normative principle

When understood as only defining levels of decision-making, the principle tends to become a negative principle limiting the right of a higher governing body to intervene in the levels of governance and decision-making under its jurisdiction. Ken Endo, who has written on the origins and history of the principle of subsidiarity, argues that:

> the negative concept of subsidiarity refers to the limitation of competences of the 'higher' organisation in relation to the 'lower' entity, whilst its positive concept represents the possibility or even the obligation of interventions from the higher organisation (Endo 1994:642).

Jacques Delors, who was instrumental in drawing the concept into the negotiations for the European Union, also argued for a positive understanding of the principle:

> Subsidiarity is not simply a limit to intervention by a higher authority vis-a-vis a person or a community in a position to act itself, it is also an obligation for this authority to act vis-a-vis this person or this group to see that it is given the means to achieve its ends (Delors 1991:9).

A cursory reading of the initial formulation of the principle in the papal encyclical of 1931 could, it is true, give rise to the understanding that the principle is all about levels of decision-making, and that it negatively restricts the role of the higher body. This is because the Pope's goal was to address the rise of Fascism, Nazism and Stalinism. At that time, the Pope argued:

> just as it is gravely wrong to take from individuals what they can accomplish by their own initiative and industry and give it to the community, so also it is an injustice and at the same time a grave evil and disturbance of right order to assign to a greater and higher association what lesser and subordinate organizations can do (Pope Pius XI 1931).

This indeed is a statement about levels of decision-making and management that certainly does argue that decision-making should be as close to the individual and to the grassroots as is possible, and therefore infers a negative dimension restricting the role of higher bodies. A more positive dimension of the principle, however, is immediately expressed. The sentence that follows is:

> For every social activity ought of its very nature to furnish help to the members of the body social, and never destroy and absorb them (Pope Pius XI 1931).

Subsidiarity, therefore, is not just about non-interference and non-intervention, but about positive help and support. This chapter refers to the statement of Allan and Michele Dale in Chapter 31 that the issue of proper levels of decision-making are one of the main implications of the principle. This is an accurate interpretation. It is an implication that flows necessarily and inevitably from the principle, so saying that it is an implication rather than the main meaning of the principle does not weaken the imperative for decisions and actions being taken as close to the grassroots as possible. The essential content of the principle, however, is that all social bodies and social structures exist to support the individual, the local and the communal.

**Subsidiarity is not just about non-interference and non-intervention, but about positive help and support.**

To argue otherwise (that is, to focus only on the Pope's condemnation of the higher authority taking over what a lesser body can do) would be to ignore the context of Catholic social teaching from which this principle has come. In this teaching there is a strong emphasis on the fact that society exists for the person – both the person as an individual and the person in the multiple sets of relationships that make up that person's life. As Chaplin points out:

> humans are social creatures unable to realise their ends in isolation from others. They need subsidium, the help, of society in order to be human. Society itself thus performs a 'subsidiary function' in relation to persons. A 'subsidiary' function is not a 'secondary' one but rather an indispensable auxiliary one. Society performs a subsidiary function not simply when the individual meets a crisis, but as a matter of course (Chaplin 1993:180).

Similarly, as Endo (1994) puts it, 'all societies exists [sic] for each person, and for the realisation of his/her dignity'. As such, the choice of the word 'subsidiarity' (the phrase used in the papal encyclical is 'the principle of "subsidiary function"') itself is indicative of a positive rather than a merely negative implication. The word is derived from the Latin word '*subsidium*', which means 'help, relief; reinforcement'. Ken Endo points out that 'in Latin, the word *subsidium* or *subsidiarius* initially meant something in reserve, or more specifically, reserve troops' (Endo 1994). Endo (1994) also considers that the term was then used for the

application of troop reinforcement or fresh supply of troops. Later the term acquired the broader sense of assistance or aid. In this derivation of the word, we already see that the notion of subsidiarity can contain positive connotations, as it envisaged of 'the intervention of forces for the benefit of those in trouble' (Endo 1994).

Another Catholic commentator, John Cronin, argues for the breadth of the understanding of the principle. He considers that, as well as:

> the negative but important duty of protecting smaller groups from the progressive encroachment of a giant power, whether it be private or governmental (there is also) the positive obligation of promoting self-governing functional societies on all levels (Cronin 1950:219).

and that:

> the state has the right and duty to intervene when any situation threatens the common good (Cronin 1950:534).

Again, another Catholic commentator, Scott Kelley, speaks of 'non-arrogation', or the obligation of a higher order community not to interfere in the internal life of a community of lower order, and 'empowerment' (the obligation of the higher order community to assist the lower in case of need). He also calls 'collaborative pluralism' a third constitutive element of the principle. By this, he is referring to 'the mutually beneficial relationships that emerge from interactions among various intermediary institutions' (that is, those institutions between the individual and the state) (Kelley 2010:8–9). This would seem to hint at the kind of partnership and networking practised by Landcare, which will be discussed in the final section of this chapter. For the moment, I wish to stress that the original intent of the principle was positive (active help and support) rather than merely negative (non-intervention), although that negative element also remains a necessary and inevitable implication of the principle.

This book shows the importance of local self-reliance. In Chapter 6, Graham Marshall and Lisa Lobry de Bruyn argue that evidence from researchers working in the related traditions of self-determination theory and motivation crowding theory suggests that individuals are more likely to cooperate voluntarily, or autonomously, with governance structures the more they perceive them as supportive of their autonomy rather than controlling. In Chapter 31, Allan and Michele Dale also argue that:

> national governments always run the risk of significant local disenfranchisement and indeed secessionist movements when there is not a strong interplay between national policy and programs and delivery systems that greatly enhance regional or local self-reliance.

## A hierarchical or non-hierarchical concept?

The subsidiarity principle therefore does not just refer to a kind of inverted hierarchy in which central governments devolve what decision-making they can to regional governments, regional governments do the same to local governments, and local governments do the same to individuals or small groups. It is not just a form of decentralisation. An example that has been used to illustrate the difference between decentralisation or this kind of hierarchical devolution of power and the principle of subsidiarity is the action taken by the United States Federal Government and Supreme Court in overriding the authority of state governments to enforce desegregation in certain states of the United States. A prominent example of this is the *Brown v. Board of Education*

*of Topeka* decision of the Supreme Court in 1954. This decision determined that racially segregated schools were unconstitutional, and it required schools to integrate. This was a decision at a federal level that overrode the decision-making authority of states. In response, in 1957, the governor of Arkansas, Orval Faubus, deployed the Arkansas National Guard to block desegregation at Little Rock Central High School by physically blocking African-American students from entering the school. At the request of Woodrow Wilson Mann, the mayor of Little Rock, President Eisenhower sent in federal troops to enforce integration and protect the nine black students who were the first to enrol at the school. This was a case of a central government overriding an intermediate government in support of a more local government and in support of disempowered citizens.

It should be added that this was not a simple case of intervention from above. It was carried out at the request of the mayor of Little Rock and in liaison with the Little Rock branch of the National Association for the Advancement of Colored People (NAACP), an organisation largely based on voluntary local groups. It was therefore a kind of partnership between the local community and the United States Federal Government that got around the failed subsidiarity of an intermediate level of authority on behalf of people at the grassroots level. This is clearly not consistent with decentralisation or with many forms of the devolution of power, but it is fully consistent with the principle of subsidiarity. The principle of subsidiarity is about *optimal* support for each level of society, and most importantly, for the small-scale, local grassroots level, whether this support comes from the level immediately above, or from some higher level of authority, or indeed from some non-governmental body. Further illustrating this point, in Chapter 31, Allan and Michele Dale argue that:

> subsidiarity is a significantly different concept to devolution in the policy and delivery context. Societies that just leave local and regional communities entirely to fend for themselves without demonstrable support for strong capacity building for local self-determination can often foster fractures within the relationships between the nation-state and specific geographic areas or ethnic communities.

### Problematic interpretations of the principle

Not everyone interprets the subsidiarity principle in this more holistic way. David A. Bosnich from the Acton Institute, founded by a conservative Catholic priest in the United States, in describing the principle of subsidiarity states the following:

> This tenet holds that nothing should be done by a larger and more complex organization which can be done as well by a smaller and simpler organization. In other words, any activity which can be performed by a more decentralized entity should be. This principle is a bulwark of limited government and personal freedom. It conflicts with the passion for centralization and bureaucracy characteristic of the Welfare State (Bosnich 2010).

This truncated view of the principle of subsidiarity would have left the African Americans in Little Rock without any recourse. Ken Endo describes this kind of understanding of the principle as being a 'territorialized' understanding, since central governments, regional governments and local governments are territorial entities. In contrast to this, he describes such bodies as, for example, the NAACP, the nine students who were seeking to attend the high school, and the African-American community itself (and other such local communitarian groups and civil rights groups) as non-territorial. He argues that the territorial interpretation became dominant as the principle was drawn into the discussions regarding the European Union (Endo 1994). This territorial interpretation of subsidiarity can also be found in other discourses, particularly in the United States where, as with the

Acton Institute, the principle is associated with federalism and is used to argue for small government. Endo points out on the contrary that 'we can safely state that the principle of subsidiarity was born to protect and promote non-territorial associations' (Endo 1994:639). Or, as Catholic theologian Vincent Miller argues, subsidiarity:

> envisions not a small government, but a strong, limited one that encourages intermediate bodies and organizations (families, community groups, unions, businesses) to contribute to the common good. It envisions a strong government that protects individuals and small intermediate bodies from the actions of large organizations; not just the state but corporations as well (Miller 2012).

### The grassroots, the small scale and the local

In conclusion, the principle of subsidiarity is not just a form of decentralisation or devolution of power, nor is it just about the appropriate levels for decision-making. Rather, it is a principle that advocates that the whole of society be ordered towards sustaining, supporting and empowering the individual, the local, the grassroots or the communal. It is a principle grounded in a view of the human being as being characterised through two fundamental dimensions. One is that, as a being with reason and free will and therefore with the capacity and the right to exercise that reason and free will, every individual has the right to exercise those attributes to the full extent, or at least to the extent that such exercise does not cause harm to others. In other words, each person is to be as autonomous as possible, and to be in charge of their own life. Only in this way can a person reach their own personal fulfilment.

The second dimension of the human being that provides a grounding for the principle of subsidiarity is the essential inter-relatedness of human beings. The human being is essentially oriented towards relatedness. The autonomy called for then is not an isolated autonomy but a very connected autonomy, consistent with the idea of a 'nested community-based system of governance' mentioned by Marshall and Lobry de Bruyn in Chapter 6. A similar combination of autonomy and connectedness applies to the various kinds of communities (for example, family, life communities such as villages and towns, and communities of interest) that people naturally form as part of any organised society. Organised society exists to serve both the individual *and* these natural groupings. It should therefore never override or displace them (except insofar as this is necessary to protect the same autonomy and interconnectedness and the wellbeing of other individuals or communities).

For this reason, subsidiarity is not just referring to the matter of how governments function. It enables consideration of human interaction among individuals, groups and communities relating to and connecting with each other while fully respecting and supporting the initiative, individuality and autonomy of the other. It does not merely apply to organisations related to state-driven governance, but to every kind of human organisation, such as, for example, groups that act for the betterment of others. It asserts that in any form of human or social interaction, respect for the autonomy and connectedness of people is essential. Further, it is not just an ideological, partisan or idealistic theory about how things ought to be. Rather, it is a criterion for making things work. Allan and Michele Dale's comment on Australian landcare in Chapter 31 is likely to apply to many other areas as well:

> Australian landcare originally emerged as a result of higher level policy failures to recognise and arrest land degradation in more developed agricultural landscapes within Australia, and most particularly to deal with soil erosion in cropping lands and the insidious spread of soil salinity. In many localities, this movement for building local

> self-reliance is credited with preventing the economic, social and ecological collapse of several agricultural production systems, regions and local communities (citing Cary and Webb 2001).

In the Australian landcare case, what could not be achieved in a top-down policy manner was achieved through the nested action of autonomy of local communities. The success or failure of development in poor areas has been shown both by experience and research to hinge on the extent to which people are enabled to take control of their own affairs. This may require support, but it is this support that empowers rather than takes control. In Chapter 10, Clinton Muller and Joy Tukahirwa state:

> The nature of such development programs and initiatives have been criticised as being overly prescriptive, and lacking inductive participatory approaches that engage communities in identifying development solutions (citing Burkey 1993; Schuurman 1993).

Approaches that aim at removing impediments and making resources and, more importantly, opportunities available for people who then take control of their own development have proven to be vastly more successful than approaches that try to impose solutions from the outside. With regard to conflict resolution, the approach of the Nonviolent Peaceforce is an example. This organisation makes no attempt to bring a solution to conflicting parties. Rather, they use international witnesses to create a venue where representatives from the conflicting parties can come together in a situation in which their safety is ensured. These representatives then negotiate a solution themselves. Without outside help to create a peaceful venue, a solution is impossible, but the outside help must aim at enabling the conflicting parties to achieve their own solution, rather than trying to bring solutions to them (Nonviolent Peaceforce n.d.).

The treatment of various addictions is another case in point. While there are known problems with the approach, Alcoholics Anonymous and the many programs that are based on it, at one level support the individual to take responsibility for their own recovery. There are no rules, instructions, teachers or counsellors, no coercion or compulsion, just the experience of others to learn from. Each person takes what they choose from the experience of others and are fully in charge of their own recovery. Each group is also autonomous.

These examples of poverty, conflict and addiction are important. All three are intractable problems that have stymied the best efforts of experts and professionals. But when the combination of autonomy and connectedness is achieved, when each person or community can take charge of their own affairs – not in isolation but in supportive relatedness – change becomes possible. Neither taking over nor leaving people to their own resources provides a solution. Neither domination/subservience nor isolation/abandonment is the answer. Autonomy and connectedness, help that supports and enables but does not take over or override, is what is advocated by the principle of subsidiarity. As Muller and Tukahirwa argue in Chapter 10:

> Programs have in the past assumed that smallholder farmers are organised and capable of articulating informed demands to external service providers. However, experience indicates that without a deliberate empowerment effort, farmers are often subjected to manipulation by these external service providers, which results in limited access and outcomes from the extension services (citing Government of Uganda 2005). This emphasises the need for farmer empowerment as an important element in development of demand-driven advisory services, enabling farmers to

make their own decisions, rather than blindly adopting recommendations from others (citing Friis-Hansen and Duveskog 2012).

The impact of this approach, or one that empowers rather than absorbing, dominating or controlling, is described by Sonia Williams in Chapter 4. She argues:

> Landcare … tends to embody an ethic and process that allows for those affected by change to be a *valued* part of that change process. It represents the enabling of communities, who together, identify and understand the issues that affect themselves and their communities. Through supportive processes, Landcare helps them to develop solutions appropriate to their local situation. In aggregate, such local solutions help to meet global needs. Landcare builds trusted partnerships between all involved in dealing with the issue at hand, shares knowledge and encourages innovation … In short, it is a recognition that *the people in the landscape* constitute the most important factor in NRM [natural resource management].

Greater power centralisation within society and less local self-reliance can have significant implications for the timeliness of responses, usually leading to unnecessary escalation of the problem at hand. This might be best recognised when there are low levels of local self-reliance and when highly centralised governments are tardy in their response in post-disaster scenarios. There are countless examples in the governance literature of governments becoming increasingly inert or 'constipated' as more and more decisions are retracted closer to the top of the power tree. A second major problem simply emerges through greater inefficiencies and cost implications arising from less individual and local self-reliance. This, for example, is well understood in the context of health budgets internationally. Greater self-reliance emerges from people looking after their own personal health, and communities taking responsibility for ensuring all individuals have good nutrition and are active. Similar outcomes are understood across environmental, social and economic policy domains.

## Lessons for the landcare experience

### The importance of landcare for the principle of subsidiarity

The examples of the role of subsidiarity briefly referred to above work for poverty reduction, conflict resolution and the treatment of addiction. They show how beneficial the combination of autonomy and connectedness can be. While these experiences are helpful in demonstrating the value, and indeed the proper understanding of the principle, they do not shed a great deal of light on the all-important issue of how subsidiarity can be applied in complex governance systems. In fact, it must be said that there has not been a great deal of success in applying the principle within such complex systems. The institution from which the principle originally found support, the Catholic Church, certainly does not have a good record for implementation. The European Union has attempted to implement it, but Brexit happened precisely because of a sense of local disempowerment.

This is where Landcare becomes exceedingly important as an exemplar. Landcare is a form of implementation of the subsidiarity principle that links local groups with all levels of governance for landscape management in a way that maintains the autonomy of the local groups but provides them with support from government, businesses and experts. It is therefore an example of an implementation of the principle of subsidiarity that relates directly to a wider complex governance system. At least in Australia, it is a nationwide movement and includes federal, state and local government in a network of support for

local groups. To the best of my knowledge, it is one of few examples in the world of a nationwide and essentially effective implementation (with the degree of this effectiveness fluctuating according to the interest of the various levels of government at the time) of the principle of subsidiarity that incorporates multiple tiers of government in a network of support for local activities and initiatives.

As many of the authors in this book have made clear, Landcare has shown success. Landcare therefore constitutes an important example of implementation of the principle of subsidiarity. In Chapter 4, Williams points out from her experience in the Harnham Landcare group that:

> local communities became empowered to make a significant contribution to global sustainability through increased understanding and ownership of solutions to their own local issues … coordinators have been placed within host Landcare or similar networks … Where some level of support continued to exist under the regional delivery model, these groups are now regaining momentum.

Consequently, a study of how landcare in Australia works, what makes it work, what has hindered its effectiveness and what adaptations have been developed by Australian landcare in response to the problems it has encountered would be invaluable for all who are interested in seeing the principle of subsidiarity implemented more broadly in society. In a sense, this book is an attempt to achieve this. I argue in this chapter that there are two main areas in which the experience of landcare sheds light on methods of implementing the subsidiarity principle. One is the role of partnership and networking and the other is what I will call the need in governance for a feedback loop that brings the voices of the grassroots level to the awareness of the decision-making levels of society. As Allan and Michele Dale suggest in Chapter 31:

> Many complex problems facing the sustainable use of natural resources, for example, have emerged because of longstanding and outdated local philosophies and cultures that may no longer be useful in the modern context. Through people in the local community coming together around acceptance and analysis of shared problems, a social framework for the injection of scientific and new knowledge is often secured.

## The role of networking and partnership

As Lisa Robins has pointed out in Chapter 30:

> The story of Landcare is one of partnerships … horizontally (within levels, like collaborations across Landcare groups or individual Landcare groups working with local businesses) and vertically (between levels, like collaborations across tiers of government) … 56% of all Landcare-type groups in Victoria were part of a larger Landcare network in 2009, and 'there was evidence that these networks substantially enhanced the capacity of groups to engage other partners … networks of groups typically engaged more landholders and volunteers, developed partnerships with other organisations, operated across larger areas, managed larger budgets, and accomplished more on-ground work across a wider range of topics' (citing Curtis et al. 2014).

In Chapter 4, Williams also sheds some light on how this networking developed:

> The social fabric developed under the Decade of Landcare included district-based support staff (facilitators or coordinators) who were often already embedded members of the community. Coordinators built networks that became trusted hubs for information exchange and program development and delivery, and they supported the

> groups' drivers and champions … the success of Landcare as a widespread movement acting as a change agent within local communities was the result of a deliberate program of government support delivered under the Decade of Landcare plan. This plan provided the infrastructural support for the development and operation of groups, empowering them to face the issues that were pertinent to them.

Robins spells out the process in more detail:

> At the time of the announcement of the Decade of Landcare, the government added another partnership to the mix in the form of Landcare Australia [Landcare Australia Limited] with its mandate of promoting Landcare and seeking private sector sponsors … There now exists a National Landcare Network, formed in 2011, to 'foster a cohesive and cooperative forum to collaborate, support, advocate for and add value to Landcare and other community, volunteer natural resource management groups; foster strategic partnerships; celebrate Landcare achievements; represent community-based Landcare at the national level; and speak as the national voice in the development of Landcare and broader natural resource management policy' (citing Love 2012:50).

Robins further attests to the value of this networking and partnership, while Allan and Michele Dale in Chapter 31 also stress the importance of partnership by saying:

> Landcare builds on the principle that 'a problem shared is a problem solved'. Farmers facing rising saline water tables, for example, are simply unable to resolve such complex problems through individual actions within their own farm boundaries. Solutions to problems like these require collective and evidence-based action at the landscape scale (for example, through extensive reforestation of upper slopes and coordinated drainage).

It seems fair to say that Landcare has shown the role that networking (cooperation between Landcare and similar groups) and partnership (with other types of groups and agencies, the various levels of government, businesses, schools academics, experts, etc.) have in supporting and empowering local autonomous groups. While that includes networking and partnerships with the various levels of government and with academic institutions, experts, businesses, non-government organisations and others, it also includes networking among Landcare groups themselves. Networking with governments, experts and business can be valuable in terms of gaining information and skills. Networking with other groups brings a cross-fertilisation of ideas and practices, a clarification of understanding through dialogue, and a very empowering form of support that comes when one is not required to stand alone.

I would suggest that the Landcare experience indicates that both kinds of networking and partnership are essential for the implementation of the principle of subsidiarity. Furthermore, I concur with Allan and Michele Dale who argue in Chapter 31 that 'through Landcare-like movements building local social capital, the prospect of resolving shared problems improves, contributing a bit-part in the resolution of recognised national policy problems'. This subsidiarity-focused experience of the value of networking and partnership is relevant to many other social movements. To the extent that non-government organisations and community groups that work for the betterment of the environment or of society do so in an isolated way, they will miss out on the empowerment that can come from partnership and networking. It may be that certain individuals and groups are hesitant about partnership and networking because they fear a loss of autonomy. Landcare, however, provides an active model where connectedness can be achieved without sacrificing autonomy. It is therefore a model that removes the need to sacrifice connectedness to preserve autonomy.

The Landcare experience demonstrates how much can be experienced by governments taking up the initiative to establish networks and partnership with local autonomous groups, non-government organisations and others, particularly in the areas of social welfare and environmental protection. Further, since one of the reasons that many individuals or groups may be hesitant about networking and partnership is that they are concerned about the amount of time it will consume, there may be a place for people and groups whose goal is not to carry out some particular social or environmental activity, but rather to create the links of networking and partnership between and among individuals and groups working in a specific field. In this way, it may be possible to achieve the kind of institutions necessary for the implementation of subsidiarity in that field, even when there is no initiative or support from government bodies. Achieving this may be a way of achieving an implementation of the principle of subsidiarity from the bottom up. The system of facilitators and coordinators that Australian landcare has developed may be considered a prime example of how such networking and partnership can be implemented in support of local autonomous groups. In this publication, Muller and Tukahirwa (Chapter 10) and Andres Arnalds, Jonina Thorlaksdottir, Brian Slater and Fred Yikii (Chapter 24) have shown the effectiveness of this type of networking in Kenya and Iceland respectively. In Iceland, that extends to the generation of knowledge through partnership between researchers and on the ground practitioners.

**Landcare provides an active model where connectedness can be achieved without sacrificing autonomy.**

### Creating a feedback loop for good governance systems

Landcare also shows that, while some governments may be very responsive to and supportive of landcare, successive governments may be less aware and less attentive. Williams points out in Chapter 4 that this is currently the case:

> This innovation has largely been forgotten in recent Australian Government investment models. Without this locally focused support, many Landcare networks and groups have withered … The trust in government programs and government staff as partners … has been lost.

This experience demonstrates the need for a system in which the voices of the smallest scale and most local levels of society can be heard at every level of government. It needs a feedback loop that effectively brings to the governing levels an awareness of societal realities, the perspectives, needs and aspirations of the other levels, and most importantly, of the grassroots level. The Victorian Landcare Council would appear to be a case in point. In 2008, Landcare members disenchanted with Landcare's marginalisation formed the advocacy-based Victorian Landcare Council in response to Landcare's loss of funding and marginalisation. The National Landcare Network was formed shortly after to do the same at national level.

That there should be ebbs and flows to the importance placed on the subsidiarity-based aspects of Landcare by various governments over time should be anticipated. In Chapter 26, Rob Youl points out that:

As governments are subject to so many requests and demands, representing the needs of Landcare in the contested arenas of national and state politics is important to ensure the movement's viability and reputation.

Given that governmental decision-making is constrained by policy frameworks, deadlines and budgets, as well as the preconceptions, preoccupations and predilections of the individuals involved, it is not enough to say that the government should simply listen to the people. Subsidiarity requires and needs to support an institutional structure for focused representation. In introducing the principle of subsidiarity, I used the example of the intervention of the Federal Government of the United States in the city of Little Rock, Arkansas. It is important to note that this intervention did not simply come out of the blue as an initiative originating from the Federal Government. Rather, it came about because of the activities of the African-American journalist Daisy Bates, the president of the Arkansas chapter of the NAACP, who kept the Federal Government informed of the situation. As mentioned, the mayor of Little Rock also appealed for federal intervention.

Without this upward process of informing and pressuring the different governing levels of society from the grassroots level, it is unlikely that the principle of subsidiarity can be effectively implemented. This seems to be borne out by the fact that such activities as those of the Victorian Landcare Council became necessary. Research on the experiences of this council and any other similar activities may help shed light on how this kind of feedback loop can become more effective. This would need to include research into the ebbs and flows in the attitudes of governments in Australia towards Landcare and into the ways that Landcare has had to adapt to less interest, less funding and at times, the establishment of other programs that overlap with Landcare. Clearly, the same problems are likely to occur for any implementation of the principle of subsidiarity that link local activities with government.

### Networks supporting Landcare

The collaborations formed between Landcare groups in Australia have facilitating learnings between landholders, but there is much less attention given to facilitating learning between Landcare groups around the business of working in a local community and with government. How to organise in communities, how to develop partnerships with government agencies and industry, and how to influence agendas both locally and at a government level represent an essential social knowledge that underpins work with land managers. However, this social knowledge does not move readily beyond the localities where it develops. Landcare networks in Australia have also failed to change the regional natural resource management (NRM) governance system in which they operate. Landcare members and staff have often complained about being marginalised by decision-making organised around government and regional priorities rather than local priorities, but they have been slow to speak out and find ways to change that marginalisation.

Since 2015, Victorian Landcare's volunteer-managed services and advocacy organisation, Landcare Victoria, has sponsored a project called Community Learning for Environmental Action (CLEA) to develop peer-to-peer learning within the landcare movement. Funding has come from the Natural Resources Conservation League, a philanthropic organisation committed to capacity building in the community environment sector. CLEA has developed a multilevel strategy to strengthen peer-to-peer learning. If Landcare is to provide a useful local self-reliance approach in realising global sustainability, and in achieving the United Nation's Sustainable Development Goals in particular, similar to the CLEA approach, attention and effort in other country contexts will need to extend beyond the many success

stories of individual groups to consider the status of, and how to build and sustain, the necessary supportive policy settings and institutional arrangements.

Landcare is also not, as many believe, a spontaneous community volunteer movement, even though many original groups formed this way. Rather, the success of Landcare as a widespread movement acting as a change agent within local communities (now across the globe) was the result of a deliberate program of government support delivered under the Decade of Landcare Plan, which provided the infrastructural support for the development and operation of groups, empowering them to face the issues that were pertinent to them.

This chapter suggests that in any societal governance system, there will be constant forces or tendencies seeking to centralise power and to implicitly or explicitly diminish local self-reliance. This is often seen through the development and delivery of government programs that are reactive, short-term and oriented towards influencing the voting behaviour of key political constituencies. Such programs often explicitly diminish the building of local self-reliance and eschew the principle of subsidiarity.

If Landcare is to provide a useful local self-reliance approach in realising global sustainability, and achieving the global Sustainable Development Goals in particular, attention in other country contexts will need to extend beyond the many success stories of individual groups to considering the status of, and how to build and sustain, the necessary supportive policy settings and institutional arrangements. Networking and coordination offer interesting and worthwhile jobs to many rural people, including young graduates and older women. Indeed, these experiences often create a springboard to middle-level positions and beyond, and they sometimes direct individuals into research.

Robins (2018) has cautioned that the Landcare story is not one of outright success or failure, venturing that 'it has been thwarted by misguided policy settings and associated institutional arrangements, which has undermined realisation of its full potential'. The evidence suggests that landcare could have been (and could still be) much more successful in Australia with better policy settings and institutional arrangements. The subsidiarity concept, however, reminds us that not all change has bottom-up or top-down qualities, but that an alignment of policy vision, strategies and delivery systems should be polycentric and vertically integrated, and that local self-reliance movements can inform national policy, while national policy might be able to foster and enhance the strength and resilience of local self-reliance movements.

There is some emerging insight into the increasing need for legitimate third-party advocates within the system of governance for complex governance domains (see Dale 2015). If the role of such advocates is accepted and supported by different layers of government and key stakeholders within the policy domain, then the opportunity exists for someone in the system to agitate for continuous improvements in the way the governance system operates. We refer to such a party here as a 'systems doctor' – an independent but collaborative agent charged with bringing key players in the governance system (from policymakers to service agents and clients) together to help analyse problems facing the system in delivering its intended policy outcomes. Such a party could also help those responsible for the system to design and institutionalise adaptive reform. These arrangements would need to focus on understanding healthy governance systems, and in theory, should incorporate the need to strongly build subsidiarity (and local self-reliance) into the system. While rare, such arrangements do exist, more so in some sectors than others. In the justice system of many countries, for example, the coroner's or ombudsman's office may play such a role, but these arrangements are generally not focused on 'whole

of system' analysis and the implementation of continuous reform. In New South Wales in Australia, the state's NRM portfolio recently ran a natural resources commission, while the Australian Government ran a national water commission. Both institutions have since been disbanded, suggesting that the position of such third-party arrangements can be tenuous if there is not a strong political commitment to open and accountable governance and continuous policy improvement.

In building the bigger picture concerning the wider impact of subsidiarity, Landcare-type movements frequently espouse the notion that, while the actions taken are essentially local, when viewed together, these local responses can collectively add up to effective global change, building the sense that more national or global problems can be manageably solved through building local self-reliance networks. In the context of complex national policy problems, this again reminds us of the subsidiarity principle, and particularly that the resolution of national or even global problems might have very local foundations.

Once a shared and global social narrative begins emerging around the importance of solving locally agreed problems, the diffusion of knowledge can start to seep beyond the innovators and leaders who have taken the initiative to move things forward. Landcare-like movements often actively diffuse new approaches and set the foundations for more collective action from within the community itself. Many governments have also experimented in more top-down and regulatory approaches to changing local behaviours, often with more limited success and at a much higher cost than mobilising and normalising local community action.

## Conclusion

In the period from the 18th to the 20th centuries, democratic systems were introduced into most middle-income and high-income countries and many other countries with a view to creating, in the words of Abraham Lincoln, 'government of the people, by the people, for the people'. Few would argue today that the democratic system we have has achieved that. How do we get democracy out of its present stultified state and closer to the goal for which it was originally intended? I believe that the principle of subsidiarity may provide an answer to this, but only if it is understood in the positive sense and not just as some form of decentralisation, devolution of power, centralised federalism or small government. Rather, it must be understood as support for and empowerment of the small scale, the local, the grassroots. The experience of Landcare globally suggests that this can best be achieved if a real system of networking and partnership is developed that will not only strengthen and support individuals and autonomous local groups but will also serve as a feedback loop that ensures that the realities and perceptions of the grassroots are reflected at the governing levels of society.

Landcare is the best example of this that I know. By articulating what Landcare is and how it works in relation to local groups and government structures, it is probable that a great deal of light can be shed on how a society that is truly responsive to the grassroots can be achieved. To fully spell out what Landcare has to offer as an example of cohesive implementation of the principle of subsidiarity, more research is needed. The processes of Landcare itself need to be thoroughly studied as do the ebbs and flows in the attitudes towards and support for Landcare from the state and federal governments. An articulation of all this is likely to help spread Landcare to countries in which it does not yet exist. It is also likely to enable other activities for social and environmental betterment to learn from the experience of Landcare, and it may be a powerful help in finding a way to revitalise democracy.

## References


Aichi Prefectural Government (2004) *Final report of the Committee for Considering the Role of the Prefecture in the Age of Decentralization* [PDF], Nagoya: Aichi Prefectural Government, accessed 11 October 2017. https://www.pref.aichi.jp/kikaku/bunken/torikumi/houkoku-youkou/pdf/h3.pdf

Bosnich DA (2010) *The principle of subsidiarity, religion and liberty,* Acton Institute website, accessed 20 July 2017. https://www.acton.org/pub/religion-liberty/volume-6-number-4/principle-subsidiarity

Chaplin J (1993) 'Subsidiarity and sphere sovereignty: Catholic and reformed conceptions of the role of the State', *in* McHugh FP and Natale SM (eds) *Things old and new: Catholic social teaching revisited*, University Press of America, Lanham: Maryland.

Cronin F (1950) *Catholic social principles: the social teaching of the Catholic Church applied to American economic life*, The Bruce Publishing Company, Milwaukee.

Dale AP (14 November 2015) *'If you have a pulse, you're a politician'* [video], JCU TEDx Talk, YouTube, accessed 11 October 2017. https://www.youtube.com/watch?v=ZdSWFe89grk

Delors J (1991) 'Principle of subsidiarity: contribution to the debate', *in* Delors J *Subsidiarity: the challenge of change,* European Institute of Public Administration, Maastricht.

Endo K (1994) 'The principle of subsidiarity: from Johannes Althusius to Jacques Delors' [PDF], *The Hokkaido Law Review,* 44(6):652–553, accessed 11 October 2017. https://eprints.lib.hokudai.ac.jp/dspace/bitstream/2115/15558/1/44(6)_p652-553.pdf

European Union (n.d.) Treaty on the European Union, accessed 11 October 2017. http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:12012M/TXT&from=en

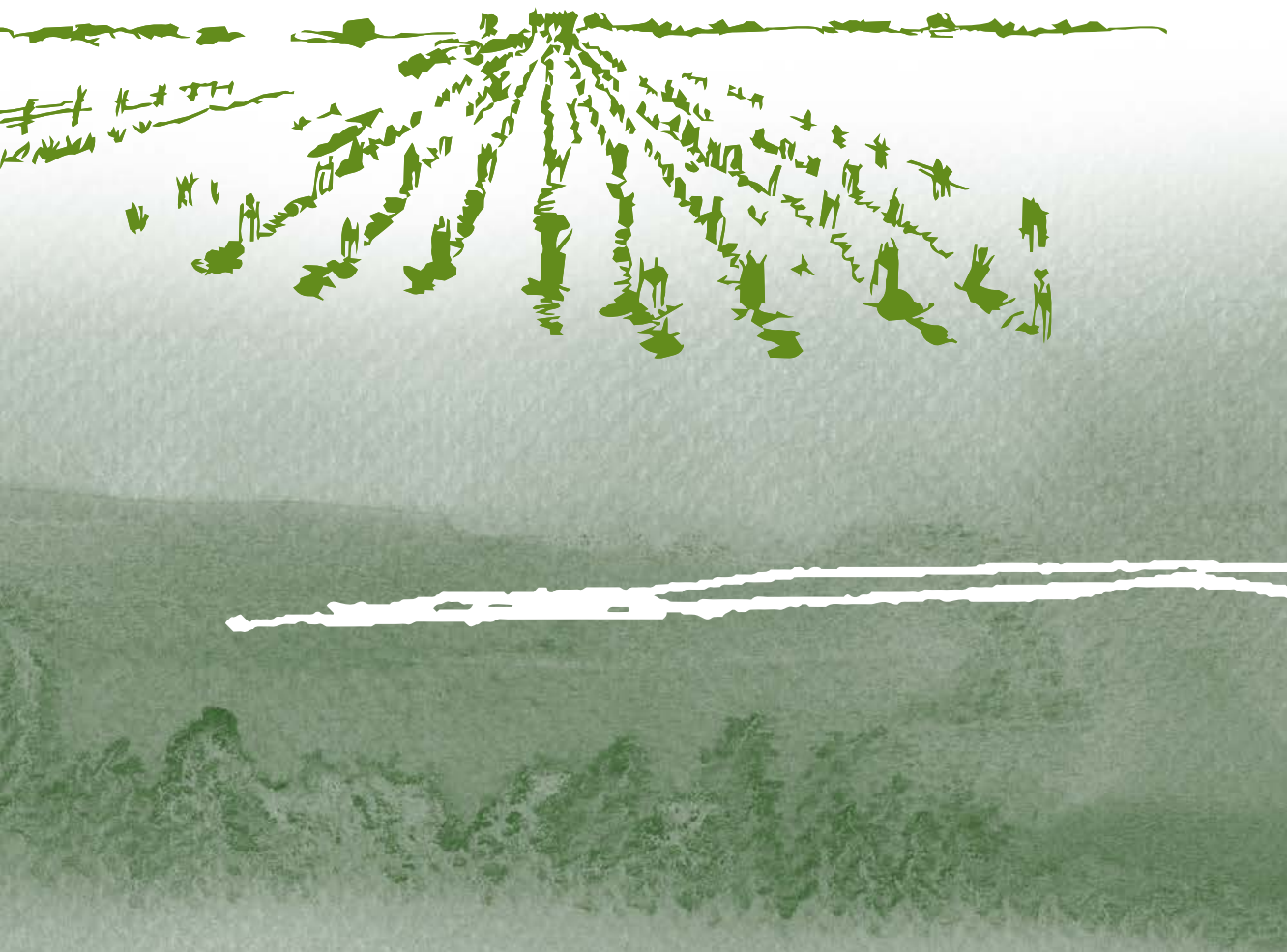
Kelley S (2010) 'Subsidiarity: challenging the top down bias', *Journal of Religion and Business Ethics,* 1(2):8–9.

Miller VJ (2012) 'Saving subsidiarity: why it is not about small government', *America: The Jesuit Review,* July 2012, accessed 18 October 2017. https://www.americamagazine.org/issue/5147/article/saving-subsidiarity

Nonviolent Peaceforce (n.d.) Peaceforce website, [accessed 27 April 2022]. https://www.nonviolentpeaceforce.org

Pope Pius XI (1931) *Quadragesimo Anno*, 79, accessed 18 October 2017. https://www.vatican.va/content/pius-xi/en/encyclicals/documents/hf_p-xi_enc_19310515_quadragesimo-anno.html

Robins L (2018) 'More than 30 years of Landcare in Australia: five phases of development from childhood to mid-life (crisis or renewal?)', *Australasian Journal of Environmental Management,* 25(4):385–397.



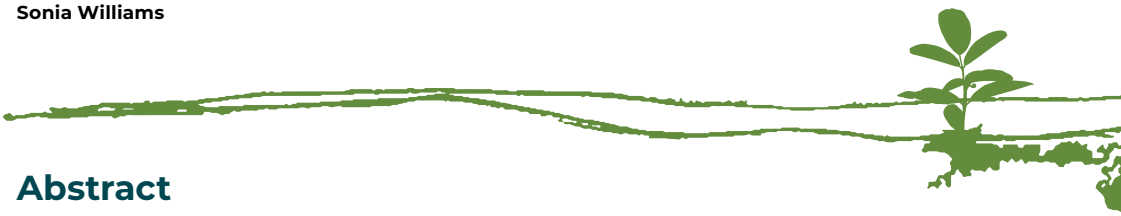
# PART B

## Developing local resilience and sustainability

# CHAPTER 4

## Looking after our own backyard: understanding critical factors enabling self-reliance in local communities

**Sonia Williams**




## Abstract

**To address the issue of global sustainability in a way that is itself sustainable, programs must build the local self-reliance that allows for community ownership of both issues and solutions. In Australia, the initial Decade of Landcare Plan was successful in fostering community self-reliance through the support of locally appointed staff and resourcing of locally determined environmental projects.**

**Landcare as a term is widely recognised, but the philosophy and model underpinning its initial success is not as well understood. Landcare isn't just about natural resource management, sustainable agriculture or sustainable living. It embodies an ethic and process that allows those affected by change to be a valued part of that process. In this chapter, I use my nearly 30 years of involvement in Landcare to reflect on the changed approaches to the delivery of Landcare support programs and the impact of this on factors critical in building self-reliance. New approaches have seen programs focused on counting the immediate physical on-ground outputs from investment, rather than on building self-reliance. New programs have been designed for delivery to the community rather than designed with the community. They deliver community engagement activities, rather than activities that build engaged communities. Over this time, the community's involvement and co-investment has waned.**

**If we are to foster self-reliance, it is important that future programs recognise that we are in the people business. Rather than focusing on on-ground outputs, programs must be built around the critical factors that foster self-reliance, enabling communities to contribute to global sustainability by looking after their own backyard.**

## Introduction

What is self-reliance and how can it be fostered? The Oxford English Dictionary definition is 'reliance on one's own powers and resources rather than those of others'. From this, it could be assumed that building self-reliance is a naturally self-fulfilling action, as it draws upon one's own powers and resources. To some extent this is true. Human nature, Darwin's theory of survival of the fittest and Maslow's hierarchy of needs ensure that, in general, people will behave to ensure that they survive in the here and now. This, however, is often at the expense of, or could have harmful consequences for, the longer-term sustainability of our communities and the environment.

To address the impacts and effects of human interactions and natural disruptions that negatively affect global environmental health, governments, non-government organisations and the general community invest (through donations and volunteer involvement) in efforts and programs designed to improve global sustainability. Programs that invest merely in the issue at hand rather than fostering self-reliance only move the ownership of the issue, and therefore the responsibility, onto others. If we are to address the issue of global sustainability in a way that is itself sustainable, it is important that programs foster the self-reliance that allows for community ownership of both the issues and the solutions. This way we all become responsible for looking after our own backyards!

Several chapters in this book will discuss the critical role that self-reliance plays in achieving global sustainability from both an academic and policy perspective. I hope to contribute to this by providing a perspective that is based on my nearly 30 years with Landcare.

## Reflections from 30 years of Landcare involvement

My involvement with Australian Landcare has ranged from being part of a farming family and a voluntary group project officer to holding professional positions, including working as a district Landcare coordinator, an executive officer of both a subregional and regional Landcare network, a general manager of a state-based community Landcare peak body, and now a state Landcare facilitator, delivering a community-based Landcare support program. I am also actively involved with the National Landcare Network, a nationwide body with membership drawn from the state and territory peak Landcare bodies across Australia. During this time, I have come to understand, from both a grassroots perspective and the policy interface, the factors that build or hinder the development of community self-reliance.

When I became part of a family farming business in the New England region of New South Wales, I thought that I would be fairly well equipped for this role. Despite having a city upbringing, I was armed with a degree in rural science. I quickly learned, however, that academic knowledge was merely a part of the complex range of knowledge required to manage a productive and profitable farming business. I credit my father-in-law for sharing his practical knowledge with me and teaching me that knowledge doesn't always come from formal academic endeavour.

Along with our neighbouring farmers, we faced many challenges, including drought, decreased persistence of pastures, and stock losses in the cold New England winter (a problem exacerbated by lack of shelter resulting from the dieback of native trees). The great push for increased agricultural productivity in the past was now damaging the health of the ecosystem that had previously enabled agricultural production in the region.

Government programs had encouraged and supported this unsustainable development, from compulsory ringbarking and clearing of trees in the early 1900s, through to a superphosphate rebate to offset the cost of adding fertiliser to the landscape. This productivity boost, which allowed for a threefold to sixfold increase in stock-carrying capacity, built the economic prosperity of the region. It came, however, at an environmental cost that was not evident at the time.

Landcare, the great experiment of cooperation between the Australian Conservation Foundation and the National Farmers Federation, with financial commitment from the Australian Government, was a catalyst for change. It provided professional staff (some skilled in community development and some with natural resource management (NRM) knowledge, but few with both) and incentives that encouraged involvement. Landcare supported community members to work in local groups to learn about factors that impacted on their own sustainability. Importantly, it valued the experience and knowledge of local communities in designing programs and processes to address these factors.

In 1989, my husband, Ted, along with our neighbours, formed the Harnham Landcare group. This group comprised 14 farming families operating across the Kentucky area of the New England tablelands. We shared our concerns and knowledge, learned from others and supported each other in changing our farming practices. During the Decade of Landcare, our group grew from 14 families to 45. We focused on restoring habitat and shelter across the landscape through planting and remnant protection, improving soil health and addressing erosion. We investigated how these approaches could improve our bottom line, both at the time and in the future. Just as importantly, we built social capital that forged bonds between community members and across generations. This reinforced people's sense of place and provided a sense of community for newcomers to the area. The Harnham Landcare group involved schools, overseas students and delegations to share what it had learned. We also sought to learn from others.

Harnham Landcare was one of around 2,500 groups formed across New South Wales during the Decade of Landcare, where local communities became empowered to make a significant contribution to global sustainability through increased understanding and ownership of solutions to their own local issues. Fast forward 30 years to 2019 and what do we see? Some of these groups remain strong and operate as successful change agents, leading local action that contributes to improved global sustainability. Many Landcare groups, however, are largely disenfranchised, unsupported and no longer act as a force for change in their communities. To understand why, we need to first understand what Landcare is and what it is not, and then look at why it works well in some cases and why it fails to thrive in others.

## Understanding Landcare as a delivery model

Many people view Landcare as undertaking improved practices that result in an improved environment, be it in the natural landscape or on farmlands or in our way of living. Landcare, however, is not an interchangeable term for technical aspects of NRM, sustainable agriculture or sustainable living. Rather it tends to embody an ethic and process that allows for those affected by change to be a *valued* part of that change process. It represents the enabling of communities, who together, identify and understand the issues that affect themselves and their communities. Through supportive processes, Landcare helps them to develop solutions appropriate to their local situation. In aggregate, such local solutions help to meet global needs. Landcare builds trusted partnerships between all involved in dealing with the issue at hand, shares knowledge and encourages innovation.

By working with groups rather than individuals, Landcare not only impacts the immediate decisions of an individual, it also changes the social norms of the community so that each individual's management decisions contribute to a more sustainable future. Landcare uses peer learning and subtle peer pressure to keep neighbours true to their part of the local plan, but also allows room for adaptive learning, innovation and changed adoption methods to suit new and emerging challenges and changed personal circumstances. In short, it is a recognition that *the people in the landscape* constitute the most important factor in NRM.

Working with people and respecting their knowledge, hopes and fears, rather than just having a technical focus on soil, water or vegetation, is the central tenet of Landcare. Landcare provides ownership and the willing co-investment of individuals and communities to build our future. Landcare recognises that the issues facing us are too big for either community or government to tackle independently and, importantly, that the job won't be finished at the end of a single project, a single year or even a single lifetime. This approach encourages all family members to be involved. It recognises that today's children are tomorrow's managers and that their understanding and ongoing involvement is critical.

The Australian Decade of Landcare ended in 2000. It was replaced by regional delivery models and a changed focus of government investment that was more concerned with counting the immediate, physical, on-ground outputs from government investment, rather than building self-reliance. This crucial aspect of the Landcare model has been largely ignored, undervalued or – probably more accurately – just not understood. Landcare investment is now, in the main, delivered by technical NRM or agriculture extension experts who have a regional rather than a district or local perspective. It is delivered *to* landholders and communities rather than being designed and delivered *with* the community.

Although current programs have claimed to have great community involvement, the focus has been on delivering community engagement activities for public works or on-ground programs, rather than building engaged communities that are valued as co-contributors and that invest in programs that produce local outcomes and take us towards global sustainability.

**The success of Landcare as a widespread movement acting as a change agent within local communities was the result of a deliberate program of government support delivered under the Decade of Landcare Plan.**

Landcare is also not, as many believe, a spontaneous community volunteer movement, although some of the original groups did form this way. Rather, the success of Landcare as a widespread movement acting as a change agent within local communities was the result of a deliberate program of government support delivered under the Decade of Landcare Plan. This plan provided the infrastructural support for the development and operation of groups, empowering them to face the issues that were pertinent to them. Further, it supported and built the skills of group 'champions' who acted as local and district-scale 'drivers', ensuring that groups retained local focus and momentum.

The social fabric developed under the Decade of Landcare included district-based support staff (facilitators or coordinators) who were often already embedded members of the

community. Coordinators built networks that became trusted hubs for information exchange and program development and delivery, and they supported the groups' drivers and champions. This innovation has largely been forgotten in recent Australian Government investment models. Without this locally focused support, many Landcare networks and groups have withered. Many, however, have chosen not to officially close, as Landcare remains important to them. Their ability to actively contribute to solving problems, however, has been greatly reduced as their status and resources have shrunk to essentially voluntary unassisted activities. The trust in government programs and government staff as partners that had been built under the Decade of Landcare has been lost.

## Building a statewide approach to landcare support

In 2015, Landcare NSW, the volunteer-led state peak body established by the Landcare community, won state government support to reinstate 60 half-time coordinators for 3.5 years. These coordinators were placed within host Landcare or similar networks. Some 20 months after the appointment of most of these coordinators, the capacity and capability of the host community networks to deliver for their communities and to partner with government varied markedly. Where some level of support continued to exist under the regional delivery model, the groups had regained their momentum. The groups who had barely managed to survive with minimal or no support from their regional bodies found it challenging to rebuild an engaged community.

In many cases, the self-reliance that characterised these networks during the Decade of Landcare had been lost. One example that highlights this comes from a group that was struggling to complete one of the very few set activities required under the program brokered by Landcare NSW. This activity required the group to work with their communities to develop an overall annual action plan. No parameters were set for the outputs that were required, as this program was about each community defining their own goals. Not having predefined deliverables proved to be very difficult until the penny dropped that, in the words of the coordinator, 'We have been chasing the funding bus for so long to survive we have forgotten where we are going.' After this realisation, the group refocused, it rebuilt its membership base and now delivers activities that are valued by its communities. The group's self-reliance has been rekindled through a simple recognition that the communities' needs are the key drivers of their destiny.

The new state-based program has worked with its coordinators and host organisations to rebuild the understanding that first and foremost, they are in the *people* business, as well as the NRM or sustainable agriculture business. This leads me to consider the important factors of working in the *people* business:

- **P**lace **–** working with people on their interests and priorities and involving all within the community
- **E**ncouragement – not doing it for people but supporting the drivers in the group to build their skills and confidence
- **O**wnership – ensuring that those who need to live with the change are valued for their knowledge and contribute to the development of the solutions
- **P**artnerships – bringing information opportunities, sourcing technical expertise and resourcing to ensure the best possible outcomes
- **L**aughter – making it fun so people will want to be involved
- **E**valuation – measuring progress against the group's interests and priorities to provide a sense of achievement or reset direction when required.

**Landcare works. We know this from some 30 years of experience.**

Landcare works. We know this from some 30 years of experience. Landcare as a model is effective in fostering a community approach to building self-reliance and a recognition by both government and members of the community that the community is instrumental in identifying environmental issues and designing solutions for a more sustainable future. The factors that are critical in fostering self-reliance include program design that builds upon a sense of community, deals with current local issues and provides local support (staff and structures) that is embedded in the community. A bottom-up approach to delivery and experiential learning creates interest and motivation. There is greater trust and acceptance of ideas when information is generated by other landholders and community members. Partnerships with providers external to the community, which are based on equality and respect, coupled with processes that develop an understanding of the issues and solutions brings rigour and ownership. In turn, this encourages local investment (time and money) in the proposed solutions.

## Conclusion

Although landcare is widely recognised as a philosophy and a delivery model, it is not well understood. In this chapter, I have used my 30 years of experience in Landcare to understand and explore some of the critical factors that are necessary for ensuring communities are supported to build their self-reliance, enabling them to look after their own backyard and contribute to global sustainability. The key messages of this chapter are as follows:

- The social and environmental changes we need to deal with on a global scale are too big for government or the community to deal with alone.
- Limited government, non-government and other investment is better placed when used to support, build and maintain self-reliant communities that can develop appropriate interventions, rather than undertaking public works-type programs that deliver investment to individuals to achieve countable outputs.
- To involve the community there needs to be recognition that we are in the people business, not just NRM or sustainable agriculture.
- Success comes from designing and delivering *with* communities not *to* communities.
- Community engagement is not and should not be seen as a replacement for building engaged communities.
- Once lost, trust (and real subsidiarity) are very difficult to regain.

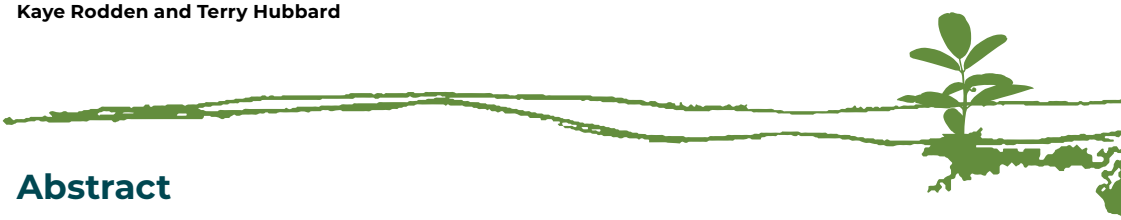
## Acknowledgements

This chapter is written from a practitioner's perspective. It has insights gained from a vast body of papers, conference proceedings and firsthand involvement at both the grassroots scale and at the interface with policy development and implementation. While I have not referenced any specific papers, I acknowledge and thank the numerous researchers and practitioners whose work has shaped my knowledge and understanding of Landcare.

# CHAPTER 5

## The meaning of support!

**Kaye Rodden and Terry Hubbard**




## Abstract

**The history of Landcare's formation and expansion in Victoria, Australia, and globally is well documented in this book. Landcare commenced as a willing and respectful partnership between organisations that had a vision of a community-led approach to sustainable private land management within a supportive government policy framework that provided foundational resourcing to enable the process. While many people associate Landcare with action to build a sustainable and productive natural environment, what sets Landcare apart is its focus on building resilient and sustainable communities with the capacity to act to repair, maintain and enhance the natural assets in their landscape. These communities become a valuable asset themselves and their ability to add value to investments from elsewhere means that their economic value to governments of all persuasions is significant.**

**This chapter explores what it takes to provide an environment where this community asset can become self-reliant and regenerative. Self-reliance evolves from communities having confidence in being able to make decisions that are respected, acknowledged and included in government and non-government policies. Policy settings, at every level of government, and subsequent resourcing, need to be developed within a framework that enables this process to occur. This chapter will discuss the experiences of landcarers in Victoria to explain what helps to make a strong, resilient Landcare community and how government can help.**

## Introduction

There is considerable discussion in this book about how a community-based movement such as Landcare can be 'used' to implement broader community policy. The original Landcare concept aimed to do just that: engage and support communities to implement sustainable landscape management on private land. The result was a win for the government, who were struggling to achieve natural resource management (NRM) outcomes, but it was also a win for the local landholders who were delivered a process that helped them to work across neighbouring boundaries to tackle wicked problems. This was an integrated approach that encompassed a number of land management issues.

The model, trialled first in central Victoria, Australia, was a resounding success. Locals were helped to address their own issues in a collaborative way by sharing knowledge and expertise, and in the process, they built their capacity and confidence to take on more challenges. Other groups followed suit and the landcare movement was formed. There are now over 600 groups in Victoria, with close to 60,000 family members involved. Landcare groups cover 82% of private land and 32% of public land, which is around 65% of the state (National Landcare Network 2018). The vast majority of these Landcare groups are organised into geographically based networks, which provide an avenue for an economy of scale while allowing them to maintain their own autonomy and follow their own objectives. Sharing administrative resources and amalgamating projects offers the potential to increase the size of the funding pie as well as the effective portion each individual group receives.

Landcare, with some help, initially formed to improve productive farming techniques and enhance environmental assets in partnership with others. This has been achieved, but what sets Landcare apart from other NRM groups is its primary focus on building resilient and sustainable communities. This was succinctly expressed by Wonder in his report to the Australian Government that looked at the role of smallholder value chains for food security:

> Landcare is driven by its membership and thereby empowers participants to address issues of common interest. Their individual human and accumulated social capital brings skills and expertise as well as cohesiveness and trust to the work of the group, and these are qualities essential for enterprise development as well as NRM (Wonder 2014:3).

## Landcare as an asset

Landcare is itself asset. It is a social resource that is integral to the sustained management of the natural landscape of which it is a part. Like other assets, it needs to be nurtured and valued so that it can respond to opportunities and be resilient to threats. If a crop is to successfully establish itself, thrive and mature, it needs certain environmental conditions. Similarly, certain conditions are needed for a Landcare community to establish itself, survive and thrive. When the murmurs of this new radical movement first surfaced over 30 years ago in Victoria, the seeds already existed. In this case, 'the seeds' were a strong community framework where individual landholders knew and trusted each other. People can't be forced to cooperate if there is no relationship or trust and goodwill. The ground was also 'fertile' – there was already a common purpose or a clear set of priorities underpinning the movement. In this case, these were soil erosion, salinity, pests, weeds and the loss of trees in the landscape. The government and farmers were looking for changes in the way the rural landscape was managed.

The alignment of government and landholder priorities at that time was pivotal. It meant that resources, in terms of administrative support, knowledge and money, were freely accessible. These provided the nourishment needed over an extended period to help the community grow and achieve their common goals. Effectively, even though communities were given the latitude to be autonomous, as opportunities or problems arose, groups grew and spread with the availability of resources. The seed was always in the soil, ready to germinate when the opportunity arose and – given the right growing conditions – to thrive to a sustaining and productive 'crop', returning manyfold on the original investment. No farmer would just go out and throw water and fertiliser on bare soil without having some idea what might grow. Nor should the broader community (via government) throw resources around and hope that a resilient, self-reliant community will suddenly appear and change the world.

**Landcare is itself an asset. It is a social resource that is integral to the sustained management of the natural landscape of which it is part.**

This chapter seeks to address the key question: What does it take to provide an environment where this community asset, like other assets within our landscape, can thrive to a point where it is self-reliant and regenerative? It also seeks to explore what type of support is required to foster resilience in communities so that they can weather the highs and lows of social, environmental and economic conditions that are thrown at them.

## Top-down versus bottom-up approaches to support

The top-down approach to support occurs when someone from outside a community decides what the community needs without prior consultation. This may seem expedient at the time and may allay any fear of governments losing control of the process. It might also, perhaps, satisfy the priorities of those making the decision in the short term. It will, however, create a dependent community that has little ownership of the outcomes and that has gained no skills in the process. In these cases, when support is withdrawn, the community returns to the status quo with an embedded handout mentality. There are numerous examples of this approach, often linked to the idiosyncrasies of short-term political cycles: the shifting of funding priorities, the appointment and then removal of support staff and facilitators, and the changing of funding guidelines that demand that groups create competitive consortiums across wide geographic distances, often with people they have never met.

At the other extreme is a bottom-up approach. Community groups are left to their own devices to aggregate, agree on priorities, develop projects and seek partnership support from outside their community to supplement their own resources and social capital. Once again, there are many examples where this has been the case: a community group established to save the local streetscape, library, or hospital, or a group set up to create a local market brand for farm produce. Often these groups depend on a few individuals who have the energy and enthusiasm to maintain the momentum, and they can wither or thrive

depending how long this lasts. Without a succession plan or external support, a vacuum is created when key people leave. To come back to the plant comparison, we have the seed and we have the soil, but without fertiliser and moisture (the support), the plant will not flourish and will eventually die.

## The middle ground

Consistent with the subsidiarity principle as defined and explored in this book, the middle ground between top-down and bottom-up governance is where, at its best, the Australian landcare model sits: a fertile ground which, when provided with some external resources, will repay in full and more. Government providing too many resources will drown the crop or wash out the fertiliser. Provide too few resources and the crop will struggle. The dilemma for governments is how to identify the productive soils that have a good seed bed and a community with a vision. They then need to determine what resources are needed and what level of resourcing to add. Provide too many resources and the community is swamped and loses its independence; too few and the community loses traction.

This is the crux of the discussion. What helps to make a strong, resilient community through landcare and how can government help? Experience suggests that the answer lies predominantly in community engagement. There are many definitions of 'engagement' and Victorian landcarers have experienced most of them. Remarkably, the following confusing and often conflicting list of state-based definitions of community engagement include:

- informing the community of policy directions of the government
- consulting the community as part of a process to develop government policy, or building community awareness and understanding
- involving the community through a range of mechanisms to ensure that issues and concerns are understood and considered as part of the decision-making process
- collaborating with the community by developing partnerships to formulate options and provide recommendations
- empowering communities to make decisions and to implement and manage change.

Some of these consultation methods focus on the top-down approach and others the reverse. Some hover in-between. What has worked in Landcare, put simply and supported by others (for example, Curtin 2015), is the following:

- **Invest in talk:** The community is an asset and building relationships takes time and resources. Collaborative conversation is based on trust and integrity.
- **Talk long and talk often:** Discuss priorities – what is working and what is not working.
- **Value the conversation:** Don't shift the goal posts, as trust and relationships are not expendable.
- **Talk before you act:** Walk through the 'door' together.
- **Talk about and acknowledge achievements:** Give credit where credit is due.

In Victoria, recent strategies have put communities at the centre of the planning and delivery of catchment management and NRM. How this is to be achieved is still being resolved, but a key will be investing in conversations and resourcing communities to have the capacity not only to talk, but to also make valuable contributions to the engagement process. There is potential here for an 'honest broker' to be involved in this process – the role that Australia's regional NRM bodies were initially established to play. The danger is that, in attempting to secure their own corporate structure, these organisations often lose sight of the broader goal and become competitors in the funding bids rather than

independent brokers! Even worse, they exhibit a form of 'conservation imperialism', as Curtin puts it, mining local initiatives and goodwill without crediting the primary community investors (Curtin 2015:92).

In supporting Landcare, once governments have agreed on investment projects, a balancing act remains. Providing too much support can lead to the volunteer community members losing ownership of their projects, but providing too little or spasmodic support leads to volunteer burnout and disenfranchisement. The policy or support conundrum is that no two Landcare groups are the same, and a simple formula based on a job description and time allocation determined by an external resourcing agent does not work. By the same token, handing over the responsibility of managing a staff member to a volunteer group, while it has the potential to build capacity, is not always welcomed.

The key to providing effective support rests on conversation about its delivery continuing throughout the process. The right support needs to be provided when it is needed, perhaps by supporting a skills audit or bringing groups together to share what is working and not working to generate adaptive feedback. These are the roles that are often supported by organisations like Landcare Victoria. This suggests that success in the provision of support hinges on a long-term commitment to landcare, not fly-in fly-out support. In this instance, Landcare Victoria is playing the role of independent broker for improving the health of community-based landcare. The role is independent of government, and it supports policy forums from the ground up. This approach helps inform strategy development and build policies and strategies needed to support the landcare community to be self-reliant.

## Conclusion

Self-reliance in a community evolves from the community being confident about making decisions that are acknowledged, respected and included in government and non-government policies that will have an immediate impact on them. Government policy settings need to be based on a framework that enables this process to occur.

There is an increasing recognition that the community has a pivotal role in delivering global food security and climate change mitigation. Only recently, for example, evidence was published on how better stewardship of land across the globe will have a major role in achieving the Paris Agreement goal of holding global warming below 2 °C (Griscom 2017). Much of this will be achieved on private land by individual landholders. Developing government policies that foster a self-reliant and resilient community framework that supports these landholders, we believe, is the most cost-effective and efficient way forward.

## References


Curtin CG (2015) *The science of open spaces: theory and practice for conserving large, complex systems,* Island Press, Washington D.C.

Griscom B (2017) *'Natural climate solutions', PNAS,* 114(44), accessed 10 January 2021. http://www.pnas.org/content/early/2017/10/11/1710465114.long

National Landcare Network (2018) *National Landcare's written submission to Prime Minister's Drought Summit* [PDF], National Landcare Network and Landcare Australia, accessed 21 May 2022. https://landcarensw.org.au/wp-content/uploads/2019/07/Brief-for-Drought-Summit-Oct-26.pdf

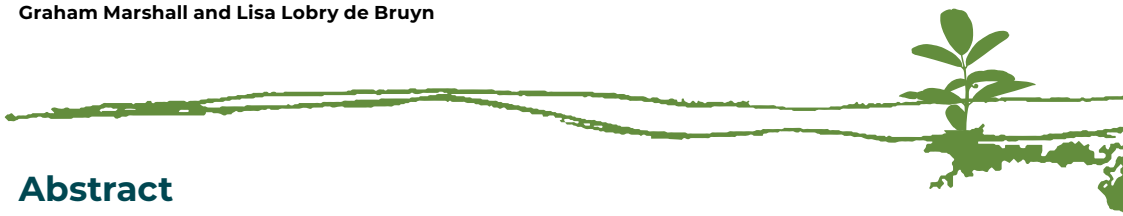
Wonder B (2014) *Smallholder value chains for food security: a scoping study with particular attention to farmers groups and innovation platforms based on landcare principles,* report to the Australian International Food Security Research Centre (AIFSRC), ACIAR, Canberra.

Photo: Clinton Muller

# CHAPTER 6

# Community-based governance and global sustainability

**Graham Marshall and Lisa Lobry de Bruyn**



## Abstract

**The scale of collective action required for global sustainability is feasible only to the extent that efforts at this level can build on the trust, reciprocity and cooperation already established at lower levels. Such a bottom-up process of building capacities for global sustainability is one of community-based environmental governance, at least where this governance is rightly understood as a nested multilevel system of groups, organisations and governments interacting in accordance with the principle of subsidiarity. The Australian experiment with community engagement in landcare and regionalised natural resources governance is reviewed to inform ongoing attempts to grow the societal capacities required to overcome the collective-action challenges of delivering sustainability at the global level.**

## Introduction

The concept of sustainable development arose from the General Assembly of the United Nations calling on the World Commission on Environment and Development to formulate 'a global agenda for change'. The resulting landmark report launched this concept while observing that until recently:

> the planet was a large world in which human activities and their effects were neatly compartmentalized within nations ... These compartments have begun to dissolve. This applies in particular to the various global 'crises' that have seized public concern, particularly over the past decade (World Commission on Environment and Development 1987: clause 11).

Sustainability continues to be framed as a global problem predominantly in need of global solutions. Critics like Cole (2015) have described this conclusion as a 'facile nostrum', arguing that the global level is but one of multiple societal levels at which global sustainability challenges like climate change and biodiversity decline need to be tackled if progress is to be achieved (see also Berkes 2017). The aim of this chapter is to develop this argument primarily on the basis of advances in the theory of collective action and to illustrate it using the case of Australia's ambitious 'experiment' with community engagement since the 1980s in pursuit of sustainable rural land use. These theoretical advances are discussed in the second section of this chapter. These advances are employed in the third section as a basis for understanding the Australian experiment and the nation's failure ultimately to 'scale up' the extensive voluntary cooperation from rural landholders that arose from this community engagement. This understanding is employed in the fourth section of the chapter to identify pathways through which community engagement supported by complementary governance arrangements (community-based governance) might realise more of its potential to contribute to global sustainability. The fifth section concludes the chapter.

## Understanding collective action for global sustainability

### The conventional theory of collective action

Administrative rationalism was founded on the confidence that all problems of public administration are amenable to scientific analysis and solvable from afar by a central authority capable of implementing its chosen solutions through an integrated command structure. The presumed opportunism and parochialism of individuals meant that citizenship within democracies was understood as involving little more than periodically casting votes for political representatives (Marshall 2005). This understanding was corroborated by the conventional theory of collective action. This theory is concerned with the provision of collective goods, which include public goods and common-pool resources. The benefits of providing a collective good cannot be captured exclusively by those contributing to provision, meaning others can 'free ride' on their efforts (Olson 1965). When contributors see others free riding on their contributions, they are likely to become discouraged and join the ranks of free riders. As more parties join these ranks, contributions eventually cease.

Provision of a collective good has been characterised as involving a dilemma, since a conflict exists between what is optimal for a group (all members contributing) and what is

in the short-run interests of its individual members (free riding). Such a 'collective action dilemma' is exemplified by Hardin's (1968) account of 'the tragedy of the commons'. The conventional theory of collective action predicts that members of any large group will be unable to self-organise a solution to their dilemma, given that such a solution is itself a (second-order) collective good open to free riding. The collective good can be served only if a solution is organised external to the group. It follows from this conventional reasoning that progress in providing a collective good like global biodiversity that benefits the populations of all nations is infeasible in the absence of centralised intervention at the global level.

**A conflict exists between what is optimal for a group (all members contributing) and what is in the short-run interests of its individual members (free riding).**

### A behavioural theory of collective action

The conclusion that individuals faced with large-group problems of collective action are universally incapable of self-organising remedies for free riding has been challenged by the recognition that such problems are often decomposable into smaller problems (Ostrom 1990) and by evidence on actual behaviour in collective action dilemmas (Poteete et al. 2010). The collective action problem of conserving global biodiversity can, for instance, be decomposed into a series of problems ranging spatially from those of individuals or firms seeking private goods (for example, healthy surroundings, ecotourism profits) to local groups seeking collective goods for their members (for example, recreational fishing from local streams), regional organisations seeking increased ecotourism revenues, provincial governments seeking to satisfy public demands for environmental sustainability, national governments seeking increased export revenues from establishing a national reputation for environmentally sustainable agricultural production, groups of national governments acting bilaterally or multilaterally to further the mutual interests of their respective populations (for example, by protecting habitats within their jurisdictions that are critical to the migration of bird species that are highly valued by those populations) and finally to the global population with its shared interest in biodiversity as a critical requirement for planetary sustainability.

The evidence from research into actual behaviour in collective action dilemmas reveals it is not uncommon for at least some members of a group faced by a collective action dilemma to be predisposed to reciprocity strategies – reciprocating others' contributions rather than free riding. This predisposition can enable these individuals to provide themselves with small-group collective goods (for example, local biodiversity). This research evidence also indicates that once some cooperation becomes established within a population it can spread beyond the initial set of reciprocators through a virtuous-cycle dynamic in which others' awareness of this cooperation increases their trust that their own contributions would be reciprocated. This widens the pool of reciprocators, increasing the level of cooperation, further increasing trust that contributions will be reciprocated, and so on. In this way it can become possible for the provision of collective goods benefiting progressively larger groups within a population to be self-organised by way of interpersonal (or 'horizontal') reciprocity.

Nevertheless, the feasibility of relying entirely on interpersonal reciprocity as a basis for collective action declines as the size of the group involved expands and the number of interpersonal relationships escalates. A point will generally be reached in the growth of collective action within a population where the appointment of a 'third party' is needed to bolster the levels of reciprocity that individuals can themselves afford to undertake, so that the incidence of free riding does not exceed a threshold beyond which trust, reciprocity and cooperation begin to unravel in a vicious cycle (North 1990). This third-party activity can be described as involving 'vertical' reciprocity, as distinct from 'horizontal' reciprocity between group members. Third-party activity of this kind involves negotiating and enforcing the rules by which vertical reciprocity will be exercised. This is a central element of governance, which refers to the 'process by which the repertoire of rules, norms and strategies that guide behaviour within a given realm of policy interactions are formed, applied, interpreted, and reformed' (McGinnis 2011:171).

Governance brings with it the challenge of establishing and maintaining cooperative relationships between third-party structures and the members of the group whose collective action is to be supported. Cooperation in these relationships from group members can take various forms, including voluntary compliance with rules, reporting non-compliance by others and exercising interpersonal reciprocity through social approval or disapproval (Marshall 2011). Cooperation of this kind cannot be taken for granted, and indeed it is not uncommon for it to be weakened by group members adopting strategies of free riding (where group members come to depend entirely on the vertical reciprocity provided by these governance structures) or unconditional non-cooperation (where group members have had unsatisfactory interactions with these or similar structures) in their dealings with these structures (Marshall 2009). The less voluntary this cooperation, the greater will be the costs of monitoring and enforcing the rules, and thus the less cost-effective and feasible will governance be in enabling provision of higher-level collective goods (for example, regional biodiversity) benefiting larger groups (Marshall 2002).

**Evidence suggests that individuals are more likely to cooperate voluntarily with governance structures the more they perceive them as supportive of their autonomy rather than controlling.**

Evidence from researchers working in the related traditions of self-determination theory (Ryan and Deci 2000) and motivation crowding theory (Frey and Jegen 2001) suggests that individuals are more likely to cooperate voluntarily, or autonomously, with governance structures the more they perceive them as supportive of their autonomy rather than controlling (Ostrom 2000, 2005). The proposition that autonomous motivation, a core element of citizenship (Marshall and Malik 2019), can be strengthened by governance arrangements perceived as autonomy-supporting has been supported empirically by Marshall et al. (2017) in respect of climate governance. It is consistent with the argument that individuals will cooperate voluntarily with governance structures when they trust those structures to support their autonomous endeavours to provide themselves with collective goods, and thus ascribe legitimacy to those structures (Marshall 2004).

## Subsidiarity and community-based governance

It follows from this body of research that the feasibility of governance enabling the provision of collective goods to larger groups will be enhanced when group members perceive it to be supportive of their autonomy. The principle of subsidiarity is conducive to establishing such perceptions. It prescribes that governance be structured such that authority in respect of any matter be assigned to the level closest to the individual where it can be exercised competently. Higher levels of governance are understood accordingly as subsidiary to lower-level ones, and ultimately to the individual (Marshall and Stafford Smith 2010). The autonomy of individuals and their proximate governing structures (for example, local groups and associations) is thereby maximised subject to a competency constraint. Governance arrangements designed and administered consistent with the subsidiarity principle accord with the characterisation of community-based governance as 'shorthand for governance that starts from the ground up but deals with cross-scale interactions' (Berkes 2005:34) and of community-based conservation as 'extend[ing] beyond communities to include institutional linkages and multiple levels of organization that impact and shape institutions at the local level' (Berkes 2007:15193).

Community-based governance allows individuals and their communities as much autonomy as they can capably exercise (Marshall et al. 2017). It is a polycentric arrangement in which higher-level governance structures serving larger groups support or 'nest', rather than supplant or sideline, lower-level structures serving smaller groups. Such nesting allows 'smaller organizations [to] become part of a more inclusive system without giving up their essential autonomy' (Marshall 2005:7). Marshall (2008a:41) referred to 'nested community-based system[s] of governance' in view of the common misapprehension noted by Berkes (2007) that community-based governance involves no more than community-level governance. When properly understood as a multilevel exercise, community-based governance offers potential to realise the democratic ideal of people truly governing themselves in solving their problems of collective action at all levels of societal organisation (Ostrom 1991).

The subsidiarity principle applies when deciding whether and how to support the growth of collective action (for example, from the local to regional level) by introducing a higher (for example, regional) level of governance. It requires that entities at any level participate as far as their capacities allow in deciding whether higher-level governance structures are required and how they should be designed and operated (Marshall and Stafford Smith 2010). Absence of such participation can be expected to lead to perceptions of higher-level structures as controlling, and thus undermine autonomous cooperation with those structures.

Minimising restrictions on the autonomy of existing governance structures (for example, local groups) when introducing higher-level structures is important for vertical trust in so far as the existing structures can serve to mediate between the different perspectives of the higher structures and their own members, thereby reducing the risks that these differences will cause misunderstandings, suspicions and confusion with potential to undermine this trust. This insight corresponds with the recommendation of Berger et al. (1977:3) that policymakers should become more cognisant of the important contribution that the 'mediating structures' of civil society make to individuals feeling 'more "at home" in society, and the political order … more "meaningful"' (Reeve et al. 2002; Marshall 2002, 2005, 2008a).

Governance structures capable of mediating between the private and public spheres of life, by retaining a capacity to present distinct 'private' and 'public' faces, can protect individuals and their groupings from the alienation of modern life and strengthen the legitimacy of governments and other higher-level governance structures. They can do so by helping higher-level structures to connect with local perceptions, values and norms and thereby be perceived by individuals as more supportive of their autonomy. Governance structures retained when introducing higher-level ones can be understood accordingly as mediating structures that make it more possible to develop vertical trust up and down the governance system by breaking into smaller steps what otherwise may be alienating social distances (Marshall 2005).

This account of developments in a behavioural theory of collective action leads to a very different conclusion to that reached by the conventional theory in respect of the appropriate role of external authorities in enabling provision of large-group (including global) collective goods. Whereas the conventional theory concludes that successful provision of such goods depends entirely on intervention by an external governing structure, the updated behavioural theory concludes that feasible provision of such goods requires external structures to limit themselves to subsidiary roles in supporting the endogenous provision efforts of individuals and their self-organised groupings.

## The Australian 'experiment' with community engagement for sustainability

### Landcare

An ambitious 'experiment' with community engagement in the pursuit of sustainability in rural Australia can be traced to the 1983 launch of the National Soil Conservation Program. This program identified local community participation as essential for national-level success in managing natural resource degradation issues. This emphasis arose from the influence of rural development theory, which highlighted the potential of local self-help supported by change agents (Curtis 1998). The experiment gained momentum when the Australian Government established the $360 million Decade of Landcare program (1990 to 2000). The funding for this program was intended to catalyse local activity by rural landholders by supporting the formation and facilitation of Landcare groups.

A key driver for the formation of Landcare groups 'was an understanding that land and water degradation issues that crossed farm boundaries needed to be tackled at a scale of planning and action greater than the individual farm' (Campbell 2016:85). In rural areas, the groups were established predominantly at the neighbourhood level, with membership of a few dozen families in traditional agricultural districts, and more in more densely settled peri-urban settings. The groups were often established around pre-existing social groupings centred, for instance, on a school or sporting team, which meant that 'the core group of people, including group leaders, are well known to each other and already identify with that community' (Campbell 2016:85–86). About one-third of Australian farming families became involved in more than 6,000 Landcare-type groups (Campbell 1994).

Although the focus of these groups was usually on private lands managed by group members, they also worked on roadsides, reserves and other public lands (Curtis et al. 2014). The essence of Landcare was described in its early days as 'landholders working in their own local social group to solve their own local land conservation problems in their own way' (Poussard 1992:233), and more recently as 'about promoting sustainable

environmental and natural resource management through voluntary collective action at a neighbourhood or district level' (Campbell 2016:83). The focus of Landcare-type groups was typically on one or two issues (often weeds and invasive animals) in respect of which their members could achieve significant private benefits from local collective action. In some areas this focus was expanded to the district level through formation of networks of Landcare groups. In 2009, 56% of all Landcare-type groups in Victoria were part of a network (Curtis and Sample 2010).

### Integrated catchment management

Meanwhile, state and territory governments were establishing integrated catchment management (ICM) concepts and groups. ICM concepts are similar to those of integrated water resource management programs in their recognition of the inter-relatedness of different natural resource management (NRM) issues and of the catchment as the appropriate level at which to integrate responses to these issues. Governance at the catchment level was also seen as offering the coordination of local landcare efforts in providing local collective goods (for example, local wildlife corridors) needed to maximise provision of that kind of good at the higher level (for example, by facilitating connectivity of the local wildlife corridors) (Marshall 2008a). With ICM groups expected in their early years to achieve voluntary cooperation from those they depended on for implementation of their strategies for on-ground action, they naturally looked towards Landcare-type groups as a key means for building this cooperation (AACM and the Centre for Water Policy Research 1995).

### The regional delivery model

Prior to the end of the Decade of Landcare program, the Australian Government moved in 1997 to accelerate on-ground implementation of ICM strategies by establishing the five-year $1.25 billion Natural Heritage Trust. Landcare and other local community groups competed for this funding to undertake projects aligned with the ICM strategy for their catchment. This marked the onset of a purchaser–provider approach whereby access of community groups to Australian Government funding for on-ground projects came to depend on satisfying project selection criteria that became increasingly dictated from the top down.

The price paid by Landcare-type groups to access this funding included significant sacrifices of their autonomy. For instance, the balance of funding from Australian Government programs shifted from sustainable agriculture projects, which most Landcare groups had formerly chosen to undertake, to biodiversity conservation projects. This purchaser–provider approach 'can be seen as a way of maintaining "control" by manipulating farmers' individual and group behaviours' (Curtis et al. 2014:179). The value of Landcare-type groups as mediating structures fostering growth of self-organised collective action was compromised. This was consistent with an international trend across multiple sectors, with Berger and Neuhaus (1996:151) remarking on 'the deformation of mediating structures by [a] creeping process of "governmentalization"'.

Reeve et al. (2002:31) had identified a pivotal role for ICM groups in mediating trust between Landcare-type groups and government agencies to maximise the level of collective action achievable under the purchaser–provider approach, and found that 'major effort in supporting the building of mediating capacity in these [ICM] organisations will be needed'. However, the capacity of ICM groups to mediate trust between local and governmental levels came to be weakened for at least two reasons. First, although

community members of these groups had significant roles under the Natural Heritage Trust in evaluating funding bids from local groups, these roles disappeared as the evaluation process in subsequent iterations of the purchaser–provider approach became centralised progressively to the Australian Government (Curtis et al. 2014). The process lost its 'private' or 'community' face and was perceived increasingly as government controlled.

Second, for the next phase of the purchaser–provider approach (comprising the National Action Plan for Salinity and Water Quality, introduced in 2000, and the Natural Heritage Trust extension, established in 2001, which jointly became known as the 'regional delivery model') the Australian Government effectively sidelined pre-existing ICM groups by newly delineating 56 NRM regions across the nation, with a new organisation responsible for integrating and coordinating lower-level resource management activities to be established for each region. This number of regions was considerably smaller than the number of catchments for which ICM groups had been established under the original Natural Heritage Trust. The area serviced by the 45 ICM groups (then called catchment management committees) operating in New South Wales during the original Natural Heritage Trust (Farrier et al. 1999), for instance, came to be serviced by only 11 regional organisations (now called Local Land Services) (NRM Regions Australia n.d.). This change followed on partly from arguments that the pre-existing catchment areas were too small to effectively integrate the management of inter-related environmental and natural resource problems. It followed also from the Australian Government's determination to become more involved in ensuring (upward) accountability to itself of the bodies it funded, and to simplify this task by reducing the number of such bodies to be held to account (Marshall 2008b).

## Implications for self-organised collective action

Although the Council of Australian Governments (2000) argued that the new, much larger regions represented the most effective level for engaging the community in NRM, subsequent reviews found community engagement to have become a major challenge. Many community groups viewed the new regional bodies as remote from the local communities with which their members identified (Regional Implementation Working Group of the NRM Ministerial Council 2005). Moreover, opportunities were missed for the new regional organisations to bridge the social distance between themselves and local groups by nesting the pre-existing ICM organisations and their local networks so that they could serve as mediating structures. Harnessing these opportunities was discouraged by upward accountability requirements imposed on the regional organisations. These requirements were preoccupied with short-term biophysical and financial outcomes and unconcerned with the longer-term benefits for intraregional trust and cooperation that such nesting would yield (Marshall 2008b). In any case, relatively few of the new regional organisations understood themselves as subsidiary to the ICM organisations and Landcare-type groups and networks that had preceded them (Campbell 2016).

Accumulated empirical evidence indicates that the voluntary conservation efforts of landholders arising from their participation in Landcare-type groups are critical to the success of the regional delivery model. Hence 'NRM practitioners need to at least ensure they don't undermine these efforts and, if possible, they should seek to nurture them' (Curtis and Mendham 2011:171–172). Landcare-type groups, however, are now struggling in many if not most districts of Australia.

Some of this decline has been attributed to:

> those responsible for developing regionalism fail[ing] to articulate how the regional framework should relate to voluntarism and, as a result, undermin[ing] it … The tendency for the regional NRM policy reform to displace and undermine rather than augment community landcare was a grave error (Campbell 2016:89).

Other reasons for this decline relate to rural population changes, including an increasing proportion of non-farmers and absentee property owners (Curtis and Mendham 2011).

## Community-based pursuit of global sustainability: theory to practice

Although the Australian experience with landcare over the 1990s was described by a team of European and American authors as a 'remarkable social experiment' (Pretty et al. 2001:278), lack of understanding of how governance could have strengthened, rather than 'crowded out', the voluntary local efforts of Landcare-type groups in order to maximise the provision of conservation-related collective goods at all levels resulted in a failure to realise 'what could have been one of the world's best examples of nested, multilevel systems of community-based governance of natural resources' (Campbell 2016:92). The experiment has nevertheless been described as a 'world-leading story' (Campbell et al. 2017:414) yielding important insights for future attempts to establish authentically community-based governance systems for large-scale conservation challenges (Campbell 2016).

The aim of this chapter is to distil from the preceding conceptual and case-study analysis how community-based governance might be implemented to enable more successful pursuit of sustainability towards the global level. A start is made below by considering the steps that might be taken in this direction in a 'green field' setting where all governance options for supporting community engagement in pursuit of sustainability remain on the table, such as was largely the case in Australia prior to adoption of the particular governance approach associated with the regional delivery model. These ideas may be useful for other nations not yet locked into a path of institutional development for community engagement in sustainability programs. The ideas presented in this section draw from Marshall et al. (2010:276–279).

How might we move towards a nested, community-based system of natural resources governance in a 'green field' setting? We would begin by recognising the range of small groups within each local community that already provide themselves with collective goods such as sport competitions and wildfire control. These groups will typically have evolved with diverse ways of operating, each suited to its own purpose. We would proceed then through the three steps described below, recognising the value of using public funds to catalyse processes that might otherwise take generations to occur. An appropriate public agency with a clear understanding of, and commitment to, community-based governance would oversee these steps.

### Step 1: Forming natural resource management groups at the local level

This step involves encouraging members of pre-existing groups within a local community to establish one or more groups concerned predominantly with natural resource and/or environmental issues that they share and feel motivated to address (for example, control of weeds or invasive animals). Public funds are allocated to catalyse this process, for instance by resourcing awareness-raising events and appointing facilitators. The public agency

overseeing the process provides guidelines to ensure that the new groups are downwardly accountable to their members for whatever purposes they come together.

### Step 2: Enabling strategic effort at higher levels

Once the local conservation groups are well established and have achieved success in addressing the issues for which they were originally founded, they would be encouraged to think about conservation issues extending beyond their immediate interests and capabilities. Depending on each group's capabilities, these issues might include other conservation problems, filling knowledge gaps, sharing information and experiences, intergroup coordination of efforts and so on. Some public funds would be made available to these groups and perhaps other bodies (for example, local governments) to discuss complementarities in their interests and capabilities, and how they might prioritise and coordinate their actions. The reasons that local groups might want to 'join forces' with one another and other organisations to self-organise structures at one or more higher levels would be promoted to them, with the choice whether to proceed in this direction left to each local group. In agreeing to establish such a structure, the local groups would consent to cede power over specified matters to that structure, normally in exchange for representation on it.

The financial focus of any such higher-level structure would primarily be on providing governance over funds and other resources contributed by its constituent groups to effectively provide conservation-related collective goods at a larger scale than the groups could achieve by acting independently. It may be possible for these structures to also satisfy eligibility criteria for receiving public funding, but the consideration by local groups of higher-level governance options would only be informed, not constrained, by the preferences of public funders for options with certain attributes (for example, capacity to meet accountability standards). In any event, the public agency responsible for facilitating the emergence of nested community-based NRM governance would seek to ensure that funder preferences are informed by an understanding of this form of governance.

Where local groups prefer a governance structure that does not immediately satisfy funder preferences (for example, a district-level structure when investors prefer to invest in a larger, regional structure), ways of nesting the locally preferred structure within the structure preferred by the funder would be explored. An organisation such as that described by Steffen et al. (2009:164), independent of public funders and the groups involved, would be established to assess whether bottom-up proposals for structures to receive external investment satisfy funder preferences and meet basic guidelines (including of subsidiarity).

### Step 3: Establishing accountability consistent with subsidiarity

The structures designated through this process as eligible for public funding would be established with required standards of downwards accountability to the groups they represent and reasonable openness to their involvement. They would also need to satisfy minimum necessary standards of upwards accountability to funders. The goal would be to leave these structures as autonomous as possible in responding to the unique evolving circumstances each group faces, thus creating conditions conducive to motivating voluntary cooperation of local groups and their members with the decisions made by these structures. An important role of higher levels of governance (for example, regional structures, government agencies and supranational organisations) would be to ensure that learning is transmitted horizontally among lower-level entities.

## Conclusion

The scale of collective action required for global sustainability is feasible only to the extent that efforts at this level can 'piggyback' on capacities established at lower levels for solving free-rider problems in pursuit of this sustainability. Collective action at each successively higher level is made feasible by the platform of trust, reciprocity and cooperation already established in providing lower-level collective goods. Collective action towards sustainability may eventually, through 'the incremental self-transformations that frequently are involved in the process of supplying institutions' (Ostrom 1990:190), come to succeed at the global level.

Such a process of building capacities for global sustainability 'from the ground up' is one of community-based environmental governance (Berkes 2017:9), at least where this governance is understood properly as a nested multilevel system of groups, organisations and governments interacting in accordance with the principle of subsidiarity. Community-based governance has been heralded as 'the most exciting opportunity to turn the tide against the triple Anthropocene threat [of biodiversity loss, climate change and unsustainable land use]' (Kremen and Merenlender 2018:4).

The Australian 'experiment' with Landcare and regionalised natural resources governance documented briefly in this paper offers important insights for ongoing attempts to grow collective action for sustainability beyond the local level. These attempts represent nothing short of transformational policy reform, from the worldviews and patterns of vested interests long associated with the centralised, top-down governance approach to the new ways of thinking and acting required for a truly community-based approach to flourish (Campbell 2016; Marshall and Stafford Smith 2010). Persisting with these attempts is essential; the solution to the global problem of sustainability is ultimately community-based.

## References


AACM and the Centre for Water Policy Research (1995) *Enhancing the effectiveness of catchment management planning: final report,* Department of Primary Industries and Energy, Adelaide.

Berger PL and Neuhaus RJ (1977) *To empower people: the role of mediating structures in public policy*, American Enterprise Institute, Washington, DC.

Berger PL and Neuhaus RJ (1996) 'Peter L. Berger and Richard John Neuhaus respond', *in* Novak M (ed) *To empower people: from state to civil society*, AEI Press, Washington, DC, pp. 145–154.

Berkes F (2005) 'Why keep a community-based focus in times of global interactions?', *Topics in Arctic Social Sciences,* 5:33–43.

Berkes F (2007) 'Community-based conservation in a globalised world', *Proceedings of the National Academy of Sciences of the USA,* 104(39):15188–15193.

Berkes F (2017) 'Environmental governance for the Anthropocene? Social-ecological systes, resilience and collaborative learning', *Sustainability,* 9:1232.

Campbell A (1994) *Landcare: communities shaping the land and the future*, Allen and Unwin, Sydney.

Campbell A (2016) 'Two steps forward, one step back: the ongoing failure to capture synergies in natural resource management (Australia)', *in* Young MD and Esau C (eds) *Transformational change in environmental and natural resource management: guidelines for policy excellence,* Routledge, Abingdon, U.K., pp. 80–94.

Campbell A, Alexandra J and Curtis D (2017) 'Reflections on four decades of land restoration in Australia', *The Rangeland Journal,* 39(5&6):405–416.

Cole DH (2015) 'The problem of shared irresponsibility in international climate law', *in* Nollkaemper A, Jacobs D and Schechinger JNM (eds) *Distribution of responsibilities in international law*, Cambridge University Press, pp. 290–320.

Council of Australian Governments (2000) *Our vital resource: a national action plan for salinity and water quality*, Commonwealth of Australia.

Curtis A (1998) 'Agency-community partnership in landcare: lessons for state-sponsored citizen resource management', *Environmental Management,* 22(4):563–574.

Curtis A and Mendham E (2011) 'Bridging thre gap between policy and management of natural resources', *in* Pannell D and Vanclay F (eds) *Changing land management: adoption of new practices by rural landholders,* CSIRO Publishing, Collingwood, Australia, pp. 153–176.

Curtis A, Ross H, Marshall GR, Baldwin B, Cavaye J, Freeman C, Carr A and Syme GJ (2014) 'The great experiment with devolved NRM governance: lessons from community engagement in Australia and New Zealand since the 1980s', *Australasian Journal of Environmental Management,* 21(2):175–199.

Curtis A and Sample R (2010) *CBNRM in Victoria: contributing the dialogue, learning and action*. A report to the Department of Sustainability and Environment, Institute for Land, Water and Society, Charles Sturt University, Albury, NSW.

Farrier D, Lyster R and Pearson L (1999) *The environmental law handbook: planning and land use in New South Wales*, 3rd edn, Redfern Legal Centre Publishing, Sydney.

Frey BS and Jegen R (2001) 'Motivation crowding theory: a survey of empirical evidence', *Journal of Economic Surveys,* 15:589–611.

Hardin G (1968) 'The tragedy of the commons', *Science,* 162 (December 13):1243–1248.

Kremen C and Merenlender AM(2018) 'Landscapes that work for biodiversity and people', *Science,* 362(6412):1–9.

Marshall GR (2002) 'Institutionalising cost sharing for catchment management: lessons from land and water management planning in Australia', *Water, Science and Technology,* 45(11):101–111.

Marshall GR (2004) 'Farmers cooperating in the commons? A study of collective action in salinity management', *Ecological Economics,* 51(3-4):271–286.

Marshall GR (2005) *Economics for collaborative environmental management: renegotiating the commons*, Earthscan, London.

Marshall GR (2008a) *Community-based, regional delivery of natural resource management: building system-wide capacities to motivate voluntary farmer adoption of conservation practices*, Rural Industries Research and Development Corporation, Canberra.

Marshall GR (2008b) 'Nesting, subsidiarity and community-based environmental governance beyond the local level', *International Journal of the Commons,* 2(1):75–97.

Marshall GR (2009) 'Polycentricity, reciprocity, and farmer adoption of conservation practices under community-based governance', *Ecological Economics,* 68(5):1507–1520.

Marshall GR (2011) 'What "community" means for farmer adoption of conservation practices', *in* Pannell DJ and Vanclay FM (eds) *Changing land management: adoption of new practices by rural landholders*, CSIRO Publishing, Melbourne, pp. 107–127.

Marshall GR, Hine DW and East MJ (2017) 'Can community-based governance strengthen citizenship in support of climate change adaptation? Testing insights from Self-Determination Theory', *Environmental Science and Policy,* 72:1–9.

Marshall GR and Malik A (2019) 'Polycentricity and citizenship in environmental governance', *in* Thiel A, Garrick DE and Blomquist W (eds) *Governing complexity: analysing and applying polycentricity,* Cambridge University Press, pp. 197–218.

Marshall GR and Stafford Smith DM (2010) 'Natural resources governance for the drylands of the Murray-Darling Basin', *The Rangeland Journal,* 32(3):267–282.

McGinnis MD (2011) 'An introduction to IAD and the language of the Ostrom Workshop: a simple guide to a complex framework', *Policy Studies Journal,* 39(1):169–183.

North DC (1990) *Institutions, institutional change and economic performance,* Cambridge University Press.

NRM Regions Australia (n.d.) *NRM regional organisations,* accessed 12 September 2017. http://nrmregionsaustralia.com.au/nrm-regions-map/

Olson M (1965) *The logic of collective action,* Harvard University Press, Cambridge.

Ostrom E (1990) *Governing the commons: the evolution of institutions for collective action,* Cambridge University Press.

Ostrom E (2000) 'Crowding out citizenship', *Scandinavian Political Studies,* 23(1):3–15.

Ostrom E (2005) 'Policies that crowd out reciprocity and collective action', *in* Gintis H, Bowles S, Boyd R, and Fehr E *Moral sentiments and material interests: the foundations of cooperation in economic life*, MIT Press, Cambridge, MA, pp. 253–275.

Ostrom V (1991) *The meaning of American federalism: constituting a self-governing society*, Institute for Contemporary Studies Press, San Francisco.

Poteete AR, Janssen MA and Ostrom E (2010) *Working together: collective action the commons and multiple methods in practice*, Princeton University Press.

Poussard H (1992) 'Community landcare to test government policies and programs', *7th International Soil Conservation Organisation Conference proceedings*, Sydney, 27–30 September.

Pretty J, Brett C, Gee D, Hine R, Mason C, Morison J, Rayment M, Van Der Bijl G and Dobbs T (2001) 'Policy challenges and priorities for internalising the externalities of modern agriculture', *Journal of Environmental Planning and Management,* 44(2):263–283.

Reeve I, Marshall GR and Musgrave W (2002) *Resource governance and integrated catchment management,* Institute for Rural Futures, Armidale.

Regional Implementation Working Group of the NRM Ministerial Council (2005) *Regional delivery of natural resource management: moving forward*, NRM Ministerial Council, Canberra.

Ryan RM and Deci EL (2000) 'Intrinsic and extrinsic motivations: classic definitions and new directions', *Contemporary Educational Psychology,* 25:54–67.

Steffen W, Burbidge AA, Hughes L, Kitching R, Lindenmayer D, Musgrave W, Stafford Smith M and Werner PA (2009) *Australia's biodiversity and climate change,* CSIRO Publishing, Melbourne.

World Commission on Environment and Development (1987) *Our common future,* Oxford University Press.


Photo supplied by Landcare Australia

# CHAPTER 7

# A sustainable resourcing strategy for landcare

**Paul Martin and Kip Werren**

## Abstract

**Landcare is a community-based natural resource management (NRM) program of global significance. The strength of Landcare lies in its local focus and character and the fact that community groups and networks decide their own visions and set goals for environmental action in their districts and regions. Landcare is an effective mechanism for facilitating community participation in NRM, community partnerships and cost sharing between government and private landholders. The main restraint on achieving conservation goals, however, is the lack of resources available for landcare actions. Without further resources, Landcare cannot commit to the extent needed to achieve sustainable management of the Australian environment. This feasibility problem faced by most Landcare groups reflects a far larger challenge of environmental funding. Future pressure on budgets means that it is unlikely that Australian governments will commit to substantively increased conservation funding. There is a real possibility that environmental funding by governments will continue to decrease. To meet this challenge, there is a need for innovation in conservation resourcing as the demand for investment in conservation activities dwarves the capacity of both government and private landholders. Landcare groups will need to find even more creative ways to address this resourcing gap.**

## Introduction

Anecdotally, members of community-based volunteer movements such as Landcare that contribute to the care and protection of the environment note that public funding is in short supply and declining. They remark that government coordinators or technical experts are increasingly scarce. Moreover, they observe that the bureaucratic red tape they are required to comply with to competitively apply for limited government funding, without any guarantee that they will receive it, is punitive.

Depending on the creativity and willingness of team members to invest time, emotion and effort, they may find ways to address the lack of government funding. Strategies might include enlisting the help of school children on land rehabilitation projects, running a barbeque or cake stall, requesting in-kind support from local business (for example, a business that provides earthmoving equipment and operators), registering for digital crowdfunding, partnering with a not-for-profit lottery, registering as a tax-deductible gift recipient, organising corporate sponsorship and using biodiversity banking or carbon markets. Creativity and personal energy help fill the gap between what is required and what is provided by government to ensure Landcare's continuing contribution to the public good. Other possibilities yet to be fully explored include:

- building broader stewardship requirements into mandatory or negotiated development control conditions (for example, biodiversity offsets and bio-banking)
- building habitat connectivity responsibilities into consumer-driven programs (for example, organic certification)
- building connectivity requirements into supply/buy chain systems (for example, retailer supplier standards)
- using more market-based instruments (for example, water rights, carbon offsets and other market-based credits).

**The limit of any strategy is not the strategist's imagination, but rather their ability to secure the right resources, at the right time and right place.**

The lack of resourcing is a fundamental challenge for environmental groups. In this chapter, it is argued that a more coordinated and strategic approach is required to tackle this universal problem. It will take concentrated and expert effort to change the funding landscape for community environmental groups around the world. The starting point is the need to carefully consider key questions, including:

- How much money and labour is likely to be needed to achieve desirable environmental sustainability outcomes on rural lands?
- What is the potential amount of resources available from different public and private sources under alternative strategies?
- Which strategies are most likely to be effective in bridging the funding gap efficiently and equitably?
- What reforms to existing policies and programs, or other institutional arrangements, would constitute feasible strategies to reduce the national funding gap?

Military strategists such as Julius Caesar, Sun Tzu and Carl von Clausewitz underscored the fundamental importance of resourcing and logistics in military campaign strategy. They indicated that the limit of any strategy is not the strategist's imagination, but rather their ability to secure the right resources, at the right time and right place. This is as true of the good work undertaken by Landcare as of any other human endeavour.

## Landcare context

Although the setting is different in every country, the Australian situation provides an outline of the challenges facing community environmental organisations around the world. Australia is a vast continent with a small population and a unique ecology. It has numerous environmental laws and regulations, various natural resource conservation programs and many dedicated volunteer groups. Despite this, Australia faces ongoing deterioration of the terrestrial environment (Jackson et al. 2017) due to climate change, land-use change, habitat fragmentation and degradation, and invasive species. Increased population and economic activity have fuelled the demand for food, fibre, minerals, land, transport and energy. Correspondingly, there has been an increase in waste generation.

The effectiveness of natural resource management (NRM) in Australia is hampered by governance system factors, including a lack of policy coordination between jurisdictions, a lack of data for decision-making, and inadequate capacity to identify and measure cumulative environmental impacts. However, the major impediment for environmental management, protection and restoration is inadequate resourcing. In this broader context, the insufficient resourcing that each volunteer environment group grapples with is a localised reflection of national and international economic scarcity.

## Private contributions

A 2016 study (JP Morgan Chase & Co 2016) based on survey evidence, with most survey respondents located in North America and Europe, found that progress has been made in engaging the private sector in conservation investment. The study stated:

- Private capital flows to conservation investments totalled US$8.2 billion from 2004 to 2015.
- Sustainable food and fibre production attracted most of the investment capital.
- Organisations investing in habitat conservation typically favoured real asset investments, with almost half (48%) of habitat conservation capital committed towards direct land ownership and another 12% directed towards conservation easements.
- Few organisations reported making a major contribution to water quality and quantity investments in comparison to sustainable food and fibre production or habitat conservation.
- Private investors are motivated by both conservation and financial returns.
- Most respondents noted that the primary barrier to further investment was a lack of available deals with appropriate risk/return profiles.
- Investors expressed the need for more government support to absorb risks and create market mechanisms.
- Private investors were still looking for deals, with a reported US$3.1 billion awaiting deployment at the end of 2015.

What the study did not consider was the significant contributions to NRM made by private landholders, businesses, communities, Indigenous people and non-government organisations. The World Resources Institute has recognised the importance of local expertise (knowledge, relationships and labour) with the creation of the TerraMatch platform, which aims to connect funders with local groups undertaking forest and landscape restoration (TerraMatch n.d.). The Australian Bureau of Statistics (2018b) reported that in 2016–17 there were 88,073 agricultural businesses in Australia. Of the 394 million hectares available for agriculture, 7.4 million hectares (1.88%) has been voluntarily removed from agricultural production for conservation purposes. In 2011–12, the Australian Bureau of Statistics (2013) estimated that 8.1 million Australian adults had participated in nature conservation activities at home or on farms. Approximately 750,000 Australian adults participated in voluntary work to conserve nature. Nearly 500,000 Australian adults participated in voluntary work for an environment conservation organisation.

## Resource gap

In 2021 the United Nations launched the UN Decade on Ecosystem Restoration, which aims to encourage governments, businesses and individuals to take up the common goal of preventing, halting and reversing the destruction of natural spaces on every continent and in every ocean. Unfortunately, no clear estimate is provided on the funding required to achieve this noble but nonetheless ambitious goal. Martin and Werren (2009a) estimate that the funding required to protect, prevent or mitigate pressures on the environment from human activities in Australia is likely to require approximately 2% of gross domestic product (GDP) per annum. Based on the 2016–17 GDP (Australian Bureau of Statistics 2018a), the required funding is around $34 billion per annum. Unfortunately given the limits of data, it was not possible to provide a breakdown of the funding required for landscape and biodiversity conservation. This type of analysis is needed. Nonetheless, it is clear that most of the funding is required in rural areas, as this is where intact habitats are likely to remain. This raises the issue about the extent to which rural communities should be responsible for protecting and conserving biodiversity. Should the responsibility for protecting biodiversity values fall on local rural communities rather than the Australian public at large? To what degree should the load be shared?

Regulation is a way to force people to avoid doing harm, but it can also be used to require them to take action to protect the public good. For example, regulation can require that landholders forego the economic use of some of the land that they own to protect the environment, or that they take action to control things that harm the environment or the public interest in some other form. It is not unreasonable to expect this of citizens, but there is a point where the allocation of this responsibility can become unfair. It is particularly likely to be considered unfair if the expectation is beyond the capacity of the citizen to deliver. Using command and control instruments to oblige private landholders to undertake investments in the public interest, where they have not caused the harm and where there is no economic benefit to themselves, is problematic in terms of procedural fairness. Additionally, expecting them to do this successfully when they do not have sufficient resources to make that investment is impractical.

Martin and Williams (2016) noted that Australia is a wealthy country on a per capita basis, but has a population density of less than 0.1 person per hectare. Wealth intensity measured by total GDP per hectare places Australia in a group with less than US$3,000 GDP per hectare: Russia (US$1,222), Iceland (US$1,344), Argentina (US$1,713), Canada (US$1,976), Australia (US$1,995) and Brazil (US$2,628). Australia's wealth is concentrated in coastal and urban

areas, where over 80% of the population live and most industrial and commercial activities occur. Rural communities are essential to sustainable development because agricultural activities typically require natural environments, but these communities often do not have the required funds and human capital to address the problem, particularly in times of economic downturn due to market or climate cycles. To achieve desired outcomes will require more funds and human capacity than is likely to be reliably available in rural communities.

This suggests that more money to protect the environmental public good should come from the public purse, so that the investment is sufficient, fair and feasible. The total contribution of local and state government departments to NRM, including management of their parks and reserves, is around $4.9 billion per annum. However, the reliability of this estimate is contaminated by inconsistent and confusing reporting. Taken as a whole, government investment probably meets between one-fifth and one-quarter of the total that is required. It can be reasonably argued that Australian governments should contribute more.

There are, however, severe limits on government funding. National and state budgets are under pressure from post-COVID recovery, declining terms of trade and slow economic growth, our ageing population, increased demand for health care and the need to service deficits. Without an increase in government revenue or cuts in expenditures, the financial pressures due to our ageing population will create a fiscal gap between government revenue and expenditure. Closing this gap will probably require increases in taxes or a proportionate reduction in expenditure. Given these considerations, it seems unlikely that Australian governments will significantly increase their environmental funding. Indeed, it seems that disinvestment is more likely. The balance of the investment, if it comes at all, must come from other sources.

More non-government funding will be essential, but can more be sourced from landholders and local volunteers? Many private landholders undertake NRM activities without financial support. Considerations that influence this participation include:

- the nature of the activity
- landholder autonomy in achieving conservation goals
- the nature and extent of the financial and non-financial support that is available
- market forces
- transaction costs and the administrative complexity of funding schemes
- duration, quantity and quality of information
- awareness of the program
- opportunity costs
- landholder characteristics such as dependency on farm income
- attitudes towards conservation
- the financial stresses on the landholder
- the landholder's ability to solve problems
- business goals
- whether or not there are successors to the landholding
- whether the title of the landholding is freehold or under a lease
- the degree of neighbouring landholder participation
- the degree of trust in the government and programs
- the level of alignment between the land management philosophies of landholders and program administrators.

There are limits to what is feasible, even assuming optimal goodwill. Although the figures fluctuate, the total contribution of farm-gate agriculture to GDP is around 2–3%. Farming is a low-margin activity, so its ability to fund land protection and restoration falls well short of filling the funding gap. It is also economically volatile and risky in business terms. Without more resources from other sources, private landholders cannot commit to the extent needed to achieve sustainable management of the Australian environment. This is a feasibility problem faced by most Landcare groups, which reflects a far larger challenge of environmental funding.

## Different problems require different strategies and resources

The resourcing problem is made worse by the changing nature of rural NRM problems. The archetypal problem is caused by an irresponsible or incompetent landholder, or one which continues because of some fault or inadvertence of the landholder. General norms of accountability and stewardship suggest that in these situations the landholder is accountable. The community, through government and voluntary action may assist, but that does not alter this fundamental responsibility.

However, many modern challenges for sustainable and productive use of rural resources do not fit this simple understanding of accountability, particularly if the landholder cannot feasibly do the work that is required. Sometimes a solution requires collective action that is beyond the capacity of individual land stewards. Examples include the collective overexploitation of a river or aquifer, or some forms of soil erosion. Addressing these problems may require coordination, technology or infrastructures that are not feasible for a local Landcare group to provide.

Two other problem types can be impossible for private land stewards to manage themselves. The first is if the problem or its solution crosses land boundaries. The boundary might be cadastral, concerning the legal rights of public and private landholders who have different interests and constraints. The diversification in land uses (for example, grazing and cropping, hobby farming and private conservation) creates problems for coordinated management. Consequently, one landholder may not be motivated to fix a problem that is important to their neighbours who have a different type of enterprise. The characteristics of their business may make it impractical for them to carry out work at a time that suits their neighbours. Moreover, the intersection of various restrictive legal regulations may make it infeasible to participate in the required conservation activity. In Australia, coordinated weed and fire prevention, for example, is hampered by the different requirements of the three levels of government.

The boundaries of rights and interests might also be between states, provinces or countries, which have different interests and constraints. Finding workable solutions can require economic or social incentives for cooperation or dealing with legal and other constraints and complexity. A regional or statewide landcare program, for example, may require investment and work to make it possible and attractive for everyone to participate. It is often not feasible for a local group to tackle the complex coordination and incentives issue with the resources that they have, and public support is needed.

The second problem type is self-generating (autopoietic), particularly if it evolves or adapts over time. A new weed, a disease, an insect infestation or a harmful animal population can have these characteristics. Coordinated ongoing action and investment is required.

The participation of the majority of relevant land stewards is essential when a problem crosses jurisdictional boundaries. For many landcare initiatives, the weakest link determines the strength of the chain.

For simple problems, if a few land stewards choose not to participate, this may not be a strategic problem, particularly if the harm only affects those individuals. For problems that require collective remedies, however, if it is not feasible for everyone who needs to participate to do so, then this affects everyone. It does not matter which link in the chain breaks – whether it is the individual landholders, the citizen group, the funding source or the government agency – the result is the same. In these cases, everyone loses. Given fluctuations in income, differences in landholders' capacities and different attitudes, these types of problems may be beyond the capacity of volunteer groups to resolve.

### Cunning, imagination and creativity

This chapter has focused to a large extent on funding or resourcing issues. Money is not the be-all and end-all of resourcing environmental activities. If environmental activities can be achieved without being paid for, money is inconsequential. The key question should not be 'How can we get the money to buy what we need?' A more useful focus is 'How can we get what we need (preferably without money)?' This way of thinking opens up creative opportunities. Successful Landcare groups often use this approach, without realising the entrepreneurial genius of it.

A starting point for entrepreneurial thinking about landcare initiatives is to realise that the 'platform' that is needed involves a mix of tangible and intangible resources. It is not hard to make an inventory of the tangible requirements. Landcare teams do this all the time, even if they do not make a written list. They think of the materials, equipment and tools they will need to do the job. They may estimate the manpower that is required and compare it to the labour available to identify what work may not be covered by their volunteer capacity. Some requirements, such as power, transport to the work site or catering, may be fungible with labour or capital, and the team may find creative ways of meeting the need. It is not unusual for one volunteer group to help another with such needs. The local service club may lend a vehicle or a shelter, or provide catering for a working bee.

The resources that typically do not receive enough attention are often the ones that are most strategically important to Landcare's success. These are the intangible resources, such as knowledge, relationships and systems. Some cannot be purchased, so they must be created by the team. An example is 'relationship capital', which is the glue that holds the team together and makes it effective, and the catalyst that enables the team to negotiate for cooperation, such as access to resources that they might otherwise have to pay for.

Intangible resources include relationships, knowledge, information, capabilities, processes and culture – all aspects of 'human capital'. We can imagine these intangible resources as a Venn diagram (Figure 7.1). The four sets are made up of generic individual skills, specialised individual skills, generic team skills and specialised team skills. Intangible resources are refined through experience.

Individual human capital represents the intangible resources held by a person that will help them to carry out a role effectively – their knowledge, skills, relationships and attitudes. The human capital requirements of a team leader will be different to those of a technical officer, as they have different skill and knowledge requirements. Some individual requirements will be generic, such as having the ability to communicate, understanding how the team works and the systems the team uses, or having a shared attitude or sensitivity.

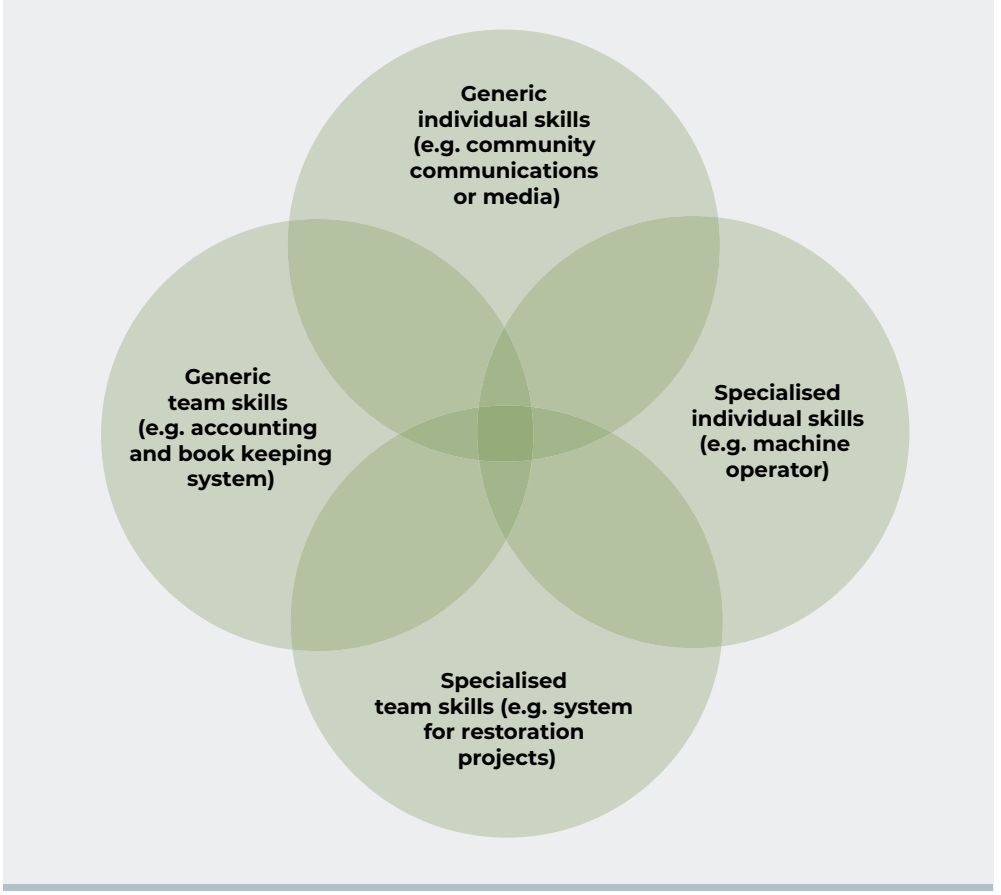



**Figure 7.1** Intangible resources

Some will be specialised, such as the skills of the team bookkeeper or secretary, or the worker who knows how to operate specialised machines. Personal relationships and an individual's reputation may also be critical to the effectiveness of the team.

For individuals to be fully effective, they are usually required to use systems and processes, and perhaps access specialist advice. These are collective rather than individual intangible resources. Many collective requirements are similar across many organisations, such as a bookkeeping system, project management or a member and stakeholder communications system. These are generic intangibles. Other collective resources are more specialised, for example, data about the local area, maps, contact directories or dedicated databases. A fully effective Landcare group needs the right mix of individual and collective generic and specialised intangible resources, and the right mix of tangible resources, such as capital and labour and funds, to do the job well. The group's ability to use these resources proficiently comes partly through experience – individuals and groups generally get better at what they do by building knowledge and skills by working together on tasks. The off-the-shelf accounting package may potentially do everything the group needs, but it will only become efficient when the bookkeeper has learned its subtleties. A new Landcare coordinator may have been introduced to the local landholders, but until they have spent time together in the field or around the dining table, they will not understand and fully trust each other, so they may not perform well as a team.

Different strategies can be used to obtain different resources. Cunning and imagination can make a significant difference to how successful a group is. The value of entrepreneurial cunning and energy can be seen by looking at how different Landcare groups go about their work. Some have social networks and partnerships that allow them to flourish even when funding is tight. Some use opportunities such as biodiversity banking or carbon markets, or draw on labour sources like a local prison or a service club. Others have good community relationships that guarantee cooperation, and others tap into research or philanthropic funds to leverage their efforts. Around the world, community environment groups have found many creative solutions.

**Different strategies can be used to obtain different resources. Cunning and imagination can make a significant difference to how successful a group is.**

Some resources cannot be sourced from outside, for example, team-building relationships and refining practice through working together. However, even the development of these resources can be accelerated with a strategy that recognises what is needed and sets about creating it with vision and energy.

One key to entrepreneurial resourcing is understanding precisely what is required to get the best results. A shovel and a tunnelling machine are both 'digging equipment' but it takes more time to achieve results with a shovel. Another key is the application of creativity and energy to find ways to create the resource platform. Seeking money from the government is one strategy, but it is not the only one and it can be costly. It can build a culture of dependency and, because funds can be intermittent, it can result in inefficient work and team demotivation when good funding bids are unsuccessful. Many Landcare groups have great entrepreneurial ability and some of their strategies are innovative and effective. That ability, however, is not universal. Systematically learning from the most effective resourcing entrepreneurs within the Landcare community would probably create many new opportunities for the whole landcare movement, but there is no institutional structure that allows this to happen.

An aspect of resourcing that does not receive a lot of attention by Landcare is the need to achieve reform of the institutional frameworks that determine what resources flow to citizen groups. Institutions consist of the rules that determine how information and resources flow in society and the organisations and processes that apply these rules. Government funding rules, regulations, philanthropic arrangements and the operation of groups like Landcare are all examples of institutional arrangements. The institutions that affect resource flows to Landcare groups include the public and private sector agencies and regional groups that provide funds and limited support for projects or organisational support for Landcare.

Institutional arrangements that support landcare activities are often not well aligned to support the good work that Landcare does. Many problems arise, not due to the quantity or the timing of funds, but because of bureaucratic oversight. Government grants often use bureaucratic arrangements that are very unfriendly to community groups, administratively complex, unreliable, sometimes oppressive and demoralising. Anecdotal evidence suggests

that these arrangements treat volunteers as supplicants rather than as valued partners who are making a great contribution to the public good. These issues affect the viability of Landcare groups in many ways and improvement should be possible.

### Regional Onsite Conservation Program

New structures can create new opportunities. An alternative funding model to government-funded NRM that we have proposed is the Regional Onsite Conservation Program (ROCP) (Martin and Werren 2009b). We present this here as an example of alternative approaches to funding that have not been pursued by government or Landcare.

The ROCP model reflects the rationale that taxation incentives, when embedded in the right institutional structures, can significantly increase private funding for NRM activities. The ROCP would aim to attract funding by capturing the value of marketable eco-services, directing philanthropic funds towards conservation works, and facilitating research into ecosystems, sustainable agricultural practices and biotechnology. The ROCP could provide financial and non-financial incentives to private landholders, encourage unincorporated joint venture arrangements with non-government conservation organisations, build social capital, encourage cooperative practices, facilitate innovation and develop conservation works on an extensive spatial scale.

The ROCP involves investment through an investment trust that operates three subordinate funds aimed at:

- conservation philanthropy
- conservation research and development
- the production and sale of marketable eco-services.

An investor would have the choice of allocating funds to the appropriate subordinate funds. There would be a mix of taxation treatments, depending on the use of the funds.

Taxation incentives for conservation could encourage long-term commitment and compensate for lower returns and higher risk (relative to other investments). The government could leverage its outlay (its decrease in taxation) to facilitate conservation on private land for the benefit of society, with the degree of leverage depending upon how attractive investors find the taxation incentives and other benefits. History demonstrates that taxation incentives can have a disproportionate effect compared to simple public subsidies, stimulating private investment and innovation in support of public goals.

There are many other possibilities (United Nations Development Program Biodiversity Finance Initiative n.d.). A real-world example of a capital-raising mechanism that uses taxation incentives to encourage investment in environmentally friendly initiatives is the Netherlands' Green Funds Scheme. The Netherlands Government launched the Green Funds Scheme in 1995 (Bellegem et al. 1997) to facilitate projects in nature conservation, encourage a change in economic activities so that they take biodiversity into account, promote the distribution of sustainable energy technology and support household participation in green projects. It is a tax investment scheme that allows investors to contribute to green projects by placing their money with an approved financial (green) institution at below market interest rates. This is partly compensated by the tax incentive. The green institutions lend money at below market rates to companies that undertake certified green projects.

In the proposed ROCP model, projects would be developed using a flexible mechanism led by landholders who 'bid' for investment in project proposals. Having a mechanism that can foster 'connected up' private conservation tailored to the capabilities and the needs of landholders would enable projects to be proposed at scales ranging from a couple of landholders to a large regional program involving many landholders.

Landcare has demonstrated the value of a strong local focus and of community groups and networks deciding their own visions and goals for environmental action for their districts and regions. The ROCP model has been designed to provide opportunities for high levels of landholder motivation, initiative and innovation with flexibility for local action. Under the ROCP model, landholders – individually or as part of a collective – would choose the best means to carry out the conservation activity and negotiate the design and investment. Since we first proposed the ROCP model, many market instruments, private initiatives and other funding options have emerged. This suggests that institutional innovation (particularly if supported by taxation arrangements) has the potential to create a new business model for landscape sustainability to bridge the gap between what is feasible from conventional sources (farmers and government), and what is needed to significantly improve outcomes.

## Conclusion

A key strength of Landcare is its localism. It is a real demonstration of the subsidiarity principle. Securing sufficient resources is a fundamental challenge faced by every Landcare group. The groups that are more successful tend to be energetic, well-connected and very creative. Their efforts, however, are largely fragmented and focused on finding local solutions to local challenges. This does not tackle the overarching and fundamental lack of resources, or the lack of strategies and institutions in many countries that could help to overcome this problem.

Turning our attention to the broader challenges that have been outlined in this chapter could address these resourcing issues. This would require new skills and a concentrated effort. This chapter notes, however, that there are options to meet these challenges that are currently not well understood and remain under-exploited. These options will need people with a sophisticated understanding of funding, political relationships, economics and environment. Nonetheless, whatever the future holds, it cannot be denied that community organisations make very important contributions to the environment and to social justice around the world. Their reputations and networks are, in themselves, resources that could be leveraged entrepreneurially to create new opportunities to solve old problems.

# References


Australian Bureau of Statistics (2013) *4602.0.00.002: community engagement with nature conservation, Australia, 2011-12*, accessed 24 January 2021. http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/4602.0.00.002main+features52011-12

Australian Bureau of Statistics (2018a) *1345.0: key economic indicators, 2018*, accessed 24 January 2021. http://www.abs.gov.au/AUSSTATS/abs@.nsf/mf/1345.0#NationalAccounts

Australian Bureau of Statistics (2018b) *4627.0: land management and farming in Australia, 2016-17*, accessed 24 January 2021. http://www.abs.gov.au/ausstats/abs@.nsf/mf/4627.0

Bellegem Van T, Beijerman A, Eijs A, Boxtel M, Graveland C and Wieringa H (1997) *Green investment funds: organic farming Dutch case study,* OECD Expert Group on Economic Aspects of Biodiversity.

Jackson WJ, Argent RM, Bax NJ, Clark GF, Coleman S, Cresswell ID, Emmerson KM, Evans K, Hibberd MF, Johnston EL, Keywood MD, Klekociuk A, Mackay R, Metcalfe D, Murphy H, Rankin A, Smith DC and Wienecke B (2017) *Australia State of the Environment 2016: independent report to the Australian Government Minister for the Environment and Energy*, Australian Government Department of the Environment and Energy, accessed 24 January 2021. https://soe.environment.gov.au/download/reports

JP Morgan Chase & Co. (2016) *State of private investment in conservation 2016: a landscape assessment of an emerging market* [PDF], accessed 19 May 2022. https://www.forest-trends.org/wp-content/uploads/2017/03/doc_5474.pdf

Martin P and Werren K (2009a) *Discussion paper for Victorian Government Department of Sustainability and Environment: an industry plan for the Victorian environment*, Victorian Government Department of Sustainability and Environment, Melbourne.

Martin P and Werren K (2009b) The use of taxation incentives to create new eco-service markets, *in* Lin-Heng L, Milne J, Ashiabor H, Deketelaere K and Kreiser L (eds) *Critical issues in environmental taxation Volume VII*, Oxford University Press.

Martin P and Williams J (2016) Next generation rural natural resource governance: a careful diagnosis, *in* Mauerhofer V (ed) *Legal aspects of sustainable development: horizontal and sectorial policy issues, Springer,* Switzerland, pp. 607–628.

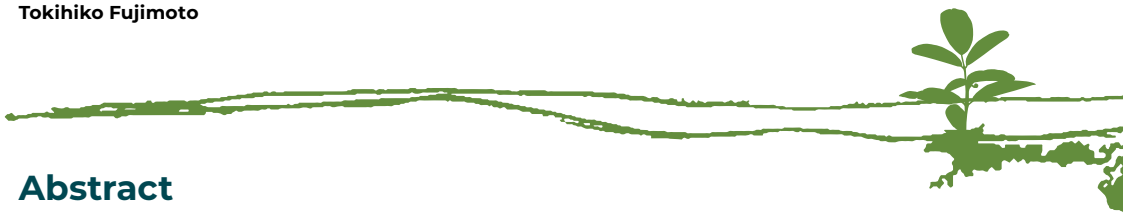
TerraMatch (n.d.) TerraMatch website, accessed 24 March 2021. https://www.terramatch.org

United Nations Development Program Biodiversity Finance Initiative (n.d.) BIOFIN Catalogue of Finance Solutions, accessed 24 March 2021. http://www.biodiversityfinance.org/finance-solutions

# CHAPTER 8

# Renewable resources and landcare ethics: community-based ownership for caring for life, land, nature and the environment

**Tokihiko Fujimoto**




## Abstract

**This chapter discusses the dynamism between renewable energy and the landcare approach in the local community through a simple conceptual framework (care, resources, local resources, social enterprise). From this, I will build a theoretical model of renewable energy and community to establish the concept of community-based ownership based on the landcare ethics. The theoretical framework of renewable energy and community is shown to be effective in realising the goal of environmental protection and community development at the same time. In line with the subsidiarity principle, it does this by installing renewable energy as a community action under the landcare approach. As the model demonstrates, in the proposed mechanism for renewable energy, the community, individuals, families and social enterprises for renewable energy management and local government play pivotal roles. At the end of this chapter, I consider fundamental questions about the relationship between national, state and local governance to support energy transition towards a renewable and sustainable society. I conclude that the application of the landcare approach to the development of renewable energy and community wellbeing is a sound counterbalance to more typical approaches to the global centralisation of governance.**

## Introduction

At the first International Conference of Landcare Studies held in Nagoya in November 2017, diverse practices from the global Landcare network were reported by more than 60 participants from 11 countries. Ideas based on individual experiences were first exchanged, and then supportive and creative criticism resounded. The dialogue became deeper and deeper day by day. Soon after the conference dialogue, the paper *Global resilience through local self-reliance – the Landcare model* (Seigel et al. 2018) was published. Consistent with this work, from the viewpoint of landcare ethics, this question can be asked: What kind of opportunities are there to engage the local community in renewable resource and energy development? In this chapter, I will try to create a dynamic link between renewable energy and the landcare approach at the local level, and show the reasoning behind proposed mechanisms for its realisation.

First, I give my specific perspective of landcare ethics based on the subsidiarity concepts raised by Michael Seigel in Chapter 3 of this book. Second, through the ideas of social scientists about nature, the environment and agriculture, I try to define and analyse the characteristics of natural and human resources and social enterprises (community entrepreneurship) regarding the progression of renewable energy at the local community level. Then I show the theoretical framework proposed by using these concepts and variables to realise the integrated goal of environmental protection and sustainable community development via the appropriate and targeted installation of small-scale renewable energy at local level.

## Landcare ethics

### The Landcare movement's origin in Australia

Landcare is a grassroots movement aimed at natural regeneration and environmental conservation. The movement was born in Australia in 1986. Seigel began his focus on landcare ethics from insights gained from his Australian experience. Seigel (2010:63–64) considered that 'Western Civilization was relocated in the Australian land', and at the same time, 'the traditional and original (Indigenous) culture had been cut off, and a new culture that is suitable for western (British) environment was planted'. In short, Australia's new history was shaped by British immigrants. Seigel further considered that:

> Australian land has been developed by an ethnic group that has been living there only for 200 years and has its sense cultivated in Europe. European Australians were adapting the Western way to the natural environment of Australia and developing the natural history about Australian land and the environment by using Western language (Seigel 2010:63–64).

Consequently, although agriculture was being implemented in Australia with efforts to adapt to Australia's special circumstances, agricultural practices were fundamentally 'British'.

The British settlement of Australia, with its industrial agriculture, has indeed brought a blessing of crops, not only in that nation, but also as export goods to support other nations. Nevertheless, this has often been to the detriment of the Australian land. In many places, soil has been devastated through soil degradation, wind erosion, desertification, the invasion of alien species, uncontrolled forest fires and severe salt damage. In recognition

of this problem, many Australian farmers have squarely faced the crisis between the land and the environment. They have taken action aimed at restoring the damaged soil, and in short order they have expanded their ambitions to develop a comprehensive action for restoring land and nature, including forests, rivers, beaches, coastal areas and urban cities via sustainable resource management (Youl et al. 2006).

For more than 30 years, landcare practices in Australia have accumulated the experiences and habits that care for the land and the environment. Australian Landcare groups are now regenerating natural habitats and restoring the soil with careful monitoring. More than some 5,000 local Landcare groups of diverse ages take part in Australian Landcare networks. This network has not only thrived in Australia but has also expanded beyond its borders to 26 other countries in North America, Europe, Africa, Latin America and the Asia-Pacific region. Together, the participants in the global landcare network learn from the regenerative effect of landcare efforts on nature and the land; and from these learnings, the principles of landcare have emerged.

### Landcare principles

Seigel (2013:12) summarises the key landcare principles as follows:

- Landcare is based on the operation of local autonomous voluntary groups. They operate on the initiative and under the control of local residents and are therefore rooted in the local community and attuned to the natural environment. Landcare groups are largely made up of primary producers and rural landholders.
- While Landcare groups address global issues such as climate change or biodiversity loss, their focus is still on what can be done locally to address these issues, without groups getting into debates about the politics of these issues.
- Landcare groups aim to address environmental issues holistically. In other words, they do not treat problems such as invasive species, soil degradation and salinity as independent of one another. Instead, they try to address the interconnected linkages between these issues and in relation to one another. The focus may be on a specific issue that is particularly serious in a given environment, but it aims to understand and deal with that issue in communion with other issues in the local environment.
- Landcare groups focus not only on the conservation or restoration of the natural habitat, but also on the wellbeing of the local community, including a focus on such things as the income of farmers and other primary producers. In this sense, the holistic approach mentioned above considers human society and the natural environment together in an integrated way.
- Landcare is often characterised by partnership and networking. This means partnership and networking among the different Landcare groups, and with the various levels of government, academics and specialists, business corporations, non-government organisations, etc.

We can define landcare through these principles. Consequently, landcare actions are based on the efforts of local groups rather than individual farmers. These groups treat environmental problems at the local level, adopt a holistic approach and apply an open-minded awareness. It is a practice and a movement that aims to achieve the regeneration of nature and preservation of the environment for the overall wellbeing of the bioregion, and ultimately for the global community and environment.

### Care and landcare

I will look at the meaning of the term 'care' in the natural resource context. Caring means listening carefully (not only to people, but also to things). Careful observation will arouse concern and show specific ways of caring and support. Relationships can then be established between those who give care and those who receive care. Caring brings new encounters and experiences to those who give and receive care. Through these new encounters and experiences, those who care for others will develop a new identity. Those who receive care will also transform their way of thinking. From conversations with people who are 'living in the landcare world', we see that they are often learning something from being surrounded by nature and the environment and a caring community. It seems that by caring for land, they have gained a vision and peace of mind about their own way of life and living. In a community that has survived many crises while experiencing various natural disasters and social changes, there is a path to wellbeing that has been formed in the local land and bioregion – a sustainable pathway based on the rules of both human beings and nature.

In this context, landcare integrates care for the land with human, community and social relationships (Seigel 2018). If we acknowledge the dynamism between those who do the caring and those who are cared for, the Australian landcare network is an attempt to create a viable, new relationship between the self, life, land, nature and the environment, in the process of carefully re-encountering the land, nature, the environment and Indigenous people.

**Landcare ... is a practice and a movement that aims to achieve the regeneration of nature and preservation of the environment for the overall wellbeing of the bioregion, and ultimately for the global community and environment.**

## Renewable energy as local resources

### Landcare approaches to renewable energy

While Landcare in Australia emerged as a response to land degradation challenges and is primarily concerned with land management and restoration, there appear to be many parallels in the world of renewable energy. Many countries are facing the need to transform their energy grids from centralised systems based on fossil fuels and nuclear power to much more decentralised systems based on renewable energy.

Can the landcare approach and landcare ethics be applied to unleashing the potential of renewable energy? Seigel suggests that logical linkages can be drawn between the self-reliance that arises from renewable energy development and Landcare:

> The introduction of small-scale renewable energy generation can promote local self-reliance. Renewable energies are essentially of the local commons, so when communities take the initiative to install and manage renewable energy resources, they contribute to community cohesion, as well as to energy independence and regional sustainability (Seigel et al. 2018:14).

Renewable energy opportunity is fundamentally a shared resource in the local community – it is a 'commons' resource. Community-based action to install small-scale renewable energy will encourage local energy independence, sustainability, resilience and wellbeing. This raises questions such as:

- Who owns renewable energy?
- Is natural energy a shared resource of the local community?
- How can we enable local communities to utilise renewable energy and manage it for their own wellbeing?

This chapter seeks to organise and integrate these ideas.

## Resources and local resources

Economist Jun Nishikawa defines resources as:

> Natural resources of living and non-living objects (land, minerals, forest, water, wildlife and marine products) that are originally consumed in a processed or unprocessed state to satisfy human needs. It also consists of human resources (labor force, skills, morale of workers) and cultural resources (technology, production system, organization) that actualize revealing potential resources. In a broader sense, it includes non-consumable potential resources such as climate and geographical conditions (Nishikawa 1974:88).

According to Keiichi Sakamoto, a philosopher of agriculture, natural resources can be further divided into biological resources and mineral resources. Biological resources are 'resources for agriculture' and are often related to land and water, forest and food production. Mineral resources, on the other hand, refer to industrial raw materials and fuels, resources for industrial use (Sakamoto 1989:9).

Economic growth has become the dominating issue in each country through industrialisation. For industrialisation, the following three resources are required:

- mineral resources (chiefly minerals and energy)
- social resources (the input of capital, policy support and legal support)
- human resources (a reliance on skilled workers).

As a result of pursuing the efficiency and thoroughness of these three resources, a development and economic growth focus at the nation level was promoted and progressed on a global scale (this is called 'globalisation impact'). Furthermore, the sociological point of view attempted to expand the concept of resources to include information resources: knowledge and ideas and network resources (Shibata 2012:516). 'Network resources' refers to social welfare resources and are defined as a means 'to satisfy the needs of individuals and groups and to maintain, survive, and develop social systems' (Hamashima et al. 1977:254).

From the perspective of civil engineering and planning studies, the concept of environmental resources has emerged in response to discussions regarding climate change, the peak-oil problem, environmental load assessment and other environmental elements. Particularly during the period from the 1980s to the 1990s, there was lively discussion about the carrying capacity of the planet. 'Carrying capacity' refers to the limited or allowable amount of human activity that does not impair the natural purification ability of the land. It assesses the population that can survive on finite land and the environment. To evaluate at the local level within a certain range, five perspectives are shown: ecological, physical, facility environment, economic and social carrying capacity (Stewart 1993).

In the development of a nation that is based on exploitation and economic growth, the first process of development gives weight to secondary industries, chiefly the manufacturing industry. Later, more weight is given to tertiary industries, such as education, medical care, welfare, tourism and culture. In addition, the concept of resources is expanded to include information, welfare, nature and the environment.

Whereas the concept of resources has been developed mainly to enable discussion about development and growth of the nation-state, the concept of regional resources attempts to grasp various elements at the more local level in an integrated manner.

Sociologist Morio Onda defines local resources in the following five categories:

- human resources (residents' qualities of compassion, diligence, honesty and simplicity)
- cultural resources (heritage and the way of land use and traditional culture)
- capital resources (regional economic cycles, local finance and the citizens' economy)
- information resources (local ways of life, wisdom for nature and the environment)
- network resources (residents' organisations, social networks and associations) (Onda 2002:2).

The concept of local resources is established on the basis of a community that has a certain range as a region of sustainable resource production, supply and consumption. People aim at locating, sharpening, and utilising the 'things' in the area as the main body. As a result, the concept of local resources is reconfigured in recent years to connect 'human', 'thing', 'finance' and 'information' to encompass the wisdom and network of people who create new value, and to realise the wellbeing of the community and bioregion. Understanding this background to resources illustrates how the consideration of local resources by communities increasingly supports and underpins the actual restoration of nature and sustainability at the local level, and often in response to modernisation and globalisation.

### Community enterprise for renewable resource management/development

Many consider that 'the best Landcare groups and networks eventually become community enterprises, contributing to livelihoods and building independent resourcing' (Seigel et al. 2018:6). Landcare enables people to make a living and have voluntary resources. Landcare-like concepts can be used to consider the concept of social enterprise for renewable resource management – the enterprise being a local actor that integrates the use of local resources, environmental conservation and the wellbeing of the community and bioregion. There is a growing and active academic interest about social enterprise in business and management, policy studies, economics and sociology. Indeed, theoretical research on social enterprises has two trends in the United States and Europe (Kerlin 2006).

In the United States, social enterprises are regarded as hybrids of commercial enterprises and not-for-profit organisations. Charismatic social entrepreneurs stimulate social innovation by creating new markets with new added value by their own ideas, networks and management skills. They solve social problems through social services. This is commonly seen in the trend of commercialisation of not-for-profits, commercialisation and sophistication of social services, and socialisation of commercial enterprises (for example, corporate social responsibility and philanthropy).

On the other hand, in Europe, social enterprises are regarded as hybrids of cooperatives and not-for-profit organisations. Under the reorganisation of the welfare state and of the third (largely not-for-profit) sector, there is a new focus on issues related to social justice, such as the increase in long-term unemployment, the impacts of social exclusion, the lack of social welfare services and the vast amount of public funds put into not-for-profits and cooperatives.

In this process, 'a cooperative that had been originally [aimed] towards common interests has become interested in the public interest in the local community', whereas not-for-profit organisations strengthened their business approach. As cooperatives and not-for-profit organisations became more similar, the term 'social enterprise' came to be used (Fujii et al. 2013).

Focusing on the resources that support organisations and businesses, the problems of both become clear. European social enterprises are directly affected by government policies because of their reliance on governmental resources as their main source of finance. In the United States, social enterprises require organisational management through business revenue by customers whose preferences frequently change and who have the freedom to purchase other services. They are largely dependent on the qualities of their charismatic leaders to continue to provide new services by reading changes in customer tastes. Management organisation also depends on the talent of the leader.

In contrast, social enterprise based on renewable energy resources as the foundation resources are dependent on the natural environment of the region and the social wellbeing of the community. Since renewable energy is a local resource rooted in the local community, the spatial scale of social enterprises is inevitably appropriate at the regional level, and the scope of problem-solving is also limited to local issues. In this way, social enterprises for renewable energy resource management integrate conservation and restoration of the natural environment and community development at the regional level (Fujimoto and Kagohashi 2019), just like a landcare model.

## A landcare approach to renewable energy and community development

### Planning and local works

How can we combine landcare ethics and renewable energy in the mechanism of community development? Essentially, landcare is premised on the need for local autonomy and self-reliance, for partnership and networking to support that autonomy and self-reliance, and for a holistic and integrative approach to local sustainability. The key principle has been community ownership of problems and solutions at the local level, with the direct engagement of local individuals in planning and works.

According to this description, the mission of landcare activities is to establish community sovereignty in each locality. Planning and works are designed at the local level, with the primary producers and residents as the main actors. Landcare efforts that concern both social issues and the solutions of regeneration of nature and the environment are approached within the region. Partnerships and networking features also provide insights for this mission. Landcare builds a community that seeks the wellbeing of both that community and the bioregion. It maintains and improves the lives of residents and rehabilitates and preserves the natural environment as a total integrated goal. Landcare must cope with limitations of technology and expertise, funds, active time and other factors in the local community.

Consequently, it is also important to build a network with the broader world for problem-solving and value creation. Partnerships and networking are aimed not only at developing globally relevant efforts but at developing awareness that deepens collaboration with various local agencies and people, performs strategic common tasks and fosters community wellbeing.

### Renewable energy and community

Almost all countries (especially more mature democracies) will soon face a declining and ageing population. Financial support from the state for the improvement and rehabilitation of public facilities and the repair and updating of living and social infrastructure will significantly decrease year by year. The burden of care for, and communication with, elderly people and children, hospitals and welfare, social security and life security will shift from the national to the local scales. Who will support the lives of residents in the community and the sustainability of local society and the environment? How will this be accomplished? This is our challenge and the challenge for future generations. Until recently, small societies have been the basic unit of life for social and environmental sustainability at a bioregional scale. How can we establish the wellbeing of life, society and the natural environment for the future?

Can we realise the goal of self-reliance, family and local communities while fostering diversity of resources via social enterprise? The key players – primary producers and residents as a Landcare group, social or community enterprises for renewable energy, and local government – share the environment and renewable energy opportunity within the bioregion. This is the basic idea of renewable energy and community-led effort guided by landcare ethics. Primary producers and residents engage in local resource management. They can be a powerful force in launching a social enterprise for renewable energy at the local level. Social enterprises for renewable energy produce and supply not only food, electricity and thermal energy but also welfare services for the residents. These residents can be given food, energy and welfare services inside the local community. There is less need to purchase food and energy from elsewhere. Enterprises and residents pay taxes to local governments, and local governments maintain social infrastructure and manage public facilities, public transportation and other public services.

The role of local government in this approach to renewable resources is to:

- oversee permits, regulations and penalties to enable sustainable use of local resources and natural capital
- provide entrepreneurial support for community enterprises by being aware of networking and partnership opportunities, encouraging regional internal connections and fostering the creation of new industries and services
- maintain and update a basic infrastructure, support life and corporate activities for the residents and guarantee living support for people who wish to relocate to the community
- incorporate the ideals and principles of landcare and become active participants in the community's effort to transition to renewable energy.

## Conclusion

To adopt these Landcare-style principles to the real world of renewable energy transition, the organisation of the local society must be strengthened. First, it is necessary to raise the social structure of communities to improve local autonomy and independence. On the roles and potential of the local governments as a comprehensive and responsible entity, economist Tokue Shibata set forth the ideas of Jurist Michitaka Kainou, the first director of Tokyo Metropolitan Pollution Research Institute in 1969:

> All current tax shall be changed as a local tax, the necessary expenses such as diplomacy and the judicial/metrological system required by the central government should be assessed by the local governments and distributed to the government from the local tax. When the central government holds tax revenue, that is money from another world and they further sacrifice the poor citizen's life, go to war as in the past, and build useless roads, big bridges and huge dams. If we enrich local governments familiar with civic life and let local rural areas have sufficient economy and finances, the eyes of local residents will be sharp even against the occurrence of pollution, and measures can be strengthened accordingly (Miyamoto and Awaji 2014:21).

Kainou's idea resonates with economist James Robertson's view that emphasises taxation on energy drawn from natural capital and resources. Robertson suggests imposing an environmental tax as a royalty on those who benefit from natural resources that are common resources of all human beings. Robertson (1998) stipulates the principle of environmental tax as follows: anyone who benefits from using 'shared property' that are resources and valuable objects not created by humans, but by nature and society, must pay compensation. In other words, the environmental tax is a taxation on activities that consume resources and damage the environment, and is a taxation on the value derived from nature and the environment by technology.

Kainou and Robertson's ideas raise fundamental questions about where the source of social wealth lies, and the need to reorganise the relationship between the state and the local government. This proposal is supported by the basic principle that nature and natural resources belong to all.

This chapter, from the viewpoint of landcare ethics, tries to present a basic framework to utilise renewable resources and establish community wellbeing. Because of the dynamics of landcare and renewable resources, the local community (including primary farmers, residents, social enterprises and local government) becomes integrated into the idea of a sustainable community.

Landcare represents a philosophy and culture that began in Australia and has grown over 30 years of experiences and passion. Landcare ethics are now expanding globally. What is the good society driven by landcare ethics? What is the wellbeing of the community and bioregion led by landcare practice? In landcare activities, the power of nature to reproduce echoes individual lives, giving power to the people. People are being slowly healed at the same time as they regenerate damaged nature and adopt the practice of protecting the environment. We are finding a place where hope lies.

## Acknowledgements

This research was supported by JSPS KAKENHI Grant Number 18K14538 and 18K05862. I appreciate the valuable comments and dialogue from the participants and session chair of the first International Conference of Landcare Studies, supported by Institute for Social Ethics, Nanzan University, Japan. Above all, I dedicate this chapter to Michael Seigel.

## References


Fujii A, Harada H and Otaka K (eds) (2013) *Tatakau Syakai Kigyou: community empowerment no ninaite*, Keisoushobou.

Fujimoto T and Kagohashi K (2019) 'Community-led micro-hydropower development and Landcare: a case study of networking activities of local residents and farmers in the Gokase township (Japan)', *Energies,* 12(6):1–9, accessed 10 March 2021. https://www.mdpi.com/1996-1073/12/6/1033

Hamashima A, Takeuchi I and Ishikawa A (eds) (1977) *Shinban Syakaigaku Syoujiten*, Yuhikaku.

Kerlin J (2006) 'Social enterprise in the United States and Europe: understanding and learning from the differences', *Voluntas,* 17(3):247–264.

Miyamoto K and Awaji T (2014) *Kougai Kankyou Kenkyu no Pioneer Tachi: Kougai Kennkyuu Iinkai no 50 nen*, Iwanamisyoten.

Nishikawa J (1974) *Shigen Nationalism: Senshinkoku riron no houkai*, Diamondsha.

Onda M (2002) *Global Jidai no Chiiki Zukuri*, Gakubunsha.

Robertson J (1998) *Transforming economic life: a millennial challenge,* Green Books, England.

Sakamoto K (1989) *Ningen ni totte Nougyou toha nanika*, Gakuyosyobo.

Seigel M (2010) 'Australia Boomanoomana Landcare group: Torikumi, Jisseki, Oyobi Mondaiishiki', *Syakai to Rinri,* 24:63–64.

Seigel M (2013) 'Secretariat to promote the establishment of Landcare in Japan', *SPELJ Newsletter,* Issue 1.

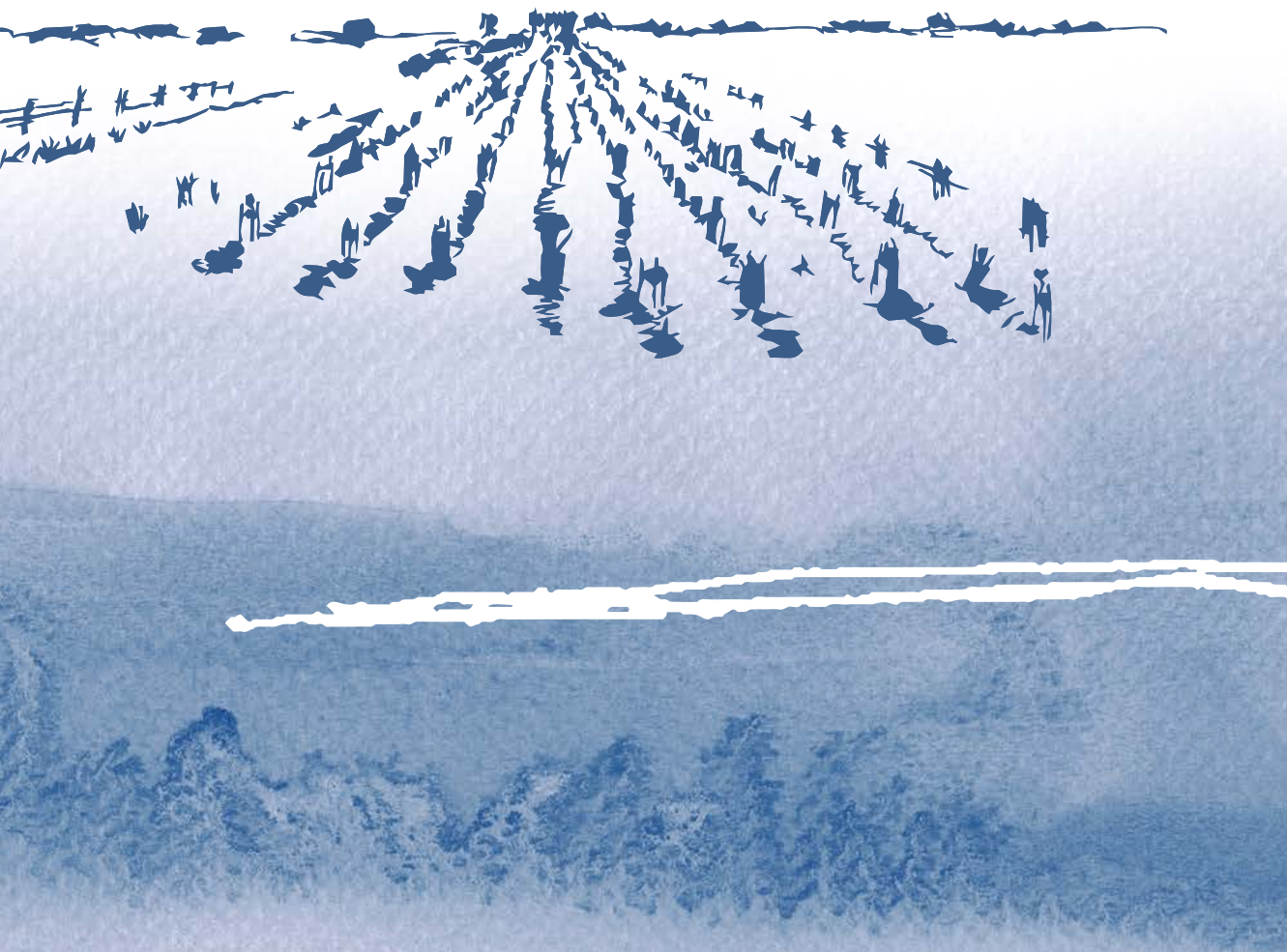
Seigel M (2018) 'Landcare to Hokansei no genri', *Syakai to Rinri,* 33:17–33.

Seigel M, Kagohashi K, Dale A, Quealy J, Mason A and Youl R (2018) '*Global resilience through local self-reliance: the landcare model',* a summary of the discussion of International Conference of Landcare Studies 2017, Nanzan University Institute for Social Ethics and Australian Landcare International, Nagoya.

Shibata Y (2012) *Gendaisyakaigaku Jiten*, Koubundo.

Stewart C (1993) *Recreational and developmental carrying capacities of coastal environment: a review of relevant literature and research*, Atria Engineering Hydraulics Inc.

Youl R, Marriott S and Nabben T (2006) *Landcare in Australia: founded on local action*, SILC and Rob Youl Consulting Pty. Ltd., Melbourne.



# PART C

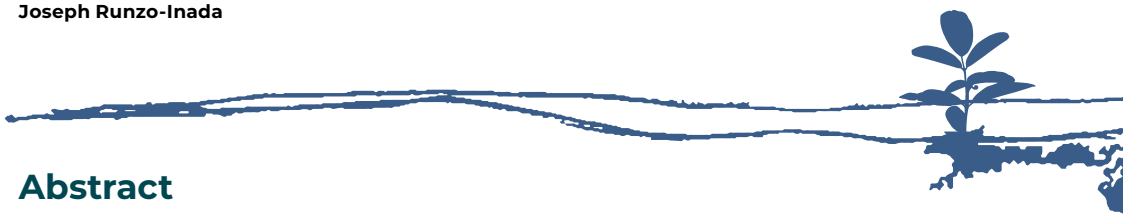
# Landcare as an integrative concept

Photo: Adobe Stock/SeanPavonePhoto

# CHAPTER 9

# An integrative approach to self-reliant people and sustainable land use: Toyama City's resilience strategy

**Joseph Runzo-Inada**



## Abstract

**Sustainable quality of human life and sustainable land-use practices are critical and irrevocably inter-related issues for the 21st century. Toyama City is recognised both in Japan and abroad as a model of ecological land use and resilience planning. It is the first Japanese city to be chosen for the Rockefeller 100 Resilient Cities initiative, the first non-national entity to sign a Memorandum of Understanding with the World Bank, the only Japanese city in the United Nations Sustainable Energy for All program, and a nationally designated Japanese Environmental FutureCity. Toyama City is a virtual laboratory for best sustainability practices. Unusual within the 100 Resilient Cities, Toyama City encompasses a large land area of 1,242 km$^2$, with extensive areas devoted to agriculture. Seventy per cent of the land is forested and two major and eight minor rivers flow through the city boundaries. To address this complex combination of rural and urban concerns and opportunities, the key to Toyama City's official resilience strategy is an integrative, comprehensive and holistic approach. The Resilience Strategy 2050 foregrounds core initiatives for the sustainability of Toyama City's agricultural and forested areas, the integration of the rural and urban/suburban areas, and vigorous initiatives to nourish its citizens' connection to the land and to agriculture.**

**This Japanese agrarian approach parallels fundamental principles of the Australian landcare movement: locally motivated and volunteer-based sustainable resource management and enduring care for the land that helps maintain productive farmland while protecting the environment. Importantly, the Landcare model of sharing the acquired wisdom and skills of sustainable land management with others and with future generations is also a core value of the Toyama City model.**

## Introduction

Toyama City was created in 2007 from the coalescing of seven former municipalities under a Japanese national program to combine rural and urban centres. Toyama City's 30-year Resilience Strategy 2050 explicitly seeks to unify and harmonise urban, agricultural and rural areas for long-term resilience. Covering the entire 1,242 $km^2$ of the city boundaries, with vast rural areas from the Sea of Japan to the crest of the northern Japanese Alps, the Resilience Strategy 2050 contains a multitude of programs for rural sustainability, agricultural protection and ecological preservation. The city's self-understanding is not an opposition between urban, suburban and rural, but is rather one of a holistic entity with essential rural, suburban and urban elements. Most importantly, the key lesson from the city's resilience planning process is that administrative processes, programs and projects do not alone make an integrated rural/suburban/urban municipality. Rather, communal bonds, respect for others and respect for nature are the foundation for self-reliance and resilience.

While Toyama City, with a population of more than 420,000 and home to high-tech, robotics, banking and pharmaceutical industries, is not a predominately agricultural city, agricultural society plays an essential role in the health and resilience of its society. In 1845, Henry David Thoreau famously left the comforts of urban society in the town of Concord, Massachusetts, to live in a small cabin on Walden Pond and practise simple living and self-sufficiency (Thoreau 2004). In our contemporary world of rapid population growth, urbanisation and the resultant pressures on the natural environment, we need to ask how the life and lessons of the practices of self-sufficiency of Thoreau and others like him might be compatible with, and even applicable to and integrated into, our modern, urbanised societies. Starting from its inception in 1986 in Victoria, Australia, the grassroots landcare movement is one thread of this rethinking of sustainability. Toyama City offers another, parallel thread, where land-care concerns intersect with the creation of an integrative and comprehensive vision of sustainability for a comprehensive urban/rural municipality.

Located about 250 km north-east of Tokyo on the Sea of Japan, Toyama City's land ranges from sea level at Toyama Bay to the 3,000 m crest of the northern Japan Alps, which is only 44 km from the city centre. This stunning natural setting, with its rich farmlands and abundant forests, presents the city with unusual challenges as well as opportunities to create an environmentally friendly and landcare-sensitive municipality. Indeed, Toyama City's established success in modelling a longstanding comprehensive commitment to sustainability and environmental issues led the Japanese Government to choose Toyama City as the host of the G7 Environment Ministers' Meetings during the 2016 G7 Summit in Japan.

## Structure of Toyama City's resilience strategy

Working with the Rockefeller 100 Resilient Cities program in 2015 to 2017 to design a comprehensive 30-year resilience strategy, Toyama City first developed a vision that emphasised the importance of communal bonds and respect for nature that are the foundation for the city's urban/rural/nature balance:

> The Toyama vision is to be … a model of resilience and environment-friendly living, where strong community bonds help citizens flourish, and the high quality of an active lifestyle for all its residents achieves a harmonious balance between traditional arts and modern technology and between economic prosperity and the inspiring natural surroundings of the pristine Northern Japan Alps (Toyama City & 100 Resilient Cities 2017).

This vision is summed up in the slogan 'Community, nature and innovation for the future'. Toyama City's vision is of resilience. It has four related elements: resilient people, resilient infrastructure, resilient prosperity and resilient environment. Toyama City's Resilience Strategy 2050 is then structured in a logical flow from the guiding vision, through the four resilience elements, to 10 major 30-year cross-cutting initiatives, which in turn have 35 subinitiatives. Each of the resilience elements is addressed in a vision statement. Of particular concern here is the resilient environment vision:

> The Toyama Vision for the Environment is a harmonious balance between human health, animal health and the health of Toyama's bountiful nature. This comprises two aspects, each reflecting a different though complementary value and ethical stance: environmental management (human health) and environmental conservation (the health of nature and animals for their own sake). Working with international organizations like UNEP, NOWPAP, SEforALL, IUCN and IGES, Toyama will continue to vigorously support eco-friendly socio-economic practices, efficient waste management systems, green industries and long range conservation plans (Toyama City & 100 Resilient Cities 2017).

The four resilience elements form an organic whole. The defining feature of the city's comprehensive approach to resilience is the principle that every policy should be directed towards the single goal of long-term comprehensive resilience. Other stated key principles in Toyama City's Resilience Strategy 2050 are:

- an emphasis on social bonds and self-realisation for citizens
- wide stakeholder engagement (including rural communities)
- integrated cross-silo communication and cooperation
- efficient planning with multiple resilience dividends from each project
- maximum utilisation of public–private cooperation
- mutually integrated plans that address specific issues for the urban, suburban and rural agricultural areas.

Of the 10 major cross-cutting initiatives for 2050, four are especially relevant here:

- water, waste and energy management
- rural Toyama and agricultural sustainability
- citizen health, wellbeing and participation
- conservation and environmental education.

### Water, waste and energy management

Toyama City's water, waste and energy management initiative is intended to create an integrated approach to these three sectors while simultaneously supporting future needs, addressing global environmental challenges and stimulating economic diversification into new areas of the green circular economy. This initiative focuses on local production of renewable energy including micro hydro-electric facilities, solar power generation and waste energy projects.

One innovative waste-to-energy project in Toyama City is the Greenhouse Horticulture Project, developed by the waste management company Kankyo Seibi, one of Japan's most advanced forerunners of industrial waste management. The inevitable excess heat generated from the final burning of waste products in a steam generator, to produce electricity as one waste-to-energy process, is now used to heat an array of 28 greenhouses totalling 4 hectares. Ingenious heat transfer containers transport the excess heat to the greenhouses while electricity from the generator powers the greenhouses.

This waste-to-energy greenhouse project produces a 95% reduction in fossil fuels that would have been used for the greenhouse operation, and a 53% reduction in electrical power costs for the all-LED and computer-controlled greenhouses.

Another of Toyama City's environmentally friendly agricultural related projects involves working with local companies to develop a range of micro hydro-electric systems. The city has several test stations, one generating 689,200 kWh annually, enough to completely power a neighbourhood of 125 houses. When they are installed in rural areas, these micro hydro-electric systems can be used on slow-flowing bodies of water like irrigation canals, enabling rural areas that have inadequate access to the electrical grid to become energy self-sufficient. The electricity can be used to power agricultural electric vehicles, and the surplus sold for income.

Paralleling the Landcare model of sharing knowledge, Toyama City is committed to sharing its agricultural resilience knowledge and serving as a model for other cities, often in cooperation with private companies. In 2014, under the auspices of the Japan International Cooperation Agency, Toyama City signed a Memorandum of Understanding to start introducing these small hydro-electric generation systems in rice terrace areas of the Tabanan region of Indonesia, which have been designated UNESCO World Heritage sites. In 2018, Toyama City signed Memorandums of Understanding with both the Iskandar region on the Malaysian Peninsula and the city of Kota Kinabalu in Borneo, Malaysia, to introduce these small systems. Through these overseas projects, Toyama City hopes to be able to help bring clean-energy-generated electricity to rural areas and help reinvigorate local agricultural areas.

### Rural Toyama and agricultural sustainability

Following the national reorganisation program to consolidate Japan's rural and urban areas, Toyama's agricultural landscapes are an integral feature of the city. The goal of the Rural Toyama and Agricultural Sustainability Initiative is to 'protect and enhance the rural areas which are vital for our regional economy, our identity, and environmental quality'. In this initiative, it is expressly stated that:

> We will celebrate and maintain the rural landscapes through establishment of a volunteer forest management project, conservation of the traditional rice terrace landscape, and we will promote regional forestry products as a characteristic of Toyama (Toyama City & 100 Resilient Cities 2017).

As noted above, 70% of Toyama City's municipal area is woodlands. Toyama City has specific programs to carefully remove excess trees to keep the forests healthy, and some of this is done by volunteer groups. The city is now promoting the use of wood pellets, which are created from timber derived from this forest-preservation thinning. These pellets are used as fuel for stoves and boilers, achieving a resilience value from so-called 'waste'. Given the importance of its forestry resources to Toyama City's self-identity, it has been working with Rob Youl, Chair of Australian Landcare International, to organise an urban forestry exchange between Australian Landcare International and Toyama City. Toyama City's Forestry Policy Division has agreed to help foster an information exchange with a team of Australian farm foresters led by Rowan Reid of the Australian Agroforestry Foundation, Australia's leading trainer in and practitioner of farm timber management and utilisation. This exchange would cover species selection, laying out forests, silviculture, pruning, measuring volumes, logging, sawmilling, forming self-help networks, seasoning, marketing and managing for multiple goals including water production and safety.

In a more high-tech solution to environmental issues and sustainability in rural areas, Toyama City has partnered with Nissan Corporation, which has provided 30 all-electric Nissan e-NV200 utility vans cost free to the city for three years. These will primarily be deployed to rural areas where gasoline stations are becoming less common and where the electric vehicle batteries can also provide emergency electricity during disasters. This will help reduce the impact of vehicles on rural environments as well as reducing destructive $CO_2$ emissions.

Toyama is a rice-growing region and the city has targeted specific projects aimed at sustainability and environmental conservation in these rural communities. The city's rice terrace maintenance program partners with the Japanese Government. The government provides direct payment for 81 villages in the mountain areas while the city provides actual maintenance through citizen support in 22 villages within the city limits. The city also provides subsidies for areas where cultivation has been abandoned to help prevent summer flooding. Additionally, the city promotes rice terrace conservation by encouraging children to learn about rice planning. One of the most important ways to promote land conservation is through programs for children, who are the future generations. In 2016, 106 children were involved in this project.

**One of the most important ways to promote land conservation is through programs for children, who are the future generations.**

Another interesting program that involves farmers is a program for diversifying rainwater catchment reservoirs during flooding. Excessive rainwater is temporarily stored on school fields, small suburban retention areas and, importantly, in rice fields. Rice field storage, which is carried out in cooperation with the community, reduces the outflow by 4.4 times into waterways, greatly reducing flooding in urban areas. Farmers who cooperate in this program receive a subsidy. During heavy rains in July 2004 along the Tsubono River, 60 households suffered river flood damage, but in the heavy rains of 2007 – after this scheme was implemented – no households suffered damaged.

Historically, Toyama City was the centre of traditional medicine for all of Japan. Medicine peddlers travelled out from the city to deliver medicines throughout the country. Working with farming communities, the city is dedicated to promoting sustainable agriculture by identifying and promoting important medicinal and health benefit plants, supporting farmers to expand the planting area to increase productivity and adding new commercial value to medicinal plant products. This includes sharing farm machinery to reduce agricultural costs, and a new generation of young farmers is being encouraged to develop low-cost, high-value agricultural businesses.

Egoma (*Perilla frutescens*), a member of the mint family used in traditional Chinese and Japanese medicine, has long been grown in the Toyama foothills. Highly desirable because it is rich in omega-3 fatty acids, it is sometimes called the 'fish of the fields'. Toyama City is supporting the recultivation of abandoned farmland within the city limits for large-scale farming of *Perilla frutescens*. A Toyama City company is developing a factory to produce 92 million soft capsules annually, which are designed to prevent oxidisation of the fragile

oil. The city is also working with a food institute in Italy to produce an especially nutritious variety of olive oil that incorporates the oil of the egoma plant.

As part of Toyama City's strategy to promote agricultural sustainability, new agricultural skills are developed and new farmers are nurtured by providing agricultural training to increase the employment opportunities in agriculture. This includes opportunities for children to both learn agricultural skills and learn about the importance of agriculture in protecting nature. The city's Rakuno Gakuen program supports farmers and non-farmers who are interested in agriculture. In Japan's ageing society, farmers face several difficulties: working on high ladders and cultivating heavy vegetation becomes more difficult, often there is no successor for the family farm, and viable farmland is left idle. Four courses are offered in this program:

1. The Farming Challenge Course offers practical activities for people interested in farming or in developing more complex farming skills.
2. The Agricultural Business Course offers basic knowledge for starting an agricultural business.
3. The Farm Training Course provides two years of training on vegetables and fruits, or flowers and rice. The participants' ages range from 30 to 70, with most participants being in their 60s.
4. The Home Garden Course is a one-year course on vegetable cultivation.

### Citizen health, wellbeing and participation, and conservation and environmental education

The goal of Toyama City's Citizen Health, Wellbeing & Participation Initiative aims to ensure a high quality of life and self-realisation for citizens of all ages by enabling active participation in inclusive communities. Of particular relevance here are subinitiatives to implement intergenerational programs for community participation, specifically those focused on local conservation and agricultural and farming promotion. The goal of Toyama City's Conservation & Environmental Education Initiative is 'to preserve nature for future generations and conserve nature and accessibility to nature for citizen's self-realization and resilience' (Toyama City & 100 Resilient Cities 2017:78). Since Toyama City's Resilience Strategy 2050 initiatives are cross-cutting, some aspects of these two initiatives have already been described above, but several subinitiatives are noteworthy.

Toyama City has initiated a One Tree Per Child tree-planting project with elementary school students. From 2017 to 2022, the students will plant trees to help them learn how forests absorb $CO_2$ and reduce global warming. The hope is that planting trees and creating a rich natural environment will help children become aware of themselves as part of the environmental and agricultural community. The goal is to have 1,000 trees planted by 1,000 elementary school children working in teams of four. This is an intergenerational project.

Another project, this one in the urban centre, is Toyama City's Community Gardens Project, which creates gardens in previously abandoned squares in the city centre. These gardens offer opportunities for the elderly to remain active, encourage intergenerational interactions and help bring nature into the city centre. The city has so far provided seven areas and private landowners contributed five additional areas. The city supports this project by providing subsidies to neighbourhood associations (World Bank Group 2017:22).

Another interesting facet of Toyama City's dedication to nourishing interpersonal bonds and bonds with agriculture is the fact that major city corporations such as INTEC have agricultural fields (for example, growing Japanese pears (nashi)) where employees can learn

about caring for agricultural products and intergenerational groups can work together. Although these are private operations, they reflect a city-wide vision of the importance for all stakeholders of landcare and intergenerational agricultural learning.

On a larger scale, the Eco-Town Park, which the city started developing in 2002, is an 18-hectare industrial park developed under public–private partnership. It currently includes seven private businesses which, with city incentives, turn various types of putative 'waste' (including wood, water, cooking oil, leftover food, plastic and used automobiles) into useful products. Integral to the park is an extensive waste-recycling education centre to increase awareness of the methods and importance of waste recycling. Citizens, schoolchildren and visitors can learn about the importance, methods and valuable end products of recycling.

## Relationship morality, resilience and nature

The preceding section outlines Toyama City's Resilience Strategy 2050 and describes some specific policies and projects. But while policies, initiatives and mechanisms may be conducive to, and even instrumental in, developing a people's self-reliance and resilience, policies, initiatives and mechanisms do not produce self-reliance and resilience. Identifying the foundational conditions for self-reliance and resilience are the most important lessons of Toyama City's resilience journey and the crux of the city's resilience strategy. Through the process of developing the city's Resilience Strategy 2050, it was discovered that a vibrant communal spirit, a caring-for-others social perspective and deep bonds to nature form the resilience backbone that underlies the past, present and any future success of Toyama City's specific resilience policies, initiatives and mechanisms.

**A vibrant communal spirit, a caring-for-others social perspective and deep bonds to nature form the resilience backbone that underlies the past, present and any future success of Toyama City's specific resilience policies, initiatives and mechanisms.**

Embedded in the identity of the city and its citizens is a deep Japanese sense of both the sacredness of nature and the centrality of agricultural and rural lands. Within the self-understanding of the importance of a robust relationship between rural and urban residents, and also deep interpersonal and community bonds, Toyama City's Vision 2050 emphasises 'community and nature' and the critical balance of the four essential elements – resilient people, resilient infrastructure, resilient prosperity and resilient environment – that must be maintained to nurture an enduring and resilient city. Toyama City faces the dual challenge of preserving the exceptional quality of its natural and human-made assets. Environmental standards are high and rural areas are currently sustainable, but diligence and evolving methods are required to maintain and improve the quality of the environment and the conservation of nature and rural areas. Likewise, the city's social cohesion, community bonds and self-reliance are strong, but these will wither without nourishment.

Ultimately, success in building and nourishing these relationships depends on taking the moral point of view. One key element of taking the moral point of view regarding

persons is benevolence: one must take others into account in one's actions not just out of self-interest, but because one respects them as persons. In his book *Relationship morality,* the American philosopher James Kellenberger explains the moral point of view by arguing that the ultimate grounding of obligation, and finally of all morality, is a single but universal relationship between each and all (Kellenberger 1995). Applying this principle to relations between people, Kellenberger argues that the realisation of a 'person/person relationship' to others creates 'a sense of duty grounded in a recognition of the intrinsic worth of persons' (Kellenberger 1995:53). For those who see the intrinsic value of animals and nature, this concept of relationship morality can be extended to animals and nature as person–living being relationships and person–nature relationships, which will both in turn engender human–nature bonds. As Kellenberger says:

> As we come into the presence of persons and discover their inherent worth as persons, so too we can come into the presence of nonhuman animals, into the presence of inanimate but living beings, like an oak tree, and into the presence of nonliving natural entities natural settings like a pasture or a mountain range or a desert and thereby discover an inherent value analogous to that possessed by persons. (Kellenberger 1995:382).

Relationship morality entails an organic view of human–human and human–nature bonds. Toyama City, with its natural and agricultural setting and Japanese cultural milieu, sees itself in organic terms. On Toyama City's model, resilient cities are like resilient people. A suggestive parallel might be the resilience of athletes. Two mountain climbers might have the same 'measurables' but one performs at a consistently outstanding level and the other does not. What is the underlying difference? With athletes, we sometimes talk about 'heart' – that immeasurable something extra of the successful athlete. For Toyama City, it is essential that the city maintain strong civic pride, exceptional community bonds, a deep and abiding commitment among citizens to the self-realisation of oneself and of others (which is a Confucian ideal) and deep respect for nature. These are qualities of 'heart', which are not fully measurable (Toyama City & 100 Resilient Cities 2017:39).

**The initiatives in Toyama City's Resilience Strategy 2050 incorporate the high degree of mutual support and volunteerism inherent in its citizens' self-understanding, which includes an inextricable and abiding relationship with the land.**

The pragmatic effect of these immeasurable qualities of 'heart' help explain how Toyama City's urban dwellers do not look down on rural dwellers as 'peripheral', and explain Toyama City's drive for a long-term plan that supports all segments of society and all regions of the city. This plan must prioritise the deep relationship between the city and the natural environment, including both environmental management and the conservation of nature. The word that best sums up the essential centrality of relationships to people and nature in Toyama City is *itadakimasu*, which is traditionally said (especially in rural areas) before eating, to give thanks to every being that made one's meal possible: the fish and the fisherman, the fields and the farmer, the cook and the server. The initiatives in Toyama City's Resilience Strategy 2050 incorporate the high degree of mutual support and volunteerism inherent in its citizens' self-understanding, which includes an inextricable and abiding relationship with the land.

## Conclusion

The increasingly rapid global population shift from rural to urban residency, and the evolution of the human manipulation of nature from the industrial/mechanical era through to the electronic and digital eras, has resulted in the physical and spiritual distancing of humans from the land and from nature. The movement towards self-reliance and genuine resilience, which includes a fulfilling appreciation of ourselves as literally formed from the 'dust' and our health and destinies as inexorably tied to nature, can help counter the modern trend away from the richness of person–person relations grounded in person–nature bonds.

The Resilience Strategy 2050 is Toyama City's model for achieving this deeper connection to others and nature. But it is just one of many steps in a long-term commitment to creating a resilient city that achieves a harmonious balance between quality of life and economic growth, and between environmental/conservation concerns and social values. Working with the World Bank's City Partnership program, the Rockefeller 100 Resilient Cities initiative, the Organisation for Economic Co-operation and Development, the United Nations Sustainable Energy for All program, the United Nations Environment Programme and Australian Landcare International, Toyama City's aspiration is to introduce others to the Toyama City model and vision for a sustainable and resilient city of the future where human relationships and relationships with nature create self-sufficiency and long-term resilience in the context of a meaningful relationship with the land.

Moving the world towards sustainable practices will not be easy, but as Thoreau concludes in *Walden*:

> I learned this at least from my experiment; that if one advances confidently in the direction of his dreams, and endeavours to live a life he has imagined, he will meet with a success unexpected in common hours (Thoreau 2004:313).

Importantly though, we will not be able to create practices that are genuinely sustainable for the quality of human life and for the land if we live merely as self-reliant *individuals*; we will create this vision of genuine sustainability for the quality of human life and land as a *community* of self-reliant individuals who share human–human and human–nature bonds.

## References


Kellenberger J (1995) *Relationship morality,* Pennsylvania State University Press, University Park, USA.

Thoreau HD (2004) *Walden,* Yale University Press, New Haven, USA.

Toyama City and 100 Resilient Cities (2017) *Resilient Toyama: Toyama vision 2050, Community, Nature and Innovation,* Toyama, Japan and New York City, USA.

World Bank Group (2017) *Development knowledge of Toyama City*, World Bank Tokyo Development Learning Center, Washington DC, USA.

Photo: Kabale Agroforestry Network

# CHAPTER 10

# How can landcare contribute to household development outcomes in Uganda?

**Clinton Muller and Joy Tukahirwa**

## Abstract

**The sustainable management of natural resources has been placed on the global development agenda as being equal in importance to poverty eradication. The interlinked nature of these global challenges is increasingly apparent, particularly in sub-Saharan Africa, where incidences of rural poverty are closely associated with degraded landscapes. Solutions for management of land degradation are viewed as requiring collective approaches through engagement of community at the grassroots, and actors within the landscape.**

**In Uganda, the Australian-inspired landcare approach has been adopted since 2001 as a means of empowering the community to manage natural resources through linking land management practices to livelihood outcomes. This chapter examines a study that investigated the effectiveness of the landcare approach in Uganda at the household level as a mechanism to contribute to food security and livelihood outcomes. A comparative assessment of households engaged and not engaged in landcare was undertaken to determine if there was a relationship to livelihood and food security indicators through landcare participation. The study found a higher performance of landcare member households against several defined indicators, suggesting that landcare has a positive contribution on these issues. Furthermore, the application of the landcare approach in enabling effective collective action was examined and discussed in the context of the sustainable adoption of positive land management practices. We conclude that the unique nature of landcare as a subsidiarity-oriented community model to empower local people to address landscape-scale degradation should be further considered as a development approach to address incidences of poverty and land degradation.**

# Introduction

## The global development agenda

As the post-2015 development agenda shifts from the Millennium Development Goals to the Sustainable Development Goals, so too does the need to identify new approaches and pathways to progress the sustainability agenda, building on lessons achieved to date (Sachs 2012). Since 2000, the Millennium Development Goals have focused on reducing extreme poverty in developing countries. Poverty eradication remains one of the greatest global challenges today, and an indispensable requirement for the achievement of sustainable development (United Nations General Assembly 2014). However, some have argued that pursuing a post-2015 agenda focused only on poverty alleviation could undermine the development agenda's purpose and that there is a need to place equal priority on the protection of the Earth's life support system as there is on poverty reduction (Griggs et al. 2013).

It is widely recognised that the process of facilitating a sustainable trajectory of eradicating poverty while improving lives and livelihoods needs to also promote sustainable access to food, water and energy while protecting biodiversity and ecosystem services (Griggs et al. 2013). The nexus of issues of poverty, environmental degradation and food security prioritises the need to intensify and expand sustainable land management practices to create food secure communities, while reducing degradation of natural resources. Greater emphasis is being placed on the principle of subsidiarity that positions community at the forefront of landscape management and decision-making activities through approaches such as landcare (Catacutan et al. 2015).

## The nexus between poverty and land degradation in Uganda

In the east African country of Uganda, despite significant progress in reducing monetary poverty at a very rapid rate, attributed in part to favourable market prices and weather (World Bank 2016), about one-third of all rural households live below the national rural poverty line (IFAD 2012). Agriculture is the main economic activity and the primary source of livelihood for most of the population, contributing 40% of gross domestic product, 85% of export earnings and 80% of employment (Government of Uganda 2004). A challenge that needs to be addressed to reverse the trend of increasing poverty is the relationship between low incomes in rural areas in Uganda and stagnation of agricultural production. A key constraint to achieving a vision of improved agricultural productivity in Uganda, as in many sub-Saharan Africa countries, is widescale land degradation (Birungi and Hassan 2010).

The combined impact of land degradation and poverty in sub-Saharan African countries like Uganda are forecast to continue to worsen unless sound intervention polices are implemented. Designing appropriate intervention policies and programs, however, requires an understanding of the factors that determine the adoption of land conservation practices (Birungi and Hassan 2010). This includes a thorough appreciation of the social and institutional environment in which policies to curb land degradation can be implemented, including among grassroots community groups. Appropriate design of these interventions could facilitate knowledge transfer, encourage cooperation and help to coordinate and monitor service delivery, in addition to improving farmer access to credit, markets and farm equipment, all of which are important for the adoption and diffusion of agricultural technologies among smallholder farmers (Nyangena 2005).

### Landcare – an approach for consideration?

Landcare is one approach that has been adopted in some regions of Uganda that seeks to contribute to development outcomes through strengthened social capital to allow effective collective action for natural resource management (NRM) at a landscape scale. An Australian-inspired community empowerment approach, landcare is based on voluntary farmer groups and other committed people working collaboratively together at a local level to address common NRM issues (Campbell 2009). Landcare has demonstrated potential as a community strengthening approach in comparison to traditional processes of collective action, particularly given the content focus on resource management (Mowo et al. 2009). While landcare can be approached as an ethic that facilitates individuals and communities in approaching NRM from a holistic standpoint, the contribution of landcare to poverty alleviation at the household level warrants investigation.

Within eastern Africa, the landcare approach provides a platform for smallholder farmers to engage in integrated NRM as a means of empowering local rural communities (Tanui 2005). Mowo et al. (2009) have described the approach as being based on local voluntary groups working collectively and in partnership with local government units to foster better land management for improved livelihoods. This adaptation of the landcare approach emphasises multistakeholder partnerships with strong support from the local government to enable technological innovation and link better land management practices to livelihood and enterprise options. Tanui (2005) adds that through this approach, local communities are empowered to effectively manage land resources for sustainable production, income generation and food security.

## Kapchorwa and District Landcare Chapter

In Uganda, landcare was first introduced in 2001 through the African Highlands Initiative ecoregional project, led by the World Agroforestry Centre. Based on knowledge transfer from the success of the approach in the Philippines, landcare was applied to address a myriad of complex and linked NRM and social issues in Kapchorwa District on the northern slopes of Mount Elgon. The issues were principally focused on:

- indiscriminate removal of vegetation
- excessive erosion from free grazing
- encroachment and extraction from the protected forested areas
- declining soil fertility
- gender inequality in labour and decision-making roles
- poor governance around NRM
- conflict with the displacement of the Indigenous people
- land abandonment in lowland areas from cattle rustling with population displacement in the highlands.

The combined effect of these challenges was nowhere more evident than in the management of excessive run-off and landslides, which destroyed crops, property, infrastructure and even took lives (Catacutan et al. 2015). The extent of the landscape degradation of the region prior to landcare is illustrated in Figure 10.1. This 2002 photograph of Kween District is characteristic of the region's landscape prior to the introduction of landcare. The Kapchorwa District Landcare Chapter (KADLACC) was formed as an Indigenous platform of smallholder groups, with a shared vision for integrated NRM.

**Figure 10.1** A characteristic treeless and exposed soil landscape in Kween District, 2002. Photo: Simon Nygas

KADLACC has been successful in bringing together stakeholders, facilitating community action in soil and water conservation and championing local level innovations to bring about landscape-scale restoration. Based on the success of the outcomes from Kapchorwa, the landcare approach has been shared with other sites in Uganda including Masaka and Kabale, with the Uganda Landcare Network being formed in 2015 (Catacutan et al. 2015).

**KADLACC has been successful in bringing together stakeholders, facilitating community action in soil and water conservation and championing local level innovations to bring about landscape-scale restoration. Based on [this] success ... the landcare approach has been shared with other sites in Uganda.**

The formation of KADLACC provided a unique Indigenous platform of smallholder groups with a shared vision of integrated NRM. The process of formation was convened through a participatory discussion of the challenges facing the district between the local community and other stakeholders across the Kapchorwa District. At the time, this included the administrative districts of Kween and Bukwo, which were separated in 2010 as part of a national decentralisation initiative of the government of Uganda to ensure more equitable distribution of resources (UBS 2012). Through the facilitated meeting, the community identified that the long-term solutions to the landscape challenges would only be realised through the adoption of a harmonised approach to livelihood and conservation efforts. By empowering the community in the decision-making process, under the auspices of the landcare approach, KADLACC has facilitated multistakeholder platforms across the landscape to take ownership and accountability of individual actions under the

common vision for improving the natural resource base. This has included partnership creation and collaborations with stakeholders at a range of levels within the community, supporting training, cross learning and knowledge-sharing activities, while promoting an enabling policy environment for wider adoption of these activities within the district-level government (Catacutan et al. 2015; Barungi and Tukahirwa 2017).

An impact evaluation of the effectiveness of the landcare approach in Kapchorwa was undertaken by Mowo et al. (2009). This evaluation concluded that the rapid adoption of landscape remediation practices by landcarers was achieved through facilitated learning and community interest in improving livelihoods as well as their environment. Much of the success of landcare in Kapchorwa was attributed to the highly participatory and consultative process applied, which included:

- the selection and implementation of research and development activities
- partner engagement
- support services offered through a multidisciplinary team
- facilitation of farmer grassroots institutions and their linkages to district levels of governance
- the use of integrated approaches and holistic NRM.

Furthermore, the landcare approach has built the capacity of the local community to experiment with different technologies and share the outcomes of these interventions with their peers, facilitating the scalability of experimentation and adoption. In turn, this has improved cooperation in solving common resource issues and increased the access to information among smallholder farmers. The successes of these outcomes are noted among participating households, who have reported positive changes in food availability, and increased milk production and household incomes through engaging with landcare (Mowo et al. 2009).

## Poverty measures, food security and livelihood indicators

### Factors influencing food security and livelihoods

A range of factors affect food production and food security. These include the quality and quantity of agricultural land, biodiversity, pressure on water resources, pollution, resource depletion, climate change, the economic environment and market access. The common solution to such challenges is to increase agricultural production from the same area of land while reducing the negative environmental impacts. High population density also has a profound effect on food and livelihood security. When the human and livestock population at the village and district level rises beyond a sustainable level, it threatens food security, as food stores are depleted. Farmers without secure land tenure tend to also be food insecure, as they are unable to produce adequate food for themselves. On the other hand, the factors that affect food access are income level and food cost, as smallholders with low incomes are unable to purchase adequate food (Renzaho and Mellor 2010).

Ashraf et al. (2013) have identified several factors that affect livelihoods, including natural assets such as land and soil fertility, vulnerability to shocks and adverse trends such as overpopulation, environmental changes, political unrest, social conflict, climate change and education levels. Similarly, Singh et al. (2008) have adopted a global approach, identifying constraints in livelihood and food security as global warming, increasing human population, costly agro-inputs, ecosystem degradation, unequal distribution of produce and abiotic

stresses. Consideration is given to characteristics including education, with Anderson (2012) noting that people with a higher level of education were more likely to pursue off-farm activities to improve living standards, whereas uneducated labour is associated with subsistence farming. This tends to translate into lower levels of income for smallholders and difficulty in accessing credit, which can impact the adoption of improved management practices and technologies. Similar consideration is also given to attributes of land ownership and proximity to infrastructure and urban areas for participation in agricultural and non-agricultural activities (Winters et al. 2009). Additionally, effective collective action has a positive relationship with livelihood indicators, with a study by Abenakyo et al. (2007) finding that strengthening collective action is a powerful way to improve livelihood assets of smallholder farmers in Uganda.

### Land resource degradation and development challenges in Uganda

In Uganda, there is a strong and clear link between the contributing factors to food insecurity and poor livelihoods with natural resources. High rates of poverty, fast-growing populations and insecure land tenure are exacerbating the issues of land degradation across the country. Subsequently, degraded land poses a threat to national and household food security and the overall welfare of rural populations (Lyamchai et al. 2007). This degradation includes significant soil loss, reduced soil fertility, decreased vegetative cover, declining water quality and increasing water scarcity (German 2006). With this reduced natural resource base, agricultural productivity is declining, leading to reduced income generating potential among landholders (Okoba and de Graaff 2005). This is particularly alarming, as the livelihoods of more than 80% of the rural population are dependent on natural resources. The combination of these factors is a key contributor to increased poverty and food insecurity within already vulnerable and skill-deficient communities (Pender et al. 2006).

In Uganda, land degradation is identified within the Agricultural Development Strategy and Investment Plan as one of the major constraints to increasing agricultural productivity and production, and subsequently a key impediment to addressing incidences of poverty (MAAIF 2010). About 85% of land degradation in the country is accounted for by soil erosion and nutrient depletion (NEMA 2001), with low land productivity resulting from soil erosion noted as one of the biggest challenges to improving the performance of the Ugandan agriculture sector (Barungi et al. 2013). The worst affected areas include the highlands of Kapchorwa, Bukwo, Kween and Mbale in Eastern Uganda, and Kabale and Kisoro in Western Uganda (Zake et al. 1999; Olson and Berry 2003).

Efforts in the past by development agencies and research partners to reverse the land management challenges plaguing communities have generally had limited impact (Farrington 1998). Evaluations of on-ground activities have found evidence of project success being confined to small pilot site areas and rarely translated into government-level policy or practice (Pender et al. 2006). The nature of such development programs and initiatives have been criticised as being overly prescriptive, and lacking inductive participatory approaches that engage communities in identifying development solutions (Burkey 1993; Schuurman 1993).

At a country scale, east African countries are undertaking progressive policy changes to encourage more demand-driven and market-oriented agricultural services (Friis-Hansen and Duveskog 2012). This includes a policy shift from centralised extension systems to decentralised demand-driven agricultural advisory systems (Anderson and Feder 2007). National extension programs, including the former National Agriculture Advisory

and Development Services in Uganda, had begun to recognise the important role of farmer empowerment, public–private partnerships and local participation in providing extension services to facilitate agricultural growth (Friis-Hansen and Duveskog 2012). To be effective, these programs have in the past assumed that smallholder farmers are organised and capable of articulating informed demands to external service providers. However, experience indicates that without a deliberate empowerment effort, farmers are often subjected to manipulation by these external service providers, which results in limited access and outcomes from the extension services (Government of Uganda 2005). This emphasises the need for farmer empowerment as an important element in the development of demand-driven advisory services, enabling farmers to make their own decisions rather than blindly adopting recommendations from others (Friis-Hansen and Duveskog 2012).

## Landcare as a mechanism for building local self-reliance

As a mechanism to facilitate the mobilisation and empowerment of grassroots rural institutions for integrated NRM, the adoption of the landcare approach in Uganda provides a pathway to build capacity through strengthening existing social capital. This provides a framework that facilitates action at the community level to address land degradation and promote agricultural growth.

The fundamental value of the landcare approach is the importance that is placed on engaging local actors to identify and take ownership of locally relevant solutions to address the challenges contributing to resource degradation across the landscape. Through strengthened social capital, collective action and enriched institutional arrangements, Landcare groups in Uganda have demonstrated evidence of sharing NRM information, diffusing technologies and the adoption of behavioural changes. To this extent, the landcare approach has provided an approach to establish networks and multisector partnerships to address both land management and livelihood objectives (Tanui 2005).

### Contribution of landcare to household food security and livelihoods

Muller (2015) undertook a study in the Eastern Uganda districts of Kapchorwa and Kween on the northern slopes of Mount Elgon to test whether the landcare approach benefited participating household members in terms of food security and livelihood improvements. Benefits to the household were assessed based on measures of food security and livelihood through a comparative analysis between member households that did or did not practise landcare. The effectiveness of landcare as an approach in improving food security and livelihood outcomes was examined in the context of the effectiveness of collective action strengthened through the approach.

The communities of the Kapchorwa (population 109,300) and Kween (population 98,900) districts belong to two major ethnic groups: the Bagisu and the Sebei. Livelihoods of the Sebei are predominantly pastoral, with the Bagisu heavily dependent on growing crops including coffee, bananas, beans, maize, wheat and potatoes. The region is characterised by fertile volcanic soils and an abundant rainfall, with an annual mean rainfall range of 1,500–2,000 mm. The Mount Elgon region is susceptible to natural disasters, including floods, landslides, drought and famine, with recent studies indicating that climate change is expected to result in an increase in disasters (Nakakaawa et al. 2015).

A random sample of 168 households was selected across Kapchorwa and Kween districts. The sample included 55 households who were members of a Landcare group and 113 non-Landcare members (Figure 10.2). The non-Landcare households belonged to other collective action groups, including self-help, financial (savings group), industry (dairy group), women's and marketing groups. All households surveyed had an affiliation with either a Landcare group or a collective action group of some nature. Of the total households surveyed, 21% were a member of a Landcare group (Figure 10.3). Households from Kapchorwa comprised 54% of those surveyed, while 46% were from Kween.

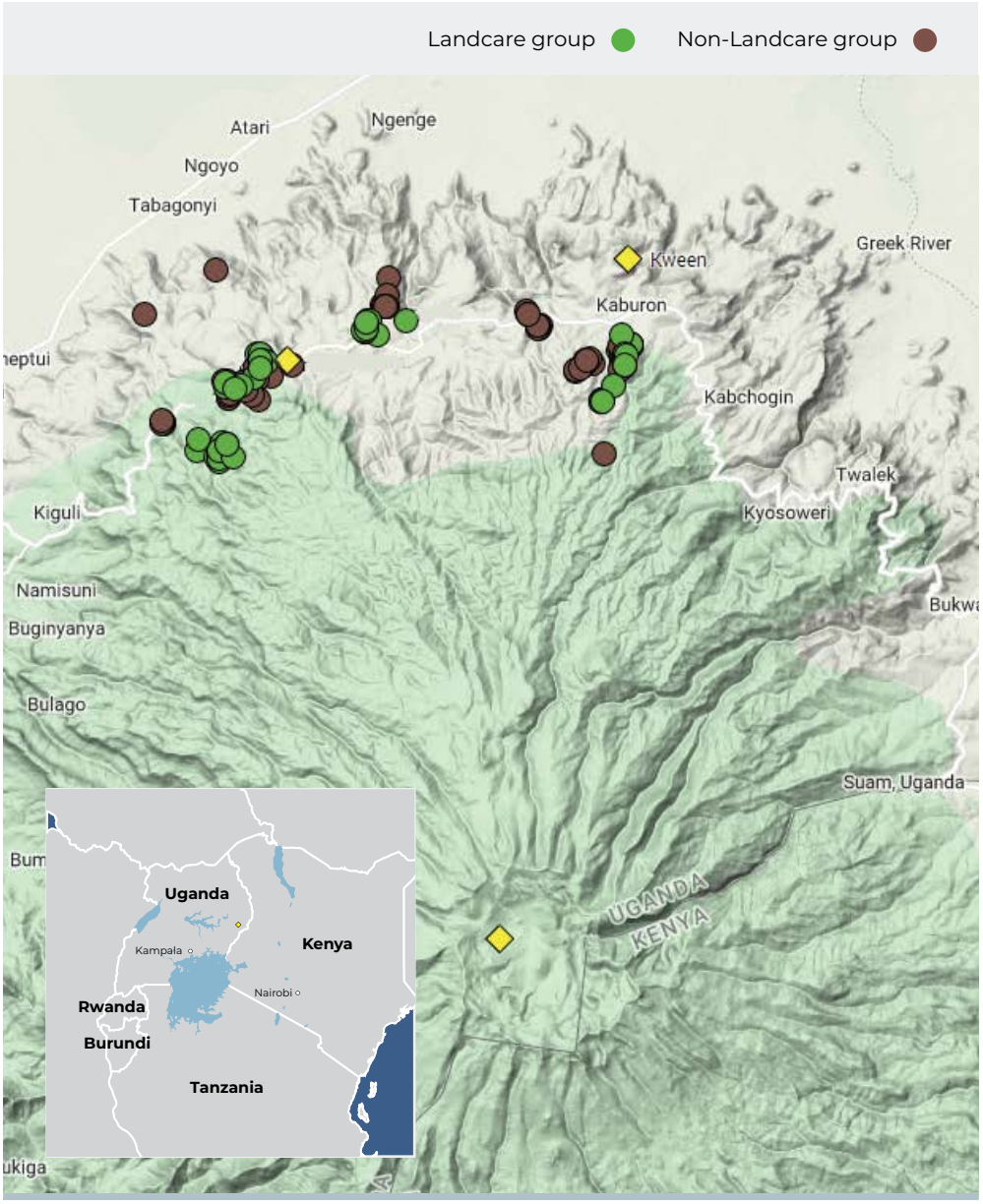



**Figure 10.2** Location of Landcare and non-Landcare households surveyed in Kapchorwa and Kween districts

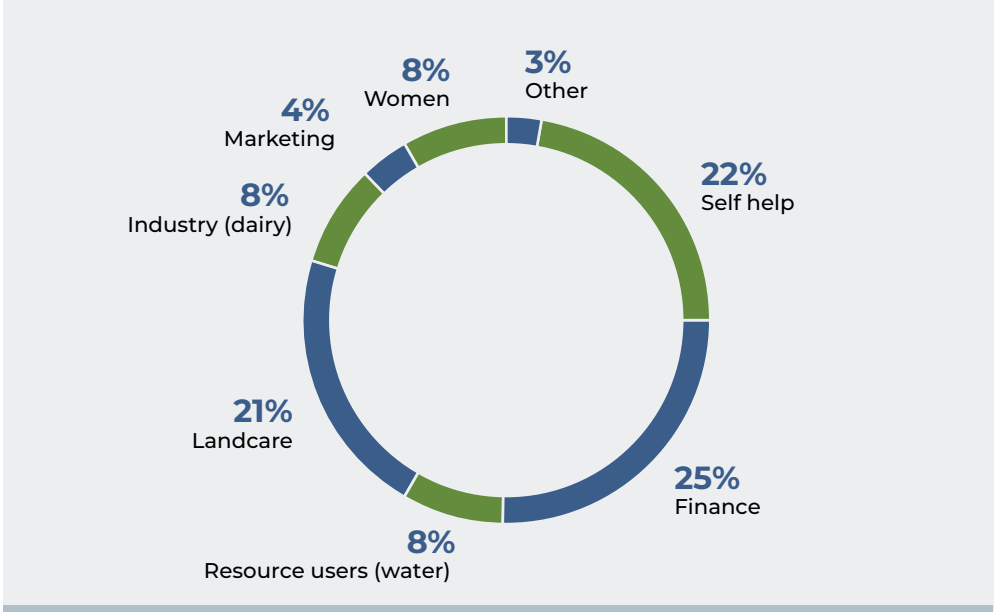



**Figure 10.3** Total group membership breakdown of households surveyed

## Key research findings

Across most indicators examined through the study, households that belonged to a Landcare group performed better than households who did not. This was particularly evident among measures of assets and infrastructure, as well as proportion of off-farm income and a number of land management issues. This finding was supported by qualitative data collected as part of focus group discussions, which concluded a greater diversity of group self-help activities and vision complexity among Landcare groups.

The findings of several statistical analyses concluded that Landcare member households were more food secure than non-Landcare member households. This was based on household assets, farm assets and livestock, which were significant variables for food security and scored consistently higher among Landcare group member households. A positive correlation was also observed through an assessment of livelihood variables, which concluded there was a significant influence on livelihoods based on the strong performance of Landcare member households in the variable indicators of education, land ownership, household asset ownership and farm assets.

**Landcare member households were more food secure than non-Landcare member households.**

To further understand these results, the effectiveness of landcare as an approach for improving food security and livelihood outcomes was examined through a comparative analysis and thematic clustering of group vision and activities based on data from 12 focus group interviews (six Landcare groups and six non-Landcare groups).

### Group activities

Activities Landcare groups were engaged in (Figure 10.4) have a fixed focus on landscape management, with all groups undertaking some form of revegetation (for example, tree planting, fodder shrub planting) or soil conservation works (for example, construction of erosion bunds, planting grass for soil stabilisation). None of the non-Landcare groups were undertaking environmental works, but rather focusing predominately on savings and loans, and agricultural practices and production. Overall, Landcare groups were undertaking a wider range of activities, with groups participating in an average of 5.5 activities. Non-Landcare groups had a more limited focus, with only 2.5 activities per group on average.

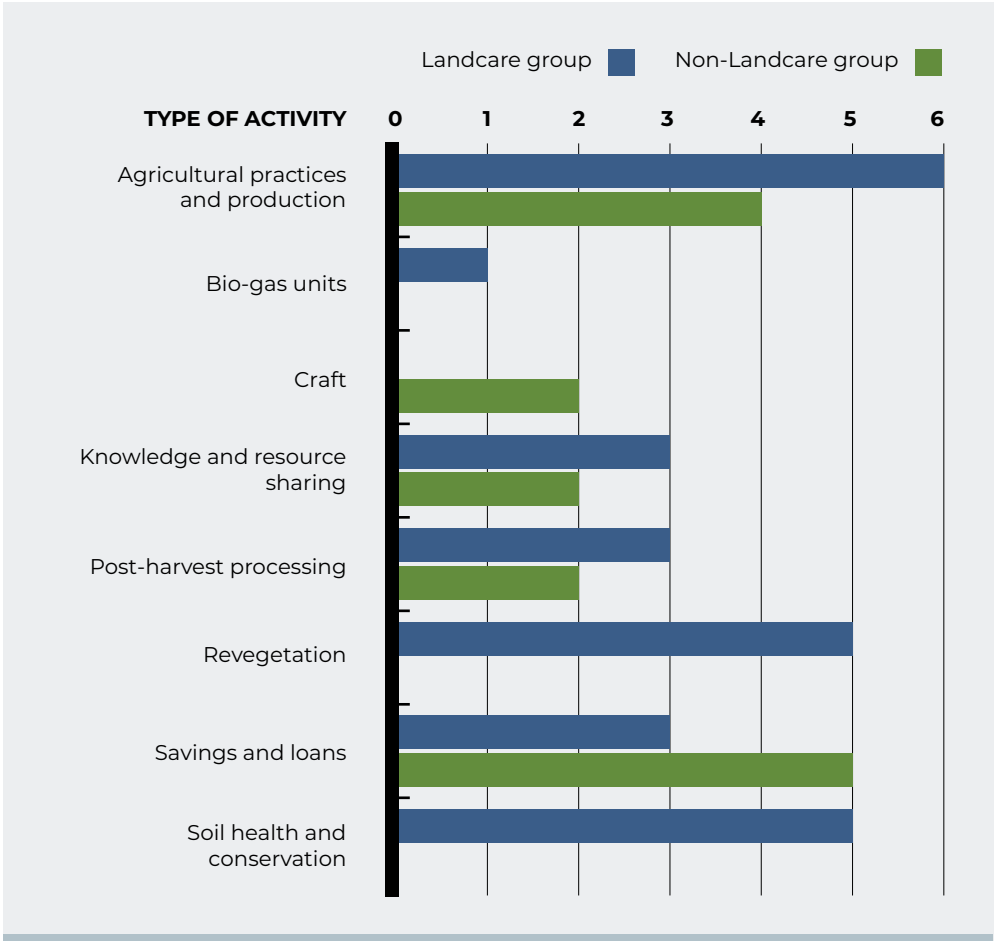



**Figure 10.4** Group activities undertaken by Landcare and non-Landcare groups

## Group networks

Interviewed groups were asked to identify external partners that they work with. While no group offered an exhaustive and complete list, the responses provided an indication of the priority partners viewed by the group. These partners were linked through a simplified social network analysis (Figure 10.5). This analysis identified that 75% of the groups interviewed identified Landcare as a partner through either the KADLACC or the Landcare member group Tuban Organic Farmers Association, who provide soft skill development and technical training on soil conservation within the districts. A much richer and diverse stakeholder engagement was observed among the Landcare groups, with two non-Landcare groups indicating they did not partner with any external stakeholder or group.

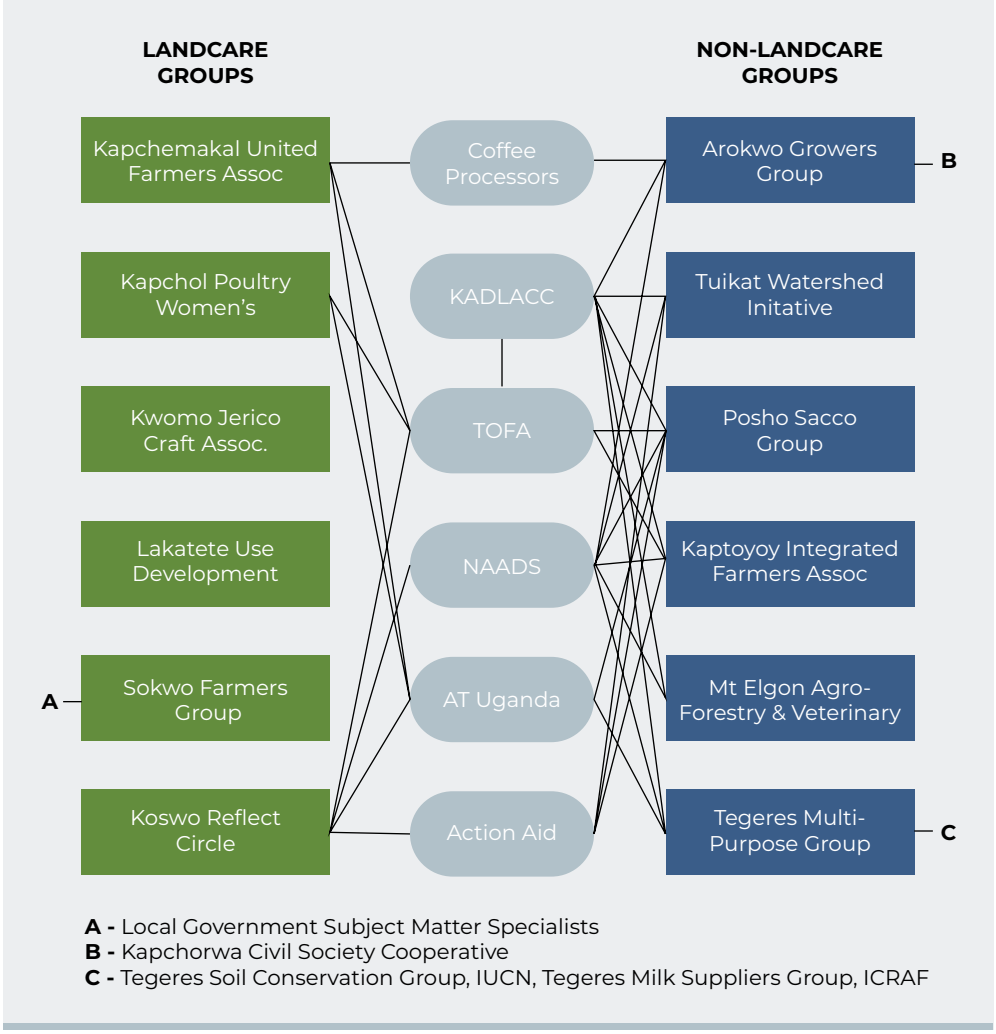



**Figure 10.5** Simplified social network analysis of group partners

Notes: KADLACC: Kapchorwa District Landcare Chapter. TOFA: Tuban Organic Farmers Association. NAADS: National (Uganda) Agricultural Advisory Services. AT Uganda: Appropriate Technology Uganda. IUCN: International Union for Conservation of Nature. ICRAF: International Centre for Research in Agroforestry (World Agroforestry Centre).

## Group vision

Visions of non-Landcare and Landcare groups identified through the study showed that all the non-Landcare groups expressed visions related to production, livelihoods and/or finances (Figure 10.6). While these visions were also shared by Landcare groups, the focus of the Landcare groups' visions were on improving agricultural and business production as well as restoration of the natural environment. There were two outlying visions among Landcare groups noted in the Other category. These included increased respect in the community and reduced population.

The main difference observed between the non-Landcare and Landcare group visions was the clarity within the group visions. The Landcare groups' visions were specific and measurable (for example, 'purchasing equipment for value addition of coffee production'). In the non-Landcare groups, the visions were more generic and unclear (for example, 'access to more information, technologies and services'). By focusing on improvements in agriculture and business activities, Landcare groups had a clearer understanding of the activities necessary to support their vision, correlating with the results in Figure 10.4. Furthermore, the Landcare groups' visions included both long-term and short-term objectives, in comparison to only half of the non-Landcare groups who did not qualify their vision from a temporal perspective.

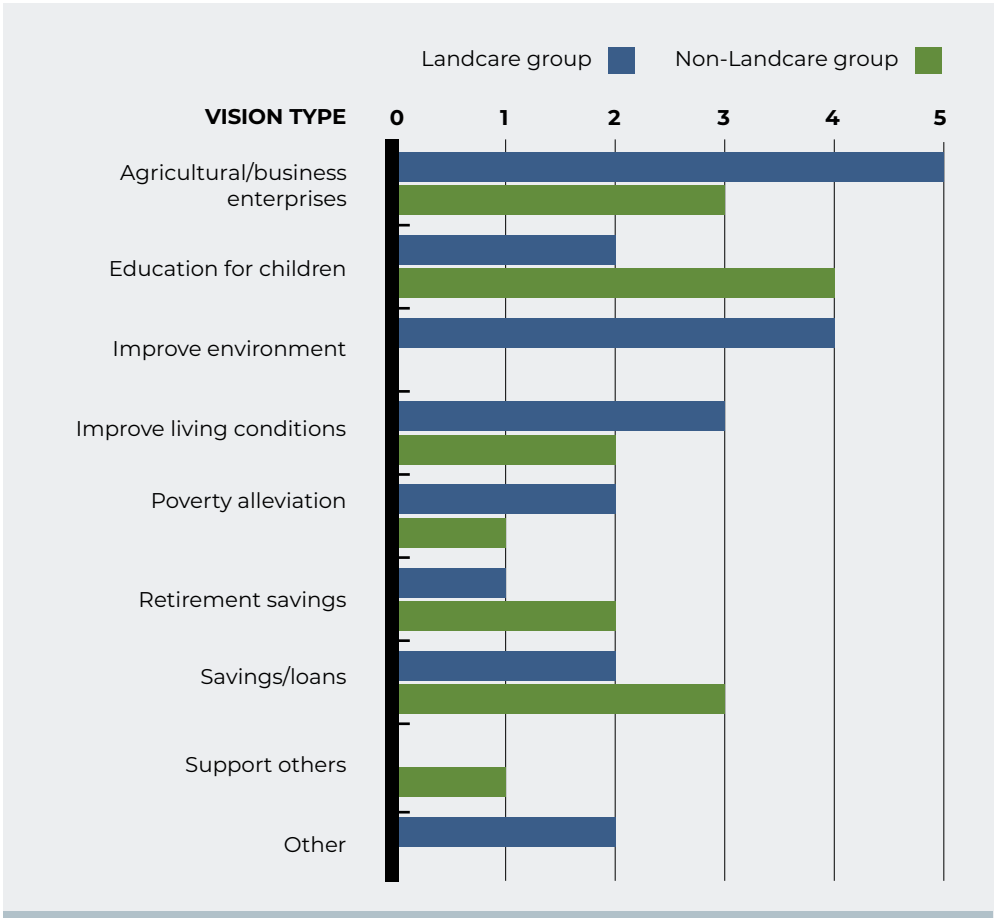



**Figure 10.6** Vision types of Landcare and non-Landcare groups

## Conclusion

This chapter has articulated the contribution of the landcare approach to food security and livelihoods in Uganda as a measure of contribution to poverty alleviation. A key driver for poverty, as well as a barrier to improved rural development, is identified as the continued degradation of the natural environment and resource base on which smallholder farmers depend. The evidence of the convergence of these issues has been clearly demonstrated for Uganda, and in particular, the focus sites of the study in Kapchorwa and Kween districts.

In light of failures of development efforts to address land degradation and alleviate poverty in rural areas, landcare as a systematic community empowerment approach to landscape management needs to be considered. The findings from Muller's study (2015) found there was a difference in the contribution of factors between Landcare group members and non-Landcare group members in influencing household level food security and livelihoods. Muller concluded that Landcare member households performed better than non-Landcare member households in the identified variables, supporting the claim that landcare in Uganda can contribute to improved food security and livelihood outcomes at the household scale.

Consideration of the contribution of landcare to the household development needs of rural communities raises scope for future consideration of the potential of landcare. As an approach, Landcare could contribute to the development agenda, especially given the unique crossover between landscape restoration and poverty alleviation through community empowerment. This is particularly relevant when exploring the potential to adopt and embed landcare principles into existing institutional arrangements at the grassroots.

The transaction costs of landcare in comparison to other approaches warrants further examination. It has been argued that when social capital is strong, communities are able to provide more cost-effective solutions than either governments or markets. This is particularly pertinent to Landcare for the protection of common resources necessary for the livelihoods of rural households. Subsequently, an analysis of the cost effectiveness of investing in strengthening social capital for effective collective action in lieu of government or market responses would add further value to the efficacy of the landcare approach.

As the global development agenda explores opportunities to address the nexus of issues between land degradation and incidences of poverty, the landcare approach and demonstrated experiences from Uganda bring a compelling argument to the table. Landcare is a unique model in that it facilitates effective collective action through empowering community to be at the forefront of landscape-scale planning and action implementation. While focused on a bottom-up participatory approach, landcare recognises the importance of multistakeholder partnerships to support the vision of community through enabling conducive policy environments and accessing necessary skills and technical capacity. Through creation of an environmental ethic to protect the common natural resources that the rural poor depend on, the landcare approach can benefit household livelihoods and positively influence food security. Subsequently, the adoption of a landcare approach that creates community ownership of natural resource challenges, to benefit that community at the household level, demands further consideration as a development approach to address incidences of the linked nature of poverty and landscape degradation.

# References


Abenakyo A, Sanginga P, Njuki J, Kaaria S and Delve R (20 August 2007) 'Relationship between social capital and livelihood enhancing capitals among smallholder farmers in Uganda', African Association of Agricultural Economists (AAAE), 2007 Second International Conference, Accra, Ghana.

Anderson B (2012) 'Converting asset holdings into livelihood: an empirical study on the role of household agency in South Africa', *World Development,* 40(7):1394–1406.

Anderson J and Feder G (2007) 'Agricultural extension', *in* Evenson R and Pingali P (eds) *Handbook of agricultural economics*, vol. 3, North Holland, Amsterdam.

Ashraf S, Iftikhar M, Shahbaz B, Ali Khan G and Luqman M (2013) 'Impacts of flood on livelihoods and food security of rural communities: a case study of southern Punjab, Pakistan', *Pakistan Journal of Agricultural Science,* 50(4):751–758.

Barungi M, Ng'ong'ola DH, Edriss A, Mugisha J, Waithaka M and Tukahirwa J (2013) 'Factors influencing the adoption of soil erosion control technologies by farmers along the slopes of Mt Elgon in Eastern Uganda', *Journal of Sustainable Development,* 6(2):9–25.

Barungi M and Tukahirwa (2017) 'Landcare bylaws increase adoption of soil erosion control technologies: evidence from Mt Elgon highlands in eastern Uganda', *Journal of Resources Development and Management,* 32:1–9.

Birungi P and Hassan R (2010) 'Poverty, property rights and land management in Uganda', *African Journal of Agricultural and Resource Economics,* 4:48–69.

Burkey S (1993) *People first: a guide to self-reliant participatory rural development*, Zed Books, London.

Campbell A (2009) 'Foreword', *in* Catacutan D, Neely C, Johnson M, Poussard H and Youl R (eds) *Landcare: local action – global progress*, World Agroforestry Centre, Nairobi.

Catacutan D, Muller C, Johnson M and Garrity D (2015) 'Landcare: a landscape approach at scale', *in* Minang P, van Noordwijk M, Freeman O, Mbow C, de Leeuw J and Catacutan D (eds) *Climate-smart landscapes: multifunctionality in practice*, World Agroforestry Centre, Nairobi.

Farrington J (1998) 'Organisational roles in farmer participatory research and extension: lessons from the last decade', *Natural Resources Perspectives 27,* Overseas Development Institute, London.

Friis-Hansen E and Duveskog D (2012) 'The empowerment route to well-being: an analysis of farmer field schools in East Africa', *World Development,* 40(2):414–427.

German L (2006) 'Moving beyond component research in mountain regions: Operationalizing systems integration at farm and landscape scales', *Journal of Mountain Science*, Science Press, 3(4):287–296.

Government of Uganda (2004) *Poverty Eradication Action Plan*, Ministry of Finance, Planning and Economic Development, Kampala, Uganda.

Government of Uganda (2005) *Proceedings of the mid-term review of national agricultural advisory services,* Government of Uganda, Kampala.

Griggs D, Stafford-Smith M, Gaffney O, Rockstrom J, Ohman MC, Shyamsundar P, Steffen W, Glaser G, Kanie N and Noble I (2013) 'Policy: sustainable development goals for people and planet', *Nature*, 495:305–307.

IFAD (International Fund for Agriculture Development) (2012) *Enabling poor rural people to overcome poverty in Uganda* [PDF], accessed 1 October 2020. https://land.igad.int/index.php/documents-1/countries/uganda/rural-development-7/1424-enabling-poor-rural-people-to-overcome-poverty-in-uganda/file

Lyamchai C, Ngatoluwa R, Mmbaga T, Massawe N, Lema N, Catacutan D and Tanui J (2007) *Policy and institutional context for natural resource management in Tanzania: a basis for developing a Landcare program*, Working Paper No. 65, International Centre for Research in Agroforestry (ICRAF), Dar es Saalam, East Africa.

MAAIF (Ministry of Agriculture, Animal Industry and Fisheries) (2010) 'Agriculture Sector Development Strategy and Investment Plan: 2010/11-2014/12', Agriculture for Food and Income Security, Government of Uganda, Kampala.

Mowo J, Tanui J, Masuki K, Nyangas S and Chemangei A (12–16 July 2009) 'The landcare approach to sustainable land management in the highlands of eastern Africa: the case of Kapchorwa, Uganda' [conference presentation], *4th Biannual Landcare Conference*, Limpopo, South Africa.

Muller C (unpublished) *Does landcare in Uganda contribute to improved food security and livelihood outcomes at the household scale?* [master's thesis], Charles Sturt University.

Nakakaawa C, Moll R, Vedeld P, Sjaastad E and Cavanagh J (2015) 'Collaborative resource management and rural livelihoods around protected areas: a case study of Mount Elgon National Park, Uganda', *Forest Policy and Economics,* 57:1–11.

NEMA (National Environment Management Authority) (2001) *Uganda State of the Environment Report 2000*, version 2, Ministry of Natural Resources, Government of Uganda, Kampala.

Nyangena W (unpublished) *Social capital and institutions in rural Kenya: is Machakos unique*? [PhD thesis], University of Gothenburg.

Okoba B and de Graaff J (2005) 'Farmers' knowledge and perceptions of soil erosion and conservation measures in the central highlands, Kenya', *Land Degradation & Development,* 16:475–487.

Olson J and Berry L (2003) *Land degradation in Uganda: its extent and impact,* Land Degradation Assessment in Drylands (LADA), Kampala.

Pender J, Place F and Ehui S (2006) *Strategies for sustainable landcare management in the East African Highlands,* International Food Policy Research Institute, Washington DC.

Renzaho AMN and Mellor D (2010) 'Food security measurement in cultural pluralism: missing the point or conceptual misunderstanding?', *Nutrition,* 26:1–9.

Sachs J (2012) 'From millennium development goals to sustainable development goals', *The Lancet,* 370:2206–11.

Schuurman FJ (1993) *Beyond the impasse: new directions in development theory,* Zed Books, London.

Singh L, Vats P, Singh M and Singh R (2008) 'Livelihood, food and health security with special reference to biotechnolog', *Plant Archives,* 8(2):505–525.

Tanui J (2005) *Empowering communities to regenerate livelihoods and landscapes revitalising grassroots knowledge systems: farmer learning cycles in AGILE,* African Highlands Initiative, Brief No. 4.

UBS (Uganda Bureau of Statistics) (2013) *Statistical abstract,* Statistics House, Kampala.

United Nations General Assembly (2014) *Report of the Open Working Group of the General Assembly on Sustainable Development Goals*, document number A/68/970, sixty-eighth session, agenda items 14, 19(a) and 118.

Winters P, Davis B, and Carletto G (2009) 'Assets, activities and rural income generation: evidence from a multi-country analysis', *World Development,* 37(9):1435–1452.

World Bank (2016) *Uganda poverty assessment 2016: fact sheet*, accessed 10 October 2020. https://www.worldbank.org/en/country/uganda/brief/uganda-poverty-assessment-2016-fact-sheet

Zake JS, Nkwiine C and Magunda MK (1999) 'Integrated soil management for sustainable agriculture and food security in Southern and East Africa', *in* Nabhan H, Mashali AM and Mermut AR (eds) *Proceedings of the expert consultation conference***,** Food and Agriculture Organization (FAO), Harare, Zimbabwe**.**

Photo: Susan King

# CHAPTER 11

# Landcare as a method of cultivating a sense of richness in life: the keys for encouraging individual capacity

**Tomomi Maekawa**

## Abstract

What are the keys for encouraging people to be engaged in landcare? In this chapter, as a Japanese scholar interested in landcare issues, I describe landcare as a method of cultivating the sense of richness in the lives of people who are engaged in it in various styles. Looking back on my days spent in Australia some years ago, through sharing the stories of people I met, I identify three factors that encourage individuals to exercise their own landcare capacity:

- organising things with a joyful mind
- helping each other in neighbourhoods
- being open and generous to others.

These key factors are consistent with the principle of subsidiarity envisaged in this book.

# Introduction

After spending time as a Japanese scholar experiencing landcare in Australia, I especially remember the relaxing and joyful time that I had with many warm people who provided me with a lot of valuable suggestions for my research and life. I lived in Albury while carrying out my field research on Landcare groups, and was based at the Charles Sturt University Institute for Land, Water and Society. The focus of my research was describing how landcare worked in Australia as a social system and looking at what Japan could learn from this. This chapter is based on the research and ideas explored in Maekawa, Seigel and Kuwako (2016), Maekawa and Aron (2016), Maekawa (2016) and Seigel (2010, 2012).

The trigger for the start of my life in Albury was brought by an encounter with Professor Michael Seigel in April 2012 when I was a PhD candidate. At that time, Michael had been introducing the concept of landcare in Australia through his papers written in Japanese. These papers showed the example of one Landcare group and the ideas of the landcare concept. Through meeting and listening to him, my interest in Landcare grew, and gradually I hoped to know firsthand what landcare was. With Michael's advice and support, I decided on a one-year stay in Australia by myself. During my time in Australia, I was fortunate to get many chances to meet and talk with people who were engaged in landcare in various ways. Some were members or staff members of local Landcare groups or networks, and some were temporary volunteers at the activities hosted by the Landcare groups or networks.

People I met shared stories with me of their days in landcare. When I hoped to visit groups or networks to carry out the interviews, people helped me by introducing me to their fellows or by providing transport to activities, offices or members' homes. I was glad to be able to have extensive time to talk with them on the long journeys in their cars. The stories, which were full of encouraging words, and their humanity have remained with me, although it is already over eight years since I was in Australia.

Things in Australia might have changed, particularly in the wake of the COVID-19 pandemic and its consequent social and economic impacts. However, I believe that it is valuable to focus on the fundamental attitudes of the people who were engaged in landcare. This will help future research on community design, which includes searching for the methodology for better communication among people with differing perspectives and values.

## Purpose and methodology

In other publications, I have described three characteristic elements of landcare as a social system:

- establishing a system and a spirit of multiparty partnership
- securing human resources that, with flexibility to adjust to each locale, act as coordinators supporting local groups
- maintaining a holistic support system from governments who respect the autonomy of local groups.

These, however, must not be the only reasons that landcare has spread across Australia as a movement and attracted many people. This is because landcare activities are originally and continuously voluntary and autonomous, based on the will of the individual.

In this chapter, through describing the fundamental attitudes of people involved in landcare from the stories provided by the people I met and from my participation in landcare activities, I will show that landcare is not just a natural resource management approach that provides efficiency in caring for the extensive land of Australia, it also holds the key for cultivating richness in the lives of people.

## Organising things with a joyful mind

The first fundamental attitude of landcare is that these groups and networks have a culture of organising their activities to be joyful for people who join them as volunteers or visitors. This gives the group members rewards for their work. This fundamental attitude can be seen in landcare activities such as assisting with field learning for students or a tree-planting tour for revegetation in rural areas.

### Assisting field learning for schoolchildren

At a nature park in a suburb of Melbourne, a 'Friends of' group organised and carried out field learning on the environment for local schoolchildren. I visited this park before this event and enjoyed watching beautiful birds while thinking how wonderful it would be if Tokyo had such an expansive nature park in the middle of the city. Later, this experience helped me see many little seasonal birds in trees, even at a nature park near my home.

The field learning at the park was organised and carried out through the collaboration of several different community groups and organisations. The content was rich in the variety of what the schoolchildren could learn from the local specialists. There were four activities:

- counting the number and the species of insects
- tree planting
- playing with some of the traditional tools of Aboriginal culture
- attending lectures about the living creatures in the water from rangers, with water watch instructions and analysis of the water bugs of the wetland.

The schoolchildren learned about biodiversity in the nature park, and about the existence and work of the community group and the volunteers who care for the park.

The local volunteers enjoyed assisting the schoolchildren with tree planting, teaching them how to use the tools and to treat the seedlings, and with analysing water bugs using magnifying glasses and tweezers. The volunteers were mainly retired local people. Some of them told me that they were happy to be volunteers and to contribute to helping others. Being a part of such a voluntary group and its activity seemed to make them feel connected with others, such as with fellow volunteers, with the staff members of environment-related organisations, and with the schoolchildren. They did not have to feel isolated in societies or communities, even after they had retired from their workplaces.

### A tree planting tour for revegetation

In a farming area in western Victoria, a Landcare network hosted an annual two-night camping event for tree planting on local farms, wetlands and other properties. This event was part of a project of making biolinks (wildlife corridors) in this area. It had achieved the planting of over 1 million seedlings from 1997 to 2013. By hosting the camping event, the Landcare network expanded the biolinks, and at the same time, formed connections among the participants of the event and between the participants and the environment.

The volunteers came from the city or the suburbs of Melbourne. On the first day, we travelled by bus from Melbourne to the lodge where we would stay. Unfortunately, it was rainy weather during the day time, especially on the second day, so we sometimes had to stop planting and rest under the trees. Despite this, about 200 participants successfully planted around 14,000 seedlings in the target areas.

What we enjoyed was not only simply planting trees, but also the communication with the other participants in the field. Some of the women told me that they had participated in this event every year for over 10 years. Some had met at this event for the first time and had become friends. This event was where they met to chat about their common interests, such as bushwalking and gardening. One man had retired from his workplace in Melbourne and had come along for over 10 years as well. He told me that he liked working in the field under the beautiful sky and the sunshine. He looked very happy talking with others while planting trees and over cups of tea during the event.

Tree planting was not the only activity. There were also many ideas to help the participants from the city enjoy the time and the local environment. In the evening, when we came back to the lodge from the fields after the hard work of planting, our tired faces turned happy with the wonderful barbecues and the campfire and country music under the canopy of thousands of stars. We enjoyed the talks by the local farmers and rangers, and wildlife watch tours behind the campsite. It was a warm and joyful time, even though it was winter. I remember hearing the guitar when I woke up at midnight from stiff legs and arms.

## Helping each other in neighbourhoods

The second fundamental attitude of landcare is helping each other in neighbourhoods. When a Landcare group is launched and the group starts planning its activity, its members are motivated by helping their neighbours in the local community, and by overcoming the challenge they are facing. This fundamental attitude can be seen in the shared stories, such as a bushfire recovery project and a series of activities by a Landcare group to overcome serious soil erosion.

### A bushfire recovery project

In a hilly area of Victoria, a Landcare network had been carrying out a bushfire recovery project since 2009. This was a project aimed at rebuilding and rehabilitating the local environment on the private properties that had been damaged in the Black Saturday bushfire, by supporting the landholders and local communities in this area. After the bushfire, the members of the network recognised that what was needed was recovery, support and direction to assist landholders. With the support of the Catchment Management Authority and the Australian Government, they started the project. They got voluntary support from private companies, the public sector, schools and other organisations in various ways. These investors supported in-field activities such as planting trees, building nest boxes for wild birds and animals, and supplying seedlings for plantings.

A wide range of activities were carried out as part of this project, such as assessments of burnt and non-burnt resources, seed collecting, revegetation and fencing. However, when I visited and talked with the members of this network, they told me that what they were carrying out through their Landcare network was simply helping each other. I realised that the required connectedness was built through being a member or a staff member of a Landcare group, and this tie among the local people worked effectively, especially when the risk of natural disasters appears.

### Overcoming soil erosion in rural farming

In the foothills of the Great Dividing Range in north-east Victoria, there was a Landcare group that had connections to local farmers since its inception in 1988. The Landcare group, composed of local farmers, was formed to tackle the problem of land degradation and other issues that were common in this area. Since its establishment, the group had

played an essential role of connecting the farmers to each other, and this became the basis for dealing with the shared problems. However, connecting the local farmers to each other is not an easy task in a rural farming area in Australia. Because of the expansive land of this continent, the farmers didn't have the time or the chance in their busy days across vast properties to meet at one place in ways that enabled them to talk and share information about their worries and hopes, and what they should do.

In this group, the key that enabled them to overcome this difficulty (caused by the huge physical distance among the local farmers) was the effort of the facilitator of this group. At that time, because Landcare itself had not been well known, the facilitator had to visit each house and explain what Landcare was and what the benefits were of establishing a group with other local people for dealing with the local environmental issues. This dedicated work by the facilitator encouraged the farmers to start a Landcare group. Since the establishment of the group, almost all the local farmers in this area became members.

They got together, discussed the issues they were facing in their area, planned and carried out their activities. They helped each other, with consultation and encouragement from the staff members of the Soil Conservation Authority. Being a member of the group gave the local farmers the opportunity to share their time, labour force, ideas and ideals. This resulted in completion of various activities for improving the health of the soil and the landscape of the area.

Soon after the group was established, they started activities aimed at improving the soil health in each property, by doing things such as implementing a method called 'whole-farm planning', in cooperation with each other. They gradually, however, came to plan and act, not simply in each property, but also in other places of this area, thinking of the whole community. When I visited the harvest festival organised by this group at a community hall, I saw that many families, including small children and elderly people, were enjoying their time with family and friends in a beautiful landscape.

In a rural farming area of Australia, the existence of a Landcare group and its activities were precious opportunities for local people to get together and enhance their social connectedness by spending joyful time with others. The harvest festival showed the fondness of the group members for their local environment and for the community, far beyond the boundary of private properties.

## Being open and generous to others

The third fundamental attitude of landcare is being open and generous to others. This is illustrated by a story from a staff member of a Landcare network in the southern coastal area of Victoria. When I visited this network to see how it supported local groups, I got not only a detailed understanding of their network but the opportunity to meet some members of groups and join a field event hosted in the area. All this was done with the help of transportation and accommodation at a network staff member's home. She talked to me about the area where she lived, which has a beautiful coastal landscape. She also talked about her own experience in Landcare, which showed me the importance of the existence of a Landcare group.

Because of the beautiful beach and the tourist-friendly facilities, the area is very popular with Melbourne residents who spend their time there during the holiday season. However, this means that there are houses that are empty for most of the year, except during the summer holiday season.

I didn't realise this was a problem until the staff member told me about her own experience. When she moved to this area with her family, the street they live in had about 20 houses. Her house, however, was the only one occupied all year around. She told me that Landcare creates an opportunity for the local people to come together, talk with others and join in with the local community. In this region, there were fewer churches than before, and these used to be places that provided these opportunities for local people. Considering this situation, the existence of a Landcare group and the network in this area not only provides an improved environment or farming-related situation, it also creates social connectedness among the local people, not just the farmers and environmental activists.

As I talked with her, I realised that the essential fundamental attitude of Landcare networks is openness and generosity to others, not only to members but also to non-members – even someone like me, an outsider from overseas. Through all of my visits to the Landcare groups and networks, I became convinced that the generosity of the members of the network and groups enables them to cooperate with one another when they face challenges that need to be overcome.

## Encouraging individual capacity by growing local connections

### Creating invisible and unique value

The stories described above suggest the range of benefits that landcare activities have brought to people, beyond the visible outcomes such as positive change in the landscape of Australia. These come from the links between the individuals, and between the individual and the local community. The three fundamental attitudes in landcare can be thought of as the key elements representing the social welfare that landcare creates or promotes. This leads me to think that landcare has contributed to cultivating the sense of richness in life for the people who participate in it.

Looking at these stories, we can see that people have a chance to exercise their own capacity, not only during emergencies such as natural disasters, but also in their daily lives. Landcare encourages people to take positive actions through their connections with others, especially when they are in a physically or mentally difficult situation (for example, when they were remote from city conveniences, or from their families or from workplaces after retiring).

### A farmer's life-changing story

One story that shows how landcare cultivates the sense of richness in life is about a woman who was both a farmer and a member of a Landcare group. She was a member of the Landcare group mentioned in the 'Overcoming soil erosion in rural farming' section above. The Landcare group she belonged to had carried out many local activities to overcome the issues caused by land degradation. When I visited her property, I could not see any remnant of the past degradation issues. However, she told me that there used to be a lot of land degradation and scarring from soil erosion before she started working with the other farmer members of the group. To illustrate the impact, she showed me pictures of the gradual visual changes of her property.

What she emphasised was that her life changed after she joined Landcare. By bringing local farmers together and working at a landscape level, they had changed the brown land

into a beautiful green land. She said that she had rarely had opportunities to learn how to improve the soil health and the productivity of the property, because she lived on a farm remote from the township for many years.

Landcare encouraged her to increase her capacity – her hope to learn and practise new knowledge became a reality through forming a local group with other farmers and working together. She realised her will and capacity through learning methods and practising them in the field to overcome the challenges that she and other farmers had been facing.

She said that through being active as a member of a Landcare group, she took roles in the activities of the group, such as project management, communication, planning, reporting, and editing and publishing the outcomes of their group to share them with others who were facing similar challenges. By creating social connectedness in local communities, Landcare groups function as a trigger that promotes individual capacity to be both exercised and shared with others.

**By creating social connectedness in local communities, Landcare groups function as a trigger that promotes individual capacity to be both exercised and shared with others.**

## Conclusion

Concerning the 'sense of richness in life', there must be various criteria for explaining or evaluating it. The stories in this chapter suggest ideas for enlightening the value of what landcare creates through linking people – an idea which may be hard to visualise and not suited for standardisation.

Through visiting and talking with people engaged in landcare, I recognised the idea of the 'sense of richness in life' as the delight that is brought by local connectedness, especially when we experience difficult situations in our lives. The suggested key foundation attitudes of people in landcare – organising things with a joyful mind, helping each other in neighbourhoods and being open and generous to others – can give you a hint for how to understand and exercise the concept of the 'richness in life'.

## Acknowledgements

The field research carried out in Australia was greatly supported by Charles Sturt University Institute for Land, Water and Society, Mr Rob Youl (then Chair of Australian Landcare International) and the late Professor Michael Seigel at Nanzan University. In addition, the research could not be realised without the help of many people in the landcare field. I sincerely appreciate everyone who kindly provided me with support or help in Australia, especially those people who made time to carry out the interviews and to let me participate in their group activities.

The stories in this chapter are based on field research carried out from June 2013 to May 2014.

## References


Maekawa T, Seigel MT and Kuwako T (2016) 'A study of the educational approach of the Australian landcare movement', *International Journal of Affective Engineering,* 14(5):73–82.

Maekawa T and Aron D (2016) 'Community coordination for addressing local environmental challenges: application of the Australian landcare model to Japan', *Interdisciplinary Environmental Review,* 17(3/4):167–181.

Maekawa T (2016) 'A method of partnership between governments and citizen's community groups for achieving environmental sustainability in the landcare movement in Australia', *International Journal of GEOMATE,* 11(24):2284–2290.

Seigel M (2010) 'Australia Boomanoomana Landcare Group', *in* Nanzan University Institute for Social Ethics (ed) *Syakai to Rinri,* 24:63–82.

Seigel M (2012) 'Chiikikyoudoutai, Houkatsutekitorikumi, Renkei', *in* The Society of Biosophia Studies (ed) *Biostory,* 17:37–43.

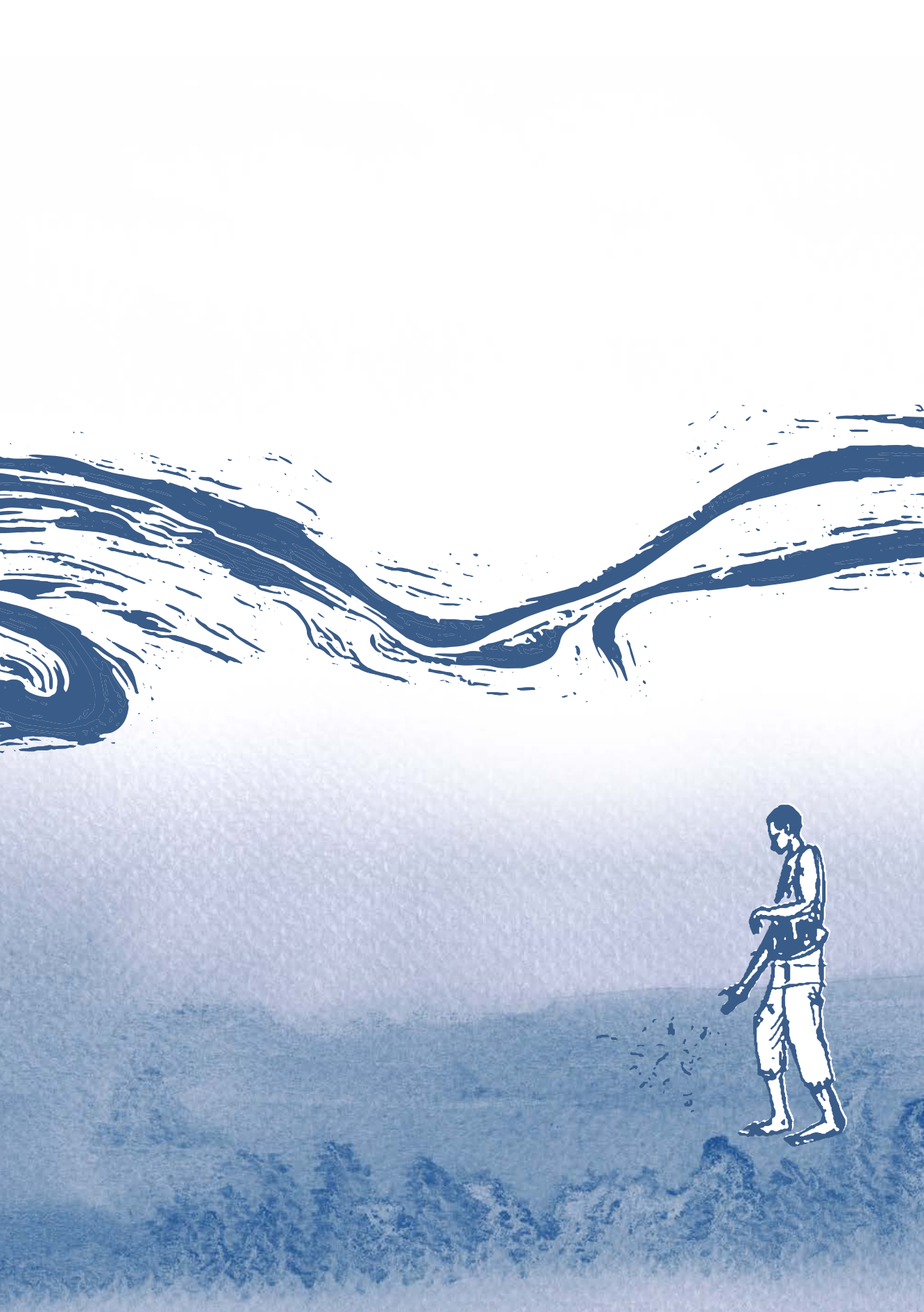
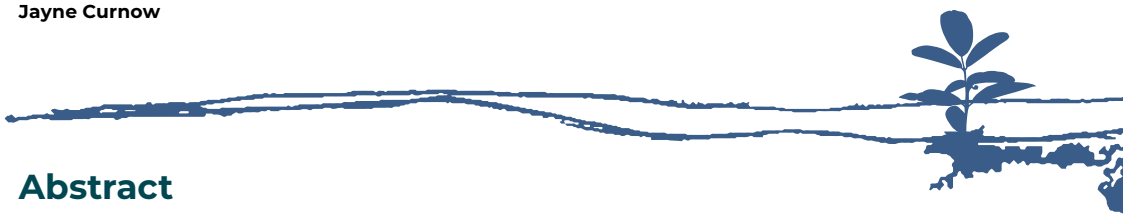


Photo: Jeffrey Maitem

# CHAPTER 12

# Landcare: integrating agricultural extension with natural resource management

**Jayne Curnow**



## Abstract

The flux inherent in agricultural extension continually provides novel opportunities for innovation. Entry points are through:

- the introduction of new technologies and agricultural practices – the what of agricultural extension
- methods such as technology transfer or participatory approaches via different modes of delivery by public and/or private providers – the how of agricultural extension.

While constantly evolving, the refrain of low adoption is an enduring theme in the discourse and practice of agricultural extension. Despite the 'obvious' benefit to the farmer, the extension field is littered with the seeds of great ideas that did not grow. In the southern Philippines, a group of researchers, staff at government and non-government agencies and farmers have been trialling the delivery of agricultural extension based on landcare principles augmented with an assets-based community development method of engagement. The Livelihood Improvement through Facilitated Extension approach breathes new life into both the 'what' and 'how' of agricultural extension to deliver cost-effective extension driven by local communities that benefits people and the environment.

## Introduction

Landcare exists in at least 25 countries around the globe, emerging largely without any systematic strategy to gain a global footprint. It operates in Australia, Indonesia, the Philippines, Japan, Pakistan, India, Sri Lanka, South Africa, Uganda, Tanzania, Kenya, Malawi, Botswana, Namibia, Zimbabwe, Ethiopia, Rwanda, Spain, Germany, Iceland, Canada, the United States, New Zealand, Fiji and Tonga. In two countries – Australia and South Africa – landcare has been incorporated into government policy and programs to deliver conditional grants framed within national, state and provincial priorities. In both countries, landcare has provided a platform for exchanging information, knowledge, technologies, skills and experiences among farmer peers and a wide range of stakeholders. This makes it relevant and worthy of analysis as a form of agricultural extension. Landcare also continues to be part of the South African Government's efforts to manage natural resources, increase agricultural productivity and provide employment (see Francis Steyn in Chapter 13). Australian Government policy commitments peaked during the Decade of Landcare in the 1990s, after which resources were redirected to other approaches, primarily regional natural resource management (NRM) bodies in all states and territories. At the state level, interest appears to be resurfacing in South Australia, with the enactment of the *Landscape South Australia Act 2019* establishing eight landscape regions with emergent details on management, and grants mirroring many aspects of Landcare.

A key strength of landcare is that it is not rigidly structured, nor is it rules based. As such, it can arguably be adapted at any scale. Landcare concepts are equally applicable as government policy and a clarion call for community-led action. Scholars and practitioners debate where the margins lie and what can or cannot be considered landcare (Lockie 2014). Attempts to define exactly what landcare is and is not invariably lead to cordial, productive debate that commonly results in the agreement that it is a difficult exercise. I have been party to a number of these fascinating discussions seeking to define landcare, to distil an essence from the policies, principles, practices, ethics and grassroots and community movement monikers that are attached to landcare. While this makes for good conversation, and at times a lively intellectual debate, the key point is that landcare is successful precisely because its tenets are broadly applicable and readily translated into actions to address local requirements and diverse issues of concern, ranging from commodity, community and/or conservation interests.

What appears most fruitful is to consider landcare as adhering to a suite of broad principles. The *Australian Framework for Landcare* (Australian Landcare Council Secretariat 2009) lists six principles that suggest that landcare:

- delivers self-determination
- is inclusive and collaborative (encourages working in partnerships)
- is apolitical (might have multipartisan support)
- is flexible, adaptable and innovative
- is responsive to different needs and cultures
- is based on a clarity of purpose.

In a different but not incompatible register, South African Landcare (Prior 2012:18–19) identifies six more detailed principles that seek:

- integrated sustainable NRM addressing the primary causes of natural resource decline
- community-based and led NRM within a participatory framework

- the development of sustainable livelihoods for individuals, groups and communities utilising empowerment strategies
- government, community and individual capacity building through targeted training, education and support mechanisms
- the development of active and true partnerships between governments, Landcare groups and communities, non-government organisations and industry
- the blending of appropriate upper-level policy processes with bottom-up feedback mechanisms to give voice to local communities.

Further, many instances of NRM or sustainable land use can be considered landcare even if they are not labelled as such. In Chapter 9, Joseph Runzo-Inada looks at the parallels between landcare and the resilience strategy of Toyama, Japan, which seeks to integrate rural and urban spaces with locally driven sustainable NRM 'to nourish its citizen's connection to the land and to agriculture'. Rather than rigidly demarcating what is or is not landcare, a focus on adherence or contribution to landcare principles has been a positive self-identification approach (Prior and von Maltitz 2004; Johnson and Muller 2020).

For both the Australian and South African governments, restoration of denuded landscapes and NRM has been a priority. The emergence of landcare in the Philippines was also based on NRM issues but was promulgated by the efforts of an international non-government organisation and self-organised farmer groups. Philippines landcare is subsidiarity in action; it is locally based and action-oriented, and it draws authority and legitimacy from its membership. More recently, landcare in the Philippines has been leveraged as a form of agricultural extension that incorporates NRM. Through an examination of landcare in the Philippines, I outline the many ways that Landcare can not only deliver modern agricultural extension, but can do so in a way that addresses NRM and the complex interactions of biophysical and social forces. Agricultural extension that draws on the principles and practices of landcare can contribute to the positioning of people at the centre of agricultural extension, mitigating strong tendencies towards a focus on technology transfer that frequently struggles to gain widespread adoption.

**Philippines landcare is subsidiarity in action; it is locally based and action-oriented, and it draws authority and legitimacy from its membership.**

## Agricultural extension

Agricultural extension in most countries is now delivered by a range of service providers across the public and private sector. From a global perspective, extension is increasingly pluralistic, with public, non-government and private sector players (Davis et al. 2020). Common among providers of extension services is the challenge of low rates of adoption and limited uptake of new technologies. The predominant, linear 'research knowledge to farmer technology' transfer approach is failing to improve agricultural development in the 21st century (Tropical Agricultural Platform 2016). Davis et al. (2020) make a number of policy recommendations, including the need to make extension more demand-driven and to reduce top-down approaches to sharing information. These contemporary insights add

a refreshing perspective to the large body of literature that frames the limited efficacy and impact of extension as an issue of farmer behaviours, perceptions and decision-making processes. What is still uncommon is a focus on issues to do with the extension provider's assumptions, motivations and modes of delivery within the broader social and political position of farmers.

One of the hallmarks of best practice in extension has been to approach technological challenges or opportunities within the context of farming systems (Kernot, personal communication, 2019). A focus on agricultural systems emphasises the interconnectedness of the biophysical environment with an understanding of the trade-offs and knock-on effects of interventions on the agriecological ecosystem at nested scales. The biophysical focus has often been complemented with economic insights, but most frequently, there been little attention to how extension fits into the social, gendered and political context of the farmer and the agricultural enterprise. To address this dearth of understanding, a humanising of agricultural extension is proposed (Cook, Satizabal and Curnow 2021). The humanising proposition aims to meaningfully orient extension towards female and male farmers by bringing the dynamics of power, place and people into the frame along with technical innovations.

## Landcare and agricultural extension in the Philippines

Landcare is one pathway to a more humanised form of extension that empowers farmers by starting with their lived realities and valuing their expertise and their deep knowledge of their environment. This is exemplified by the practices of landcare as extension in the southern Philippines. In the early 1990s, the International Centre for Research in Agroforestry (ICRAF) undertook a program to address soil erosion in Claveria on Mindanao Island. At the time, there were limited personnel and resources to deliver government agricultural extension services, so ICRAF brought together local actors, including farmers, researchers and government staff, to use and adapt contour hedgerows and natural vegetation strips to conserve soil (Johnson and Muller 2020). Farmers quickly began to organise themselves to pass on these techniques. By the turn of the century, these groups had formed the Claveria Landcare Association, connecting more than 200 groups.

**Landcare is one pathway to a more humanised form of extension that empowers farmers by starting with their lived realities and valuing their expertise and their deep knowledge of their environment.**

In the late 1990s, ACIAR commissioned a study into the success of the approach in the Philippines and found that it delivered strong positive impacts both in terms of conservation and building farmers' social capital (Vock 2012). Based on this evidence, ACIAR funded an action-research project that commenced in 2003 to trial agricultural extension based on the principles of landcare more widely across Mindanao, including in zones vulnerable to conflict. The Australian–Philippines research team partnered with the Landcare Foundation of the Philippines, which had commenced operations in the same year. The positive impact of the work prompted ACIAR to commission subsequent projects

and this has delivered a pipeline of research-for-development funding for more than 20 years. The Philippines Government has been an active partner from the most local level (*barangay*) through to the national level, through the Philippines Council for Agriculture, Aquatic and Natural Resources and Development (PCAARRD).

In the most recent project (ACIAR n.d.), the principles of landcare have been operationalised with the methods of assets-based community development to further integrate a focus on farmer livelihoods in agricultural extension. This has resulted in the Livelihood Improvement through Facilitated Extension (LIFE) model. LIFE has been designed, tested, revised and retested and is now being rolled out in multiple sites across Mindanao. PCAARRD and the Landcare Foundation of the Philippines lead the scaling of the LIFE model, and members of the ACIAR-commissioned research team provide an on-demand support role in the shift from research-for-development to government-led implementation and integration into policy and services.

Why has the Landcare/LIFE approach to agricultural extension and NRM gained traction in the Mindanao context of communities vulnerable to conflict? The significant investment of time and resources in research-for-development cannot be ignored; however, landcare has also been hugely successful on Bohol Island in the Philippines without this scale of investment (Campbell 2018). I suggest that adherence to the principles of landcare has been the major factor in delivering agricultural extension on Mindanao with such enviable results and impacts. Revisiting the principles of landcare as articulated in South Africa, the LIFE model delivers through:

- **Integrated sustainable NRM addressing primary causes of natural resource decline.** The genesis of this approach was addressing soil erosion, which had been achieved within the context of different farming systems. NRM issues continue to be a touchstone around which LIFE is deployed. In the South Cotabato region of Mindanao, 92% of members from the participating farmer groups (Saravia and Assumption) were involved in generating income from charcoal production, which contributes to deforestation. After participating in LIFE, 46% of farmers reported that they had completely stopped making charcoal to solely focus on vegetable production as an alternative livelihood.
- **Community-based and led NRM within a participatory framework.** Soon after ICRAF introduced hedgerows, natural vegetation strips and soil conservation techniques, farmers took over and drove a process of extension through organising groups to disseminate the information. In this instance, community participation preceded the organising of participatory framing. Local communities rally around an issue of shared interest, which often leads to other positive outcomes. For example, the Ipil Municipal Environment and Natural Resource Office in Zamboanga Sibugay province is partnering with the Katipunan Vegetable Agar-agar Growers Association to implement a program related to the declaration of the turtle protection and sanctuary areas. This well regarded and active growers association will encourage community awareness of and compliance to sanctuary protocols.
- **Development of sustainable livelihoods for individuals, groups and communities utilising empowerment strategies.** The focus of increasing production and improving NRM was always conceived as being in the service of improving wellbeing and food security in locations that are varyingly remote and impacted by the conflict on Mindanao. Social organisation, trust and cohesion were positively impacted as farmers from different religious faiths found common ground. The Magdaup Vegetable Growers

Association (in Ipil, Zamboanga Sibugay) formed through the LIFE project comprises predominantly women members of different faiths and cultural backgrounds. The group is based in an area of historical violent armed conflict. Through joint activities, such as farmer field schools, the relationship among the association's members has vastly improved. Previously there was a lack of trust, but members are now keen to help each other. These farmers now visit each other's farms, and significantly, the women encourage involvement in activities that promote cooperation and peace (Beza, Johnson and Fuentes 2018).

- **Government, community and individual capacity building through targeted training, education and support mechanisms.** Landcare/LIFE is communicated through local individuals who are trained as community facilitators. In a significant shift away from top-down technology transfer, the co-creation and sharing of knowledge is emphasised (Carr 1995). The LIFE manual, developed through a co-creation process, includes modules on engaging farmers and institutional partners, including multiple tiers of government as well as the application of the model following disasters with insights from managing the COVID-19 pandemic.
- **Development of active and true partnerships between governments, Landcare groups and communities, non-government organisations and industry.** 'Seeing is believing' is a mantra of Landcare/LIFE. This involves facilitating a range of meetings and workshops and travelling to different sites. These opportunities for interaction are where representatives from all these groups can instigate, affirm or expand productive partnerships. As outlined below, the PCAARRD-led PULL (PCAARRD-UP Mindanao-Landcare LIFE) program exemplifies genuine, active partnership building.
- **Blending appropriate upper-level policy processes with bottom-up feedback mechanisms to give voice to local communities.** At trial sites, Landcare/LIFE continues independently of the ACIAR-commissioned research, providing an opportunity for those who formulate and implement policy to visit sites and hear directly from these communities. This has seen Landcare/LIFE incorporated into *barangay* (village/district), municipal and provincial development plans and annual investment plans. This is exemplified in the active collaborations between the Olo-clofe B'laan Landcare Association, the *barangay* council and the city agricultural office described by Mary Johnson and Evy Elago-Carusos in Chapter 17.

This principle of blending policy processes with bottom-up feedback mechanisms dovetails neatly with the implementation of the principle of subsidiary, defined earlier in this book as the making of decisions at the most appropriate scale to effect positive outcomes for society. With the LIFE model, a great deal of decision-making power is vested in farmers and farmer organisations, which then feeds up to the *barangay* level. PCAARRD has heeded the messages from the communities and invested in the 'Enhancing livelihoods in conflict-vulnerable areas in Mindanao through the LIFE model' program, also known as the PULL program (University of the Philippines, Mindanao n.d.), on the pathway to informing national policy and programs. Of significance is the breadth of partnering agencies involved in this activity:

- four *barangays* (Magdaup, Canahay, Talisawa and Tomicor)
- four municipalities (Surallah, Ipil, Datu Abdullah Sangki and Ampatuan)
- Department of Agriculture Region XII (regions are an administrative unit and Region XII includes four provinces, five cities, 45 municipalities and some 1,195 *barangays*)
- Department of Social Welfare and Development Region XII

- Bureau of Fisheries and Aquatic Resources (Surallah, South Cotabato and Ipil, Zamboanga Sibugay)
- Department of Trade and Industry
- Philippine Coconut Authority
- UP Mindanao and Landcare Foundation of the Philippines from the previous ACIAR-commissioned research.

With such a wide diversity of agencies involved, a multiplier effect may come into play. Opportunities for policies to be informed by community feedback across or between agencies may also emerge that further institutionalise the LIFE model or stimulate innovation in other sectors.

## Conclusion

Debate about what landcare is or is not comes to the fore when 'jumping the fence' to create different applications of landcare across the globe. The principles of landcare are foundational to the implementation of LIFE in the Philippines. From this base has grown a low-cost, sustainable model of agricultural extension that effectively integrates human wellbeing with NRM. The LIFE model is a starting point for operationalising the principle of subsidiarity, with decisions emanating from the grassroots being actioned locally and then feeding into decision-making at higher levels of government. The success of LIFE has prompted more formal tiers of the Philippines Government to follow suit by formulating programs, allocating funds and codifying in policy this new mode of extension that puts female and male farmers at the heart of the 'how' and 'what' of agricultural extension.

## Acknowledgements

I am very grateful to Dr Mary Johnson who provided substantive input on landcare in the Philippines. Thanks also to Mary and Noel Vock for reviewing a draft of this chapter and providing critical insights.

## References


ACIAR (n.d.) *Improving the methods and impacts of agricultural extension in conflict areas of Mindanao, Philippines*, ACIAR website, accessed 12 February 2021. https://www.aciar.gov.au/project/asem-2012-063

Australian Landcare Council Secretariat (2009) *Australian Framework for Landcare,* AWE website, accessed 12 April 2021. https://www.awe.gov.au/agriculture-land/farm-food-drought/natural-resources/landcare/the-australian-landcare-framework

Beza BB, Johnson M and Fuentes ASY (2018) 'Women and their roles in peace building in conflict vulnerable areas of Mindanao, Philippines', *in* Marsh G, Ahmed I, Mulligan M, Donovan J and Barton S (eds) *Community engagement in post-disaster recovery*, Routledge-Taylor & Francis Group, UK.

Campbell A (2018) *The essence of landcare: flourishing in the Philippines*, ACIAR website, accessed 2 May 2021. https://aciar.gov.au/media-search/blogs/essence-landcare-flourishing-philippines

Carr A (1995) 'Innovation of diffusion: Landcare and information exchange', *Rural Society,* 5(2-3):56–66.

Cook B, Satizabal P and Curnow J (2021) 'Humanising agricultural extension: a review', *World Development,* 140, accessed 2 May 2022. https://doi.org/10.1016/j.worlddev.2020.105337

Davis K, Babu S and Ragasa C (eds) (2020) *Agricultural extension: global status and performance in selected countries,* International Food Policy Research Institute, Washington, DC.

Johnson M and Muller C (2020) *Investigating the potential of landcare: final report*, ACIAR website, accessed 2 May 2022. https://www.aciar.gov.au/publication/technical-publications/investigating-potential-international-landcare-final-report

Lockie S (2014) 'Beyond a good thing: political interests and the meaning of landcare', *Rural Society,* 5(2–3):3–12.

Prior J and von Maltitz G (unpublished) *Draft policy and institutional arrangements for the South African Landcare Program,* report for AusAID and the Government of South Africa.

Prior J (2012) 'Participation and social capital in sustainable land management: lessons learned from international landcare'*, in* Limtong P, Sirichuaychoo W, Chitchumnong T, Dissatapon C, Waramit W, Leaungvutiviroj C, Chuenpichai K, Watana S, Puttaso A, Kunta K, Damrongsadsiri K and Jaichuen A (November 28–30 2012), *Sustainable land management to enhance food production of APEC members* [workshop proceedings], APEC Agricultural Technical Cooperation Working Group, Chang Mai, January 2013. https://www.apec.org/Publications/2013/03/Sustainable-Land-Management-to-Enhance-Food-Production-of-APEC-Members

Tropical Agricultural Platform (2016) *Common framework on capacity development for agricultural innovation systems: synthesis document* [PDF], accessed 12 April 2021. https://www.cabi.org/Uploads/CABI/about-us/4.8.5-other-business-policies-and-strategies/tap-synthesis-document.pdf

University of the Philippines, Mindanao (n.d) *Enhancing livelihoods in conflict-vulnerable areas in Mindanao using the LIFE model*, accessed 4 May 2021. https://sites.google.com/view/pull-upmindanao/home

Vock N (2012) *Sustaining and growing landcare systems in the Philippines and Australia*, Impact Assessment of ACIAR project ASEM/2002/051, ACIAR, Canberra.

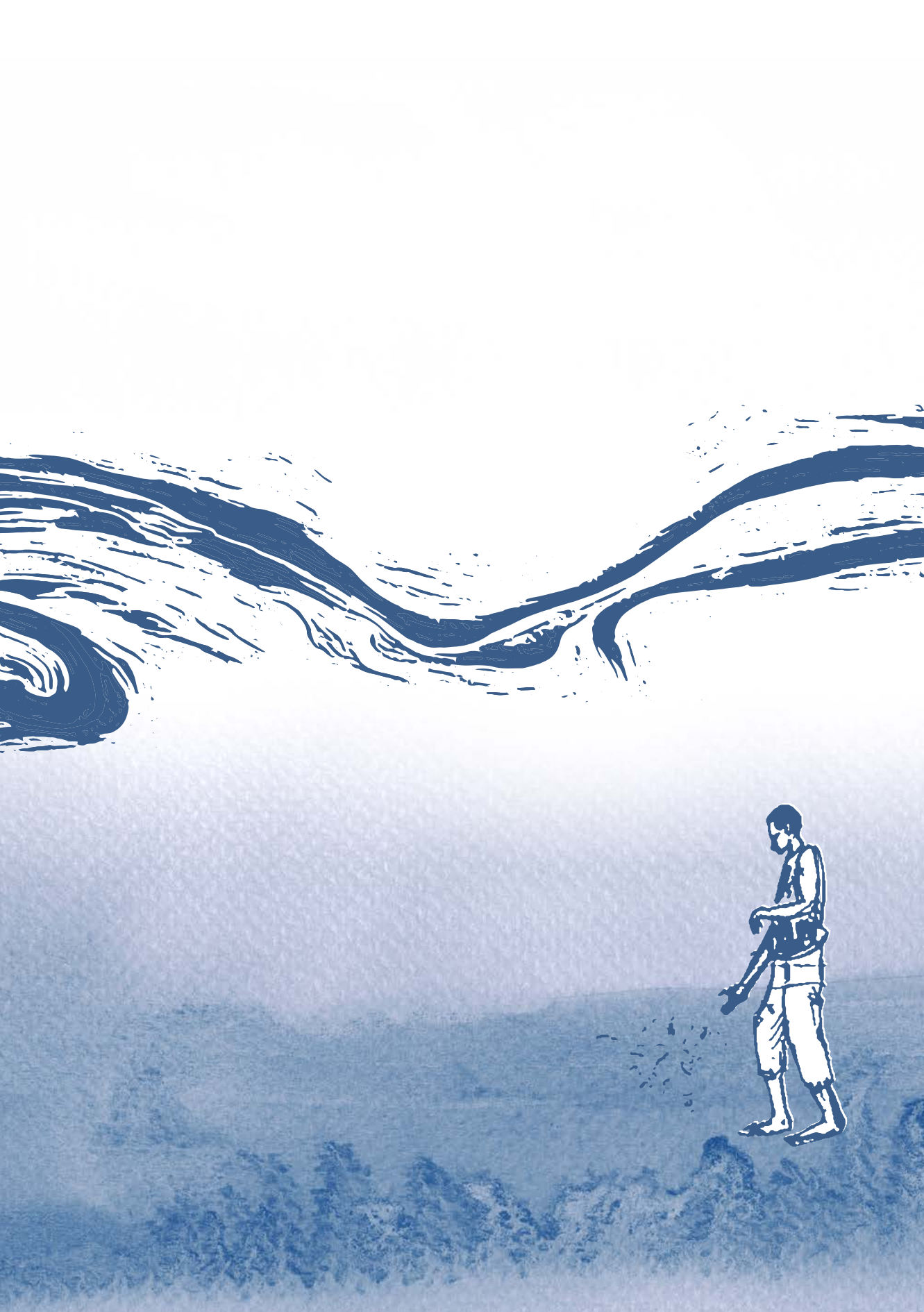


Photo: Francis Steyn

# CHAPTER 13

# Farming in the arid Koup region: a truly South African example of landcare

**Francis Steyn**

## Abstract

**The landcare model has offered practical and vital solutions to a group of landowners farming in the arid central Karoo region in the Western Cape of South Africa. These farmers sought to address threats around stock predation (with farmers losing more than half their lambs to predators every year) and drought. The landcare model seeks to plan holistically and strategically, at an area-wide scale as opposed to a farm scale. Landcare's support for collective approaches that seek ways to protect natural resources and to secure a viable farming business caught their attention. Once this group of farmers realised the need to design, develop and implement the plan from the ground up, they officially launched the Koup Area Wide Planning Project. Over many years, this project became known as a gold standard for community-based natural resource management, and it now serves as an example for any farming community around the world.**

## Introduction

Landcare is a national movement aimed at restoring sustainability to land and water management in both rural and urban areas. It encompasses integrated sustainable natural resource management (NRM) where the primary causes of natural resource decline are recognised and addressed. Landcare is community-based and community-led and seeks to achieve sustainable livelihoods through capacity building and related strategies.

In South Africa, in the arid central Karoo area, a group of farmers has captured the essence of landcare. Facing a set of extreme challenges, including drought and predation, these farmers set out to understand, repair and enhance their agricultural and natural landscapes. They achieved this by launching an area-wide planning project. This project was designed by a landcare partnership consisting of landowners, government departments and academia. It's an ideal example of developing self-reliance through partnerships and networking. However, ultimately the Koup Area Wide Planning Project is implemented from the ground up by people who make use of the natural resources on the ground and who benefit from the project. This is vital to landcare in the Western Cape in South Africa. My philosophy is that farmers must lead the process and be at the centre of the journey in order to achieve sustainability in the agriculture sector. The landcare model is where local people identify concerns, set the future vision of their home and prioritise and implement activities. We, as landcare partners, transition this vision to reality.

Photo: Francis Steyn

### Surviving the challenges – droughts and predators

Farmers in the Koup region in the central Karoo face many challenges that are threatening the viability of farming. Some farmers have even paid the ultimate price and not survived the tough environmental and economic climate. Stock predation tops the list of concerns for farmers here. Most land users farm with sheep, but sheep are vulnerable to predators such as black-backed jackals and baboons. On average, farmers lose up to 60% of their lambs annually to predators. This has economic implications for the sector. At the same time, the ongoing drought has impacted the agriculture sector. Since 2014, farmers have received considerably less than average annual rainfall. Given that average annual rainfall is only around 120 mm, any reduction impacts negatively on livestock and the natural environment.

According to Lukas Botes, a local farmer and Chair of the Koup Area Wide Planning Project, water levels in his boreholes have dropped dramatically. 'I have never had it this bad,' he says. As a result, he has reduced the number of sheep on his farm to nearly half the carrying capacity of the land. Other farmers in the region have done the same. Botes says, 'As a result of the drought, farmers here have less sheep than they should have. And I keep asking myself the question: Will I loan money to feed the sheep, or must I sell more sheep? If the drought keeps going, I will have to sell more.'

For Botes, the impacts of the drought stretch beyond his livestock and his livelihood. Farmers here care deeply for their environment. They farm on natural landscapes containing threatened plant species. The district is covered in Nama Karoo biome vegetation. It is unique – many plant species are endangered and some are already extinct. He says, 'For me as a farmer, it's not about the critters and little insects, it's about the plants. If I destroy the plant, how can I get it back with just 120 mm of rainfall? And that's what I believe we should protect. Because with our rainfall so low, there's little chance for the plant to recover.'

Given this challenging environment, farmers were forced to start questioning the viability of agriculture. Botes says, 'The farming community in the Koup are in the weakest financial position ever.' That in turn affected the livelihoods of farmworkers. The number of employees on farms in the region on average decreased from four to one. Workers were seeking other employment opportunities because the landowners were not able to pay them. Botes says, 'The problem for us in terms of agriculture is how to make it sustainable again.'

## The start of the Koup Area Wide Planning Project

Farmers first expressed an interest in the landcare model in 2011. The Department of Agriculture, Western Cape, hosted a workshop for farmers in the Koup and Koup IV region in the central Karoo. Here the landcare team in the Western Cape introduced the concept of holistic, area-wide planning. After the meeting, I was approached by farmers from the Koup area and they expressed an interest in following this concept.

At a second meeting, attended by farmers and extension officers, the landcare principles were detailed. It was explained that landcare is a community-based NRM initiative where the community takes leadership. It was explained that they, as farmers, need to build a business plan for the area they choose as the project area. Farmers took up the challenge, and together highlighted their main focus: to address the challenge of predators.

**[Farmers] took control of the project, ensuring it was planned by those affected and implemented by the community. Since then, this project has become one of the best examples of community-based NRM in the Western Cape, and is an example for any farming community in the world.**

It was only at the third meeting that farmers really understood the essence of landcare. During this meeting, fewer farmers and fewer extension personnel attended. The chairperson of the meeting was unhappy with the attendance, and questioned Landcare officials about the poor numbers. The reply from the officials was, 'You as the community are in charge of this initiative, you are in total control of who you invite and any actions or projects that are decided upon. Should this area-wide planning project fail, then it is because you did not do anything. This is a vital part of community-based natural resource management.'

This completely changed the way farmers in the area understood their role. They took control of the project, ensuring it was planned by those affected and implemented by the community. Since then, this project has become one of the best examples of community-based NRM in the Western Cape, and is an example for any farming community in the world.

### A project with big reach

At this point, 19 farmers, led by Botes, covering an area of 80,000 hectares, created the Koup Area Wide Planning Project. The community agreed to build the project on three legs:

1. job creation:
   - a fencing project
2. a series of research studies on themes:
   - economic research into farming
   - ecological research into predators
   - ecological research into vegetation and carrying capacity of the land
   - a scanning project to investigate low weaning percentages
   - a sociology project to measure the improvement of livelihoods of people in the farming area
   - a farmworker survey to determine skills and needs
   - a study group formed to continue to assess sustainable farming methods, strategies and plans based on research
3. empowerment:
   - a fencing project to increase maintenance
   - farmworker training projects (for example, AgriReap)
   - mentorship support.

First, the farmers had to bring in the right partners. This reflected the landcare model, where local autonomy and self-reliance are supported by partnerships and networking. The Landcare team in the Western Cape was one such partner. The farmers developed a

funding application (which included a jackal-proof fence and the repair of boundary fences between farms) but their initial application was turned down by government. The farmers went back to the Landcare team, and on their advice, transformed their proposal into a community-led job-creation scheme. This was presented as both a jackal-control effort and a means to facilitate sustainable agricultural livelihoods and wildlife stewardship (Nattrass et al. 2014). This time, the Koup project was successful, with funds obtained through a Landcare fencing subsidy scheme. By now, the proposal had evolved to an empowerment project, providing employment to former agricultural workers, managed by team leaders from historically disadvantaged communities.

According to researchers from the University of Cape Town's Centre for Social Science Research, the project was possible only through the support and innovative funding strategies of Landcare officials. According to Nattrass et al. (2014), 'The experience points to the centrally important role of innovative and supportive government officials in leveraging funding for initiatives like the Koup fencing project.' It also highlighted the efforts of individual farmers, who took on the leadership roles required. These farmers were responsible for addressing any collective action problems that resulted in the project (where previously some farmers may have felt they do not have to take responsibility for the work taking place on their properties). These leading farmers could communicate with landowners at various local social gatherings, to encourage greater buy-in and responsibility.

The Koup Area Wide Planning Project also connected with the Centre for Social Science Research team as a project partner. By involving social scientists and ecologists, the farmers could expand their area-wide fencing project into a study site, including looking at the biodiversity on sheep farms and the relationship between ecology, predation, farming practices and stock losses in the area. This provided a huge step forward in generating further interest and momentum (Nattrass et al. 2014).

### Creating jobs and empowering communities: the launch of a fencing project

Some jackal-proof fencing infrastructure had been completed in 1952, with the full subsidy provided by government. But the fence had not been maintained and was no longer controlling the movement of predators. With support from Landcare Western Cape, the community launched a fencing project. Salaries were paid for by Landcare, while farmers co-funded up to 40% of the work by providing necessary infrastructure, such as the droppers to make the fences and transport.

The project provided employment to 25 fencing workers, who were part of four teams. These workers lived in rural and peri-urban communities in and around the town of Laingsburg. According to studies by the Centre for Social Science Research (Nattrass et al. 2014), before the project they had lower levels of education, lived in larger households and were in the lower bands of per capita household income distribution when compared to those in historically disadvantaged communities in the town itself. The workers fenced a stretch of 238 km across 80,000 hectares. The fence was made as jackal-proof as possible, with rocks packed along the base of the fence to prevent predators from creeping below. The fencing work started in 2011 and concluded four years later.

During that time, the farmers created a non-profit organisation called AgriReap to handle the procurement and manage all the required audited book systems in the region. This dealt with the administrative and capacity-building support for the fencing team. With AgriReap's help, every worker opened their own bank account and registered with South

Africa's social grants system (this was the first such experience for many of them). Two local farmers also provided mentorship and training support to team leaders and workers, with a focus on financial and personnel management.

Studies undertaken by the Centre for Social Science Research captured the impact of the project on the livelihoods of these workers. The study (Nattrass et al. 2014) found that income from the project accounted for around 40% of the household income of these workers. Thanks to the fencing opportunities, the proportion of workers living in the poorest income category dropped from over one-third to under one-tenth. The researchers suggest that this shows the extent to which access to low-paying jobs such as those provided by the fencing project can improve both the absolute and relative socioeconomic position of those fortunate enough to obtain them.

According to Botes, the jackal-proof fence has additional benefits. 'The fence makes it more difficult for the jackal to get through; they cannot move as freely now. But it also keeps game out and the neighbour's livestock. You can't manage your grazing if the neighbour's livestock is in your veld.'

Government costs were also reduced. Based on similar projects elsewhere in the country, this project should have cost R22 million (excluding procurement and management costs). Instead, the project cost just R2.2 million (contributed by the Department of Agriculture). This saving arose because of the innovative funding model, where farmers provided co-funding and managed the teams working on their lands (removing the need for a costly contractor to oversee the teams).

## Understanding predators, the landscape and the viability of farming

Botes says farmers had many questions before the first research projects started in the Koup region. They wanted to understand the predators and how to best manage the challenges around predation. They also had questions about productivity and what it means to farm sustainably in the Koup. Many farmers lacked farm-scale information around financial viability. 'Many farmers here had simply not kept records so they couldn't determine their losses. So it wasn't about bad management, but rather about poor record keeping.' Researchers sought to change this, by answering these difficult questions.
Over the next six years, the Centre for Social Science Research, led by Beatrice Conradie, Associate Professor in Economics and Director of the Sustainable Societies Unit, compiled a number of published research and working papers. Topics included:

- a brief history of predators, sheep farmers and government in the Western Cape, South Africa
- an understanding the black-backed jackal
- findings from the Laingsburg management survey of the Karoo Predation Project
- the Laingsburg management surveys
- the Koup fencing project (community-led job creation in the Karoo)
- the effect of predator culling on livestock losses
- jackal narratives and predator control in the Karoo
- a comparison of the performance under field conditions of woolled and mutton sheep flocks in a low rainfall region
- productivity benchmarking of free-range sheep operations.

Once the studies were complete, farmers could use the results to guide their farming practices and support better business practices. One study looked at the grazing management of farmers in the Koup region. The rangelands are the cheapest and most valuable resource for livestock farmers. However, the last assessment of the region's carrying capacity had been completed in 1974 and things had changed considerably since then. The new study confirmed that farmers who follow a rotational grazing system (resting their rangelands for more than six months at a time) enjoy considerably better conditions than farmers who don't plan resting periods. Their grazing capacity is also better than the long-term recommended grazing capacity. It was found that overstocking also leads to a general decline in rangeland condition. However, the study found that species richness did not necessarily improve on farms where the grazing capacity was better or similar to long-term recommended grazing capacity (Saayman et al. 2017).

Following this study, farmers and their Landcare partners implemented a monitoring protocol, where rangelands are monitored every three years. This has highlighted the need to manage rangelands conservatively, especially during the drought. Many sheep farmers are now farming at just two-thirds of their carrying capacity and are providing feed for their sheep.

The question around grazing management is particularly important for those farming with other game species. Because of the challenges around livestock predation, many farmers in the area opted to farm with game. But it is not as easy to manage game numbers on natural vegetation, and research found that on game farms in the Koup, the veld was not given sufficient chance to rest. Botes says, 'We wanted to get data on our grazing through this project. Our grazing is our greatest asset. Now we have a basis to work off. If we're told to reduce our sheep numbers, then so be it. We don't want to lose our most important resource.'

The Department of Agriculture also supported a scanning project in the Koup. Farmers had never scanned their ewes before the launch of this project. When scanning started, farmers could ascertain conception figures before predators could capture lambs. The funded project ran for three years and helped farmers improve their livestock pregnancy records. Botes says, 'This really helped with the management of sheep, as farmers realised they needed this data. Now they are still scanning, even though the funding has stopped.'

University of Cape Town research assessed the value of the biodiversity in the Koup region. Researcher Marine Drouilly set up 176 camera traps on different locations in the project area. She also set up 156 camera traps on locations in the neighbouring Anysberg Nature Reserve, a reserve managed by the CapeNature conservation authority in the Western Cape. Her study found that the farming areas provided more biodiversity than expected, even when compared to the Anysberg Nature Reserve. Small mammals like the duiker, steenbok and bat-eared fox were present here. Her findings suggested that livestock farmers in the Koup play a key role in protecting nature (Drouilly et al. 2017). Her research also found that black-backed jackal in the agricultural areas preferred sheep, while jackal living in the reserve would eat mice and other small rodents.

From the Koup Area Wide Planning Project, farmers have created a study group. These farmers meet regularly to discuss challenges and seek solutions. The study group has now expanded beyond the borders of the initial project group and has tied in with other local farmers' associations.

## Where to from here?

Farmers across the Koup and beyond have seen the success of the Koup Area Wide Planning Project. Now six farmers, covering an area of 20,000 hectares, are set to join, including emerging farmers. Botes says, 'The plan is now to expand and include them and have a fence around their farms too.' He adds, 'I think there's better cooperation than in the past. The ideal is for us to work together. Over an area of 80,000 hectares, we would be a mega-farmer. I don't just want this to become a conservation area. I want to have something tangible for farmers. I want to ensure that soil restoration work takes place, and other (natural resource management) activities to help the environment. This can't just come from the Department of Agriculture.' He hopes to achieve this by setting up a new farming model, such as a special management area. This is a more formal structure for farmers, and could include signing title deed restrictions to ensure conservation takes place in perpetuity.

Other farming communities have seen the area-wide planning work that has emerged from the Koup and are now looking to develop their own plans. According to Landcare's Phyllis Pienaar, a project in the neighbouring Koup IV has developed its own fencing operation based on the work that has taken place here. Four more farming groups are investigating their own opportunities based on the Koup model.

### What does area-wide planning mean for this group of farmers?

What started as a fencing project to control jackal soon developed into a much broader area-wide plan and a community-led job-creation scheme. The project was implemented using the landcare methodology of community-based NRM, where the farmers are the leaders in this project. It involved more than just a fence – it ended up being a sustainable resource management plan for 19 farms over an area of more than 80,0000 hectares.

This is the essence of landcare, and the only viable option for farms in South Africa going forward. Planning must be conducted at a scale larger than an individual farm. That is the only way to effectively address many natural resource issues and strive for sustainable development of land, water and biodiversity. It must be designed by an integrated group of partners. It must also be led by the very people that use these resources on ground level: the farmers and the community.

## Conclusion

A landcare approach is exactly the method adopted by the Koup Area Wide Planning Project. Farmers identified their challenges and sought proactive solutions to these, supported by Landcare. What they have subsequently developed in the Koup region has become 'something of a gold standard', according to University of Cape Town researchers (Nattrass et al. 2014).

These farmers still have questions and more work needs to be undertaken to understand the viability of farming here, given these challenging times. Farmer Piet Gouws, who died after the tough economic reality took its toll, said shortly before his death, 'We dream of returning to a place of mutual sustainability for agriculture and the environment.'

As discussed at the Nagoya conference, the Koup Area Wide Planning Project can be considered an international success that is still surviving after a four-year drought. All the projects and research done in this area are the initiative and hard work of the community and the partners that contributed. But it is led by the community.

## References

Drouilly M, Nattrass N and O'Riain JM (2017) 'Dietary niche relationships among predators on farmland and a protected area', *The Journal of Wildlife Management,* 82(3):507–518.

Nattrass N, Conradie B and Conradie I (2014) The Koup fencing project: community-led job creation in the Karoo, *CSSR Working Paper,* accessed 14 October 2020. https://open.uct.ac.za/handle/11427/7877?show=full

Saayman N, Morris CD, Cupido CF and Swart R (2017) 'Does grazing management matter in the arid koup region of the Karoo, South Africa?' *in* Iwaasa A, Lardner HA, Schellenberg M, Willms W and Larson K (eds) (16–22 July 2017) *The future management of grazing and wild lands in a high-tech world* [conference proceedings]*, 10th International Rangeland Congress*, Saskatoon, Canada.

Photo: NZ Landcare Trust

# CHAPTER 14

# Predicting the success of New Zealand's community-led resource management initiatives

**Nick Edgar**

## Abstract

**The intensification of land-use practices is causing the degradation of water resources in New Zealand. Considerable effort is being directed towards enhancing the participation and leadership of farmers and landowners in solving water quality issues. One of the most significant challenges to improving catchment management outcomes is understanding enablers and barriers to effective community engagement in managing water resources.**

**This chapter examines the outcomes of a series of enquiry processes aimed at identifying the key success factors in community-led catchment management. This includes a detailed review of a highly successful catchment management initiative focused on the Aorere River, Tasman District. Reviewing other catchment management initiatives in New Zealand has identified several factors that contribute to achieving community-led outcomes. Prioritising support and resourcing to enhance how these success factors are expressed within communities can build improved foundations for catchment management. Landcare principles are centred on developing equitable and sustainable models for locally self-managing community water resources. Understanding the enablers and barriers to effective community-led catchment management is directly relevant to understanding how the principles of landcare can be applied to managing our precious natural resources, both in New Zealand and across the globe.**

## Introduction

Freshwater ecosystems are intrinsically connected to the health, livelihood and culture of New Zealand. However, more intensive agriculture and the difficulties of managing intensive land use and water abstraction are adversely affecting these water resources (Ministry for the Environment 2005). There is a growing awareness that the nation must face some difficult decisions related to the economic benefits of intensifying land use versus the adverse impacts on water resources (Edgar 2009).

Agriculture physically dominates New Zealand's geography, with over half the land area classified as farmland (Statistics New Zealand 2009). Not only is farming physically dominant, it is also a major sector of the New Zealand economy, particularly in export and employment. Overall, the primary sector accounts for 7.1% of gross domestic product and contributes over 50% of New Zealand's total export earnings (The Treasury 2010). Direct impacts of land-use intensification on water resources often result from land clearance and conversion of land from native indigenous forest to introduced pasture grasses. Large-scale draining and clearing of wetlands to create dairy farms are common methods for expanding dairy production. Baskaran et al. (2009) report that the intensification of dairy farming is associated with impacts such as nitrate leaching to streams and rivers, large-scale increases in the demand for surface and groundwater for irrigation, and reduced biodiversity in pastoral landscapes.

The effects of these changes on water resources include:

- the enrichment and eutrophication of streams, rivers and lakes and the associated species shifts in response to nutrient-enriched conditions (Moller et al. 2008)
- water abstractions reducing stream and river levels, which, if altered below minimum flow levels, change the biotic composition of aquatic ecosystems (Boulton et al. 2003)
- changes to flow regimes influencing life history patterns of aquatic species
- loss or erosion of stream connectivity needed for viable populations for various riverine species (Bunn and Arthington 2002).

In addition, the run-off of faeces and urine in and near streams can cause contamination by a range of viruses, bacteria and parasitic protozoa and have a significant negative impact on water quality and stream biota. Much of this degradation of water resources has resulted from the complexities of managing non-point source agricultural water pollution (Edgar 2009; Anastasiadis et al. 2014).

Reducing pollution from farms remains a significant challenge to improving and protecting New Zealand's waterways. One of the key responses to these water quality issues has been increased resourcing for, and application of, catchment management initiatives across the country (Edgar 2007; Duncan 2013). The devolution of natural resource management (NRM) decision-making to local government, combined with significant efforts to engage communities through education and communication initiatives addressing water resource management, has led to a resurgence in community-led catchment management initiatives in New Zealand (Curtis et al. 2014). Considerable attention is now being focused on methods to enhance the participation of communities in solving water quality issues. One of the most significant challenges is developing effective methods to engage with farmers and landowners who are directly responsible for managing land and water resources both at the farm and catchment scale (Tyson et al. 2011).

The NZ Landcare Trust is an independent non-government organisation focused on working with farmers and land managers at the catchment scale through education and communication initiatives to encourage economically and environmentally sustainable farming practices

that result in both profitable farms and improved water quality. This organisation won the inaugural Morgan Foundation New Zealand Riverprize for its support of farmers improving water quality in the Aorere River catchment, Tasman District, New Zealand (International River Foundation 2015).

The NZ Landcare Trust has recognised that one of the most significant challenges to improving catchment management is to identify the determinants of effective community engagement and participation in managing water resources (Lees et al. 2012). Reviews and case studies of some of its most successful catchment management projects, including the Aorere River initiative, has helped to identify critical success factors (Tyson et al. 2012).

Understanding the enablers and barriers to effective community-led catchment management is fundamental to planning, implementing and monitoring catchment management education and communication initiatives. This chapter aims to further build understanding of the key predictors of successful community-led water quality management by:

- reviewing the lessons learned from the Aorere River initiative
- reflecting on the outcomes of a national catchment management workshop focused on identifying enablers and challenges to effective catchment management
- examining literature related to water resource management and behaviour change theory.

## Case study: the Aorere River catchment

The Aorere River catchment is in Golden Bay at the top of the South Island of New Zealand. The Aorere catchment is 573 $km^2$ in area, located in the Tasman District. Eighty per cent of the catchment is native forest, with dairy farming occupying 16%. The Aorere River begins at its headwaters in Kahurangi National Park and flows for 40 km before draining into the Ruataniwha Estuary. Dairying is the most common farming type in the catchment. There are 34 dairy farms with approximately 11,000 to 13,500 cows being grazed (Robertson et al. 2013).

The catalyst for the 2006 Aorere River initiative was contamination by pathogens from dairy farms that was affecting marine farms in the receiving estuary and coastal marine area. Many of the farms are located on flood plains, so management of effluent and riparian areas is especially important. In 2006 the catchment was depicted as a high-level polluter in media articles and at community meetings. Microbial contamination from dairy pollution was said to reduce the local shellfish industry's harvesting windows from 70% to as low as 30% per year. The situation was unique in that the reduced harvest time for the shellfish farmers offered a 'canary in the coalmine' indicator of environmental problems. This situation was also different from other farming situations in that the primary pollutant was faecal bacteria run-off rather than nutrient run-off.

NZ Landcare Trust's involvement in the Aorere River initiative now spans a period of more than 12 years (2006 to 2019). Over this time, this farmer-led initiative has reduced bacterial contamination and benefited the ecological health of the river and estuary. It has helped to build social cohesion between the dairy farming community and the aquaculture industry. It has educated farmers and the wider community about water quality and introduced best management practices to most of the farms in the catchment. It has also informed the development of a national resource: a community-owned catchment management toolkit influencing collaborative catchment management across New Zealand (Edgar and Slade 2015).

The Aorere River initiative was the inaugural winner of the Morgan Foundation New Zealand Riverprize. In reviewing the Aorere River initiative and preparing the New Zealand Riverprize application to the International River Foundation, many factors were identified that contributed to the successful implementation of this catchment management initiative. These success factors included:

- farmer ownership
- clear problem identification
- independent facilitation
- technical support
- achieving results
- knowledge exchange
- celebrating success.

**This farmer-led initiative has reduced bacterial contamination and benefited the ecological health of the river and estuary. It has helped to build social cohesion between the dairy farming community and the aquaculture industry.**

Farmers took ownership of the issues and formed the Aorere Catchment Group, working closely with the NZ Landcare Trust to identify the underlying reasons for water quality decline. The NZ Landcare Trust commissioned an independent scientific review of river water quality issues, including preparation of a land-use/water quality model that clearly identified the cause-and-effect pathways of *Escherichia coli* contamination in the catchment. NZ Landcare Trust was invited by the Aorere Catchment Group to provide independent project management and facilitation services to ensure a professional approach to collaborative stakeholder engagement.

The NZ Landcare Trust commissioned technical expertise to ensure science-based solutions, particularly farm environment plans, were tailored directly to the issue of reducing non-point source run-off into the river. Achieving tangible, measurable improvements in the water quality of the Aorere River and the near shore coastal zone of Golden Bay was integral to the success of this catchment initiative. There was a focus on sharing knowledge and successful approaches to implementing on-farm best management practices both within the Aorere River catchment and to other catchments. Celebrating success was an important way to communicate farmer investments of time and money to improve water quality in the catchment and to maintain the momentum of the initiative (Edgar and Slade 2015).

### Farmer ownership

One of the key factors in the success of this project, and one that made it ahead of its time in New Zealand, was its farmer-led inception and its collaborative approach. The initiative built resilient and collaborative relationships between formerly hostile parties (dairy and marine farmers). Success was also demonstrated by farmers taking a proactive leadership approach to improving water quality. The initiative focused on promoting and empowering

local 'farmers as leaders' and acknowledging and utilising local knowledge, leadership, peer mentoring and willingness to implement best management practices. A 2012 evaluation of the project noted that the initiative adopted approaches that recognised and built from the strengths in the farming community. Two key strengths that the project leveraged off were:

- the farming community's deep connection to their land and water
- the desire for local ownership of environmental problems and local leadership to achieve solutions.

Farmer surveys had identified the key underlying farmer values:

- desire for healthier local waterways
- pride in the beauty and qualities of local waterways.

Harnessing these values by promoting the adoption of tailored best management practices for local waterway improvement was central to the initiative's success. Equally important was directly engaging farmers with the initiative. Farmers reported that the project helped to give them the power to solve their problems, allowing them to become proactive about environmental issues. Farmers reported that the initiative brought the community together and united them towards a common goal. It was an approach that built respect and self-esteem rather than blaming farmers for environmental damage (Robertson et al. 2013).

A key outcome of the initiative was the formation of the Aorere Catchment Group in 2006. This farmer-led group established credibility in the wider dairy community. This helped disseminate information and persuade farmers to adopt best management practices on farm and across the catchment (at considerable cost) to improve water quality and support their 'licence to operate' in the catchment. Forming the Aorere Catchment Group was an early example of a farmer-led, community-owned catchment management project addressing water quality in a rural community. Farmer ownership of water quality issues in the catchment has been recognised as a critical factor in the success of the initiative.

### Clear problem identification

The primary river health indicator used in the initiative was the measurement of faecal coliforms – bacterial contamination resulting from *E. coli* entering the watercourse. Unlike many other rivers in New Zealand, high levels of nutrients was not a problem in the Aorere catchment. The contamination of the water by *E. coli* was the major driver for the initiative, as it impacted on shellfish farms (and shellfish harvesting) in the estuary. Measurement of *E. coli* is used as a proxy for general river health and water quality. Measurement of *E. coli* levels over the duration of the initiative showed a trend towards improved water quality over time.

In 2007 the NZ Landcare Trust commissioned environmental consultants to carry out an analysis into the causes of the contamination, using a river plume model that showed the effects of the river flow on its receiving environments. This helped farmers understand the impact of their land use on other parts of the ecosystem. It also guided them in the actions they needed to take to improve water quality. This analysis used existing water quality information and modelled land-use activities to develop catchment contaminant budgets (Robertson & Stevens 2007). This modelling identified the causes of water resource contamination in the catchment and was essential in building a common understanding of the water quality problems and helping the community to accept these problems before tailoring solutions to address them.

It was this clear evidence that persuaded farmers that they needed to change their practices and introduce dairying best management practices. These included fencing off

waterways (and later planting them with native species), only spreading effluent during dry periods and separating liquid from solid effluent to reduce leaching. A key factor in farmers' behaviour change was that the science was independently commissioned by the NZ Landcare Trust. The modelling also helped farmers to develop an understanding of how their catchment worked and what they could do to reduce their impacts on it. Farmers considered the modelling to be an objective source of information that clearly identified the impact of intensification of land use on water quality This was seen as important by the dairy farmers as they felt they were being advised of relevant scientific facts to help them decide what they needed to do to resolve the waterway pollution issues (Robertson et al. 2013).

This approach was important, as councils have previously used science to support regulatory measures, with farmers being required to adopt best management practices. The ownership of the problem by the farmers was the most significant factor behind behaviour change, and this in turn persuaded the marine farmers that the dairy farmers were serious about making changes, reducing both conflict and potential litigation.

### Independent facilitation

The NZ Landcare Trust played a lead role in bringing all parties together and supporting farmers to set up the Aorere Catchment Group. The trust's neutrality and independence was cited by farmers as being vital to the success of the initiative. The trust provided project coordination, acted as a knowledge broker, facilitated the partnerships and collaborations with other agencies and provided on-ground support to the farming community (Edgar and Slade 2015).

The NZ Landcare Trust employed a project coordinator to carry out facilitation work and organise field-based training workshops for famers. Other support included preparing funding applications and reporting to funders, which allowed farmers to focus on governance and on-farm actions. The trust also successfully secured the funding that enabled independent scientific advice to diagnose the cause of the water quality contamination.

### Technical support

Analysis of data collected from 1996 to 2012 showed that since 2006, there had been a reduction in the number of spikes in *E. coli* during low-flow and medium-flow regimes and that there had been a step change reduction in pathogen concentrations around 2006, rather than consistent gradual reductions over time. The report states 'this sudden reduction may have been the result of the elimination of the assumed cause of such peaks, i.e. irregular, illegal point source discharges from dairy farms in the lower catchment' (Robertson and Robertson 2012:6).

Another possible cause for the reduction in spikes of bacterial concentrations was the reduction of point source contamination by eliminating stock access to waterways by fencing, bridging and culverting, all a direct result of the Aorere River initiative (Robertson & Stevens 2007). The report was important because it used publicly available data to show real changes in levels of contamination with a strong inference that these were directly linked to the on-farm interventions and farmer behaviour change resulting from the Aorere River initiative.

The Aorere River initiative is unusual in that it applied social science theory and techniques from the outset to inform its approach and evaluate changes in attitudes and beliefs. These are precursors to changes in behaviour. In 2007, the NZ Landcare Trust carried out farmer

surveys in the whole catchment. Thirty of the 33 dairy farming families were surveyed using face-to-face 'kitchen table' interviews. These surveys enabled farmers to discuss issues in the privacy of their own homes, leading to more information being revealed and helping to build trust and relationships better than open public meetings could. It also helped facilitate a more accurate understanding of attitudes and limitations than group discussions.

The surveys assisted in measuring behaviour change and understanding the key factors behind it. A second survey of the same farm households was undertaken in 2010, and a third and final survey was undertaken in 2012. The results of these surveys were largely positive and indicated a strengthening of the Aorere dairy community, the building of understanding and trust between dairy farmers and the local shellfish industry, a strong sense of pride within the community and a clear understanding of what farmers could do to improve water quality (Robertson et al. 2013).

The Aorere River initiative included a strong emphasis on providing farmers with technical support to develop environmental farm plans and encourage the adoption of best management practices on farm. Farm plans were adapted to meet the specific requirements of the Aorere catchment, taking into account its climate and typography; for example, high rainfall in the headwaters of the catchment leading to regular and rapid high-flow events. There was a particular focus on providing technical information to farmers to manage non-point source run-off of faecal contaminants into local waterways. Best management practices were identified that could reduce pathogens in farm run-off and these were promoted through field days with farm systems specialists (Edgar and Slade 2015).

**As a result of the initiative, coastal water quality improved with increased shellfish harvesting windows.**

### Achieving results

As a result of the initiative, coastal water quality improved with increased shellfish harvesting windows. In 2006, shellfish harvesting (the window in which to harvest mussels) could only occur 28% of the year due to pathogen contamination. By 2011, harvesting could occur 75% of the year. River water quality monitoring showed fewer spikes in pathogen levels. There was only one incident of pathogens exceeding safe swimming levels between 2010 and 2013, which was down from 13 between 2000 and 2010.

A major achievement was the willingness of dairy farmers to tackle issues caused by their practices, with 24 of the 34 farms developing farm plans. Audits of farm plans showed that, on average, 78% of actions identified by plans had been completed, equalling around NZ$1.6 million worth of investment in works. This equates to NZ$67,350 worth of works per farm. Of these, 100% implemented grazing best practice, 64% completed riparian fencing and 89% completed effluent disposal works.

The dairy farmers had an increased sense of pride because of their contributions to resolving the water quality issues in the river and coastal zone. There was a greater feeling of cohesion and connectedness in the local community. The media focused on positive aspects of the farmers' contributions to tackling these issues, rather than blaming them for polluting the environment. The shellfish industry presented the catchment group with an environmental

award for their efforts. The community celebrated these achievements at a lunch where the dairy farmers provided the cream, the shellfish farmers provided the mussels, and they created a seafood chowder meal. The meal provided a shared opportunity to acknowledge the role of the dairy farmers in responding to the environmental issues while at the same time improving the certainty of shellfish harvesting to the aquaculture industry.

### Knowledge exchange

The NZ Landcare Trust captured the key lessons from the Aorere River initiative and applied them elsewhere. The approach was applied in the catchment of the Rai and Pelorus rivers flowing into the Marlborough Sounds (Marlborough District). The Rai-Pelorus river catchment had similar issues and shared some characteristics with the Aorere River catchment, in particular, faecal pathogen contaminant of water resources from land use practices.

The NZ Landcare Trust developed a 'twinning' knowledge exchange between the catchments to test the applicability of the farmers-as-leaders approach in the Aorere to the Rai-Pelorus river catchment. River 'twinning' is an innovative approach that has been developed by the International River Foundation. The aim of twinning is for one catchment management initiative to partner with a geographically separate catchment management initiative to share expertise and learnings. Effectively, it provides for peer-to-peer knowledge exchange between river management professionals and practitioners as they implement catchment management protection and restoration work (International River Foundation 2018).

The lessons from the Aorere catchment initiative were further refined and then applied in the Rai/Pelorus catchment. The NZ Landcare Trust used this twinning process to support other catchment management projects across the country. This led to a strategic partnership with the Ministry for the Environment to produce a resource: the *Community owned rural catchment management: a guide for partners* (Lees et al. 2012). This catchment management resource was designed to support community-led river restoration across New Zealand and was supported by the rollout of a national series of catchment management masterclasses led by the NZ Landcare Trust.

### Celebrating success

As part of the wider Aorere River initiative, several events were held that helped to build relationships and community engagement both between the dairy and marine farmers and across the whole community. It was recognised that bringing people together to celebrate and share in successes was an important part of the initiative.

In March 2008, dairy farmers spent a day out at sea with mussel farmers, learning about the industry and how mussels are harvested. The day was organised by Matt Rowntree, a mussel farmer, as a way of showing the aquaculturists' appreciation of the work being done by the dairy farmers to improve water quality. Rowntree said, 'As someone whose livelihood depends on water quality, I really appreciate the efforts of all those involved in the Aorere Initiative. I think the project is a marvellous example of what can be achieved and is a credit to all those involved' (Rowntree, personal communication, 2008).

In November 2008, Aorere dairy farmers met with marine farmers to celebrate local water quality improvements over a shellfish chowder and fine cheese lunch. Aquaculture industry spokesperson Helen Smale said, 'A great deal has happened. In October 2007 shellfish harvest days were lifted to 79% to reflect improved water quality results' (Smale, personal

communication, 2007). Local dairy farmers Ross Riley and Rob Haldane spoke of the large voluntary investment local farmers were making – in the case of Haldane, an investment of NZ$60,000 on a new effluent storage system. He reflected that he and his family highly valued swimming, fishing and eeling, which were also benefits of the initiative and improved water quality.

One of the lessons from the initiative is the importance of reinforcing positive outcomes through telling stories in a positive way and substantiating claims through actions and results. Good stories helped to build traction. Several rural content programs featured the Aorere River initiative, including TVNZ's *Rural delivery*, which first featured the Aorere in early August 2007. The *Rural delivery* program also revisited the Aorere catchment in May 2011 to update viewers on its progress. In July 2014, Radio New Zealand's *Country life* featured farmers talking about the success of the Aorere River initiative.

The Aorere River was also featured in the film *Water whisperers – Tangaroa*. Filmed in locations around New Zealand, *Water whisperers* explored the work of 10 communities as they sought to repair waterways and protect them for future generations. The film highlighted the passionate people behind the recovery and conservation of some of New Zealand's precious waterways (Edgar and Slade 2015).

## Predictors of success

The importance of working on both a farm and landscape scale to solve issues affecting water resources has led to the realisation that remedial efforts must adopt a community-driven perspective (Lees et al. 2012; Curtis et al. 2014). Considerable attention is now being focused on methods to enhance the participation of communities in solving water quality issues. One of the most significant challenges to these community-driven approaches is developing effective methods to convince individual farmers to work together to solve these landscape-level problems (Tyson et al. 2011).

An important aspect of this is identifying the determinants of effective community engagement and participation in managing natural resources (Lees et al. 2012). Reviews and case studies of successful community-based NRM projects have helped identify critical success factors in catchment management (Tyson et al. 2012). Understanding the enablers and barriers to effective community engagement are essential to successfully planning and implementing catchment management initiatives.

There is considerable value in identifying the enablers and challenges to achieving best-practice catchment management. This has led to series of research enquiry processes focused on defining the key success factors for implementing catchment management initiatives in New Zealand. The enquiry processes have included individual reviews and case study examination of catchment management projects, literature reviews and surveys of and workshops for participants in catchment management initiatives.

A key source of information was the outcomes of a national workshop conducted by the Upper Taieri Water Resource Management Project in March 2010 (Newman and Robertson 2010). Workshop participants represented 14 diverse, community-led resource management initiatives from across New Zealand, five regional authorities and seven governmental or non-governmental agencies. A list of essential enablers and challenges to successful community-led resource management was generated collaboratively by participants at the workshop (Newman and Robertson 2010).

Another key source of information was credible efforts to reconcile available literature on determinants of successful common property resource management groups (Agrawal 2002) and determinants of behaviour change in an environmental context (Tyson 2009).

The outcomes of surveys of farmers involved in catchment management projects constituted a further line of enquiry. Table 14.1 is the result of these enquiry processes to identify the key success factors for community-led catchment management. Each success factor includes a broader description of its attributes and characteristics.

**Table 14.1** Key success factors for community-led catchment management

| Success factor | Description |
|---|---|
| **Community characteristics** | Interdependence among group members |
| | Homogeneity of identities and interests/community cohesiveness |
| | Shared norms in community |
| | High level of dependence on resources |
| | Users reside near the resource/sense of place |
| **Collaboration** | Confidence that the community-led collaborative management process will work |
| | Community efficacy |
| | Process of developing plans has been inclusive of all stakeholders from the community/community interaction |
| | Process has had effective facilitator, coordinators and leaders |
| | Process has had champions from various age groups |
| **Trust** | Fair and accurate media coverage |
| | Trust in regional authorities |
| | Community perceives broader public opinion of them as being positive |
| | Community has developed social capital through experience and trust each another to follow rules and norms of reciprocity |
| **Communication** | Information is widely shared to build broad knowledge |
| | Various communication channels are used to inform stakeholders |
| | Community has access to effective communication technologies |
| **Training** | Community members have received adequate training in self-efficacy and community efficacy |
| | Community members have received adequate training concerning governance issues |
| **Science** | Community has ability to commission scientific studies |
| | Community has access to science |
| | Decisions made by community are informed by science |
| | Scientific studies are not seen as conflicting and manipulative |
| **Environmental concern** | Common concern for water quality, perceived severity and susceptibility of threat |
| | Systems are in place to monitor and manage water quality |
| **Regulatory framework** | Environmental policies and rules are clear and simple |
| | Rules are locally devised |
| | Rules are easy to enforce |
| | Those who monitor conditions can be held accountable |
| | Graduated sanctions for non-cooperation are considered fair |

There is considerable overlap in the findings of the different enquiry processes to identify key success factors in community-led catchment management. Table 14.1 outlines eight success factors. The presence or absence of these success factors can have a significant influence on the effectiveness and outcomes of catchment management initiatives. Their real value lies in the strength of their expression and how they are enacted in the context of implementing catchment management by landowners and the wider community.

How strongly or weakly these success factors are expressed can be used to prioritise effort, for example, the level of attention and resourcing that may need to be devoted to land manager education and communication efforts. Findings from reviewing the expression of these success factors also helps to set a benchmark for subsequent project evaluation. Given that these success factors are determinants of effective catchment management, it would be hoped that significant improvements in how these factors are rated would be detected as catchment management initiatives progress.

## Conclusion

The ability to take the successful lessons learned from the Aorere River catchment initiative and apply them both regionally and nationally has been a key priority for the NZ Landcare Trust. Globally, there is increasing effort to engage communities in the management of biological resources and to ensure that landowners and land managers are actively engaged in both the decisions and actions affecting those resources.

A critical component of water resource management at the catchment scale is the key role that farmers, landowners and the wider community play in managing land and water resources (Tyson et al. 2012). One of the most significant challenges to these farmer-led approaches is developing effective strategies to convince individual famers to work together to solve these landscape-level problems (Tyson et al. 2011). Understanding the key success factors for effective farmer engagement, participation and leadership is fundamental to planning, implementing and, ultimately, achieving water resource protection and enhancement within agricultural catchments. Identifying these success factors bodes well for developing an equitable and sustainable system for self-managing community water resources. Yet, these factors (predictors of success) are not static. They must be constantly monitored and nurtured. They can all too easily erode.

The evaluation of the effectiveness of community-led approaches to catchment management is central to understanding what can and cannot be expected of collaborative processes and how they can be integrated with existing regulatory frameworks. Evaluation is fundamental to identifying environmental, social and economic change and enabling progressive learning at individual, community, institutional and policy levels.

Structured and coordinated attempts to implement evaluative frameworks, including evaluation of processes and socioeconomic components of initiatives, are necessary to determine the beneficial outcomes of often substantial private–public investment in catchment management (Edgar 2007). This is especially so as New Zealand, like many other countries, is increasingly focusing attention on collaborative processes between communities and organisations to sustainably manage natural resources.

Agriculture is an important component of the New Zealand economy. The conversion of more land to agricultural practices, and the intensification of agriculture, has resulted in concomitant impacts on the country's water resources (Foote et al. 2015). Integrated catchment management, with a focus on a combination of both regulation and community

leadership aimed at land-user adoption of best management practices, has been promoted by government, industry and communities as an effective way of improving the sustainable management of water (Edgar 2007, 2009).

Due to its complexity, there are a range of challenges to achieving the effective implementation of catchment management practice on the ground. The NZ Landcare Trust has worked with government, agribusiness and community organisations to identify the key factors, or predictors, of successful catchment management. Identifying these predictors of success for community-led catchment management can help with:

- planning, educational outreach and communicating the outcomes of catchment initiatives
- monitoring their implementation
- prioritising resourcing and identifying where further support is required
- evaluating whether such initiatives have achieved their aims and objectives (Lees et al. 2012).

Importantly, knowledge sharing has shown that the success factors for catchment management that have been identified in this chapter are applicable across a range of catchment scales and resource management issues in New Zealand. The success of the innovative 'twinning' initiative between farmers in the Aorere River catchment and farmers in the Rai/Pelorus rivers catchment was one reason that the NZ Landcare Trust was awarded the New Zealand Riverprize. It is hoped that this kind of knowledge sharing is applicable at a broader international level.

The next phase of developing and utilising these success factors in catchment management is to determine their transferability and applicability to resource management issues that transcend national boundaries. The NZ Landcare Trust is seeking to undertake a catchment twinning initiative and knowledge exchange between a catchment in New Zealand and a catchment in the wider Asia-Pacific region. The trust is currently collaborating with Australian Landcare International to initiate a catchment project in Fiji. The aim is to determine if the success factors identified for New Zealand catchment systems are also relevant to catchment systems in other countries. This new initiative will seek to inform and support other proposals to broaden the application of successful landcare models and practices globally.

## References


Agrawal A (2002) 'Common resources and institutional sustainability', *in* Ostrom E, Dietz T, Dolšak N, Stern PC, Weber EU and Stonich S (eds) *The drama of the commons,* Committee on the Human Dimensions of Global Change, National Research Council, National Academy Press, Washington DC.

Anastasiadis S, Kerr S, Nauleau M, Cox T and Rutherford K (2014) 'Does complex hydrology require complex water quality policy?', *Australian Journal of Agriculture and Resource Economics,* 1:130–145.

Baskaran R, Cullen R and Colombo S (2009) 'Estimating values of environmental impacts of dairy farming in New Zealand', *New Zealand Journal of Agricultural Research,* 52(4):377–389.

Boulton AJ, Humphreys WF and Eberhard SM (2003) 'Imperilled subsurface waters in Australia: biodiversity, threatening processes and conservation', *Aquatic Ecosystem Health & Management,* 6(1):41–54.

Bunn SE and Arthington AH (2002) 'Basic principles and ecological consequences of altered flow regimes for aquatic biodiversity', *Environmental Management,* 30(4):492–507.

Curtis A, Ross H, Marshall G, Baldwin C, Cavaye J, Freeman C, Carr A and Syme G (2014) 'The great experiment with devolved NRM governance: lessons from community engagement in Australia and New Zealand since the 1980s', *Australian Journal of Environmental Management,* 21:175–199.

Duncan R (2013) 'Converting community knowledge into catchment nutrient limits: a constructivist analysis of a New Zealand collaborative approach to water management', *Nature + Culture,* 8:205–225.

Edgar N (2007) 'Success factors for community-based river management in New Zealand', *Journal of the Australian Water Association,* 34:84–92.

Edgar N (2009) 'Icon lakes in New Zealand: managing the tension between land development and water resource protection', *Society and Natural Resources,* 22:1–11.

Edgar N and Slade M (2015) *International River Foundation NZ River Prize Application*, Aorere River, Tasman District, Hamilton.

Foote K, Joy M and Death R (2015) 'New Zealand dairy farming: milking our environment for all it's worth', *Environmental Management,* 56:709–720.

International RiverFoundation (2015) *Aorere river wins 2015 New Zealand Riverprize,* accessed 20 October 2020. http://www.riverfoundation.org.au/riverprize_new_zealand.php

International RiverFoundation (2018) *International RiverFoundation*, the Australian Water Partnership website, accessed 20 October 2020. http://waterpartnership.org.au/partners/international-riverfoundation/

Lees A, Robertson G, Garvan N, Barnett J and Edgar N (2012) *Community-owned rural catchment management: a guide for partners,* New Zealand Landcare Trust, Hamilton, New Zealand.

Ministry for the Environment (2005) *Reflections: a summary of your views on the sustainable water programme of action*, Ministry for the Environment, Wellington, New Zealand.

Moller H, MacLeod CJ, Haggerty J, Rosin C, Blackwell G, Perley C, Meadows S, Weller F and Gradwohl M (2008) 'Intensification of New Zealand agriculture: implications for biodiversity', *New Zealand Journal of Agricultural Research,* 51(3):253–263.

Newman N and Robertson G (2010) *Community-led water resource management: report on a national workshop,* NZ Landcare Trust, Hamilton, New Zealand.

Robertson B and Stevens L (2007) *Aorere sustainable farming project: assessment of coastal issues*, Wriggle Coastal Management Ltd., Nelson, New Zealand.

Robertson B and Robertson J (2012) *Aorere catchment project: review of existing disease risk monitoring*, Wriggle Coastal Management Ltd., Nelson, New Zealand.

Robertson J, Edgar N and Tyson B (2013) 'Engaging dairy farmers to improve water quality in the Aorere catchment of New Zealand', *Applied Environmental Education & Communicatio*n, 12(4):235–243.

Statistics New Zealand (2009) *New Zealand in profile: 2011* [PDF], accessed 20 October 2020. https://www.stats.govt.nz/assets/Uploads/Corporate/Stats-NZ-annual-report-2011/statsnz-annual-report-2011.pdf

The Treasury (2010) *New Zealand economic and financial overview 2010*, New Zealand Government, Wellington, New Zealand.

Tyson B (2009) Theory driven environmental communication, *in* Tyson B and Hurd DM 2009, *Social marketing environmental issues,* IUniverse, Indiana, USA.

Tyson B, Edgar N and Robertson G (2011) 'Facilitating collaborative efforts to redesign community managed water systems', *Applied Environmental Education and Communication,* 10:211–218.

Tyson B, Edgar N and Robertson G (2012) 'Enablers and challenges to community-led water resource management in the Upper Taieri Catchment of Otago, New Zealand', *Advances in Environmental Research,* 23:249–264.

# PART D

## Landcare as a transformative agent in crises

Photo: Kabale Agroforestry Network

# CHAPTER 15

## ‘Everyone, Everywhere, Landcare’

**Andrea Mason**


## Abstract

**Some elements of the Australian landcare movement have contributed to its success in that country and helped its spread throughout the globe, becoming the foundation for resilient communities. In this chapter, as a community member, landcarer and a sustainability practitioner with experience in community development, local action, marketing and communications, I will draw on personal and group experience to show how the landcare model has created a vehicle for the development of personal and community disaster response and resilience.**

**This chapter also discusses how landcare provides a sense of belonging at the personal and group level, the importance of that greater network and its ability to adapt to change. It explores how that sense of belonging manifests itself and builds trust within communities in times of need, and how this is linked to the strong Landcare Australia brand. Landcare’s diversity is one of its greatest strengths. Its grassroots approach is embedded in communities that encourage diverse and creative approaches to issues pertinent to them. How does this fit with a sense of belonging and how has the landcare movement achieved this? This chapter discuss the importance of branding, advocacy and political influence in achieving success for landcare where other movements have struggled.**

## Introduction

Although I began my working life in medical research, this is not a scientific paper. It is the story of my experience and thoughts as a landcare practitioner. In 1990 I moved with my husband and young children to a small property in central Victoria, Australia, to escape city life and return to a rural setting. In 1994, there was a call to action to address weeds in the neighbourhood, facilitated by an extension officer from the local state government agency of the time. Consequently, the Upper Williamson's Creek Landcare Group was formed. This is typical of the way Landcare groups begin across Australia. As the first secretary of this group, my life as a volunteer landcarer began and so did Landcare's influence on my personal and professional development. Since then, I have been a founding member, board member and chair of the Leigh Catchment Group network for over 20 years; a member and chair of the Victorian Landcare Network (a network for Landcare staff now superseded by Landcare Victoria Inc.); and a board member of Australian Landcare International. I have also worked as a Landcare facilitator, run Landcare training workshops, travelled overseas to help deliver training workshops with Australian Landcare International and helped organise the first International Conference of Landcare Studies in Nagoya.

Landcare has offered me the chance to participate in local, state and international issues through a forum that allows women to participate equally. Landcare also provides a training ground for skills and knowledge through coordinated programs targeted at volunteers and coordinators. It requires local action planning and prioritisation for project development and management. It supports communities in matters of mobilisation and governance in a supported framework and it creates opportunities for change at the local level.

Personally, it provided me with a safe place to integrate back into the workforce while I was caring for my family; make friends across the globe; build on my scientific background; and embrace catchment management, natural resource management (NRM), agriculture, community development and sustainability. It enabled me to become a leader in this field.

## What is resilience and how does landcare contribute to this?

Resilience means people and things can recover easily and quickly from unpleasant or damaging events. The role of Landcare groups in supporting the resilience of communities in disaster recovery has been well demonstrated in Australia. Since the devastating Black Saturday bushfires of February 2009, the Upper Goulburn Landcare Network has been working with landholders and local communities in the Murrindindi and Mitchell shires to rebuild and rehabilitate the local environment on private property. Projects included Fencers Without Boundaries; nesting boxes for wildlife; the Lorax Project (revegetation); fauna surveys on private land; and weed and pest control (Fire Recovery 2017; Emergency Management Victoria 2017). Similarly, following Cyclone Yasi in Queensland in 2011, Landcare groups were funded to undertake environmental recovery projects to restore rivers, creeks and beaches, including weed removal, rubbish removal and revegetation.

A further example of resilience fostered by Landcare is in the aftermath of the significant event on 19 December 2015, when the Scotsburn community experienced a wildfire that burned out 4,570 hectares and severely affected the community, assets and the natural environment. Since the devastating bushfire, the Corangamite Catchment Management Authority and the Leigh Catchment Group have been working in partnership to support community action in environmental restoration works and community connectivity.

The Victorian Government provided support for the Scotsburn community's recovery from the 2015 bushfire with a $624,000 funding boost to the Corangamite Catchment Management Authority for landscape rehabilitation. The authority has partnered with the Leigh Catchment Group to deliver the Scotsburn Phoenix Project to the community.

The Scotsburn Phoenix Project Plan was developed to guide the delivery of this project. As the event affected so many people, it was vital for the community to be kept up to date on the rehabilitation process and progress on the actions outlined in the Scotsburn Phoenix Project Plan. It was also important for the community to take advantage of the support available to them and be aware of how the Leigh Catchment Group was working to achieve the best outcomes for the natural environment and the community. The project aimed to build community capacity during the recovery phase, empowering disaster-affected residents with the information and tools they needed to recover and rebuild.

In the case of the Scotsburn bushfire, it was the support of the greater Landcare network and its willingness to support and share information and resources that allowed local landcarers to step up to the challenge in this disaster (Bevelander and Mason 2017). The dynamic social relationships and cohesion developed through landcare and NRM can form an intrinsic part of the social fabric, in many cases filling gaps in the community beyond the agricultural and environmental domain. The benefits – particularly for regional and rural communities – include enhanced social capacity and cohesion, stronger local governance, increased recognition of women in rural communities, and self-empowerment and fulfilment (Gutteridge Haskins and Davies 2013).

**The benefits [of landcare] include enhanced social capacity and cohesion, stronger local governance, increased recognition of women in rural communities, and self-empowerment and fulfilment.**

The key factors that made landcare so central to the resilience of the Scotsburn community after the fire are:

- Landcare offers immediate and ongoing support for community and environmental resilience. The Landcare network and its groups were the most relevant, resourced and operational community group within the fire zone. Although some members were directly affected by the fire, others in the groups were able to take the lead.
- Landcare is embedded in its community or is community driven.
- Initiatives and support offered by friends and neighbours are more likely to be accepted by highly traumatised fellow community members.
- Landcarers have a clear understanding of the impact on local natural environment.
- Landcarers generally have the broadest understanding of the issues in their local area, unshackled by government priorities and narrowly focused programs. In the case of the Scotsburn bushfire, it was Landcare groups that raised concerns about the impact on native bushland and Landcare projects on private land that were not being considered under the emergency management plans.
- Landcare groups offer a point of contact for the recovery team.

- The lead emergency response agency in Victoria has changed since the 2009 bushfires. Now the local municipality leads all the recovery processes. The new recovery team was established using key local community members, and Landcare groups were instrumental in that process.
- Landcare groups provide a coordinated approach to post-disaster extension and act as a conduit and buffer between agency staff and the community for property access.
- Agencies were looking for an immediate connection with the community to assist in the delivery of their programs. This meant there were a lot of agencies wanting to liaise with the fire-affected community members at the same time. This was potentially disastrous for traumatised community members, who were suspicious of government staff members and nervous about intruders following thefts after the fire. Landcare groups played an important role in brokering discussions, providing community gatherings and a 'safe' environment for agency staff to attend and 'be there' if community members had questions. Landcare groups also coordinated joint property visits to reduce the number of interactions that community members had to manage.

## How does landcare build self-reliance?

Self-reliance refers to the ability to do things and make decisions by yourself, without needing other people to help you. Not needing other people may be a key to self-reliance but that does not mean you must be alone or that you can't turn to others for assistance when you need them (Bergland 2007). That is why being part of the Landcare family is so important and why Landcare has so much to offer.

As a landcarer, I have a huge network with a wealth of information about landcare that I can turn to. My network includes the local community, Upper Williamson's Creek Landcare Group and the international Landcare community, with over 6,000 groups in Australia, networks across 24 countries plus advocacy groups and bipartisan support from government programs.

I am also active in local sustainability community groups and I know that there is not the same level of network or support in this sector as there is in Landcare. As a sustainability advocate, I have my local group, network and alliance to turn to. There are no state or national level organisations, no international brand and no-one is connected under one banner or a single brand like Landcare. Partnerships, knowledge sharing and networks are ad hoc and generally project-based or issue-based. Having said that, Landcare does not have a monopoly on community action. Possibly the closest organisation to Landcare from a community-driven perspective is the Transition Network, which aims to 'reduce the urgent need to reduce carbon dioxide emissions, greatly reduce our reliance on fossil fuels and make wise use of precious resources is at the forefront of everything we do' (Transition Network 2017).

Transition is an approach rooted in values and principles (Transition Network 2017). These concepts are described differently in various parts of the transition literature, but broadly they are:

- respect resource limits and create resilience
- promote inclusivity and social justice
- adopt subsidiarity (self-organisation and decision-making at the appropriate level)
- pay attention to balance
- be part of an experimental, learning network

- freely share ideas and power
- collaborate and look for synergies
- foster positive visioning and creativity.

Like Landcare, the Transition Network is community driven, is a worldwide organisation and is well branded. However, the Transition Network is generally only supported at the local government level and does not enjoy the bipartisan national level of support that Landcare does in Australia. Transition towns and Landcare groups are similar in their grassroots approach, capacity to be different depending on the community needs, and openness to new ideas and working with others. Both movements enjoy support from governments, have moved into the international arena and offer a great deal of free support for their member groups.

The main difference is their focus. Transition towns are focused on the energy, carbon and fossil fuel issues that face our communities. Landcare groups are focused on the environmental and agricultural issues within our communities, and it is these that are most impacted in times of crises. Fires, floods, drought, cyclones, earthquakes and tsunamis all have the capacity to create devastating and fast impacts on our natural environments and the communities within them. Landcare groups are much better equipped to move into this space than other organisations and their effectiveness in this space has been documented many times.

## The landcare approach

> The strength of Australian landcare is that community groups and networks, with government and corporate support, conceive their own visions and set goals for local and regional environmental action. Working from the ground up to achieve these goals creates freedom and flexibility, giving communities a great sense of purpose (Youl et al. 2006).

The landcare principles were originally developed through a stakeholder's workshop in 2003 held in South Africa (Mawangi and Muller 2013) and later defined in Japan (Seigel 2013). They are:

- Landcare is based on local autonomous voluntary groups.
- Landcare groups focus on local issues.
- Landcare groups aim at addressing environmental issues holistically.
- Landcare groups focus not only on the conservation or restoration of the natural environment, but also on the wellbeing of the local community.
- Landcare is characterised by partnership and networking.

## The strength of the Landcare brand

The name 'Landcare' evolved in Victoria through an initiative of Joan Kirner (then Minister for Conservation, Forests and Lands) and Heather Mitchell-Carmichael (then president of the Victorian Farmers Federation). With the generous support of community members, farmers and departmental officers, Landcare was launched by Mitchell and Kirner in the small town of Winjallok in central Victoria in November 1986. Many Australian communities had already begun practising landcare decades earlier; accounts from some of our most enduring Landcare groups show grassroots environmental issues being tackled as early as the 1950s. In January 1988, Australia's first official Dunecare groups formed on the New South Wales mid-north coast at Hat Head, Diamond Beach, Scotts Head and Diggers Beach.

In 1989, the national landcare movement officially began with Rick Farley of the National Farmers Federation and Phillip Toyne of the Australian Conservation Foundation successfully lobbying the Australian Government, led by Bob Hawke, to commit to the emerging movement. Landcare became a national program in July 1989 when the Australian Government, with bipartisan support, announced its Decade of Landcare Plan and committed $320 million to fund the National Landcare Program.

Landcare Australia Limited owns and carefully manages the use of the trademarks of the original and refreshed versions of the Landcare, Coastcare and Junior Landcare logos and branding. As the holder of the very reputable and recognisable community brands, Landcare Australia Limited restricts the use of the Landcare hands logo. At one time, the Landcare hands enjoyed 78% brand recognition. This was even higher in rural regions, with 55% of consumers saying they were more likely to buy product endorsed with the Landcare logo (Morgan 2013).

Uniting under one clever brand has brought a sense of broader belonging to over 5,400 Landcare and Coastcare groups across Australia and their members (Landcare Australia Limited 2013). It has helped unite the groups and enabled advocacy resulting in bipartisan political support for Landcare in Australia. It is now recognised worldwide and has been adopted in various forms in many of the over 24 countries across the globe using the landcare approach. This is no small achievement. It should be remembered when new programs are developed that could dilute the effectiveness of this powerful symbol.

## Why landcare?

As the journey of landcare has extended into international training expeditions with Australian Landcare International and the Secretariat of International Landcare, it has become evident that the principles of landcare are also relevant to farmers and communities across the globe who face uncertain futures.

Support for agriculture, soil conservation and forestry are often the focus of projects that care for the land but the concept of holistic land and catchment management, incorporating other important issues such as biodiversity and water quality, is not always present. In many regions of the world, agencies are still working in silos and farmers are not connected to each other.

In Zambia and the Caribbean, agriculture and forestry agency staff were challenged during landcare training to work more closely together and to liaise with farmer groups to develop partnership projects for delivery. Farmer groups were encouraged to begin planning what they wanted, instead of gathering to receive handouts and receive predetermined training programs.

In Fiji, there was no planning and little interaction between individual villages, resulting in low uptake of new information and low levels of change in farming methods. The landcare approach offers a way to change this.

In Japan, the damage from earthquakes and subsequent tsunamis had forced some communities to develop community action programs but these were ad hoc and not linked under a single program. A network of groups under a landcare umbrella could provide greater peer-to-peer learning opportunities and support for these groups.

Community landcare coordinators could help local groups, generate projects, encourage disaster planning, help start ecotourism businesses, organise training and research, and help people mitigate climate change.

## Conclusion

As landcare continues to spread across the globe, it is evident that the slogan 'Everyone, Everywhere, Landcare', coined by Landcare Australia Limited, is as relevant in Solwezi as it is in Winjallok. The principles of landcare can be adopted in any community and the advantages of working to these can be adapted to any issue those communities face.

If you are about to start a new community action group focused on the environment and agriculture, some questions to ask are:

- Do you want the group to be highly connected and recognised both locally and worldwide?
- Do you want the group to enjoy the benefits of more than 30 years of knowledge and resources that are freely available online and willingly shared by your new landcare family?
- Do you want the group to be respected by governments across the globe?
- Do you want to become part of a movement that nurtures, educates and promotes change?
- Do you want the group to support community resilience and self-reliance?

The key question isn't really 'Why landcare?' but 'Why not?' I know which I prefer – my weapon of choice is landcare!

## References


Bergland C (2007) *The athlete's way: sweat and the biology of bliss,* St Martin's Griffin, USA.

Bevelander J and Mason A (6–7 October 2017) 'Scotsburn recovery: implementing on ground recovery through landcare projects' [conference presentation]*, Living with Bushfire Community Conference*, Ballarat, accessed 3 May 2022. https://federation.edu.au/__data/assets/pdf_file/0007/359764/Living-With-Bushfire-2017-Conference-Proceedings_final.pdf

Emergency Management Victoria (2017) [website], accessed October 2017; inactive on 11 May 2022. https://www.emv.vic.gov.au/news/lessons-learned-lead-to-relief-and-recovery-success

Gutteridge Haskins and Davies (2013) *Report for the Australian Landcare Council: multiple benefits of landcare (21/21673)* [PDF], accessed 20 October 2020. https://landcarensw.org.au/wp-content/uploads/2016/02/Multiple-Benefits-of-Landcare-Exec-Summary.pdf

Landcare Australia Limited (2017) Landcare Australia website, accessed 20 October 2017. https://landcareaustralia.org.au/

Mason A (21 September 2016) 'The role of landcare in fire recovery' [conference presentation], *National Landcare Conference*, Melbourne.

Morgan R (2013) *Landcare branding,* Roy Morgan Research.

Mwangi G and Muller C (2013) *Southern Africa landcare masterclass report* [PDF], no publisher, accessed 11 May 2022. https://globallandcare.org/wp-content/uploads/2022/05/Southern-Africa-Landcare-Masterclass-Report-FINAL.pdf

Seigel M (2013) *SPELJ Newsletter* [PDF], accessed 20 October 2017; inactive on 11 May 2022. http://landcarejapan.com/en/nl/1.pdf

Transition Network (2017) Transition Network website, accessed 20 October 2017. www.transitionnetwork.org

Upper Goulburn Landcare Network (2017) 'Fire recovery', Upper Goulburn Landcare Network website, accessed 24 October 2017. http://ugln.net/category/fire-recovery

Youl R, Marriot S and Nabben T (2006) *Landcare in Australia founded on local action*, SILC and Rob Youl Consulting Pty Ltd, Melbourne.

Photo: Lucy Kealey

# CHAPTER 16

# Landcare, disaster resilience and the transformative capacity of community

**Stewart Lockie**

## Abstract

**Community-based natural resource management and community-based disaster risk reduction reflect what are perceived as the transformative potential of cooperation and social learning within localised communities and the limitations of state capacity. But just how much can be expected of communities faced by multiple challenges, including the potential for disasters, which are, by definition, events that exceed our ability to cope? While the answer to this question will be context specific, this chapter considers whether lessons can be drawn from experience to date for the design and support of community-based programs that make a genuine difference to resource management and disaster risk reduction. Reflecting on Australia's National Landcare Program, a case is made to support the transformative capacities of communities of place through:**

- **proactive measures to involve those least capable of participation in existing social networks**
- **sustained institutional support and low compliance costs associated with access to that support**
- **stable and consistent state policy settings**
- **two-way accountability between government and community**
- **mechanisms for coordination at larger spatial scales**
- **recognition of the importance to participants in community-based programs of additional benefits including social and emotional support.**

## Introduction

Foundation stories about landcare in Australia usually foreground the role of what were unusual political circumstances: an alliance between the presidents of the National Farmers' Federation and the Australian Conservation Foundation, growing investment in community-based environmental programs at the state level championed by, among others, the Minister for Conservation, Forests and Lands and then Premier of Victoria with a background in community development, and a national government known for consensus-based policymaking. Through the prism of today's hyper-polarised politics, these circumstances appear nothing short of extraordinary. For our purposes here, though, what is more relevant than the rarity of genuinely collaborative policymaking is the role that chronic, and escalating, environmental, social and economic crises played in motivating it.

When it was launched in 1989, the centrepiece of the National Landcare Program was the promotion of community Landcare group formation. Based on localised watersheds or neighbourhoods, Landcare groups were intended to address local environmental degradation in a cooperative and integrated manner. With an emphasis on self-help and private investment, groups remained independent of government but were able to apply for limited funding to establish trial and demonstration projects, undertake farm and catchment planning, and initiate revegetation projects. Consistent with other experiments in community-based natural resource management (NRM) (see Measham and Lumbasi 2013), the landcare approach was thought to offer opportunities to capitalise on local knowledge; encourage collective learning; facilitate coordinated action; improve relationships between resource users, government agencies and research institutions; and, pragmatically, mobilise more financial and human resources to improve environmental management than could be dedicated by government acting alone (Lockie 2020).

**Landcare's contributions to revegetation, farm and catchment management, business planning and climate adaptation may all be seen as contributions to disaster risk reduction.**

Although not explicitly conceived as a community-based disaster risk reduction (CBDRR) program (something I will come back to), landcare's contributions to revegetation, farm and catchment management, business planning and climate adaptation may all be seen as contributions to disaster risk reduction. Preparing for, and recovering from, intense climate events has been no less fundamental to Landcare group activity than field days and working bees. Yet, when asked to reflect on what landcare has taught us about the transformative capacity of communities when confronted by natural disasters, I was struck by a number of questions. Just how much can be expected of communities when disasters are, by definition, events that exceed our ability to cope? Aren't the NRM problems Landcare was established to address already challenging enough? Is there a risk of landcare and other community-based approaches being cast as silver bullet solutions to problems that are impossible to fully resolve? Are romanticised ideals of 'community' replacing considered analyses of the roles and responsibilities of governments, insurers, resource managers, peak industry groups, civil society and others, at multiple spatial and institutional scales?

One response to these questions is to conclude that community-based resource management and disaster risk reduction programs are probably little more than convenient ways for governments to shift responsibility and leave people to fend for themselves. I have no doubt there are circumstances in which this is true. My experience of landcare, however, suggests a more nuanced response is appropriate. From my earliest conversations with Landcare group members in the late 1980s, it was evident that landcare was about more than the management of land and water degradation. It worried me, certainly, that too much might be expected of community Landcare groups to the neglect of complementary policies and programs. I was bemused by the effusiveness with which many members of the policy and research communities praised the National Landcare Program in advance of any kind of systematic evaluation. Landcare group membership may have been growing rapidly but the idea that landcare had morphed from a government-sponsored program into a transformative social movement seemed premature and potentially counterproductive. Yet, at the same time, the value of Landcare group membership clearly extended well beyond encouragement and assistance to rehabilitate eroded gullies, revegetate groundwater recharge zones, plant perennial pasture species or implement any one of the many other practical resource management practices trialled and promoted by groups.

This chapter will explore the benefits of Landcare group membership in more detail, using this exploration to tease out both opportunities to capitalise on the transformative capacity of community-based NRM and risks that can arise when the limitations of such programs are ignored. First though, it will step outside the immediate context of landcare to distil lessons from experience elsewhere with community-based programs focused explicitly on acute disaster risk reduction.

## Community-based disaster risk reduction

To help set some important context for this chapter, the United Nations Office for Disaster Risk Reduction (UNDRR 2020:54) defines disasters as:

> A serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic and environmental losses and impacts.

The scale of disruption, moreover, may vary in both spatial and temporal terms. Disasters may be large or small, frequent or infrequent, sudden-onset or slow-onset, short-duration or long-duration. As events that overwhelm people's ability to cope, their management requires responses above and beyond emergency assistance, including responses that reduce the likelihood of adverse events and outcomes and responses that build resilience or, in other words, the ability of communities, societies and systems to absorb or recover from their exposure to hazardous events (UNDRR 2019).

According to the *Sendai Framework for Disaster Risk Reduction 2015–2030*, understanding and responding to disaster risk also requires, among other things, the use of traditional, local and Indigenous knowledge, collaboration among people at the local level, and the development of local disaster risk reduction strategies. As important as it is that governments provide leadership and resources, invest in scientific research and participate in international cooperation, the efficiency and effectiveness of disaster risk reduction depend on multihazard, multisectoral and socially inclusive processes at much finer

scales. The framework thus commits governments to engaging with a diversity of 'relevant stakeholders, including women, children and youth, persons with disabilities, poor people, migrants, Indigenous peoples, volunteers … and older persons in the design and implementation of policies, plans and standards' (UNDRR 2015:10).

CBDRR is a response to the need for practical models of inclusive, multistakeholder cooperation and to the limitations, in many contexts, of governmental capacity and top-down planning (van Aalst et al. 2008). CBDRR is participatory and inclusive of the most vulnerable people (Shaw 2012). Deployed primarily, but not exclusively, in developing countries where central agencies face significant resource constraints, CBDRR recognises existing knowledge and coping mechanisms but attempts to build capacity through people-centred development and community-specific risk reduction measures. CBDRR attempts to turn disaster risk into something foreseeable, manageable and even, in advance of extreme events, socially transformative (Gaillard et al. 2009).

None of this is to suggest that CBDRR is about leaving people to fend for themselves. While communities are conceived as the main actors in CBDRR, government leadership is considered necessary to ensure consistency across policy domains and multistakeholder cooperation among government agencies, non-government organisations, scientists, businesses and other external actors to provide support that is facilitative and catalytic (Shaw 2012).

Synthesising experience across multiple international case studies, Shaw (2012) identifies six characteristics of effective CBDRR programs:

1. innovation to suit the specific context – local or locally-adapted solutions that respect community norms and aspirations, utilise local expertise and provide benefits in addition to risk reduction
2. institutional ownership – whether through government or, less often, non-government organisations and civil society groups working in collaboration with international organisations to provide continuity of support for CBDRR activities
3. social capital – both bonding (relations of trust and reciprocity within a particular group) and bridging (cross-cutting relations with other groups and communities that promote collective good)
4. balanced focus on processes and outcomes – ensuring the process of arriving at a solution is acceptable to the community and enhances social learning as well as providing results
5. education and professionalism – educational opportunities at multiple levels to build the capacity and willingness to contribute of community participants, students and professionals providing support through government and non-government organisations
6. environmental management – attention to immediate environmental issues, providing a key entry point that helps sustain community involvement.

At face value, this suggests potential for community-based resource management programs such as Landcare to either grow into or coexist with and support CBDRR programs by:

- enhancing social capital (that is, those characteristics of social networks such as solidarity, trust, identity and reciprocity that produce demonstrable social and economic outcomes (Portes 1998))
- addressing immediate environmental management and community development needs.

In principle, this should help both to enhance the social networks on which CBDRR depends and to reduce the possibilities of perverse outcomes from disaster risk reduction (such as damage to natural resources or food security) and vice versa (poor environmental management contributing to disaster risk).

Although not discussed by Shaw (2012), also evident here is the role integrated community-based approaches to environmental management and disaster risk reduction have to play in helping participants navigate what is an exceedingly complex temporal and spatial terrain. As noted above, disasters may be large or small, frequent or infrequent, sudden-onset or slow-onset, short-duration or long-duration. Further, every aspect of their scale and timing is characterised by high levels of uncertainty. Far from simplifying this terrain, environmental management adds additional layers of complexity due to the often extensive spatial and temporal distances between changes in management practice and their manifestation in improved or degraded environmental conditions. Collaborative community-based approaches do not simplify the terrain either, but they do afford opportunities for social learning, peer support and coordinated action, thus lowering costs and risks for participants as they experiment with and implement new practices.

Adding to this complexity, a disaster, as noted by Gill (2007), is never a discrete physical event but a series of primary and secondary events defined by the experiences of those most immediately affected and by the responses of governments, emergency relief non-government organisations, other institutions and the broader public. Even the most acute, or sudden-onset, disasters may be experienced through multiple phases that unfold over extended periods of time as immediate impacts give way to secondary threats to public health, food supplies, livelihoods and so on. Moving effectively through these phases to recovery and rehabilitation is facilitated by the altruistic behaviour often observed in impacted and surrounding communities post-disaster – that outpouring of support as people pull together, volunteer and/or donate to clean up and rebuild (Gill 2007). Pulling together is not, however, inevitable. Disasters for which people are seen as in some way culpable may provoke conflict over the causes of negative outcomes and who holds responsibility to remedy them, the erosion of social capital and cooperation within impacted communities, and a lack of empathy from outsiders.

While Gill (2007) argues these 'toxic community' outcomes are evident most often following industrial accidents, it is important to note that conflicts over attribution and responsibility, financial dependence on activities that increase disaster risk, extended time frames for recovery, and uncertainty over lingering threats to environmental and public wellbeing are not unique to industrial accidents. Culpability may be attributed to anyone who fails to prepare for what others regard as a reasonably foreseeable event – people who place themselves in harm's way, ignore warning signs and/or neglect routine risk management. Drought provides an excellent example – its definition in Australian public discourse swinging between a 'rare and severe' event and a predictable, manageable characteristic of Australian climate for which 'prudent and entrepreneurial' resource managers ought to plan for and around (Higgins 2001; Lockie 2014). It would be fanciful to think community-based approaches might mitigate altogether the possibility that conflicting definitions of hazards such as drought will undermine social capital and cooperation but, by providing forums for deliberation over the meaning of such hazards, in advance, this possibility is at least moderated.

## Landcare, transformation and crisis

> Introducing books and media reports with the statement that rural Australia is in 'crisis' has become so commonplace as to seem clichéd. For a decade or more our newspapers and televisions have been … littered with images of drought-stricken, salt-infected and barren landscapes; worthless livestock being shot and buried; bank foreclosures; the grieving relatives and friends of suicide and accident victims; boarded up and derelict buildings; and angry political meetings (Bourke and Lockie 2001:1).

One of the problems with crisis discourses is the sense they can convey that everyone, everywhere, is either equally effected or equally at risk. Not that the scale of land and water degradation in the early days of landcare was insubstantial. Soil salinity, waterlogging, soil erosion, soil acidity, soil structural decline and water quality decline were estimated to cost Australian agriculture $1.4 billion every year in remediation and lost production (LWRRDC 1994). Had costs associated with biodiversity decline and the loss of ecosystem services been included, this estimate would have grown significantly. More important for our purposes here though is the spatial and temporal variability of environmental degradation. Data suggesting that, at its peak, over 40% of Australian broadacre and dairy farms were involved in Landcare groups (meaning, of course, that nearly 60% were not) thus need to be interpreted in context of a national trend towards higher participation rates in the most intensely degraded agricultural regions (Tennent and Lockie 2013). Where natural resources and the businesses they supported were in decline, people joined Landcare groups.

**Where natural resources and the businesses they supported were in decline, people joined Landcare groups.**

Writing at the end of Australia's first Decade of Landcare, Bourke and Lockie (2001:1–2) noted some of the important and exciting ways rural Australia was changing for the better; serving, in particular, as a focal point 'for the development of more ecologically sustainable production processes and for processes of reconciliation between Indigenous and non-Indigenous peoples'. That a substantial number of rural Australians were participating actively in Landcare group activities, the rural women's movement and other expressions of collective and self-responsibility, stood in dramatic contrast with the growing electoral success of populist politicians campaigning to address low farm incomes and high urban unemployment through trade barriers and cuts to migration (Lockie 2000).

Similar patterns were evident in the local government area in south-west New South Wales where I conducted fieldwork from 1994 to 1996 and a follow-up study, in collaboration, in 2009 (see Tennent and Lockie 2013). At the time of the first study, about two-thirds of farm households were involved in one of the six Landcare groups active in the local government area with group coverage and activity highest where land degradation was perceived as an immanent problem – the word 'perception' being used here not to imply a possibility of misunderstanding but to stress that awareness of land degradation was a function both of changes in natural resource condition and of the knowledge, experiences, values and aspirations through which people viewed and interpreted the landscape. Explaining to me how they had come to be involved in their local Landcare group, one landholder told me:

> Landcare came in exactly the right year for us. There was a beautiful tree down there and … in one month it was dead and it was probably a hundred year old tree, and we've never done anything to put the water there, it just came out of the soil … absolutely oozed out … so when Landcare came about it was just the year we wanted it to come about because that's when our big problem was (Lockie 1996:150).

Others though came to recognise signs of what was, in this case, dryland salinity, following their exposure to Landcare group activities outside the immediate area. One group returned from a visit to projects in Victoria with stories of seeing their own farms 'through a new pair of eyes', of 'looking closer' and taking 'a little more notice of the land' (Lockie 1996:151; see also Lockie 1998). This relationship between perceived landscape change and Landcare group activity was strengthened as groups went on to establish their own demonstration sites, rehabilitation trials, roadside signage and educational materials. Property and catchment planning undertaken through Landcare groups, moreover, encouraged participants to look beyond the immediate state of natural resources and to manage their businesses with an eye to climate and market variability and the challenges these present for NRM.

Also at play here were a raft of social and economic pressures and changes. One participant in my first study expressed the view:

> I would have thought that due to the financial situation, Landcare would fall in a big heap, but it hasn't (Lockie 1996:155).

Few people joined Landcare groups to access financial assistance (and those that did often left disappointed). A number told me, though, how they felt comfortable participating in Landcare; spending time with neighbours and enjoying the social interaction that accompanied group activities, without the guilt that accompanied time or money spent on entertainment and other 'non-productive' activity. At a time of considerable financial stress due to tight terms of trade and the beginning of what would become known as the Millennium Drought, Landcare groups provided many of their members with basic social and emotional support. Several of the women I interviewed believed this was particularly important for men they thought were reluctant to access counselling services or even, for that matter, their own social networks.

Landcare groups, at the time of my first study, were doing a better job of involving women, non-farming households and more rural businesses overall than production-focused groups and organisations were. The contribution to social capital appeared substantial. On returning in 2009, however, we found no active groups (Tennent and Lockie 2013). Again, this appeared to reflect broader trends, with studies conducted in Western Australia, Victoria and New South Wales suggesting that groups were disbanding, merging or going into recess, along with declines in membership, outreach and other activity (Curtis and Cooke 2006; Simpson and Clifton 2010).

So what changed? Rural communities and economies were still under considerable pressure, with low and volatile incomes on the majority of Australian farms, poor returns on investment undermining capacity for reinvestment, declining recruitment of women and young people into agriculture, and continued depopulation and loss of employment in inland rural areas (Lockie 2015). Despite these pressures, evaluations of the first Decade of Landcare found strong evidence that active participation in Landcare groups was associated with increased implementation of conservation works (Curtis and De Lacy 1996a, 1996b; Mues et al. 1998; ABARE 2003) and that participation in educational activities organised by Landcare groups was associated with the adoption of more sustainable

farming practices (Curtis and De Lacy 1996a; Mues et al. 1998, Curtis 1999, 2003; Cary and Webb 2000). Landcare was widely perceived in policy circles, however, as a vehicle for capacity building that had failed to translate its success in increasing awareness of environmental degradation into demonstrable improvements in landscape-scale resource condition (Lockie 2006). While, in response, government expenditure on environmental work was increased, resourcing for Landcare group coordination and activity declined. New institutional arrangements for NRM emphasised planning and decision-making at larger spatial scales, measurable environmental outcomes and market-based delivery mechanisms (Robins and Kanowski 2011; Tennant and Lockie 2013).

While it is possible these new arrangements led to positive outcomes (evaluating this possibility was outside the scope of the study), participants in the follow-up study were critical of hierarchical decision-making processes through which they were discouraged from applying for funding, collectively, as Landcare group members (Tennent and Lockie 2013). The devolution of funding for environmental works to individual landholders, they believed, undermined collaboration and the potential it offered to share learning and increase environmental gains. Localised factors, participants conceded, including the retirement of several community leaders and a decline in the extent of dryland salinity, had also contributed to the dissolution or dormancy of Landcare groups. So too, importantly, had the financial and psychological stress of prolonged drought – a chronic, slow-moving disaster no less extreme in its effects than acute, sudden-onset events such as bushfires and floods. Neither the social capital built up over a decade of participation in Landcare nor the potential to keep accessing peer support through a protracted period of drought were sufficient to compensate for the withdrawal of proactive government support for Landcare groups.

## Community as transformation agent

Australia's National Landcare Program may have been initiated in response to natural resource degradation but the community groups it mobilised made numerous contributions to members' capacities for dealing with a range of other crises. This suggests that more-considered integration of community-based NRM programs, such as Landcare and CBDRR programs, is likely to deliver significant improvements in environmental management, disaster risk reduction and, in turn, livelihood security. Some improvements will be based on little more than ensuring activities undertaken in one domain provide demonstrable co-benefits in others – for example, ensuring that environmental management practice contributes to disaster resilience and, where possible, the diversification of livelihood options. Other improvements will stem from the platform that cooperation, trust and social learning provide for sharing the intellectual, financial and emotional costs of managing uncertainty and planning for extreme events. In short, social capital accumulated in one domain will be reinvested in others.

Critical in this context, however, is the possibility of social capital contributing to negative outcomes – in other words, of networks mobilised in support of community-based resource management or risk reduction excluding outsiders, burdening members with unreasonable demands or reinforcing exploitative social hierarchies (see Portes 1998). While there is little evidence of this 'dark side' to social capital undermining the effectiveness of community Landcare groups, the possibility of negative outcomes points nonetheless to the importance of avoiding romanticised notions of community and social capital as silver bullet solutions to otherwise intractable societal problems.

The idea of 'community' can mean many things but in this context, it refers to 'communities of place' – people who by virtue of spatial proximity share a material interest in environmental quality and safety but who may otherwise be characterised by multiple dimensions of heterogeneity such as gender, age, ethnicity, occupation and educational background. When the heterogeneity of communities is embraced so too are opportunities to mobilise participants and approach problems from a wider variety of perspectives. Social inclusion becomes less an abstract and worthy ideal and more a source of resources, creativity and innovation.

For community-based NRM and disaster risk reduction, inclusiveness is also important to ensure that:

- a critical mass of participants, including leaders, is available to support group function
- decisions taken by the group are seen as legitimate and representative expressions of community will
- spatial coverage of the relevant area is sufficient to ensure that environmental management and risk reduction activities are effective.

At its peak, landcare in Australia was inclusive enough that groups enjoyed many of these benefits – the groups participating in my research being far more inclusive, as noted above, than most rural community groups. It is not a criticism to add that the activities organised by these Landcare groups were overwhelmingly oriented towards the needs of farmers. It simply indicates that, even in communities of place, inclusiveness may mean slightly different things depending on the task at hand. Had community Landcare groups been charged with more responsibility for disaster risk reduction, they would have needed to reassess both their strategic priorities and their recruitment strategies to involve a higher proportion of the non-farming residents within their respective watersheds. The point is not that groups were less welcoming and diverse than they thought, but that shifting focus from environmental management to risk reduction brings new needs and interests into play.

Relationships outside the spatial bounds of 'the neighbourhood' are also fundamental to realising the transformative potential of community-based programs. Changes to Australian NRM programs that saw less financial support directed to community Landcare groups, along with heightened administrative and accountability requirements for the support that was still provided, led to declines in group activity (Robins and Kanowski 2011). If lessons are to be drawn here for government support of community-based programs, there are several points that bear noting. First, rising compliance costs were as large a disincentive to continued group activity as reduced funding. Increased accountability requirements encouraged projects with measurable short-term outcomes at the expense of higher-risk projects focused on more complex problems (Tennent and Lockie 2013). Second, instability in government policy discouraged voluntary activity by reducing confidence in government agencies, creating uncertainty over whether further changes in policy might undermine long-term investments in improved resource management, and adding their own compliance costs (Lockie 2020). Third, the burden of increased compliance costs and changing policy settings fell particularly heavily on group leaders, as did reduced support for the coordination and administration of Landcare groups. While resources from government and/or other external institutions are needed to supplement local capacity if community-based programs are to be sustained, two-way accountability is just as important to minimise unnecessary compliance costs and ensure respect for local needs and rights (Lockie 2020).

Ensuring NRM or disaster risk reduction activities provide co-benefits for participants is one way to reduce the relative burden of compliance costs. As Shaw (2012) points out, environmental management provides a useful entry point for CBDRR not only because of potential for positive synergies between environmental and risk reduction activities but because dealing with immediate and visible problems associated with environmental quality and health helps maintain enthusiasm and momentum while groups attempt to deal with the more abstract and uncertain problem of disaster risk.

The Landcare experience demonstrates how important it is that while community-based NRM groups also need to balance their focus on complex, long-term challenges with the immediate needs of members, a broad range of co-benefits are potentially relevant. For example, while participation in landcare did not simplify the complex spatial and temporal terrain of inter-related resource management challenges such as dryland salinity and drought, it did provide members with the social and emotional support to participate in collaborative learning, planning and experimental activities. Many of the resource management practices groups experimented with, moreover, provided farm production and income co-benefits when subsequently implemented by group members (Lockie 1999).

**While participation in landcare did not simplify the complex spatial and temporal terrain of inter-related resource management challenges ... it did provide members with the social and emotional support to participate in collaborative learning, planning and experimental activities.**

## Conclusion

Landcare, as it evolved in Australia from the late 1980s, was always about helping people deal with events that might otherwise exceed their ability to cope. It was about acknowledging the capacities of all stakeholders, the potential to amplify these by working in partnership, and the importance of mobilising capacity to plan for extreme events including drought, fire and flooding. What has landcare taught us about the transformative capacity of communities when confronted by natural disasters or other crises? There are many lessons to be learned but I will concentrate here on three.

First, landcare reinforces the importance of not casting romanticised notions of community as some sort of panacea for spatially and temporally complex resource management or risk reduction challenges. There is much to be gained by encouraging cooperation and social learning within communities of place but, equally, much to be lost by failing to reflect critically on how people can best be supported in the face of multiple environmental, economic and social challenges and opportunities.

Second, no crisis can be understood independently of the social relationships that produce vulnerability and shape people's experiences of both primary and secondary impacts. While social capital is an invaluable resource, proactive measures are required to ensure this resource is extended to those least capable of participation in existing social networks if genuine progress is to be made towards community resilience.

Third, no community exists in isolation. Sustained institutional support, stable policy settings, and mechanisms for coordination at larger spatial scales are just some of the ways in which the responsibilities of governments and other stakeholders outside the immediate communities of place that define community-based NRM and disaster risk reduction warrant expression.

## References


ABARE (Australian Bureau of Agricultural and Resource Economics) (2003) *Natural resources management on Australian farms*, ABARE, Canberra.

Bourke L and Lockie S (2001) 'Rural Australia: an introduction', *in* Lockie S and Bourke L (eds) *Rurality bites: the social and environmental transformation of rural Australia*, Pluto Press, Sydney.

Cary J and Webb T (2000) *Community landcare, the National Landcare Program and the landcare movement: the social dimensions of landcare*, Bureau of Rural Sciences, Canberra.

Curtis A (1999) 'Landcare: beyond onground work', *Natural Resources Management*, 2(2):4–9.

Curtis A (2003) *Reflecting on the landcare experience: a report based on information held within ABARE and BRS, Attachment 1, Review of the National Landcare Program*, Department of Agriculture, Fisheries and Forestry, Canberra.

Curtis A and Cooke P (2006) *Landcare in Victoria: after twenty years*, *a report to the Department of Agriculture, Fisheries and Forestry*, Institute for Land, Water and Society, Albury, NSW.

Curtis A and De Lacy T (1996a) 'Landcare in Australia: beyond the expert farmer', *Agriculture and Human Values,* 13(1):20–31.

Curtis A and De Lacy T (1996b) 'Landcare in Australia: does it make a difference?', *Journal of Environmental Management*, 46(2):119–137.

Gaillard J, Maceda E, Stasiak E, Le Bere I and Espaldon M (2009) 'Sustainable livelihoods and people's vulnerability in the face of coastal hazards', *Journal of Coastal Conservation*, 13:119–129.

Gill D (2007) 'Secondary trauma or secondary disaster? Insights from Hurricane Katrina', *Sociological Spectrum*, 27(6):613–632.

Higgins V (2001) 'Calculating climate: "advanced liberalism" and the governing of risk in Australian drought policy', *Journal of Sociology*, 37(3):299–316.

Lockie S (1996) *Sociocultural dynamics and the development of the landcare movement in Australia* [PhD thesis], Charles Sturt University – Riverina, Wagga Wagga.

Lockie S (1998) 'Landcare in Australia: cultural transformation in the management of rural environments', *Culture and Agriculture*, 20(1):21–29.

Lockie S (1999) 'The state, rural environments and globalisation: "action at a distance" via the Australian Landcare Program', *Environment and Planning A*, 31(4):597–611.

Lockie S (2000) 'Crisis and conflict: shifting discourses of rural and regional Australia', *in* Pritchard B and McManus P (eds) *Land of discontent: the dynamics of change in rural and regional Australia*, University of New South Wales Press.

Lockie S (2006) 'Networks of agri-environmental action: temporality, spatiality and identity within agricultural environments', *Sociologia Ruralis*, 46(1):22–39.

Lockie S (2014) 'Neoliberalism by design: changing modalities of market-based environmental governance', *in* Lockie S, Sonnenfeld D and Fisher D (eds) *The Routledge international handbook of social and environmental change*, Routledge, London and New York.

Lockie S (2015) *Australia's agricultural future: the social and political context* [PDF], *Report to SAF07: Australia's Agricultural Future Project*, Australian Council of Learned Academies, Melbourne, accessed 7 July 2020. https://acola.org/wp-content/uploads/2018/08/agriculture-socio-political-context.pdf

Lockie S (2020) *Failure or reform? Market-based policy instruments for sustainable agriculture and resource management*, Routledge, London.

LWRRDC (Land and Water Resources Research and Development Corporation) (1994) *Annual report 1993*, LWRRDC, Canberra.

Measham T and Lumbasi J (2013) 'Success factors for community-based natural resource management (CBNRM): lessons from Kenya and Australia', *Environmental Management,* 52:649–659.

Mues C, Chapman L and Van Hilst R (1998) *Landcare: promoting improved land management practices on Australian farms: a survey of Landcare and land management related programs*, ABARE, Canberra.

Portes A (1998) 'Social capital: its origins and applications in modern sociology', *Annual Review of Sociology*, 24:1–24.

Robins L and Kanowski P (2011) 'Crying for our country: eight ways in which "Caring for our Country" has undermined Australia's regional model for natural resource management', *Australasian Journal of Environmental Management,* 18(2):88–108.

Shaw R (2012) 'Future perspectives of community-based disaster risk reduction', *Community, Environment and Disaster Risk Management,* 10:389–402.

Simpson G and Clifton J (2010) 'Funding and facilitation: implications of changing government policy for the future of voluntary landcare groups in Western Australia', *Australian Geographer,* 41(3):403–423.

Tennent R and Lockie S (2013) 'Vale Landcare: the rise and decline of community-based natural resource management in rural Australia', *Journal of Environmental Planning and Management,* 56(4):572–587.

UNDRR (United Nations Office for Disaster Risk Reduction) (2015) *Sendai Framework for Disaster Risk Reduction 2015–2030*, UNDRR, Geneva.

UNDRR (2019) *Words into action: local disaster risk reduction and resilience strategies,* UNDRR, Geneva.

UNDRR (2020). *Hazard definition and classification review: technical report,* UNDRR, Geneva.

van Aalst M, Cannon T and Burton I (2008) 'Community level adaptation to climate change: the potential role of participatory community risk assessment', *Global Environmental Change,* 18:165–179.

Photo: Jeffrey Maitem

# CHAPTER 17

# Lessons from the field: landcare, subsidiarity and community-based extension

**Mary Johnson and Evy Elago-Carusos**

## Abstract

**The Philippines is one of the most disaster-prone countries in the world. In addition, for over 40 years, the Mindanao region of the Philippines has experienced armed conflict. A significant outcome of the Mindanao conflict is income deprivation, along with social dislocation and isolation from services. Successful conflict mitigation, post-disaster recovery and rebuilding are highly contingent on community capacity. Since 2013, Australian and Philippine research teams have been working with conflict-vulnerable Mindanao communities on a community-based livelihood improvement project. The project is informed by the Philippines landcare experience, which demonstrated that increased levels of trust, better networks and an enhanced capacity to learn and work collectively lead to livelihood improvement. These social capital attributes also increase the community's ability to respond to disaster mitigation and preparedness.**

**Our lessons from the field in this chapter are drawn from the Olo-clofe B'laan Landcare Association case study. This association has formed close working arrangements with institutional partners and aligned their local plans to those of local government agencies. Their efforts are improving community resilience in the face of disaster such as conflict in rural communities.**

## Introduction

The Philippines has been identified as one of the most disaster-prone countries in the world (Bankoff 2007; Brassard et al. 2015; Gaillard 2015). Moreover, the Mindanao region of the Philippines has experienced, for many decades, another form of disaster: armed conflict. Armed conflict is complex in nature and has multiple origins, including insurgency against the Philippines Government, displacement of Indigenous people from their ancestral lands, clan conflict and local conflicts over land and natural resources such as minerals and water.

Rural communities impacted by ongoing conflict experience social dislocation, income deprivation and isolation from services. As communities face the persistent threat of disaster, due to both human activity and natural processes, a range of coping mechanisms have developed to allow for what Bankoff (2004) calls the 'normalization of threat'. These coping mechanisms include practical solutions such as constructing buildings using low-cost materials that can be easily replaced.

Coping with disaster, disaster mitigation, recovery and rebuilding is highly contingent on community capacity. Forging partnerships with relevant authorities establishes arrangements where communities can engage with and lead in local development decision-making.

Since 2013, Australian and Philippine research teams have been jointly working with conflict-vulnerable Mindanao communities on community-based livelihood improvement activities. This chapter discusses the role of social organisation in the Mindanao context, through a project informed by Philippines landcare. It uses examples of resilience features such as networks, trust and reciprocity that improve the ability of communities to engage in coordinated endeavours and decision-making. The chapter also describes the principle of subsidiarity and how this harmonises with the landcare approach of enhanced community-based extension.

### Natural disaster

The Centre for Research on Epidemiology of Disasters defines disaster as 'a situation or event that overwhelms local capacity, necessitating a request at the national or international level for external assistance; an unforeseen and often sudden event that causes great damage, destruction and human suffering' (Guha-Sapir et al. 2016:7). Natural disasters involve an event (for example, flood, cyclone, landslide, volcanic eruption, earthquake) that has consequences in terms of casualties, damage, livelihoods and economic disruption and may be too great for the affected area and people to deal with properly on their own (Wisner et al. 2012). The Philippines has been identified as one of the most disaster-prone countries in the world by the Centre for Research on Epidemiology of Disasters. Gaillard's (2015) distribution of natural hazards shows how widespread natural disasters are across the archipelago (Figure 17.1).

Researchers observe that natural disasters often occur in areas populated by poor and vulnerable communities (see Bankoff 2007; Davis 2014; Nakagawa and Shaw 2004). The ability for these communities to respond to disaster with cost-effective and actionable solutions requires support from local agencies such as local government, and partnerships with outside organisations such as aid agencies (Mulligan and Nadarajah 2011).

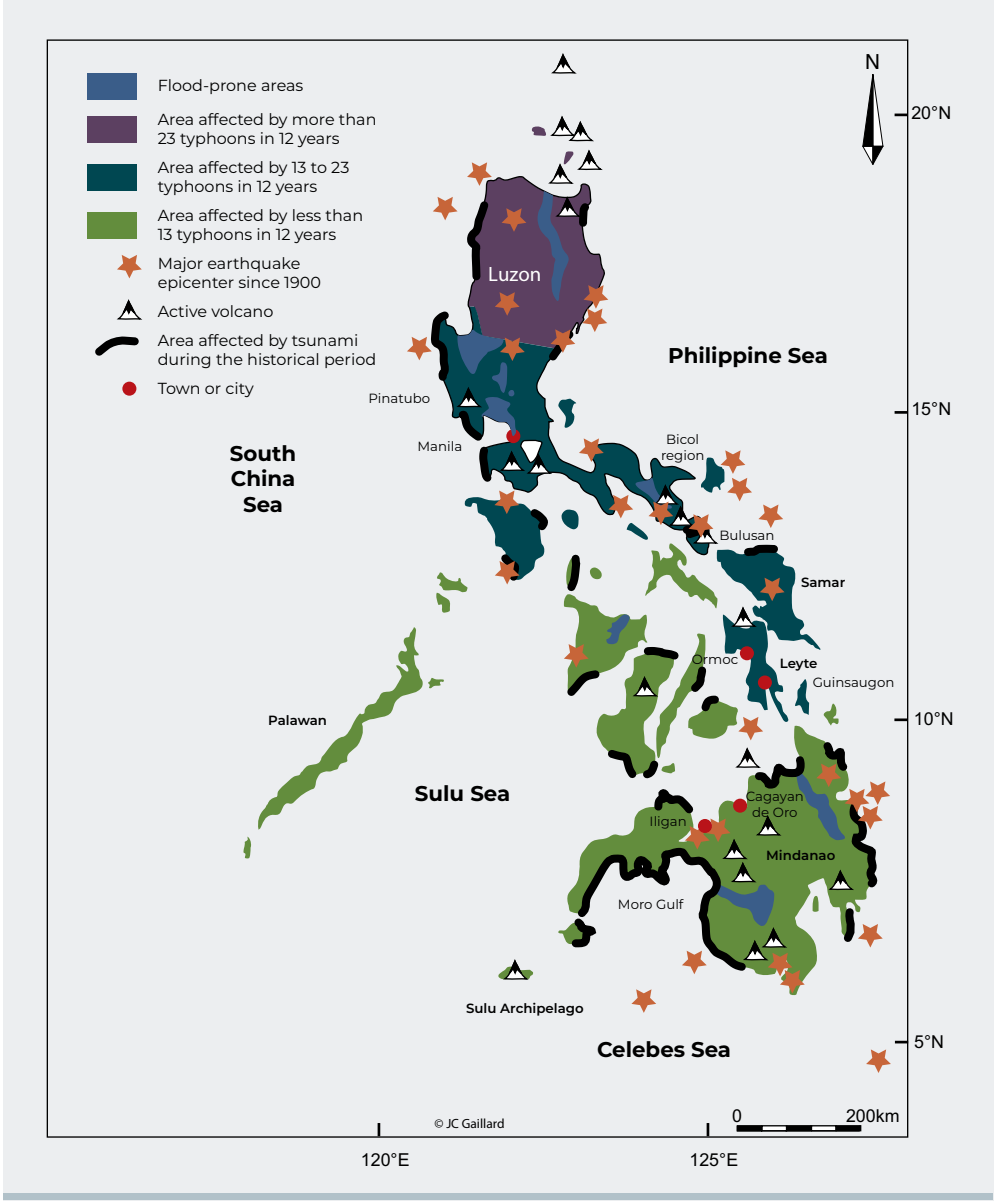



**Figure 17.1** Distribution of natural hazards in the Philippines

Source: Gaillard J (2015) *People's response to disasters in the Philippines: vulnerability, capacities and resilience,* Palgrave McMillon, USA. Reproduced with permission.

Formal and informal associations enhance the ability of people to withstand disaster. Recognising the specific ways in which disasters and people interrelate at the community level has ramifications for how disasters are perceived and managed (Bankoff 2007). Appreciating that there are both 'cultures of disaster' and 'cultures of coping' encourages an understanding of people's vulnerabilities and their ability to withstand disaster through strengthening existing capacities. Enlisting people's participation in disaster management through grassroots organisations provides the necessary local knowledge and networks for effective, efficient responses.

## Conflict in Mindanao

For over 40 years, the Mindanao region of the Philippines has experienced another form of disaster: armed conflict. The protracted Mindanao conflict is complex, multilayered and results in high rates of poverty and displacement (Adriano and Parks 2013). Two types of Mindanao conflict are described in the literature. The first refers to separatist, political, rebellion-related violence, which concerns armed challenges against the infrastructure of the state by insurgent and rebel groups. The second is non-separatist, bottom-up, inter-ethnic or intra-ethnic, clan or group violence, which concerns armed violence between and among families, clans and larger ethnolinguistic groups (Andales-Escano 2015; Lara and Champain 2009).

During armed conflict, those most often affected are civilians who are caught between the warring parties and forced to leave their communities (Veneracion-Rallonza 2015). In 2015, the United Nations High Commissioner for Refugees (UNHCR) reported the forced displacement of 407,397 Mindanao people. Of this number, approximately 37,000 people were repeatedly displaced because of armed conflict, clan war and generalised forms of violence (UNHCR 2015). By mid-2016, the UNHCR reported some 168,300 people were newly displaced by conflict in the Philippines (UNHCR 2017:20).

Studies also show that conflict and associated displacement results in significant income deprivation, along with social dislocation, isolation from services and psychological trauma to affected families (Malapit et al. 2003; Schiavo-Campo and Judd 2005; Villa 2009; Vellema and Lara Jr 2011). Another form of conflict described in the literature is misappropriation and exploitation of land and natural resources. After World War II and post-independence, large numbers of settlers from the northern islands of Luzon and the Visayas migrated to Mindanao, encouraged by a series of government-sponsored resettlement programs. This resulted in the dispossession of large areas of land that had been communally held by Moros (a collective term for members of Muslim ethnic groups in the southern Philippines) and Indigenous people (Adriano and Parks 2013; Schiavo-Campo and Judd 2005).

**The concept of social capital can be understood as 'the goodwill that is engendered by the fabric of social relations … that can be mobilised to facilitate action'**

## Social capital

The concept of social capital can be understood as 'the goodwill that is engendered by the fabric of social relations … that can be mobilised to facilitate action' (Adler and Kwon 2002:17). It is embodied in the smallest social group (family) to the largest of groups (the nation), and all groups in between (Fukuyama 2001). Social capital consists of networks of relationships that are characterised by norms of trust and reciprocity and that form the basis for collective action and enhanced community wellbeing (Putnam 1995; Ostrom and Ahn 2009).

These networks help local people to take social, environmental and economic action, draw on community spirit and provide local solutions to problems that governments alone cannot provide. In addition, these networks enable 'outside' agencies such as aid relief to connect with local entities, which is important during disaster response and recovery.

In a seminal Mindanao study of *bakwit* (a colloquial Mindanao term to describe forcibly displaced persons), Canuday (2009) found that 'the striking features of *bakwit* are capability, persistence, creativity and power in a world of reoccurring violence and displacements'. While acknowledging the 'endured pain and hardship of displacement', Canuday challenged many representations of displaced persons as helpless victims. On the contrary, he found that displaced persons continuously reordered their lives and social relations, with new sociopolitical arrangements established that enable them to evacuate, return and rebuild their communities (Canuday 2009).

In Canuday's study, social capital is mobilised into social networks that influence how power and responsibility are exercised and distributed. The networks are held together by mutual expectation of benefit and reciprocity and through kinship ties, respect and friendship. Diverse collaborations are important to allow timely and tailored responses. This concept extends to collaborative networks that can be geographically distributed and heterogeneous in terms of culture, but which are linked by a common purpose. Networks enable linkages between stakeholders at different scales and are determined by the structure of interplay between actors.

Collaboration is deeply ingrained in Philippines society through the culture of community cooperation known as *bayanihan* (Heijmans 2009). *Bayanihan* is the communal tradition where everyone works together for a common good. The longest history of *bayanihan* is found in agriculture, but the tradition is diffused throughout Filipino society and is an expression of team spirit and the sharing of labour (Gibson et al. 2010).

Collaboration that does not sacrifice autonomy can occur through the genuine application of the subsidiarity principle, where the functions of government, business and secular activity can be invested in and carried out at local level.

### Subsidiarity

The principle of subsidiarity was developed through Catholic social teaching and refers to help and relief in times of need. It is framed within the individual human right of autonomy and dignity, which broadens to include the strengthening and empowering individuals, groups and communities. In a political context, subsidiarity centres on the devolution of responsibility, where issues are dealt with at the most immediate level that is consistent with their resolution, for example, decentralised to a local level. This is evident in the landcare approach, where locally developed plans can complement and inform regional and national planning.

Subsidiarity takes on a particular salience for before and after disasters, when local capacity is critical to planning for disaster mitigation, responding and rebuilding. Local communities and local government are often the first responders to disaster events and the last entities to remain after external assistance has withdrawn. Subsidiarity plays a role in empowering communities to operate at the state–civil society interface (political capital), but this requires community capacity, committed resources and creating partnerships among different stakeholders at the local level (Shaw 2015).

## The Mindanao project

Since 2013, a joint Australian and Philippines research team has worked with conflict-vulnerable smallholder Mindanao farmers to improve their livelihoods (Figure 17.2). Commissioned by ACIAR, the ACIAR Mindanao Agricultural Extension Project (AMAEP) used extension methods adapted from Australian and Philippines landcare (Vock and Carusos 2017).

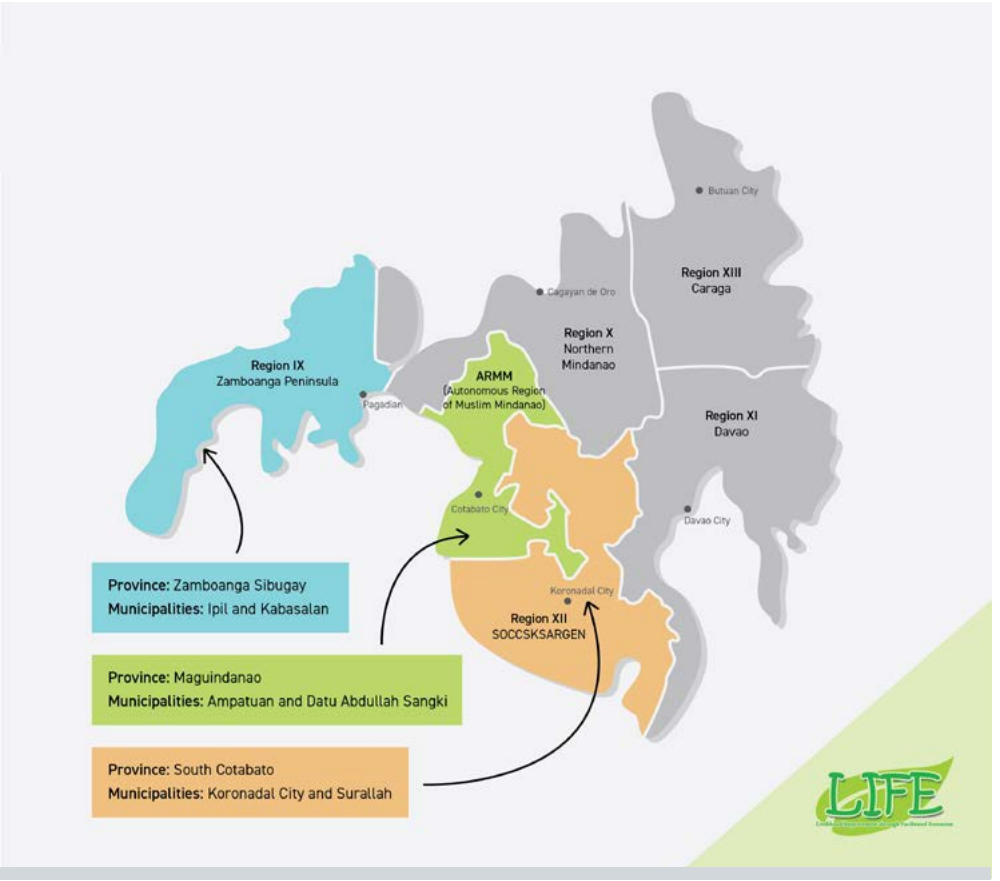



**Figure 17.2** ACIAR Mindanao Agricultural Extension Project pilot sites

Landcare emerged in the southern Philippines in the late 1990s as a strategy for collective action to deal with agricultural and land degradation challenges. Studies of Philippines landcare showed that community-based agricultural extension, informed by landcare, can boost agricultural livelihoods through strengthened farmer-based learning networks and enhanced community social capital (Cramb 2006, 2007; Newby and Cramb 2011; Vock 2015; Vock and Carusos 2017). Positive results from a small 2007 to 2009 pilot project working with a remote conflict-affected community in western Mindanao generated the impetus for the larger AMAEP project. AMAEP commenced at three pilot sites in conflict-vulnerable areas of Mindanao and, in mid-2015, was expanded to a further three sites. The farming systems at these sites are characterised by smallholder farmers producing for family food supply and income generation.

Underpinning the delivery of AMAEP is a strong partnership between the project team members that comprises Landcare Foundation of the Philippines staff and community facilitators, and Philippine and Australian university research teams. The role of the Landcare Foundation of the Philippines is primary operational partner and field staff manager. Since commencing in 2003, it has become the lead agency for the promotion of landcare in the Philippines and is a respected and successful implementer of livelihood initiatives in Mindanao. Local landcare facilitators were appointed to undertake the on-ground extension activities and research fieldwork. The facilitators have provided a consistent, committed and reliable point of contact and support for both farmer groups and project partners. They are respected by their communities and important to the ongoing development of trust and networks.

The AMAEP research teams work together in the planning and implementation of all project research activities. The University of the Philippines Mindanao provides social research expertise and the University of the Philippines Los Baños provides economic and livelihood research expertise. Australian RMIT University researchers support the Philippines team in the counterpart disciplines of economics, social research and agronomy.

The extension model developed through AMAEP is known as the LIFE model: Livelihood Improvement through Facilitated Extension. This model recognises the important role of facilitation in enabling farmers to pursue the three essential elements of the model:

- promotion of appropriate technology/information
- improvement in social capital
- building effective partnerships with extension agencies.

Change in practice takes time and the facilitators have steadily worked with their farmer groups to identify the farmers' aims and needs and develop appropriate tailored activities to meet these needs. Underpinning the LIFE model is an asset-based community development approach that places participating farmer groups at the centre of decision-making and takes advantage of available resources such as natural, social, human, physical and financial capital (Mathie and Cunningham 2003; Kretzmann and McKnight 1996).

**Working with conflict-vulnerable communities requires a strong focus on building levels of trust, stronger networks and enhancing the local capacity of people to work collectively for mutual gain.**

Another key AMAEP strategy has been the project team working concurrently with both farmer groups and relevant institutions and service providers and partners to build strategic relationships within the local area. This strategy ensures that participating parties share learning experiences, capitalise on opportunities where and when they arise, expand networks (both formal and informal), identify mutual challenges and issues and establish reliable, effective communication pathways.

Working with conflict-vulnerable communities requires a strong focus on building levels of trust, stronger networks and enhancing the local capacity of people to work collectively for mutual gain. Developing a sound understanding of social capital levels at the respective

project sites has enabled the farmer members, project team and facilitators to plan projects and activities together, and focus on areas for strengthening, such as networks and trust. Strong stocks of social capital provide both social and economic benefits. For individual farmers and farmer groups, often in resource-poor circumstances, the ability to form collaborative partnerships, share resources, utilise networks and seek information from reliable sources becomes an important strategy for achieving improved livelihood outcomes.

The following case study is drawn from the AMAEP project. It describes how subsidiarity arrangements enabled a community group, supported by local government, to develop and institutionalise their development goals through an administrative ordinance and associated program.

## Case study: Subsidiarity and the Olo-clofe B'laan Landcare Association

In the Philippines, a *barangay* is a basic political unit that serves as the primary planning and implementing unit of government policies, plans, programs and activities in a community. A *sitio* or *purok* is a geographic subunit within a *barangay,* typically composed of 20 to 50 households. The council, made up of elected officials, is the overarching governing body for a particular *barangay*. The development council is the planning and coordinating body, mandated by law to assist the council in setting the direction of economic and social development and coordinating development efforts within the *barangay*. The development council involves accredited local groups and support institutions operating within a *barangay*. It participates in identifying priority areas for development and endorsing those to the local government for funding and implementation. Figure 17.3 describes the levels of administrative division.

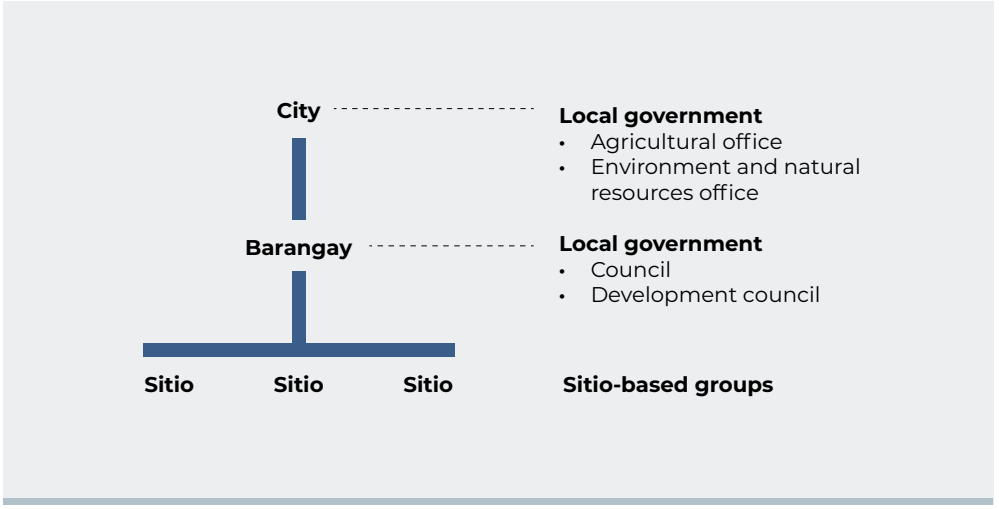



**Figure 17.3** Administrative divisions in the Philippines

The Olo-clofe B'laan Landcare Association (OBLA) is a *sitio*-level Indigenous people's group in South Cotabato, Mindanao. Koronadal is the capital city of South Cotabato. OBLA was formed by smallholder subsistence farmers participating in the AMAEP project. Poverty is widespread and OBLA's priority, identified during AMAEP-facilitated visioning workshops, was to grow cash and food crops. Extension officers from Koronadal's City Environment and Natural Resources Office (CENRO) and City Agriculture Office (CAO) collaborated with AMAEP facilitators and OBLA members on building individual and group capacity through activities and training, including a 14-module farmer field school on vegetable production integrated with agroforestry, market exposure trips to markets in Koronadal and farm enterprise planning. These activities also widened OBLA's education, marketing and service provider networks.

New networks generate fresh ideas and can create business and livelihood opportunities. For example, Koronadal's tree-planting festival is now held annually, with trees sourced from outside the area. OBLA started growing tree seedlings in home nurseries and encouraged CENRO to support other local groups to do the same. Consequently, OBLA and other *barangays* now supply trees for the annual tree-planting festival.

With proceeds from the sale of seedlings and vegetables, OBLA established a *sari-sari* (grocery) store. This has resulted in significant economic benefits for the farmers, as group members are able to meet their own household requirements and invest profits back into this small business in a group venture. The OBLA store has also created financial benefits for neighbouring *sitio* members. Their produce is bought and sold at the store, and shoppers can save by purchasing locally and avoiding the cost of travelling to Koronadal.

### Subsidiarity in action: creating the Barangay Assumption Ordinance

Barangay Assumption is located in the city of Koronadal. The idea to create a Barangay Ordinance came from an OBLA member who is also a member of the Barangay Assumption Council. An ordinance is a public regulation that covers civic matters, such as infrastructure, health, environment and links with locally planned development programs.

To develop the ordinance, AMAEP facilitators and OBLA worked closely with Barangay Assumption officials and non-OBLA *sitio* members. The facilitators ran workshops on planning and ordinance formulation, and supported the development of a conservation farming and natural resource management (NRM) program, based on environmental management, socioeconomic and social development objectives.

Once endorsed, the ordinance and conservation farming and NRM program triggered an allocation of funds from the Barangay Development Council to implement the program. Additional policies were developed and adopted that reflected CENRO, CAO and community landcare-focused programs and policies. These included no soil cultivation on a slope greater than 18 degrees (to avoid land degradation and land slide), hilly areas to be planted with permanent crops to avoid cash crops, the slash and burn system prohibited, the rehabilitation and protection of spring source area (watershed) and the declaration of protected areas.

Importantly, the gains from this Barangay Assumption Ordinance have been seen across the whole *barangay* and its seven *sitios*, including by non-OBLA members. Institutionalising local level plans within local development planning ensures that, regardless of changes in local government and community leadership, community-designed initiatives will continue.

## Conclusion

The AMAEP project, set within a conflict context, practises community-based extension that recognises the importance of local facilitators, collective learning, collective action and group empowerment. The people of the Philippines have developed strong social networks that provide coping mechanisms for dealing with disaster. This is borne out through the Canuday study that challenges representations of Mindanao's displaced persons as helpless victims.

Landcare's principles of networking and collaboration have encouraged increased levels of trust and connectedness within AMAEP sites. Networks are important for everyday transactions but take on a greater level of importance in a disaster context, where rapid but informed responses are required.

Collaboration between civil society and various levels of government is critical to enabling reasoned responses that are owned and implemented by those directly affected. The OBLA case study has described how subsidiary – working together towards a common aim – can be mutually beneficial for both state and non-state actors.

However, subsidiarity might not always guarantee effective outcomes, especially where government retains control (for instance, through funding and regulation) and finds it difficult to devolve power. Furthermore, if the capacity and motivation of communities to participate is weak then engagement on an equitable basis is unlikely.

OBLA was keen to participate in civic planning. AMAEP facilitators provided governance training so that OBLA members understood the mechanisms, process and language they needed to engage with *barangay* councils and local government. This strengthened autonomy as community members had a sound understanding of administrative governance processes and could collaborate with government officers on an equal basis.

The process of subsidiarity through application of the LIFE model in Barangay Assumption has resulted in numerous benefits for farmers, community and the environment. A survey of OBLA members since their participation in AMAEP shows that the farmers are much more confident and informed and are linked to supporting institutions. The environment has also benefited, with fewer trees being felled for charcoal production and improved on-farm practices that ameliorate the degradation of land and water resources, such as soil erosion.

The OBLA case study shows how establishing subsidiarity at the lowest administrative level of the *sitio* has generated benefits for the local community group and the wider *barangay*, and created links with local government programs.

## Notes and acknowledgements

Ratification of the Bangsamoro Organic Law in 2019 has paved the way for establishing the Bangsamoro Autonomous Region and creates new opportunities for peace in Mindanao.

This research and chapter were made possible through AMAEP, funded by ACIAR.

## References


Adler PS and Kwon S-W (2002) 'Social capital: prospects for a new concept', *Academy of Management Review,* 27(1):17–40.

Adriano F and Parks T (2013) *The contested corners of Asia – subnational conflict and international development assistance: the case of Mindanao, Philippines*, Asia Foundation, San Francisco.

Andales-Escano C (2015) 'Peacebuilding model in diverse conflict lines Southern Philippines', *in* Ha H (ed) *Land and disaster management strategies in Asia,* Springer, New Delhi.

Bankoff G (2004) 'In the eye of the storm: the social construction of the forces of nature and the climatic and seismic construction of God in the Philippines', *Journal of Southeast Asian Studies 35,* (1):91–111.

Bankoff G (2007) 'Living with risk; coping with disasters', *Education About Asia,* 12(2):26–29.

Brassard C, Howitt AM and Giles DW (2015) 'Confronting disaster: recent lessons from the Asia-Pacific', *in Natural Disaster Management in the Asia-Pacific Policy and Governance,* Springer, Tokyo.

Canuday JJ (2009) *Bakwit: the power of the displaced*, Ateneo de Manila University Press, Manila.

Cramb RA (2006) 'The role of social capital in the promotion of conservation farming: the case of "landcare" in the Southern Philippines', *Land Degradation & Development,* 17(1):23–30.

Cramb RA (2007) 'Participation in community landcare groups in the Philippines: a social capital perspective', *Australasian Journal of Environmental Management,* 14(2):93–102.

Davis I (2014) *Disaster risk management in Asia and the Pacific,* Routledge, London.

Fukuyama F (2001) 'Social capital, civil society and development', *Third World Quarterly,* 22(1):7–20.

Gaillard J (2015) *People's response to disasters in the Philippines: vulnerability, capacities and resilience,* Palgrave McMillon, USA.

Gibson K, Cahill A and McKay D (2010) 'Rethinking the dynamics of rural transformation: performing different development pathways in a Philippines municipality', *Transactions of the Institute of British Geographers,* 35(2):237–255.

Guha-Sapir D, Below R and Hoyois P (2016) 'EM-DAT 2016', The OFDA/CRED International Disaster Database, Université Catholique de Louvain, Belgium.

Heijmans A (4–8 February 2009) 'The social life of community-based disaster risk reduction: origins, politics and framing' [conference presentation]*, World Conference of Humanitarian Studies*, Groningen.

Kretzmann J and McKnight JP (1996) 'Assets-based community development', *National Civic Review,* 85(4):23–29.

Lara FJ and Champain P (2009) *Inclusive peace in Muslim Mindanao: revisiting the dynamics of conflict and exclusion*, International Alert, London.

Malapit HJL, Clemente TS and Yunzal C (2003) 'Does violent conflict make chronic poverty more likely?: the Mindanao experience', *Philippine Review of Economics* 40(2):31–58.

Mathie A and Cunningham G (2003) 'From clients to citizens: asset-based community development as a strategy for community-driven development', *Development in Practice,* 13(5):474–486.

Mulligan M and Nadarajah Y (2011) 'Rebuilding community in the wake of disaster: lessons from the recovery from the 2004 tsunami in Sri Lanka and India', *Community Development Journal,* 47(3):353–368.

Nakagawa Y and Shaw R (2004) 'Social capital: a missing link to disaster recovery', *International Journal of Mass Emergencies and Disasters,* 22(1):5–34.

Newby J and Cramb R (2011) 'Economic impacts of conservation farming in a marginal environment: the case of "landcare" in the Philippines', *International Journal of Agricultural Sustainability,* 9(3):456–470.

Ostrom E and Ahn TK (2009) 'The meaning of social capital and its link to collective action', *in* Svendsen GT and Svendsen GLH (eds) *Handbook of social capital: the troika of sociology, political science and economics*, Edward Elgar Publishing, USA.

Putnam RD (1995) 'Bowling alone: America's declining social capital', *Journal of Democracy,* 6(68):65–78.

Schiavo-Campo S and Judd MP (2005) *The Mindanao conflict in the Philippines: roots, costs, and potential peace dividend*, World Bank, Washington DC.

Shaw R (2015) 'Disaster risk management at local and community levels', *in* Davis I (ed) *Disaster risk management in Asia and the Pacific*, Routledge, New York.

UNHCR (United Nations High Commissioner for Refugees) (2015) *Displacement dashboard Mindanao, Philippines, forced displacement annual report*, accessed 3 May 2022. https://reliefweb.int/report/philippines/philippines-displacement-dashboard-mindanao-forced-displacement-annual-report

UNHCR (2017) *Mid-year trends 2016* [PDF], accessed 3 May 2022. http://www.unhcr.org/dach/wp-content/uploads/sites/27/2017/04/midyeartrends_2016.pdf

Vellema S and Lara Jr F (2011) 'The agrarian roots of contemporary violent conflict in Mindanao, Southern Philippines', *Journal of Agrarian Change,* 11(3):298–320.

Veneracion-Rallonza ML (2015) 'Women and armed conflict in the Philippines: narrative portraits of women on the ground', *Philippine Political Science Journal,* 36(1):35–53.

Villa A (2009) *Interviewing Indigenous peoples in Mindanao, Philippines: an emerging challenge to social researchers*, Anthology of Political and Historical Writings, Batingao.

Vock N (2015) 'Sustaining and growing landcare systems in the Philippines and Australia (ASEM/2002/051)', *in* Pearce D and Alford A (eds) *Adoption of ACIAR project outputs 2015 ACIAR adoption studies report,* No 12, ACIAR, Canberra.

Vock N and Carusos E (2017) 'Retooling agricultural extension for conflict-affected areas of the southern Philippines', *Rural Extension and Innovation Systems Journal,* 14(2):1–11.

Wisner B, Gaillard JC and Kelman I (2012) *Handbook of hazards and disaster risk reduction and management*, Routledge, New York.

Photo: Kazuki Kagohashi

# CHAPTER 18

# Factors determining the resilience of local communities: a comparative analysis of landcare and a pond irrigation system in the Sanuki Plain

**Kazuki Kagohashi**


## Abstract

**The management of environmental crises lend themselves to more localised governance approaches. This chapter illustrates two different attempts to adapt to environmental and resource crises: landcare in Australia and a pond irrigation system in the Sanuki Plain, Japan. Specifically, I focus on the landcare principles to test their validity in the context of adaptation to drought in the Sanuki Plain. The results of the comparative analysis confirm the following five core guiding principles of landcare:**

- **autonomy**
- **localism**
- **integrated resource management**
- **maintaining wellbeing**
- **promoting partnerships.**

**These core principles can be found embedded in the case of the Sanuki Plain, implying that they promote successful adaptation to drought events. Further research is required to expand the analysis to various other cases related to the response to crises and to compare how these core principles pertain to each case.**

## Introduction

This chapter examines the similarities between the adaptive responses to environmental crises in Australia and Japan. It focuses on the land degradation problem in Australia, which initiated the landcare movement in 1986, and on the drought in the Sanuki Plain, Japan, in 1994. Although the social context differs significantly between Australia and Japan, this chapter argues that some governance similarities between these cases do exist.

In Australia, various environmental problems have been reported since the beginning of European occupation in 1788, including clearing of indigenous vegetation, soil degradation, salinisation, extinction of native species, and weed and pest infestation, among other issues (Catacutan et al. 2009:13). Michael Seigel (2010) explains the background of these problems. The reasons for clearing can be traced back to the history of agricultural development in Australia. In the 19th and 20th centuries, demand for wool was rapidly growing due to the development of textile industries, hence the number of sheep increased dramatically (Seigel 2010). The emergence of squatters who occupied land and pushed Aboriginal people into the periphery also promoted land clearing.

Taking the Boomanoomana area as an example, Seigel points out that squatters cleared some 10,000 hectares of land that was originally covered by bushes and forest. The landcare movement, which emerged in 1986, was devised to use local-level solutions to tackle these local environmental problems. Landcare has been based on voluntary cooperative groups formed by landholders to improve agricultural productivity, including tree planting and lowering of the groundwater level, which causes soil salinisation (Johnson et al. 2009; Robins 2018). The landcare approach was effective in solving land degradation problems, such as soil erosion and salinisation, and it has been progressively expanded to include urban areas. The number of Landcare groups grew to over 4,000 in the early 1990s, reaching over 5,000 today (Love 2012; Curtis et al. 2014; Robins 2018). The period from 1990 to 2000 was called the Decade of Landcare, during which the Australian Government committed to spending $360 million to support landcare (Curtis et al. 2014).

Landcare can be understood as community-based natural resource management (NRM). It is embodied by local Landcare groups, regional NRM bodies, and regional and national NRM group networks, forming a nested governance system (Curtis et al. 2014). This type of multilayered NRM system, in accordance with public participation and community engagement principles, could increase landscape resilience. From the perspective of a community-based NRM group, it is possible to see similarities between Australian landcare and the pond irrigation system in Japan.

The Sanuki Plain is one of the driest regions in Japan due to climatic and geographic conditions. It is in Kagawa Prefecture in the north-east part of the Shikoku Island and has a precipitation no greater than 60–70% of the national average. Kagawa Prefecture covers 1,877 $km^2$, and roughly 16% is used for agriculture (30,200 hectares or 302 $km^2$). Rice is the main crop in the plain. According to the Kagawa Prefecture Ministry of Agriculture, Forestry and Fisheries Bureau (KPMA 2000), 83% of the farmland is occupied by rice paddy fields (the eighth highest rate in Japan). As the land area of Kagawa Prefecture is restricted (only 0.5% of Japan), the average area of farmland per farmer is 0.9 hectares, compared to a national average of 2.1 hectares per farmer. The population of Kagawa Prefecture is approximately 976,000, with approximately 71,000 farmers in 2015.

To improve drought response, the Kagawa Canal was constructed in 1974. It conveys approximately 247 million tonnes of water (105 million tonnes for irrigation, 122 million

tonnes for municipal water and 20 million tonnes for industrial water) every year from the Yoshino River, which flows outside Kagawa Prefecture. The water is delivered to 30,700 hectares of agricultural land, serving a population of 940,000. The Kagawa Canal plays a critical role in providing water to the Sanuki Plain.

The pond irrigation system can also be regarded as a community-based NRM system, which is similar to landcare. The local land improvement districts (LIDs) manage their own ponds (called child ponds). Regional LIDs, which embody local LIDs, manage parent ponds (the source of child ponds). This nested structure resonates with Landcare's governing structures.

**The pond irrigation system can also be regarded as a community-based NRM system ... The local land improvement districts manage their own ponds (called child ponds). Regional land improvement districts manage parent ponds (the source of child ponds). This nested structure resonates with Landcare's governing structures.**

## Landcare principles

Michael Seigel describes the main principles of landcare as follows (SPELJ 2013):

1. Landcare is based on local autonomous voluntary groups. They operate on the initiative and under the control of local residents and are therefore rooted in the local community and attuned to the local natural environment. In many cases, Landcare groups are made up largely of primary producers.
2. Landcare groups focus on local issues. They may address global issues such as climate change or biodiversity, but the focus will still be on what can be done locally to address these issues. Landcare groups are not likely to get into debates about the politics of these issues.
3. Landcare groups aim to address environmental issues holistically. In other words, they do not treat problems such as invasive species, soil degradation and salinity independently from one another, but try to address these issues in relation to one another. The focus may be on a specific issue that is particularly serious in a given environment, but they also attempt to understand that issue and deal with it in relation to the other issues in the local environment.
4. Landcare groups focus not only on the conservation or restoration of the natural environment but also on the wellbeing of the local community. This includes a focus on such things as the income of primary producers. In this sense, the holistic approach mentioned above includes considering human society and the natural environment together in a holistic way.
5. Landcare is characterised by partnership and networking. This means partnership and networking among the different Landcare groups, and partnership and networking with the various levels of government, with academics and specialists, business corporations, non-government organisations, etc.

The first principle illustrates the importance of the autonomy of local groups who are caring for their land. This perspective resonates with the understanding of the landcare ethic, which is 'influencing the way people live in the landscape while caring for the land' (Australian Framework for Landcare Reference Group 2010:1). It defines the 'landcare movement', which stresses the perspective of stewardship and volunteerism in driving local action (Love 2012:6).

Here, we will adopt the 'autonomy of local groups' as the core concept underlying the first principle. The ideas of stewardship and volunteerism related to the landcare ethic and the landcare movement are also important; however, autonomy is an overarching concept. Autonomy is the primary concept from which the stewardship and volunteerism of local groups emanate. In other words, neither stewardship nor volunteerism will occur if a group is not autonomous (at the group level). Autonomy is particularly important in landcare in the sense that the preferences and needs of local communities should be respected, and local people should take responsibility for determining and tackling local affairs. This is closely related to the principle of subsidiarity. Although a definition of subsidiarity has not been agreed yet, a shared understanding implies 'that any particular task should be decentralized to the lowest level of governance with the capacity to conduct it satisfactorily' (Marshall 2008:80). In the context of the common-pool resources management, subsidiarity can be key to the successful governance by nested enterprises/multilevel systems (Marshall 2008; Ostrom 2009).

The second principle incorporates the concept of localism, which emphasises the practical attitude of making local action more constructive. Focusing on local problems can direct local people to what they can do by themselves. This can contribute to creating a positive attitude towards local Landcare groups. Localism will also encourage people to recognise their common interests, such as land degradation, and to gather and form a Landcare group. These common interests will then become the target for their activities.

The third principle emphasises the complexity of local environmental problems, specifically referring to their inter-relatedness. This calls for integrated resource management, which involves collaboration among the actors related to and/or responsible for the problems. This approach encourages people to broaden their view from seeking individualistic interests to achieving a common good for their community, which reduces environmental risk at a regional scale. Broadening the perspective of local community can be interpreted as the recognition of the social cost of the environmental problems, the consequences of which frequently go beyond a single farm. Invasive species, for example, move not just within a farm, but also to and from farms.

The fourth principle stresses the 'maintenance of wellbeing'. Human wellbeing is a broad term and can be affected by various factors, such as income, food, health care, education and social capital (Ormel et al. 1999; Helliwell et al. 2018). At the macro scale, wellbeing can be separated into physical capital, natural capital and human capital, which are collectively called 'inclusive wealth' in the literature on sustainable economic development (Dasgupta 2004). These capital assets are theoretically identified as determinants of the level of wellbeing over generations. It is also interesting to see that, by combining the principles of 'maintenance of wellbeing' at the community level and 'localism', we can derive 'satisfying the local needs and preferences', which is one of the important perspectives of landcare.

The fifth principle describes the importance of creating a collaborative network of various entities, including Landcare groups, private companies, municipalities and non-government organisations. The perspective of partnership and networking means that the network is

based on mutual collaboration and a flat relationship rather than a hierarchical one. A collaborative network enables local groups to acquire essential resources to sustain their activities, including information on sustainable farming, technologies and grants. This can work in two ways.

First, a collaborative network can augment each group's capacity through the diversification of the means. If they are isolated, local groups must use their own limited resources. However, if resources are provided from outside the groups and further reinforced, their capacity to expand the variety of activities will be augmented. Diversifying the means will also lead to higher resilience of local groups as the options to act increase.

Second, the collaborative network can work as a safety net when the local groups face difficulties sustaining their activities due to resource limitations. A collaborative network can serve as a social security for local groups. Thus, creating a network of Landcare groups and other entities can promote local activities by developing the capacities and complementing the shortages of local Landcare groups. Landcare coordinators and facilitators play an important role in this networking.

Seigel's principles of landcare can be classified into three categories (Table 18.1). The first category relates to the ethic of landcare, which includes the concepts of autonomy and localism. The second category is the end of landcare activities and involves 'the maintenance of wellbeing'. The third category is the approach of landcare, which includes the concepts of 'integrated resource management' and 'networking/partnership'.

**Table 18.1** Core concepts underpinning Seigel's landcare principles

| Category | Principle | Core concept |
|---|---|---|
| **Ethic** | 1 | Autonomy (of local groups) |
| | 2 | Localism |
| **End** | 4 | Wellbeing (of local communities) |
| **Approach** | 3 | Integrated resource management (inclusiveness) |
| | 5 | Partnership and networking (capacity building and safety net) |

This categorisation enables us to understand Seigel's principles of landcare more structurally. The end of landcare activities is set to sustain the level of wellbeing of local communities and the approaches taken to achieve that end, such as integrated resource management and broadened partnership and networking. The most important category is the ethic of landcare (autonomy and localism that avoids residents or community members losing their initiative to manage their own resources). The approaches of integrated resource management and building partnerships are relevant, but they do not rule out the possibility of dependence on (or the domination by) upper-level entities (such as governmental bodies) or enterprises for the sake of sustaining community wellbeing.

Understood in this way, we can construct the following analytic framework of landcare:

- Landcare's goal is to improve the wellbeing of local people through the formation of and involvement with landcare activities.
- Measures for the environmental problems must be inclusive and should be diversified through the Landcare network.
- The autonomy of local groups and localism must be respected firsthand in landcare activities.

The combination of the concepts of autonomy and localism can create a perception of 'respect to the local people and environment', which would in turn develop the ethic of stewardship. In the next section, I will apply this framework to the case of a successful adaptation to water resource crisis (drought adaptation) in Japan to explore the effectiveness of the landcare principles.

## Pond irrigation system in the Sanuki Plain, Japan

The Sanuki Plain is both one of the most developed areas of the pond irrigation system and one of the most drought-prone areas in Japan. In the Sanuki Plain, more than 14,000 pond reservoirs have been constructed. The region has a density of 7.79 reservoirs per $km^2$, holding the first place in Japan for water development (KPMA 2000). Due to the severe precipitation restriction (natural water supply) compared to the demand for water resources in the Sanuki Plain, farmers have built their own ponds and developed a pond irrigation system over several hundred years (Nagamachi 2013b). Some traditional methods of pond water management were highly effective in mitigating the negative impact of drought.

### Droughts in the Sanuki Plain

The oldest drought recorded in Japan was in 701 CE. Roughly 2,000 droughts are documented in the Sanuki Plain, of which 85% occurred after the 17th century (Shikoku Disaster Information Archives n.d.). According to Hayami (1993), the population in the Sanuki Plain increased by 29.5% from 334,153 in 1721 to 432,648 in 1834. The population surge increased demand for rice, the staple diet in Japan. Both the climate condition (supply side) and population increase (demand side) accelerated the scarcity of water, which led to the development of pond irrigation systems in the Sanuki Plain. The number of ponds was 1,372 in 1645; this increased to 1,953 in 1686 and reached 5,555 in 1797 (Nagamachi 2013a).

### Drought adaptation measures in the Sanuki Plain

The increase in the number of ponds in the Sanuki Plain includes the development of traditional water usage and management. One of the adaptive measures to droughts that was developed is rotational irrigation (*ban-sui* or *ban-mizu* in Japanese). Rotational irrigation, implemented only in a drought period, is performed by the local pond irrigation association. Pond water is distributed to designated areas in which farmlands are grouped into several blocks (usually three to five) only on a specific day and time. This means that local farmlands can receive the minimum amount of water required to sustain the growth of agricultural crops one or two days per week (depending on the number of blocks). This system effectively reduces water usage, so it can marginally sustain the agricultural crops until the drought condition improves. Kagohashi and Ueta (2011) reveal that traditional water management, including rotational irrigation, had practical effects in reducing crop damage costs and the burden on farmers. Rotational irrigation is labour-intensive water management because it calls for strict monitoring of water gates to prevent illegal manipulation.

Another traditional type of water management is intra-basin water adjustment. In the Sanuki Plain, each pond is connected and the water flows upstream to downstream. The water for irrigation flows from the 'parent' reservoir most upstream to 'child' and 'grandchild' reservoirs downstream. During the severe drought in 1994, the parent pond water was delivered to the child ponds to level out the consequences of drought. In other words, the parent ponds were responsible for ensuring that water depletion would not

occur in the child ponds and their farmlands. If a child pond had grandchild ponds, the same rule applied to ensure that water depletion and crop damage would not occur in its watershed. Together with the rotational irrigation method, this type of water adjustment could increase the equity of water usage under drought conditions.

Drought adaptation measures also include inter-basin water adjustment. This was conducted for the first time in the 1994 drought by the Kagawa Canal Land Improvement District (KCLID), which distributes water through the main line of the Kagawa Canal. KCLID comprises 79 land improvement districts and water associations in the Sanuki Plain. Based on a policy of giving the distribution preference to areas with poor irrigation conditions in the Sanuki Plain, KCLID conducted water adjustment throughout the entire region. Continually gathering information on drought conditions (for example, depletion of each pond's water level; implementation of drought adaptation measures such as rotational irrigation and intra-basin water adjustment; and crop damage conditions), KCLID ensured that drought damage would not be concentrated in a specific region. As the main line of the Kagawa Canal penetrates the main parent pond reservoirs of the Sanuki Plain from east to west, it was possible to adjust water resources beyond the watersheds in the region by adjusting the water volume delivered to each reservoir. KCLID did not control water usage in each pond irrigation system. Rather, it focused on levelling the drought conditions of parent ponds. After delivering water to each parent pond reservoir, the water was distributed along with the traditional rules or customs for each pond irrigation system.

## Comparative analysis of landcare and drought adaptation in the Sanuki Plain

The first and second principles – autonomy and localism – of landcare reflect its ethic. These principles fit well with the characteristics of pond irrigators in the Sanuki Plain. Famers in the Sanuki Plain had formed an LID to manage agricultural water, implement farmland consolidation, manipulate and maintain water facilities, and so on (Ishii and Okamoto 2002). Following the Land Improvement Act enacted in 1949, an LID group can be formed if it has more than 15 farmers and if the formation is affirmed by more than two-thirds of the farmers who are supposed to receive benefits from it. An LID is a place-based local group and is composed of landholders.

LIDs in the Sanuki Plain also exhibit distinctive autonomy. First, the LID group has self-organising bodies such as an administrative board, general meetings of the members, etc. The administrative board includes more than five directors and two auditors, and the directors are elected by members. Second, LIDs maintain the water facilities using their own budget (Ishii and Okamoto 2002). LIDs collect a fee from members and repair the waterways, water gates, drainage, etc. using the pooled budget. Third, in the case of the Sanuki Plain, local LIDs allocate water from pond reservoirs according to their rules and traditions, which have developed historically. These traditional water usage and management practices have been respected even when local LIDs could receive additional water through the Kagawa Canal. Local water traditions were especially appreciated in the severe drought of 1994, even when KCLID conducted a regional water transfer. It is especially important that KCLID did not disturb the autonomy of local LIDs in the context of pond water usage and management.

When conducting regional water transfers, the KCLID tried to sustain the wellbeing of local LIDs, not simply the volume of pond water. KCLID understood that drought would decrease the income of farmers through agricultural crop losses. However, it should be noted that,

especially for farmers who were producing rice, the dying of rice meant more than an economic loss. It also meant shame for them, as failure to overcome drought and grow rice is regarded as incompetence. No matter how severe a drought is, maintaining the growth of rice has been deemed as a qualification for farmers in the Sanuki Plain. This may sound peculiar, but it is a social norm that may be attributed to the history of the Sanuki Plain, where farmers have repeatedly adapted to and survived through droughts.

The third landcare principle (integrated resource management) also fits the case of the Sanuki Plain well. During the 1994 drought, not only conjunctive water use within a watershed but also water allocation among the watersheds in the Sanuki Plain was encouraged. The latter was conducted through the manipulation of the water gates of the main Kagawa Canal line, which played a critical role in adjusting water allocation in the entire area of the Sanuki Plain. In 1994, local water development, such as groundwater, was also conducted by local LIDs through digging wells, installing pumps, etc. This was one of the adaptive measures to drought, and the number of projects for local water development reached about 8,200 (Kagohashi 2015:37). Here, integrated resource management involved the utilisation of possible water resources from the local to the regional level.

During the 1994 drought, not only the problem of inefficiency, but also the problem of inequality of water use under drought conditions was recognised. Local farmers tried to increase the efficiency of water use by implementing traditional water management practices. Some of these ceased to be used after the construction of the Kagawa Canal, as water availability in the Sanuki Plain dramatically improved and farmers no longer needed to conduct strict water management. Traditional practices, however, still play an important role in adapting to serious drought. These practices include *ban-sui* (rotating irrigation), *hashiri-mizu* (which permits farmers to take just enough water from an irrigation channel to moisten the surface soil), and *dobin-mizu* (traditional drip irrigation, where farmers carry water by bottles and do the watering).

While pond water was used as efficiently as possible in each farmland in 1994, KCLID promised local LIDs it would deliver water preferentially to those who faced severe water shortages. By conducting water transfer between watersheds in the Sanuki Plain, KCLID tried to level the water inequality among the regions in the Sanuki Plain. Here, the approach of integrated resource management included the harmonisation of efficiency and equity of water use under severe drought conditions.

**The adaptation to drought through the augmentation of the level of efficiency and equity of water use would not be possible without partnership among the local LIDs, KCLID and governmental bodies.**

The adaptation to drought through the augmentation of the level of efficiency and equity of water use would not be possible without partnership among the local LIDs, KCLID and governmental bodies. The cost of digging wells, installing pumps and amending waterways (160 million yen in the Sanuki Plain) were mostly covered by subsidies from local municipalities and the government (Kagohashi 2015:37). These subsidies motivated farmers in local LIDs to implement water development projects in their district.

It is also important to note that local LIDs were not isolated during the 1994 drought. Not only did KCLID keep local farmers motivated to implement traditional water management and increase water use efficiency, it also promised local LIDs it would provide water if they ever faced pond water depletion. Farmers trusted KCLID, and KCLID respected the autonomy of local LIDs. The mutual respect between KCLID and the local districts promoted partnership in the 1994 drought.

## Conclusion

This chapter examines the similarities between landcare's response to soil conservation and the adaptation to drought in the pond irrigation system in the Sanuki Plain. Focusing on the principles that Michael Seigel extracted from the landcare activities in Australia, this chapter draws the core ideas behind each principle: autonomy, localism, integrated resource management, wellbeing and partnership development. These concepts have been classified into three categories: ethic, end and approach.

These three categories can also be found in the adaptation process to the 1994 drought in the Sanuki Plain. Japan. First, the autonomy of local LIDs was appreciated in the Sanuki Plain, even in the time of drought. KCLID did not override the initiative of the local LIDs who have their own rights and responsibility to the use and management of pond water. As for the localism, local LIDs are place-based groups that were formed in the Sanuki Plain over several hundred years or more. The main purpose of LIDs is the management of agricultural water and related facilities. LIDs focus on local issues, such as agricultural production. Together with autonomy, localism may well contribute to the development of stewardship ethic of the productive base, which is essential to sustaining agricultural production.

Second, the more that water resources in the Sanuki Plain became scarce, the more the pond irrigation water system was integrated. Not only was the pond water used efficiently within each watershed, the inter-basin transfer of water was initiated by the level of drought faced by each LID (Kagohashi 2017). This is a good fit with the landcare principle of integrated resource management. Integrated water resource management would not be possible without partnerships between different levels of governance.

Although landcare in Australia and pond irrigation systems in Japan have developed in totally different contexts, the core ideas that underpin Michael Seigel's landcare principles seem to be relevant to achieving successful adaptation to environment and resource crises. This resonates with the discussion of social resilience, which is defined as the ability of communities to withstand external shocks to their social infrastructure (Adger 2000:361). There is an evolving literature on social resilience, which includes studies on operationalising the concept into practical indicators (see Dale et al. 2015, 2016), interpreting the theoretical characteristics of social resilience (see Maclean et al. 2014) and linking the concept to a community's adaptive capacity, such as access to critical resources (Langridge et al. 2006).

The result of this analysis implies that following the core ideas that underpin the landcare principles would contribute to augmenting the level of social resilience at the local and regional scale. It may also be possible to interpret these five core ideas as the components of the principle of subsidiarity. Marshall (2008:8) explains that this principle 'generally shares in common the implication that any particular task should be decentralized to the lowest level of governance with the capacity to conduct it satisfactorily'. He argues that the nested governance of common property resources works well when it is guided by the principle of subsidiarity in the context of landcare.

The results of this study imply that the core ideas behind landcare are relevant in adapting to environmental and resource crises. Of course, oversimplification must be avoided. We should keep in mind that there are historical and cultural differences in the governance system between landcare in Australia and the pond irrigation system in Japan. The process of forming a group, for example, is different: Landcare groups are voluntarily formed, while the members of the local LIDs in Japan are obliged to participate if they are to be involved in farming. Further research is required to take these differences into account. In addition, we need to expand the analysis to responses to other crises and compare how the five core ideas relate to each case.

## References


Adger W Neil (2000) 'Social and ecological resilience: are they related?', *Progress in Human Geography* 24(3):347–64.

Australian Framework for Landcare Reference Group (2010) *Australian Framework for Landcare community call for action*, The Australian Landcare Council Secretariat, Canberra and Department of Agriculture, Fisheries and Forestry, Canberra.

Catacutan D, Neely C, Johnson M, Poussard H and Youl R (2009) *Landcare: local action – global progress*, World Agroforestry Centre, Nairobi.

Curtis A, Ross H, Marshall G, Baldwin C, Cavaye J, Freeman C, Carr A and Syme GJ (2014) 'The great experiment with devolved NRM governance: lessons from community engagement in Australia and New Zealand since the 1980s', *Australasian Journal of Environmental Management,* 21(2):175–199.

Dale A, Vella K and Cottrell A (2015) 'Can social resilience inform SA/SIA for adaptive planning for climate change in vulnerable regions?', *Journal of Natural Resources Policy Research,* 7(1):93–104.

Dale AP, Vella K, Potts R, Voyce B, Stevenson B, Cottrell A, King D, Babacan H, Boon H, Gooch M, and Pert P (2016) 'Applying social resilience concepts and indicators to support climate adaptation in Tropical North Queensland, Australia', *in* Jorg JK and Knieling J (eds) *Climate adaptation governance in cities and regions: theoretical fundamentals and practical evidence,* Wiley Blackwell, Chichester and Hoboken, USA.

Dasgupta P (2004) *Human well-being and the natural environment*, Oxford University Press, New York.

Hayami A (1993) 'Chronology of population statistics in early Meiji Japan', *Nihon Bunka,* 9:135–64.

Helliwell JF, Layard R and Sachs JD (2018) *World happiness report 2018*, Sustainable Development Solutions Network, New York.

Ishii A and Okamoto M (2002) 'Tochi kairyo ku' [Land improvement district], *Nouson keikaku gakkai shi* (*Journal of Rural Planning Association*], 21(2):193–4.

Johnson M, Poussard H and Youl R (2009) 'Landcare in Australia', *in* Catacutan D, Neely C, Johnson M, Poussard H and Youl R (eds) *Landcare: local action – global progress*, World Agroforestry Centre, Nairobi.

Kagohashi K (2015) 'Mizu yu-zu no seidoteki tokushitsu ni kansuru ichi kousatsu: 1994 nen no sanuki heiya wo jirei to shite', *Mizushigen Kankyo Kenkyu,* 28(1):31–37.

Kagohashi K (2017) 'Water sharing, drought adaptation and inclusive wealth', *in* Shunsuke M (ed) *The wealth of nations and regions,* Routledge, New York.

Kagohashi K and Ueta K (2011) 'Kassui he no seidoteki tekiou no yuukousei: Sanukiheiya ni okeru mizu yu-zu wo jirei to shite,' *Zaisei to Koukyo Seisaku,* 33(2):81–91.

KPMA (Kagawa Prefecture Ministry of Agriculture, Forestry and Fisheries Bureau) (2000) *Kagawa ken tameike jittai chosa, Kagwa ken norinsuisanshobu*, Kagawa Prefecture Forestry and Fisheries Bureau, Kagawa, Japan.

Langridge R, Christian-Smith J and Lohse KA (2006) 'Access and resilience: analysing the construction of social resilience to the threat of water scarcity', *Ecology and Society*, 11(2):Article 18.

Love C (2012) *Evolution of landcare in Australia: in the context of Australian Government natural resource management policy and programs*, Australian Landcare Council Secretariat, Canberra.

Maclean K, Cuthill M and Ross H (2014) 'Six attributes of social resilience', *Journal of Environmental Planning and Management,* 57(1):144–56.

Marshall G (2008) 'Nesting, subsidiarity and community-based environmental governance beyond the Local Scale', *International Journal of the Commons,* 2(1):75–97.

Nagamachi H (2013a) Sanuki no tameike bunka to kagawa yousui: Kinsei tameike suiri no hattatsu. Mizu to tomoni, September 2013.

Nagamachi H (2013b) 'Tameike bunka no keisho to tameike no hozen', *Civil Engineering Consultant* 259(April):32–35.

Ormel J, Lindenberg S, Steverink N and Verbrugge LM (1999) 'Subjective well-being and social production functions', *Social Indicators Research,* 46(1):61–90.

Ostrom E (2009) 'Design principles of robust property-rights institutions: what have we learned?', *in* Ingram GK and Hong Y (eds) *Property rights and land policies,* Lincoln Institute of Land Policy, Cambridge.

Robins L (2018) 'More than 30 years of landcare in Australia: five phases of development from childhood to mid-life (crisis or renewal?)', *Australasian Journal of Environmental Management,* 1(13).

Seigel M (2010) 'Gou bu-ma nu-mana randokea guru-pu no torikumi, jisseki, oyobi mondaiishiki', *Shakai to Rinri,* 24:63–82.

Shikoku Disaster Information Archives (Shikoku saigai a-kaibusu) (n.d.) [website], accessed 24 March 2020. www.shikoku-saigai.com

SPELJ (Secretariat to Promote the Establishment of Landcare in Japan) (2013) *SPELJ Newsletter*, Issue 1, SPELJ, Nagoya.

Photo: Andrew Campbell

# CHAPTER 19

# Developing the role of landcare: a reflection on the value of community landcare as a subsidiarity practice model for emergency and natural disaster management

**Jennifer Quealy**

## Abstract

As natural disasters and emergencies increase in number, extent and severity, a powerful and sustainable response would be to develop a network of resilient, locally active, aware and capable landcare communities. The landcare model includes both the local knowledge and values held by members, as well as the on-ground works they undertake. These attributes make Landcare an ideal partner for disaster resilience and risk reduction. The 30-year Australian landcare experience demonstrates how organised communities prepare for and act on the impacts of bushfires, cyclones, floods and droughts, and build local resilience. But while this role and experience is known and greatly appreciated, Landcare has rarely been a formal partner when governments activate responses for natural disasters and emergencies. Landcare groups are regularly left out of such responses, without access to critical resources. Research and the formal activation of Landcare groups could help governments worldwide to develop more effective disaster responses. Where Landcare groups are activated, recovery outcomes are more possible. Landcare networks build resilience in their landscapes and communities, which is highly relevant to disaster responses.

This chapter looks at case studies that suggest an active role that Landcare groups could play in partnership with the usual emergency and disaster agencies. Landcare development could be critical to activating the people power, skills and capacity needed to protect the green infrastructure of landscapes that we need to be resilient to disasters in the long term.

## Introduction

The landcare movement, active across Australia (and now the world) is gradually becoming known for more than its usual role in rehabilitating damaged landscapes, promoting sustainable agriculture and improving farming impacts on water, soils, biodiversity and agricultural productivity. Landcare groups are becoming vital local networks that could be critical responders to natural disasters and emergencies. They have valuable knowledge, mapping, connections and experience of local landscapes and properties. Many Landcare members also belong to formal first-responders organisations, such as fire and rescue services, Red Cross, Country Women's Association and other community service groups. These groups all assist communities to deal with the impacts of natural disasters and emergencies. There is critical, valuable intelligence held by Landcare networks and this is often exactly what authorities need before, during and after natural disasters and emergencies.

The roles of Australian Landcare members and groups have evolved over the last 30 years to include natural disasters and emergencies. Local knowledge and networks are very useful during these events. This suggests there should be a more formal role for Landcare groups in helping government agencies to build and support the community resilience required to adapt and respond to natural disasters and emergencies. Global climate change adaptation frameworks and goals almost require the community landcare model, which could form the real-world responses behind the rhetoric of global climate change responses. The Sendai Framework for Disaster Risk Reduction 2015–2030, which was adopted at the Third United Nations World Conference on Disaster Risk Reduction in March 2015, states:

> While the enabling, guiding, and coordinating role of National and State Governments remain essential, it is necessary to empower local authorities and local communities to reduce disaster risk, including through resources, incentives and decision-making responsibilities, as appropriate. States should encourage … civil society, volunteers, organized voluntary work organizations and community-based organizations to participate, in collaboration with public institutions, to … provide specific knowledge and pragmatic guidance; engage in the implementation of local, national, regional and global plans and strategies; contribute to and support public awareness; and advocate for resilient communities and an inclusive and all-of-society disaster risk management (UNDRR 2015).

This is a welcome and resonant call for groups like Landcare to take an active part in disaster risk reduction and management. Many communities are already building their knowledge, skills and capacity to enable them to participate in response and recovery efforts. Such groups are often the first to notice events. They are also the ones who are in place when something happens, even before formal agencies respond. The world needs more Landcare-like networks that are ready, willing and able to contribute their social and landscape literacy and activity towards solving wicked challenges thrown up by complex natural disasters and emergencies.

Landcare groups have needs in this scenario too: they must be officially recognised, valued, supported and engaged in more formal roles in preparation, management and recovery over the long term for communities, landscapes and enterprises. There is a need for appropriate support, resources and capacity building, but many groups have already begun the networking and knowledge-sharing they need to be responsive to events.

This chapter describes how Landcare can leverage formal responses and improve its potential and actual role in events. Landcare is self-reflective and adaptive to change, by nature and by design. Landcare could improve its impacts by reflecting and advocating more on this role, and looking at both what it does and what it offers for responses and adaptations to climate change.

Those in experienced Landcare groups (and those watching them) know that the Landcare model already has what it takes to be an inspired, powerful, leading, 'go-to' community partner in natural disasters and emergencies. Landcare NSW notes:

> With increasing emphasis on localism, Landcare is a potentially valuable ally for governments. Landcare groups are often well placed to be the first responders, on the ground, to natural emergencies such as bushfires; again in a manner where government agencies are sometimes more constrained (Henry et al. 2016).

## Landcare as a subsidiarity model

Subsidiarity is a concept that resonates with the Landcare model. The subsidiarity recognises that individuals at their local community level can think and do much for themselves and for each other, even during complex and challenging times. This is what the term 'agency' means. But if 'agency' – the ability to know, act and do at a local level – is taken away from individuals and communities by a higher authority, longer-term complexities may arise that get in the way of recovery and resilience.

For over 30 years, Landcare has been responding to community-level challenges. It is a model of adaptive localism. Landcare requires cooperation, local knowledge and landscape literacy, social connectedness and mapping, and shared values and goals. As a recent review of a significant bushfire event found:

> Historically, the responsibility for community recovery would have rested, almost entirely, with the community itself through the ministrations of churches, welfare and aid groups, philanthropic organisations and individuals … Recovery as a responsibility of government is a more contemporary phenomenon, now forming part of the emergency management spectrum of Prevention, Preparedness, Response and Recovery, or PPRR (Leadbetter 2013).

Landcare is a known, valuable and critical player at the local community level, and in regional and catchment networks, agencies and organisations. There is a constant Landcare presence and effort activation within a myriad of day-to-day challenges across landscapes and industries and land types (social, environmental and sustainable productivity as well as local governance). Landcare can add immense value after natural disasters and emergencies. Landcare has what it takes to be an inspired and powerful local network that can activate when needed. Landcare is a leading 'go-to' community partner, made up of networked individuals who have established their agency and their subsidiarity role and can bring these to the challenges of natural disasters and emergencies.

But Landcare needs to believe this. It must advocate for its role much further, and attract support for its deeper relevance and potential to help the world (and disaster risk reduction agencies) to care about and manage disaster events. Many Landcare groups have experience in responding to post-disaster events. Australia and our regional partners are regularly visited by cyclones, monsoons, floods, droughts, bushfires, water and heat stress events and disastrous pest and weed infestations. All of these are predicted to become

more frequent and severe with climate change. Landcare groups are right there, across all landscape and community types.

Landcare members know that the network has untapped potential. Perhaps it is time for Landcare to evolve a little further, with the support of governments and leading non-government organisations that are involved in natural disasters and emergencies. Many communities understand the very real impacts of climate change – most have been caught up in various emergencies and natural disasters. The difference now – and the reason that 'stepping up' is a matter for serious research and discussion – is the escalation of the frequency, intensity and cost of such events in recent years. Community groups are actively preparing for these events, living through them and assisting their neighbours to recover for many months and years after.

**Australia and our regional partners are regularly visited by cyclones, monsoons, floods, droughts, bushfires, water and heat stress events and disastrous pest and weed infestations. All of these are predicted to become more frequent and severe with climate change. Landcare groups are right there, across all landscape and community types.**

At times, recovery works pose additional threats (mostly unintentionally) on Landcare works. An example of this occurred in Far North Queensland when coastal and roadside habitat containing important and critical biodiversity, including that of the southern cassowary (*Casuarius casuarius*, a large flightless bird vulnerable to extinction), was severely damaged by Cyclone Larry in March 2006. Many local community members and Landcare groups had been working for years to restore habitat and protect the species. Following Cyclone Larry, however, several government agencies and work crews destroyed roadside vegetation in an attempt to reduce risks to human populations, and this work led to habitat destruction. Landcare and conservation groups had to get back to work again to restore habitat and find resources to repair the additional human-induced damage.

Most Landcare groups have a critical role in managing through and recovering from these events, regardless of whether they have been impacted personally. But it is not just the physical on-ground works – landcare is also about building resilience in people and places, and practices and enterprises. It is a central and multitasking community-led model of the development of landscape practice and work that is critical to community resilience and for building and sustaining subsidiarity. People need the power to act as responsible agents in their own known and loved landscapes.

Landcare groups ebb and flow over time. Each one is particular and characterised by the local landscapes, issues and people, as well as the knowledge and diversity of the people. According to some research, however, most Landcare groups tend to go through known stages in their lifecycles (Chamala and Mortiss 1990), albeit at a pace determined by the members themselves. Localism is well in practice in such networks. Sometimes members and networks are dormant during periods when there are no obvious challenges or when members are busy with their individual enterprises (for example, harvesting times). But most groups can be quickly activated and become a vibrant and caring Landcare

community when needed. They activate prior to slow events (bushfires can take days, weeks or even months to get to a local area, for example), or more suddenly as more rapidly appearing events occur. In both scenarios, localism and subsidiarity kick in and Landcare groups are ready to partner with their catchment and disaster agencies when needed.

This reflection highlights the opportunity often found in chaos. Landcare is mature enough to help with risk reduction, preparation and whole-of-community engagement on the socioecological responses needed for climate change adaptation as outlined in the Sendai Framework. But Landcare generally runs 'on the smell of an oily rag'. Locals do what they can with what they have. This works in many scenarios. However, for the greater needs outlined in such discussions as the Sendai Framework, Landcare groups must be more securely funded so they can leverage their efforts to meet local needs, improve skills and capacity building, and access resources that will allow them to be available and connected when they need to respond to challenging events.

How do we know this? When Landcare groups are active, they both act and connect. It is a social movement as much as a group of people sharing tasks for a landscape or community. Media, research and self-reporting for over 30 years shows that Landcare is capable of tackling various challenges because of its work and focus on agriecological landscapes and their people and communities.

## Leveraging local people power is necessary for reducing global risk

Readers may be aware of and actively planning in the context of the *Sendai Framework for Disaster Risk Reduction 2015–2030* (UNDRR 2015). Landcare is a perfect model of community awareness and activation capacity for reducing risk and building resilience. But only with recognition of its capacity and potential, and with adequate support, can Landcare act more confidently in such roles. Resilience building is a key theme in emergency and natural disaster thinking internationally. This is a core role and attribute of Landcare.

**Resilience building is a key theme in emergency and natural disaster thinking internationally. This is a core role and attribute of Landcare.**

When Landcare and other community actors are not recognised for their roles, skills, capacities, preparedness and people power, and are left out of decisions, subsidiarity fails. The unintended consequences include actual damage to local projects (and social, environmental and productivity impacts), disempowerment of local community networks (often creating tensions and mental health impacts across communities) and wastage of the knowledge of community and landscape when disaster hits. Some groups are sidelined or locked out of event response management, hierarchies, workplans and recovery, despite their intrinsic local knowledge, connections and interest that could be activated to help effectively.

Landcare is generally not named or used in most formal disaster-response arrangements. When an emergency or natural disaster event occurs, governments activate their formal partners into a management hierarchy that has power, influence, activities and resources to implement. These activities can ignore and damage localism, and add greater costs to long-term recovery efforts as communities are disrupted. Invariably, these formal powers and arrangements are activated on both public and private land, impacting on local farms, properties, enterprises and Landcare projects and communities. Landcare is at the very least a stakeholder, and at most an underutilised source of knowledge, mapping, connection and local intelligence – the very ingredients needed for resilience and subsidiarity.

Many Landcare and catchment groups are called in later, when the long-term work of rebuilding, cleaning up, replacing fencing, restocking and replanting is needed. This is when the long-term impacts of the events hit families, farm, businesses and ecosystems, and it is also often when the media and politicians have moved on. This has been the lived experience of Landcare groups in many emergencies and disasters. Landcare groups in Far North Queensland, guided by the regional natural resource management (NRM) group Terrain NRM, have been through this. Terrain NRM worked with local Landcare communities to plan a long-term recovery operation that was still ongoing years later. Locals contributed to and sought external funding from businesses and donors for cassowary habitat restoration; on-farm fencing projects; and farm, riverine, schools and community recovery activities.

Two problems with generic emergency management responses are the perceived focus on urban challenges (that often feature more accessible, quicker and better resourced recovery projects) and the insufficient time allowed to support locals with their long-term recovery needs. Landcare groups often feel that they are left behind when recovery agencies and their resources move on, sometimes after just a few months. It is in the longer term that more complex, landscape-scale challenges within communities, agricultural enterprises and ecological functions of damaged rural landscapes can emerge. This is when the real work of recovery is needed – restoring or rebuilding the social, political and economic elements of the community fabric that will allow a community and its enterprises to return to viability. This is what Landcare can offer.

**Landcare groups often feel that they are left behind when recovery agencies and their resources move on, sometimes after just a few months.**

The next logical and natural step for Landcare (and governments and non-government organisations generally) is to help the formal emergency management sector avoid unintended consequences and results from recovery decisions made by others, including external partners. The challenge is for formal agencies to embrace the subsidiarity that Landcare offers. Communities need to see an end to decisions being made without the longer-term, on-ground intelligence that could be contributed by Landcare networks. One solution could be to have a roundtable with local Landcare groups in the weeks after an emergency to plan the immediate landscape triage required. This would be led by local knowledge, and could be followed by developing resourced recovery plans for longer-term recovery. Donations and grants would need to be scaled to fit this timetable and should be available and ongoing for local communities to manage (with subsidiarity).

Governments and non-government organisations need to help Landcare maintain its role in communities as knowledge and community-connection hubs. These hubs are most important when events radically disturb the norm in a region. They are made up of people who can access people, places and intelligence about local projects and threatened species and help get communities moving towards a post-disaster 'new normal'.

Agencies can help improve the positioning and value of Landcare groups as essential and valued partners of first responder institutions. Leadbeater (2013) notes the value of Landcare recordkeeping, networking and local knowledge when describing intelligence-gathering after the catastrophic Strathewen bushfires in Victoria. This is a case of a recovery approach being assisted by using:

> an authoritative record of properties impacted, homes destroyed, and lives lost. This was compiled using a map and records from the local Landcare group. In the absence of electricity and telephones, information was collected and shared by means of personal visits … (Leadbeater 2013:43).

Landcare can leverage knowledge of its communities in the face of the trauma and disruption of disaster events, which are now becoming more frequent. Landcare could contribute important knowledge to management discussions on landscapes that are being critically impacted by these events, and learn from and work with emergency management leaders to help develop pre-disaster preparation and post-disaster recovery.

Some may feel this is not the role of Landcare. Many are happy with exactly where Landcare is and where it is heading. They may not want to interfere with the status quo of emergency management. Other people will question the resources, time and skills needed for such a role – it might mean more work and even more commitment. The landcare movement needs robust research to consider these legitimate concerns, ideas and opportunities, as evidentiary background for this approach.

Landcare's attributes naturally align with the Sendai Framework's goals and critical needs, and the UNDRR's strategy for implementation at the community level (UNDRR 2015:46), which calls for local community engagement in disaster risk reduction, particularly 'establishing collaborative action for DRR at the national and local levels'. The goal of the Sendai Framework requires localism, and that makes Landcare, with all its features, a critical player. The goal is to:

> Prevent new and reduce existing disaster risk through the implementation of integrated and inclusive economic, structural, legal, social, health, cultural, educational, environmental, technological, political and institutional measures that prevent and reduce hazard exposure and vulnerability to disaster, increase preparedness for response and recovery, and thus strengthen resilience (UNDRR 2015).

The guiding principle of the Sendai Framework about community empowerment is particularly relevant:

> Empowerment of local authorities and communities through resources, incentives and decision-making responsibilities as appropriate (UNDRR 2015).

Landcare would be wise to reference, cross check and map its own roles and needs where they align with the Sendai Framework strategies. Table 19.1 lists some Landcare attributes that match with UNDRR strategies at local and community level. Further research by Landcare will strengthen Landcare's role in reducing risk, unwanted impacts and frustrations inherent in more regular disaster responses that do not currently formally

**Table 19.1** Key attributes of Landcare groups

| **Know** | **Connect** | **Prevent** | **Low risk** |
|---|---|---|---|
| Understand their landscapes intimately and know how to walk, talk and act | Connect with their community quickly to activate during and after disasters and emergencies | Prevent the worst impacts of post-disaster recovery plans and decisions | Good local reputation<br>Effective risk managers<br>Low level of insurance claims against them in Australia (via credible ongoing systems and training) |
| **Global** | **Informal** | **Adaptive** | **Multipliers** |
| Model and network that thinks globally and acts locally<br>Active in 22 countries | Not yet recognised in formal emergency management or natural disaster decision-making hierarchies | Can react quickly, effectively and be fully aware of local needs for both preparation for disasters and emergences and for recovery and resilience at the local level | Share members with other local groups and networks |
| **Capacity** | **Representative** | **Collaborative** | **Leverage** |
| Have skills, knowledge, active plans and are preparedness-aware | Include landholders and groups at catchment, state, national and global scales | Operate at farm, community, local area levels<br>Well networked | Local and business, public and government investments<br>Return on investment in planning, resilience and repair |

include Landcare. This will also greatly assist government and whole of community disaster risk reduction and resilience strategies.

With Landcare groups actively engaged in disaster risk reduction and responses, more people and places will be better prepared for these events. They will be more resilient, and more responsive to event management and recovery. This will also avoid community efforts and investments, and those of governments and industry, being compromised, wasted, vulnerable and disconnected.

Wonderfully, and with some prescience perhaps, some Australian Landcare networks have created excellent informal working relationships in local catchments with other groups, including bushfire brigades, country women's associations, rural women's networks, service clubs, schools and local councils. Links exist with the formal local emergency management groups building deep and sustaining adaptive and empowered community networks. In Chapter 15, Andrea Mason presents a bushfire case study, indicating what is possible with more formal arrangements. What Landcare and the natural disaster and emergency networks need is to build and share the knowledge that those arrangements have delivered and see if and how they can be improved.

Often, short-term recovery decisions that are not based in subsidiarity principles seem to come from fear and ignorance and make recovery a much longer and, in some cases, doomed venture. As Leadbeater states:

> Recovery started badly is almost impossible to reclaim given its longer-term impacts on the structure, relationships and functioning of the community. Creating space and time for the community to come together and for the 'right' answers to emerge is an investment in meaningful, sustainable recovery … the imposition of externally constituted and 'templated' recovery models can seriously undermine inherent community resilience (Leadbeater 2013:46).

Some adverse outcomes from a non-local recovery model include financial and agriecological impacts that layer on top of the physical impacts of the event itself. These can last longer and have more challenging long-term impacts than the original event. When Allan Dale was CEO of Terrain NRM, he experienced these frustrations after cyclones Larry and Yasi. The community couldn't access funding from government or public appeals for Landcare community recovery works to undertake essential activities. Terrain NRM and Landcare Australia had to raise funds separately through corporate supporters. In another example, allegedly adverse impacts arose after the NSW Government allowed tree clearing in the zone between houses and bushland after the 2013 Blue Mountains bushfires. This encouraged inappropriate clearing in a region that sits within a vulnerable World Heritage Area. After the January 2011 flooding in the Lockyer Valley in south-east Queensland, a state agency allowed bulldozing of creekbank vegetation, which many feared would cause more destabilisation of impacted waterways. These are the kind of unintended and additional impacts that can follow disaster events and that subsidiarity can help prevent.

## Landcare as a formalised local and empowered voice in global resilience

Landcare networks need a say when disasters are occurring, to give voice to their landscapes and social networks. Disaster-response thinking can work with long-term and deeply held community values and catchment standards through Landcare.

A new model for Landcare would see it added as a formal (and critical) partner, event adviser and actor in emergency management and natural disaster relief and recovery arrangements. Many Landcare members, groups and communities have valuable skills and resources to offer when these events occur. Disaster and emergency responses need (and the Sendai Framework promotes) a whole-of-community approach, working with government on social and agriecological innovation.

This approach will require advocacy by Landcare within its local, national and global networks. Landcare must be enabled and empowered to implement global conventions that support such an approach, and research is needed to back this up. Groups like Australian Landcare International and the Society for the Promotion of Landcare in Japan, and Landcare networks in Iceland, the Philippines, eastern Africa, South Africa, New Zealand, Pakistan and across the Asia-Pacific region, could be the virtual brains trust for this initiative. These global Landcare groups could work together to bring advocacy, research and resources into developing this layer of activity to the Landcare model. Such collaboration needs to be based on good research and practitioner case studies. Landcare must show that it has the capacity, knowledge and skills to operate as a natural disaster and emergency management actor.

The immense costs of disasters requires us to rethink how we prepare for and reduce risks. Landcare is well placed to contribute at the highest level during and after emergencies. This initiative could be called a 'triage' or 'recovery' model. It would focus on planning for disaster event management and recovery for the people and agriecological and social landscapes. This would be a simple step for networks like Landcare.

The basics that Landcare groups need for this development include long-term planning, grassroots knowledge of catchment and landscapes and social networks, community engagement, global knowledge sharing, expertise, resourcing and activation. All of these are core business for Landcare. Many landcarers add to their on-ground works and community networking with activities such as citizen science, crowdsourcing and social media marketing, and use technology to improve agriecological monitoring and management. Governments would be wise to support and leverage the many skills and capacities inherent and ever-developing in active Landcare groups, by listening to and engaging with the knowledge and networks that landcarers want to share, to assist in their care of people and place.

Many landcarers think a lot about emergencies and natural disasters, but many report feeling left out of important decision-making when local events occur. Sometimes when 'disaster thinking' comes into play, it knocks out the hard-fought policies and strategies and even the places and networks that landcarers have worked on for years. This kind of disruption is costly, but it can be avoided.

Landcare can act to bring resilience and socioecological thinking, planning and appropriate action to disaster and emergency events. Landcare needs resources from the funding pool to be available when events occur. Landcare would be a willing partner and could bring the right kind of thinking and ability to post-disaster management, particularly in long-term preparation and recovery.

## Conclusion

I propose a formalised triage or recovery role for Landcare in disaster and emergency management. This makes sense economically and socially and in terms of the impact of disasters on landscapes and assets. Landcare's role should be formally recognised and supported by all levels of government as well as major emergency and disaster non-government organisations.

Landcare needs to reflect on these ideas, share thoughts, develop ideas and advocate for this to happen. It needs to sit and act at the planning tables, where local action and larger collective strategies are being planned and rolled out. To support this approach, and with some resourcing, Landcare could create a 'Landcare Lab' of online resources and connections about disaster response by gathering research, case studies, plans and guides that will be accessible to (and built by) all landcare communities across the world.

To carry out this role effectively, Landcare (perhaps driven by Australian Landcare International, ACIAR and other key partners) needs to:

- survey and develop ideas from and with their memberships to understand what Landcare would need to develop to grow and act in ways that develop the capacity of their members and the whole community to respond to disasters and emergencies
- identify risks to networks and projects (including the social and community networks and projects) in rural, regional and remote regions, and explore how Landcare could assist with community development strategies

- collaborate on research about how Landcare effectively builds resilience into landscapes and community networks through its strategies and activity
- develop and circulate thought-leadership papers to local, catchment, state, regional and national Landcare networks, local councils and emergency management teams about how to empower and formalise these roles
- work with catchment agencies and local councils to develop collaborative strategies for risk reduction and preparation, resilience building and recovery
- advocate for partnerships between Landcare networks and governments and non-government organisations, to help them engage with and better understand landscapes and communities that might be impacted by emergencies and natural disasters
- create and develop an open source 'Landcare Lab' to gather and share knowledge and activity plans, results and suggestions widely.

If Landcare does engage, the ability to influence and get appropriate resources will open in ways we can only hope for. Landcare has a great opportunity to take a leadership role at a time when people are becoming aware of more and more damaging events affecting communities around the world. In the Sendai Framework, Landcare has a pathway and opportunity to move from being a silent or locked out partner to becoming a valued, active and critical partner, literally helping to save the world from the impacts of climate change. Landcare already thinks globally and acts locally – in both the 'good times' and the bad.

## References

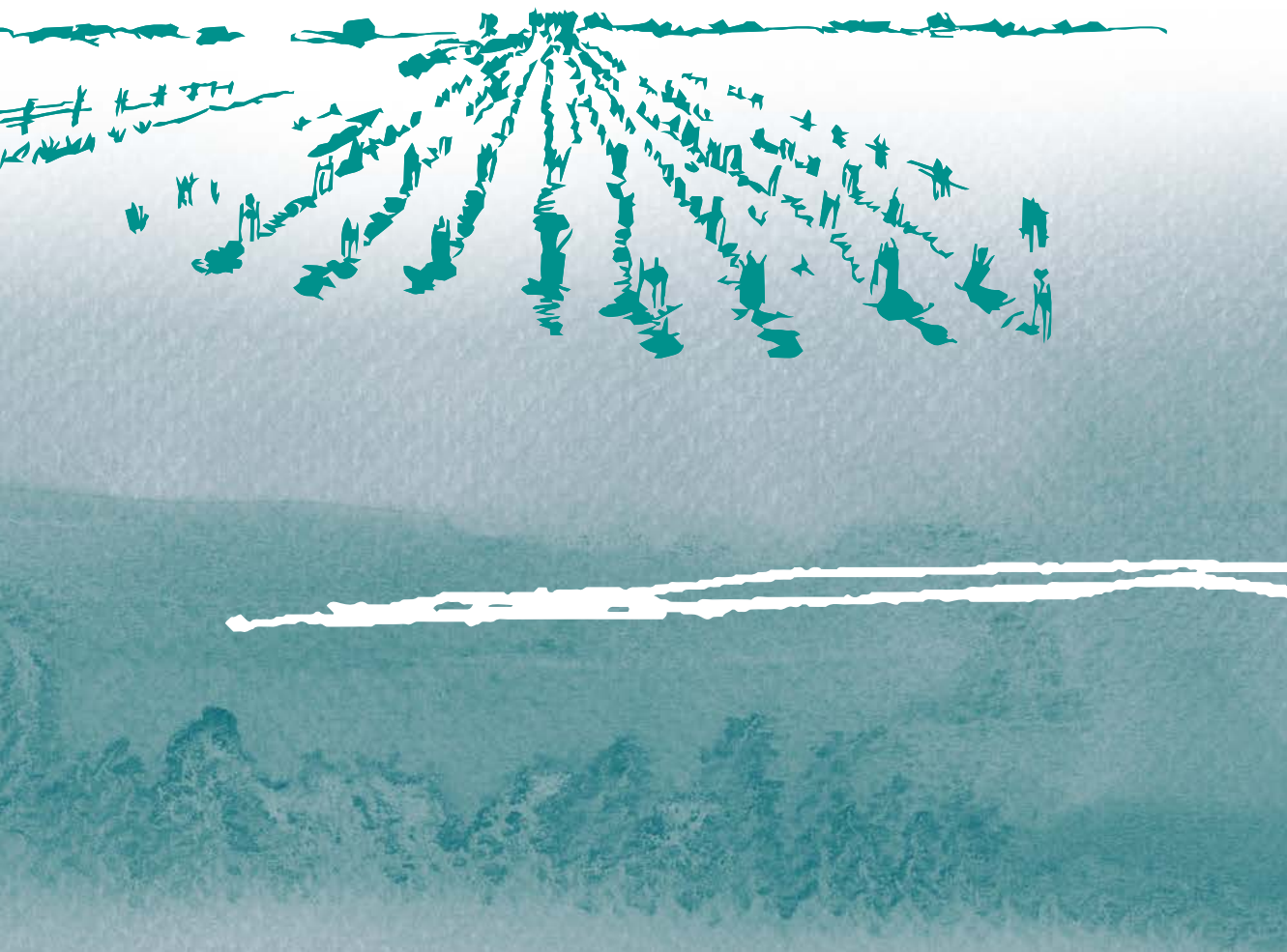

Chamala S and Mortiss PD (1990) *Working together for Landcare: group management skills and strategies*, Australian Academic Press.

Henry A, Koech R and Prior J (2016*) The value of Landcare to the Australian community* [PDF], paper prepared for Landcare NSW, accessed 31 May 2022. https://landcarensw.org.au/wp-content/uploads/2019/06/161216-The-Value-of-Landcare.pdf

Leadbeater A (2013) *Community leadership in disaster recovery: a case study,* Australian Institute for Disaster Resilience website, accessed 20 October 2020. https://knowledge.aidr.org.au/resources/ajem-jul-2013-community-leadership-in-disaster-recovery-a-case-study/

UNDRR (United Nations Office for Disaster Risk Reduction) (2015) *Sendai Framework for Disaster Risk Reduction 2015–2030*, United Nations.

UNU-IAS, Bioversity International, IGES and UNDP (2014) *Toolkit for the indicators of resilience in socio-ecological production landscapes and seascapes,* IGES UNDP, Rome.



# PART E

# Developing community learning and social cohesion

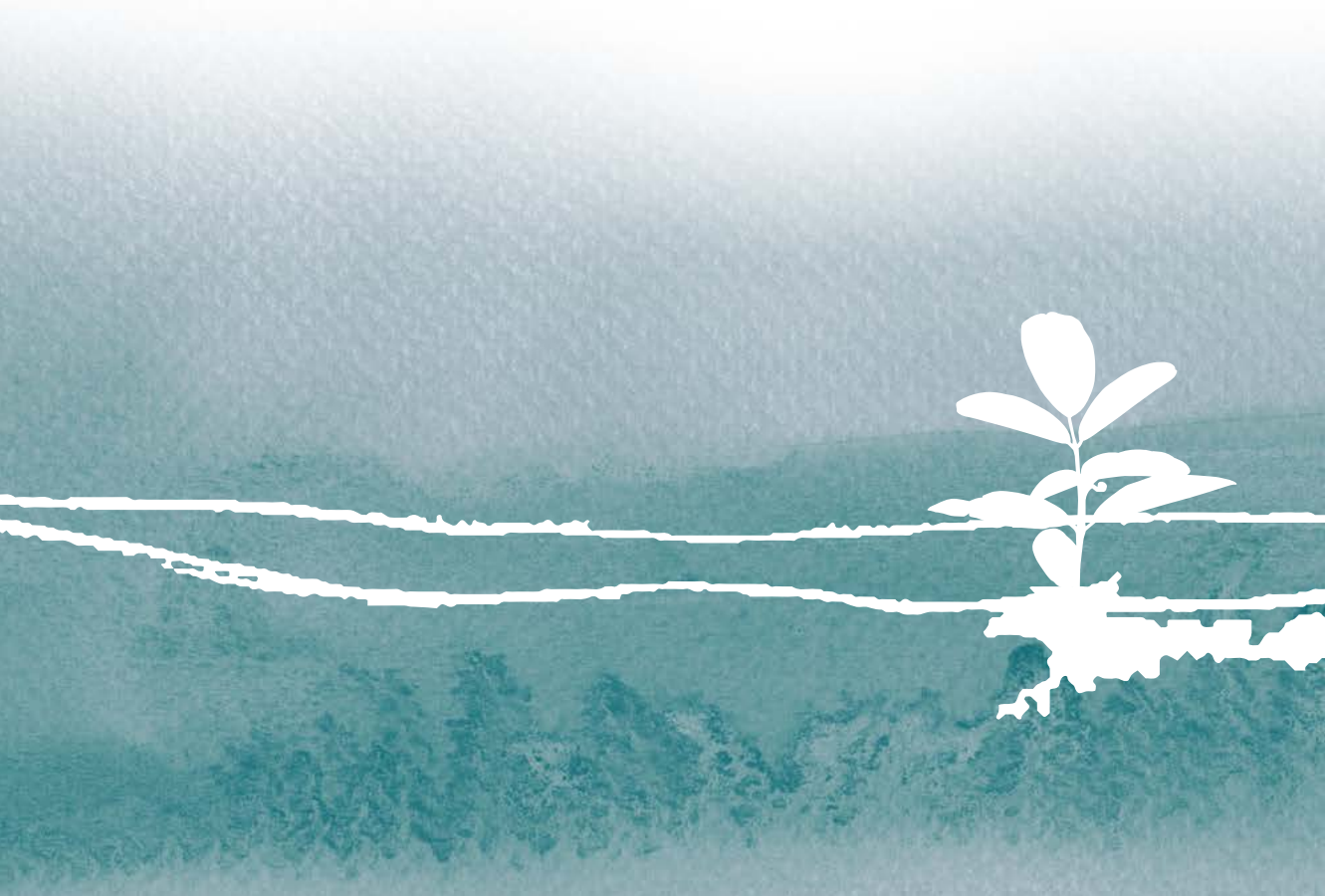
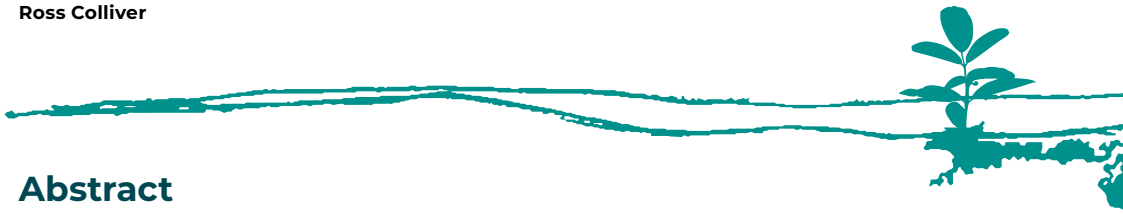


Photo: Intrepid Landcare

# CHAPTER 20

# Learning like crazy: prototypes and practices of design for shared learning

**Ross Colliver**



## Abstract

This chapter examines how social learning can strengthen the contribution of landcare and improve practices and relationships within natural resource management (NRM). The knowledge that drives landcare effort is often isolated in each of the localities in which it develops, and community-based management is often marginalised by top-down scientific management.

Two projects that respond to these challenges are discussed:

- Community Learning for Environmental Action, an action-research project testing ways to strengthen peer-to-peer learning in the landcare community in Victoria
- the Systemic Inquiry into NRM Governance, which supports people in NRM to develop systems thinking and to organise innovation in governance practice and relationships.

Both projects are attempts to take learning between peers beyond tacit and localised knowledge to explicit knowledge building, and beyond reactions to problems to constructive thinking about the larger social context in which landcare operates. Both projects are presented as prototype designs for social learning, and based on this experience, five practices of design of social learning are proposed.

## Introduction

Three passions drive landcare: love for the land, mutual responsibility and learning with others. Love for the land grows out of a relationship with a living place that motivates a person to care for the land. As your neighbours help you and as you see them work on their own properties, a sense of mutual responsibility develops. People join Landcare groups to hear what others are thinking and to see what they are doing, and they stay to keep talking about their ideas and plans and testing these against others' opinions (Curtis and Van Nouhuys 1999).

**Three passions drive landcare: love for the land, mutual responsibility and learning with others.**

The groups formed between Landcare groups in Australia, known as Landcare networks, have become skilled at facilitating learning between landholders, but there is much less attention given to facilitating learning between Landcare groups around the business of working in a local community and with government. How to organise in communities, how to develop partnerships with government agencies and industry and how to influence agendas locally and of governments are essential knowledge that underpins work with land managers. However, such knowledge does not move readily beyond the localities where it develops.

Landcare networks in Australia have at times struggled to influence the public governance and natural resource management (NRM) systems in which they operate. Landcare members and staff have complained about being marginalised by decision-making organised around government priorities, not local priorities, but they have been slow to speak out and find ways to change that marginalisation (Colliver 2010).

This chapter looks at these struggles and describes projects prototyping processes of social learning that can address them. By 'social learning', I mean learning by those who live and work in a situation, directed towards improving that situation (Pahl-Wostl and Hare 2004; Collins and Ison 2010). Etienne Wenger (1998) observed that while you cannot make learning happen, you can design for learning, so this chapter argues for a practice of design for social learning that supports people understanding and changing their social situation.

One assumption at work throughout this discussion is that the challenges facing Landcare require a capacity to learn with others and to learn from action. In *The reflective practitioner*, Schön (1983) showed how, for the skilled practitioner, for example, a doctor or an architect, every action is a probe, moving things forward around the substantive task (a surgical procedure or designing a house) and at the same time, a move that opens things up, that reveals more about the situation. This may be something the practitioner is familiar with and knows how to handle, but sometimes it is something that hasn't been anticipated and around which a new response must be invented.

Two decades later, in a similar vein, Dave Snowden (2002) observed that in a complicated system where causal relationships can be known, expertise can direct action, but that in complex systems, you can't know what do. What affects what remains uncertain?

Does this leave the practitioner helpless? No, says Snowden. In complex situations, the practitioner can *probe* the system, *sense* what is happening and then use what is discovered about the system to *respond*. Here, 'probe' means action with inquiry behind it, aiming for learning as well as to get a result.

To connect local self-reliance and global resilience, Landcare needs ways to take the learning in action that Schön describes, organise it within Snowden's complex systems, and scale this up so it works across networks and governance regimes. The projects described here attempt just this. Think of them as probes into the complex space between landholders, local communities, industry and government – prototypes that are evolving as they are tested.

## Situation 1: Little support for learning on the social side of Landcare

Anthony Gallacher and Laurie Maxted are key people in the Loddon Plains Landcare Network in north central Victoria, Australia, a network of 18 local Landcare groups whose members manage 300,000 hectares of private land. Laurie took up a property here 50 years ago:

> I came here in 1967, and I started planting trees then without ever having any funding. I could see that was going to be a goal for us, to be improving the landscape. … We've naturally regenerated and planted on our place, and it's transformed the landscape. My plan was to have 10% of our land covered with corridors of trees, and I've got that … You get shelter and you get better pastures (Colliver 2015b).

Asked about what the network has achieved recently, Laurie describes the difficulty of controlling the noxious week cactus wheel (*Opuntia robusta*) and the success of an interagency group the network has set up. Parks Victoria, local shires and the Catchment Management Authority meet regularly to talk about what each is doing to control cactus wheel. They are coordinating their control activities and having more impact. Participants have developed a sense of shared responsibility for the cactus wheel problem. They support each other's efforts and have found ways to bring in more funding.

Asked about the long-term future of the Network, Laurie's main issue is how Landcare can connect to 'younger' farmers – those over 40 but under 60 years of age. But he has few connections to Landcare people outside his area who face a similar challenge. Nor has he talked about the interagency group outside the boundaries of his network. Laurie would have enjoyed talking with Evan Lewis, chairperson of the Woady Yaloak Catchment Group, where younger farmers are active members and are part of the committee of management. However, there is no arrangement that brings him in contact with Landcare groups that are 200 km away.

Anthony, the network facilitator, meets twice a year with other facilitators in his region, but that meeting is run by the Catchment Management Authority and focuses on government business, not his practice of working in community. Anthony would have learned a lot from facilitators in the nearby Goulburn Broken region, who have set up discussion of their practice as facilitators, but again, there is no arrangement that links Anthony to those facilitators.

Anthony Gallacher (left), facilitator and Laurie Maxted (right), Chair, Loddon Plains Landcare Network

Laurie and Anthony, and the committee of management behind them, are learning how to work with communities and government agencies, but they do not have places to share what they are learning or to learn from others in similar situations. What is going on here? As the Victorian Government has retreated from providing locally based services in the agriculture sector, the connections to land management knowledge have been handed on to private consultants, but the transmission of knowledge has fallen away. Department staff in different localities once discussed and shared what they were learning about the social side of working in communities and in government, but that is now left to Landcare, where local nodes of thinking and action operate in isolation from each other. With demographics, agriculture practice and climate all changing rapidly, this poses a major risk to Landcare's capacity to adapt to current conditions, and to the overall NRM effort.

Knowledge developed while managing and influencing a group's social context (organising, collaborating and influencing agendas) stays stuck in a mode of learning Ikujiro Nonaka called 'socialization' (Nonaka et al. 2000).

Nonaka observed that tacit knowledge is transmitted through shared experience, as in a traditional apprenticeship where a person learns alongside an experienced practitioner (see Figure 20.1). This is fine for local learning, but to move knowledge beyond that locality requires conversations about practice between people who know and trust each other. In such a relationship, people have the safety to articulate what they know, question their practice and go beyond what they know to invent new practice. Explicit knowledge can be combined with other knowledge to create new knowledge, which in turn is absorbed into standard practice, and again becomes tacit.

In Australia, the physical distance between Landcare networks makes it difficult to maintain the kind of conversations that can make tacit knowledge explicit. There are other factors at work too. Projects do not include funds for the networking needed to facilitate these conversations. There is no ongoing support for the professional development of Landcare staff, and except for some governance training for committees, little support for learning between Landcare volunteers. Catchment management authorities, a principal partner for Landcare networks, pay attention to how communities can respond to government's agenda and ways of working, but much less attention to understanding community ways of working (Carr 2002).

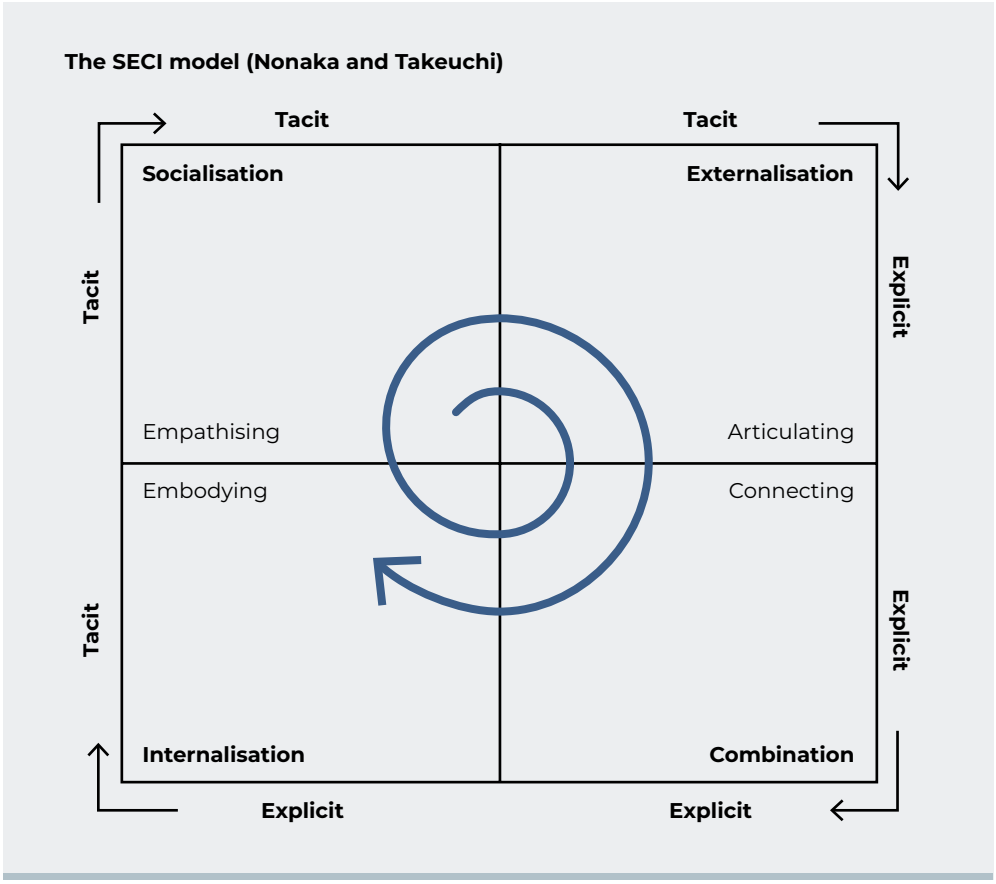



**Figure 20.1** Nonaka's model of knowledge creation

Most government NRM is organised around landscapes, not communities, and its language is drawn from the biophysical sciences, not the social sciences. Finally, rural Australia has a culture of stoicism and self-reliance that leads people to accept their isolation and 'just get on with the job'. These are a daunting set of constraints. How can Landcare members and staff articulate and share their social knowledge?

### Prototype 1: Peer inquiry on the social side of Landcare

Since 2015, Victorian Landcare's volunteer-managed services and advocacy organisation, Landcare Victoria Inc., has sponsored the Community Learning for Environmental Action (CLEA) project to develop peer-to-peer learning within the landcare movement. Funding has come from the Natural Resources Conservation League, a philanthropic organisation committed to capacity building in the community environment sector. CLEA has developed a multilevel strategy to strengthen peer-to-peer learning.

At the grassroots level, CLEA has targeted Landcare network committees of management, where leaders from member Landcare groups meet regularly to plan for their network. This is a good place for peer inquiry about how to organise, collaborate and influence, but committees of management need rigour in their inquiry. CLEA's support is built around three facilitated sessions that build capacity to pursue inquiry between peers.

In Session 1, Questions Without Easy Answers, a committee of management assesses how the network's capacity has grown in the last two to three years, and where the network needs to break new ground. The latter is framed as a question without an easy answer. A clear question focuses discussion and puts inquiry on the committee's agenda. Session 2, Best Bets, interrogates the network's past approaches to their question and articulates what has been learned from those approaches, then decides what approach will now be taken. Articulating the thinking behind the options puts the committee in a position to evaluate the results of action and to change direction if necessary. In Session 3, the committee maps its collective networks, and decides who to reach out to as it pursues its inquiry.

CLEA is now supporting seven networks in three regions with their questions without easy answers (Colliver 2017a). With an explicit question in front of them, committees of management are able to give long-term issues attention even when there are pressing short-term tasks. The urgent does not overwhelm the important. A regular phone call from CLEA to discuss recent progress encourages the facilitator and the committee to keep going (Colliver 2015a).

At the regional level, CLEA is supporting 'network weavers'. Despite being surrounded by newsletters and websites, when a landholder is looking for a person who can help them with a problem, they often choose to talk to a person they know. This is often a local person known to have good connections. These are network weavers: people active in building connections within and between networks (Holley 2012). CLEA's research in two regions (Colliver 2016) found that this is the primary way that information and support move around the Landcare community. Network weavers enjoy sharing their connections with others and are quick to make new connections to extend their own networks.

CLEA is working with the Catchment Management Authority to support network weavers. The Catchment Management Authority is setting up clear links to experts in the agriculture and environment sectors, and doing more to profile innovators in land management, agriculture and conservation. As network weavers hear about people beyond their current networks, they build them into their social network.

At the state level, CLEA is strengthening peer inquiry in forums run by Landcare Victoria. When it formed in 2008, the then Victorian Landcare Council committed to running two forums each year, in the regions not in the capital city, where volunteers and staff could share what they were doing and learn from each other. Between 40 and 60 people now attend, many travelling long distances to participate. Much learning happens informally over meals and on field trips, but formal sessions have tended to use a one-way presentation style.

CLEA is testing formats for inquiry between peers in these forums. For example, working with an agenda negotiated with Landcare staff, Landcare Victoria's Landcare Professionals Forum in 2017 tested three peer learning formats:

- 'How-to' sessions where individuals shared their knowledge on a specific subject
- 'Knowledge harvest' where small groups gathered recent learning on a current issue
- 'Conversations that can't wait' that made time on the agenda for the conversations that might never be initiated (Colliver 2017b).

### The prototype elaborates

The vision is of local nodes of inquiry connected across regions and across the state. CLEA can now build on the three levels of action just described in several ways.

- **CLEA can set up inquiry across Landcare networks.** For example, Melbourne is set to double in size to 8 million by around 2050, and that growth has a major impact in rural areas up to a two-hour drive from Melbourne. Landcare networks in this zone are asking how they can communicate with new settlers who want to learn more about managing their properties but are often time-poor and busy with young families. CLEA is testing ways to broker discussion between these Landcare networks.
- **CLEA can invest more in publishing what Landcare knows.** Landcare staff and volunteers write many reports, but these are mostly about on-ground works, not social processes, and they describe successes at the expense of the interesting failures. Landcare needs another kind of storytelling that takes the social dimensions of working in communities to other Landcare networks, other environmental groups and other community groups facing similar issues in rural communities. This will require building capacity for localised production of audio, video and images for storytelling.
- **CLEA can open pathways for Landcare to talk with city-based environmental groups.** There is currently little dialogue between urban and rural community environmental interests. How can Landcare projects be introduced to interested people in cities so they see what is happening and can participate easily? How can Landcare networks bring what they know about organising, collaborating and influencing into urban settings, and learn from environmental action in cities? There is an opportunity to connect the mobilisation of grassroots advocacy by national and state environmental groups with the experience and agenda of Landcare.

## Situation 2: Adapting to the status quo in NRM governance

Landscapes and communities are embedded in local, regional, provincial, national and international levels of governance. The landcare movement has struggled to change the governance regime in which it operates and the institutional arrangements and practices 'by which societies, and social groups, manage their collective affairs' (Healey 2003:104). Operating at the margins of command-and-control hierarchies, communities and environmental groups mobilise network governance to respond to situations where no single actor has the authority or resources to pursue comprehensive action (Wagenaar and Cook 2005). However, community ways of organising are marginalised in NRM governance (Davidson and Lockwood 2009; Colliver 2010).

Consider this exchange from a discussion between Landcare staff and community leaders talking about how to make grassroots Landcare more effective (Colliver 2010:123):

> Instead of writing a policy about what landscape change is, go into a landscape and say 'Who are the people in this landscape?' Not 'We need so much work on salinity, we need this many trees, we need this many rabbits killed' and all this sort of stuff. Go into a landscape and talk to the people in the landscape.
>
> *But you need to do both at once …*

You do, but they're not doing both at once, they're looking at the bio-physical dilemmas in the landscape, and then thinking that the community is just this thing that hangs off the side of the landscape.

*Don't you think they understand that?*

They don't! … They don't understand how we are operating!

Community and government have different ways of governing. Brunner and Steelman (2005) characterise government NRM as scientific management, an approach that differs from community-based governing on many counts (Table 20.1).

**Table 20.1** Government and community ways of governing

| Government NRM | Community NRM |
|---|---|
| Start with policy and biophysical science | Start with the whole person and their social world |
| Allocate resources to priorities based on scientific evidence | Allocate resources to priorities based on individual and community readiness |
| Decide the end goal, plan all the actions required, then implement | Decide the end goal, plan a step, check the results, then plan the next step |
| Work through a hierarchy of public servants, using contractual relationships to deliver outputs | Work through relationships of mutual responsibility between passionate people, using social networks to mobilise resources |

Source: Colliver R (2010) *Community-based governance in social-ecological systems: an inquiry into the marginalisation of Landcare in Victoria, Australia*, Murdoch University, Perth.

Sometimes these differences are brought together, but there is a tendency for people working in government to assume that the way government organises action is the best way, or at least, more effective than what are often seen as the messy, half-baked ways community organisations work.

Landcare members have talked about this for many years, but only slowly turned their attention to how they might change NRM governance itself. There is a long backstory at work here. In the first Decade of Landcare in Australia, to 1985 from 1995, government funding was guided by community priorities. In 1995 there was a shift to decision-making at regional level but funding criteria were loose enough to negotiate a fit with community priorities. In 2002 there was a swing to centralised control: the 2002 National Action Plan for Water Quality and Dryland Salinity tied funding to regional strategies, the plan's assets and threats framework moved technical data to the core of decision-making, and advances in spatial representation of resource condition allowed funders in distant cities to think they knew what was happening at the local level (Davidson and Lockwood 2009). Boundary objects and bridging structures (Berkes 2009) were not developed between local and regional levels, hindering discussion between community members and technical staff of regional authorities.

Landcare projects that didn't fit state and national priorities went unfunded. Landcare members complained bitterly to each other, but stayed quiet with funders, so as not to bite the hand that fed them. Research in 2006–08 (Colliver 2010) with two cohorts of Landcare staff and leaders found that a common response to the difference between government and community ways of governing was to educate the few in the government hierarchies who showed interest, but to not waste time trying to change 'the system'. They regarded policy as unintelligible and irrelevant to the real work happening on the ground.

Loss of funding forced a reappraisal of this stance, and in 2008 Landcare members who were disenchanted with Landcare's marginalisation formed the Victorian Landcare Council to advocate for Landcare, and, shortly after, the National Landcare Network to do the same at national level. Advocacy, however, is constrained by government ways of doing business – the standing committee, the expert report, the detailed plan, the funding criteria. These change very slowly. We need to move faster than this – we need to learn like crazy. How can Landcare members and staff influence the status quo and remake governance?

**Advocacy is constrained by government ways of doing business – the standing committee, the expert report, the detailed plan, the funding criteria. These change very slowly. We need to move faster than this – we need to learn like crazy.**

### Prototype 2: The Systemic Inquiry into NRM Governance

Fitting together different ways of governing across levels of governance in NRM is difficult (Cash et al. 2006). Everyone is pushed for time. Hierarchies of control that articulate social goals and direct resources are intertwined with networks that influence opinion and organise action. Within this hybrid, people find a way to do business, even when they see serious constraints in current arrangements. The principle of subsidiarity (Marshall 2008) suggests that higher levels of authority would improve efficiency and effectiveness in governance by devolving decision-making to lower levels. However, without asserting their interests and capacity, people at community and even regional management levels might wait for a long time for this devolution. Discussion in a forum of peers is one means to critique the allocation of authority in a governance system, to build the case for decisions that could be better managed by being devolved, and to build social learning around the processes that devolved decision-making requires.

Spurred on by Landcare community leaders in the Corangamite region of Victoria, Australia, the Systemic Inquiry into NRM Governance is opening a space for inquiry and innovation within NRM governance. The Lonsdale Systems Group, an alliance of systems-change researchers and practitioners, used its networks to bring together a cohort of around 40 people known to be innovators in NRM governance in five day-long workshops through 2015–16.

Premised on equality between practitioners, paid and unpaid, from local, regional and state levels, and on the value of differing perspectives, the inquiry critiqued and redesigned NRM governance around points of opportunity identified by participants, then won funding for three trial projects in 2017–18, targeting the urban connection to biodiversity, environmental accounting and co-design of NRM planning.

The project draws on the approach to social learning developed by Professor Ray Ison and colleagues (Collins and Ison 2010). Their action research in catchment management has come to understand innovation in governance systems as an emergent property of collective inquiry into those systems (Colvin et al. 2014). Bring people together, with their different values and points of view, around a shared situation of concern and commitment to improving governance, then facilitate so the conversations go deep enough and wide

enough. Assumptions, practices and institutional arrangements will be critiqued and redesigned. Shared inquiry changes systems.

Current practices are habits of hand and mind; current arrangements reflect where power sits. Even when all parties are dissatisfied, unlocking stuck situations requires thinking about the whole system to find what will change things. In the inquiry workshops, participants took failures of governance and diagnosed *why* things stay the same, then designed a set of actions to transform the governance system. Figure 20.2 provides an example – alternate pathways for transforming the partnership between community and government.

For 30 years, Landcare groups and networks have taken action locally, and assumed (along the right-hand loop in Figure 20.2) that Landcare would be taken on as partners in planning. This hasn't happened. An alternate track (in the left-hand loop in Figure 20.2) would gather evidence of Landcare's impacts, get better at telling that story and advocate for people-centred policies. This might then compel government agencies to do more than consult on their terms when it suits them. A third pathway (and the one taken by the Systemic Inquiry into NRM Governance pilot, called Co-designing NRM Planning) is to take on the processes by which priorities are set and projects designed (the nuts and bolts of NRM planning) and co-design these. Through this approach, decision-making draws on the capacities, knowledge and influence of both regional and community levels.

Impacts of the three pilot projects were reported in 2018 and 2019 findings on how to support systemic inquiry in governance. At this point, it is clear that the inquiry gives people in Landcare a way to be part of changing governance with other innovators in NRM.


**Figure 20.2** Transforming the community–government partnership

## Conclusion

This chapter has argued that design for social learning is a way to link local self-reliance to global resilience. It has examined two prototype designs: supporting peer learning in Landcare and improving NRM governance. Both create spaces where people who work in a system can inquire into and improve the way business is conducted. Six precepts for design for social learning emerged from the projects:

1. **Create a space for inquiry.** Busyness drives out inquiry and locks in the status quo. Inquiry needs a dedicated space. Be realistic about what people can manage alongside their day job, but don't back off from the fact that this is *inquiry*. State what needs attention, and propose a place for rigorous inquiry and inventive action.
2. **Cultivate companionship.** Social influence depends on heartfelt relationships between those who want to do things differently. Constructive, critical inquiry needs other people's views to shake up preconceptions, and others' enthusiasms to fire our imaginations.
3. **Facilitate with activist intent.** Probe for the experience behind opinion, and for difference in points of view. Listen for the dominant and minor discourses, and listen for what is emerging in the system.
4. **Learn to do it while you do it.** The content is not the only thing that matters – *the way* you learn together matters. Ask what is working as we analyse and co-design, and make this explicit as practices of social learning.
5. **Recruit allies.** Inquiry in the midst of action isn't a line item in many budgets, whether departmental, program or project. Search out allies who want to create and resource safe places for social learning alongside normal business.
6. **Get used to being out of your depth.** Events tumble over us, overtake us and have their own impetus. We come to know by getting out of our depth, by not knowing and then finding a way forward.

Underpinning social learning is an assumption that there is no body of knowledge out there to be found, but that knowing arises in action and in good company. We may be friends, or not, but we are at least companions on a path together, and this is the ground from which new knowledge grows. It's a hard journey, on our tiny planet. We have reached a very steep slope; the weather is closing in. What makes it possible to keep going, each in our own area of influence, each with our talents, is that we have at our side companions who share the journey.

Rumi, the 13th century Sufi master, put it this way (Rumi 1991):

> With company you quicken your ascent.
> You may be happy enough going along,
> but with others you'll get farther and faster.
> Someone who goes cheerfully by himself
> to the customs house to pay his traveller's tax
> will go even more light heartedly
> when friends are with him.

Landcare's challenge is to create a community of practice, not only around land management or conservation, but around design for social learning. With company, we will quicken our ascent, and make our way cheerfully.

## References


Berkes F (2009) 'Evolution of co-management: role of knowledge generation, bridging organisations and social learning', *Journal of Environmental Management,* 90(5):692–1702.

Brunner RD and Steelman TA (2005) 'Beyond scientific management', *in* Brunner RD, Steelman TA, Coe-Juell L, Cromley CM, Edwards CM and Tucker DW (eds) *Adaptive governance: integrating science, policy and decision-making,* Columbia University Press, New York.

Carr A (2002) *Grass roots and green tape,* Federation Press, Sydney.

Cash DW, Adger WN, Berkes F, Garden P, Lebel L, Olsson P, Pritchard L and Young O (2006) 'Scale and cross-scale dynamics: governance and information in a multilevel world', *Ecology and Society,* 11(2):8, accessed 15 July 2007. http://www.ecologyandsociety.org/vol11/iss12/art18/

Collins K and Ison R (2010) 'Trusting emergence: some experiences of learning about integrated catchment science with the Environment Agency of England and Wales', *Water Resources Management,* 24:669–688.

Colliver R (2010) *Community-based governance in social-ecological systems: an inquiry into the marginalisation of Landcare in Victoria, Australia*, Murdoch University, Perth.

Colliver R (2015a) *The impact of CLEA's work on questions without easy answers.* Private publication available through the author.

Colliver R (2015b) *Many more people involved.* Private publication available through the author.

Colliver R (2016) *How knowledge moves and support flows in the Landcare community.* Private publication available through the author.

Colliver R (2017a) *Questions Landcare networks are asking.* Private publication available through the author.

Colliver R (2017b) *Review of the LVI Landcare Professionals Forum 2017.* Private publication available through the author.

Colvin J, Blackmore CP, Chimbuya S, Collins K, Dent M, Goss J, Ison R, Roggero PP and Seddaiu G (2014) 'In search of systemic innovation for sustainable development: a design praxis emerging from a decade of social learning inquiry', *Research Policy,* 43:760–771.

Curtis A and Van Nouhuys M (1999) 'Landcare participation in Australia: the volunteer perspective', *Sustainable Development,* 7(2):98–111.

Davidson J and Lockwood M (2009) 'Interrogating devolved natural resource management: challenges for good governance', *in* Lane MB, Robinson C and Taylor B (eds) *Contested country local and regional natural management in Australia,* CSIRO, Collingwood, Victoria.

Healey P (2003) 'Collaborative planning in perspective', *Planning Theory,* 2(2):101–123.

Holley J (2012) *Network weaver handbook,* Network Weaver Consultants Network, Athens, Ohio.

Marshall G (2008) 'Nesting, subsidiarity, and community-based environmental governance beyond the local level', *International Journal of the Commons,* 2(1):76–95.

Nonaka I, Toyama R and Konno N (2000) 'SECI, Ba and leadership: a unified model of dynamic knowledge creation', *Long Range Planning,* 33:5–32.

Pahl-Wostl C and Hare M (2004) 'Processes of social learning in integrated resources management', *Journal of Community & Applied Social Psychology,* 14(3):193–206.

Rumi (1991) *One-handed basket weaving: poems on the theme of work,* trans. Coleman Barks, Maypop, Athens, Georgia.

Schön D (1983) *The reflective practitioner: how professionals think in action,* Basic Books, New York.

Snowden D (2002) 'Complex acts of knowing', *Journal of Knowledge Management,* 6(2):100–111.

Wagenaar H and Cook SDN (2005) 'Understanding policy practices: action, dialectic and deliberation in policy analysis', *in* Hajer M and Wagenaar H (eds) *Deliberative policy analysis: understanding governance in the network society,* Cambridge University Press, Cambridge.

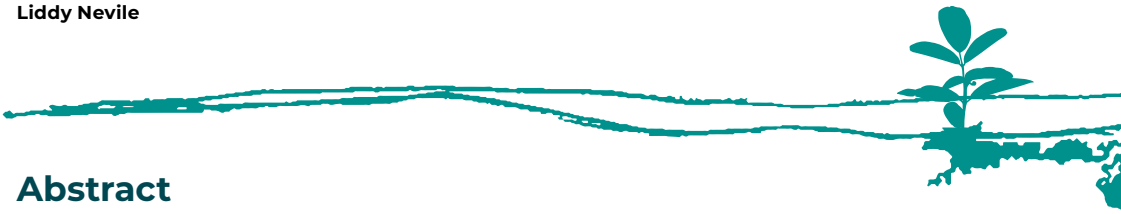
Wenger E (1998) *Communities of practice,* Cambridge University Press, Cambridge.

Photo: Brett Ellis

# CHAPTER 21

# Traditional knowledge as a landcare strategy

**Liddy Nevile**



## Abstract

Learning and practising methods of land care is a major challenge for researchers, practitioners and all of us who benefit from good land management. Currently, much contention is focused on the role of both hot and cool fires in a context, in Australia, where fire is often feared. It can be devastating to the lives and livelihoods of modern communities and the countryside.

The fire practices of Aboriginal Australians before European settlement are of interest in this respect. Some argue that the modern practices of agriculture, forestry and the regeneration of Indigenous flora and fauna would benefit from careful consideration of these older practices. In most of Australia, there is a gap of up to 200 years between the work of current ecological science today and the Indigenous science that was applied more widely before European settlement.

This chapter explores what is now known about fires, both human-controlled and wild, in a 'caring for country' environment. It suggests that greater cross-cultural communication is needed between Indigenous and non-Indigenous approaches to managing this fragile Australian landscape. It also suggests that greater sharing of different cultural approaches to environmental management could have real relevance to achieving sustainability across the globe in the face of climate change.

## Introduction

In geological and human history terms, Australia is an old country. Its environment is fragile. Indigenous practices have supported its inhabitants for millennia, alongside significant co-evolution of the environment. In the wake of European colonisation in the last 200 years, however, the Australian environment has significantly changed, sometimes irrevocably. Catastrophic fire events are now not infrequent.

This chapter aims to draw attention to the learning styles applied to environmental management exhibited over previous millennia in Australia and the ways that we learn today. Key aspects of past environmental management, for example, the Indigenous concept of 'cultural' or 'cool' burns or fire management, are not necessarily understood or accepted by contemporary managers of the landscape. In addition, the practices from the past are not easily articulated or evaluated due to the changed circumstances of those who were keepers of this knowledge. This chapter explores current knowledge of fire in the Australian landscape and suggests that greater cross-cultural communication is needed to manage this landscape sustainably and fairly. This is a learning of global relevance in the business of applying the subsidiarity principle with the landscape management context.

## The country

Recent alternative views of Australian history (for example, Gammage 2012, 2018), tell us that the Australian landscape was, as seen in early paintings, a land with open 'grazing' spaces. Hunting was easy, the land was rich with biodiversity, and there was less risk or more safety from what is now greatly feared in Australia – uncontrollable fire. This state of the country was the result of Indigenous 'caring for country' practices. Fire was used positively where machinery and chemicals are less evenly used today, as both Indigenous and non-Indigenous land managers sought open grassy landscapes for grazing animals.

**It is slowly being recognised that the land had in fact been 'treated' by its Indigenous traditional owners to provide those useful open spaces depicted in early European paintings.**

As was my personal experience in mainstream education in Australia, past Australian generations were told histories through paintings that saw the landscape through a romantic, European lens. It was often explained that early painters were simply seeing the new land as they saw the Mother Country (mainly Britain). Indeed, the early painters were probably influenced by techniques that had been developed in Europe for European conditions, with results that appeared to look somewhat 'European' (Clark and Whitelaw 1986).

Today, it is slowly being recognised that the land had in fact been 'treated' by its Indigenous traditional owners to provide those useful open spaces depicted in early European paintings. The Indigenous practice of using fire as a tool for agriculture, rather than regarding it as an unpredictable, arbitrary risk and enemy, has been credited with this achievement. The role of open grazing has now also been recognised (Gammage 2018).

A friend of mine relates that in the mid-1900s his immigrant grandfather had a practice of 'slow burning' their farmland. He claimed that his grandfather's neighbours on surrounding properties did not 'approve' of this practice, so in later years, early in the growing season, the old man simply dropped some ash from his pipe in a strategic location and then took a while to get around to dealing with it. He knew that by the time he did deal with it, his mission would have been accomplished, and a slow burn or patchwork burn would be underway. His grandson recalls it as a controlled, deliberate approach to slow or cool burning.

Australia is now subjected annually to many very savage wildfires and their devastating consequences, including loss of flora and fauna and of life and houses, equipment and livestock. Huge areas are burned beyond recovery by increasingly hotter and less controlled fires, particularly in the catastrophic 2019–20 fire season. These hot fires race up hillsides, supported by increasingly strong winds and unusually high temperatures.

In this new environment, wildfire behaviour is extensively studied and is the subject of many scientific papers. Many theories are based on an analysis of environmental damage after significant wildfires, and often the conclusions lead to the modification of practices, including in some cases greater adoption of Indigenous approaches to cultural or cool burning.

## Biodiversity degradation

Broadscale change in the Australian landscape occurs surprisingly quickly. The country is not as it was 200 years ago. Vic Jurskis, a former New South Wales senior forester (personal communication, 5 July 2018), points to the many dead and dying tree trunks and branches, and to the increased thickening of vegetation, that is now commonly seen in uncleared areas right across many parts of the Australian landscape. This is indicative of sick trees in a declining forest due to a lack of regular burning and a lack of sustainable grazing, which Jurskis says has similar benefits to traditional burning:

> The process begins with the lack of fire, seedlings grow into bushes; mulch accumulates; soil conditions and microclimates change; nitrogen accumulates in the soil; tree roots deteriorate; and as the trees get sick they lose their foliage and that lets more light in and the understory thrives; that's a vicious cycle; pests flourish that eat any part of the tree, the leaves and the roots – because sick trees are better food (Brown 2015).

In some parts of the landscape where trees are accessible to grazing stock compared to other areas that are fenced off, the latter can be seen as having thickened vegetation with many saplings. Jurskis suggests that the comparison of the crowns shows that trees in the grazed paddocks are healthier and supports the theory that trees decline unless undergrowth is controlled and nutrient cycling is maintained by burning or grazing. Traditional approaches to Indigenous burning kept forests clear of such undergrowth.

Without regular and appropriate burning, soon enough, instead of an open grassy forest with well-spaced trees and wide crowns and an open, grassy understory, the vegetation begins to close in on itself. The crown of the tree recedes down onto the branches. A forest that is in the last stages of tree decline has a thick understorey that has developed because of a lack of burning or grazing, leaving the trees vulnerable to pests, parasites and diseases.

> The survivors are still there. The dead trees aren't obvious because they've broken down. It's quieter because the bellbirds have 'moved on to where there are more sick trees in the earlier stage of decline' (Brown 2015).

The ‘space’ vacated by dying trees is then filled. For Jurskis, the final stage of tree decline in many Australian ecosystems is the invasion of wattle scrub and, in his opinion, that’s how it will stay. He considers that the wattles produce hard seeds that persist in the soil, so when the current stand dies of old age or gets burned by a high intensity fire, a new wattle scrub will return. Jurskis says this is an example of how the decline of forests that were previously managed by Indigenous burning ends up destroying biodiversity (Brown 2015).

## Protecting diversity through traditional knowledge

The television program *Insight SBS* (SBS 2016) featured my friend Victor Steffensen, an Indigenous fire expert. Each year in Australia, rural fire services across the country carry out vast swathes of back-burning and hazard reduction. Steffensen considers that this is entirely the wrong approach: that the fires tend to burn inward, creating an inferno from which animals cannot escape and a heat so strong that it burns both undergrowth and canopy.

Indigenous or cultural burning, on the other hand, is cool: fire temperatures remain low so that the flames never reach the canopy.

> ‘The canopy is [a] whole other world,’ says Steffensen. ‘The canopy is so important to us because that’s the life of the flowers, the fruits, the birds, the animals … that top canopy is very, very sacred and the simple rule is that it never burns. If you burn the canopy, then you have the wrong fire. Fire [should] behave like water, trickling through the country [so] it doesn’t burn everything’ (SBS 2016).

Traditional burns are also started from ‘fire circles’ and patterns that allow the fire to spread outwards in an ever-increasing circle. This allows animals to escape when they smell the smoke and also keeps temperatures down, with only one fire front to manage. Steffensen asserts that this kind of fire knowledge has been lost over the centuries, both because of colonisation and the subsequent breakdown in the oral transmission of knowledge. This problem is exacerbated by the introduction of non-native plants (weeds) that spring up when the canopy burns, and the increasing shift of rural farming populations towards the cities. Even European pastoral knowledge of how to manage the land with fire may increasingly become lost (King 2016).

I spent a day with Steffensen, Indigenous Elders and forestry experts in Victoria learning about cool fires. We were shown how trees limit the height to which fires can burn without damaging the canopy, with the cool fire cleaning their trunk and offering propagation opportunities to seeds in the surrounding area. During the day, an Indigenous Elder described how he believed the bark of the gum tree controls the movement of air up the trunk and that it inhibits a cool fire at an appropriate height. Similarly, a cool fire may burn the leaves and blacken the trunk of Australian grass trees, but the tree usually survives. The living growth-point is buried underground, protected by tightly packed leaf bases. In fact, new growth in grass trees can be stimulated by fire, and large numbers of other plants can be triggered to flower (Bush Heritage Australia 2018). Cool fires burn up the trunk of grass trees and melt resin that Indigenous people have used for centuries as glue, to join tips to spears, for example. This was demonstrated on this cultural day by an Elder.

## What is cultural or cool burning and can we use it today?

In his book *Firestick ecology*, Jurskis (2016) tells a simple story of how Indigenous people managed the land through fire to create and maintain the biodiversity and the fire-safe environment that greeted the first European settlers. The subtitle is 'Fairdinkum science in plain English'. He finishes his book by saying that, to conserve biodiversity and to live safely, Australians need to manage our forests with fire 'willingly, frequently and, with practice, skilfully' (Jurskis 2016). Indeed, the evidence of contemporary land management failure is all around us, he says.

Bill Gammage is another expert in forestry. He was awarded the 2012 Prime Minister's Prize for Australian History for *The biggest estate on earth: how Aborigines made Australia* (Gammage 2012). In this book, which is based on extensive research, Gammage argues that the use of fire was a universal management strategy across the Australian landscape, making it appear to newcomers as 'park-like' or 'like a gentleman's estate'. Brown (2015) considers that this would have taken centuries of stable fire management. Justin Leonard, lead researcher in urban bushfire design at the Commonwealth Scientific and Industrial Research Organisation (CSIRO), adds that 'there's a way to live in every part of the landscape' based on 'understanding what fire is in that location' (King 2016).

Steffensen works to empower local communities with traditional fire knowledge so that those most affected by major bushfires can mitigate them best. He considers that a cool fire does little damage to plants and animals. The burning takes place early in the fire season before the country is fully dried out. At this time of the year, fire may need coaxing and gentle persuasion to do its work.

**One of Australia's favourite fire prevention measures is prescribed or controlled burning – using carefully controlled fires to clear out flammable materials. We're almost obsessed with it.**

At my new property in the south-eastern coastal district of Australia, a region new to me, the ground dried out quickly in my first summer there. I was alarmed by the cracks in the soil. Lots of smaller animals, I learned, use the cracks to escape the heat of the sun and also, of course, potential fires. Bigger animals like wombats have holes into which they can go and other animals, like koalas, can wait high in the treetops. Cool fires travel slowly, and animals like kangaroos know how to run through the cool front of the fire, from the bit yet to be burned to the area already burned. Horses also take this approach.

Australian researchers, however, do not necessarily agree that increased cool burning will stop the damaging wildfires across Australia. One of Australia's favourite fire prevention measures is prescribed or controlled burning – using carefully controlled fires to clear out flammable materials. We're almost obsessed with it. Indeed, it seems that the outcome of every major inquiry into major fires is that we need to do more of it. The 2009 Victorian Bushfires Royal Commission (2009) that followed Victoria's 2009 Black Saturday fires recommended that 5% of all public land in Victoria be treated by controlled burning per year – a doctrine that was subsequently dropped due to its impracticality.

Research published by Furlaud et al. (2017) modelled thousands of fires in Tasmania and found that nearly one-third of the state would have to be burned to effectively lower the risk of bushfires. As such, the question of how much to burn, and where to burn, is a puzzle we must still solve, especially given the inherent risk, and the issues caused by smoke, and shrinking weather windows for safe burning due to climate change (Furlaud and Bowman 2017). Other researchers have worked with data collected from real fires:

> Fifty years of real data, not modelling, from Western Australia shows that the extent of high intensity wildfires is inversely proportional to the area of prescribed burning during a few years beforehand, irrespective of variability in climate and weather, provided that at least about 12% of the landscape is burnt each year (Jurskis, personal communication, 5 July 2018).

Mistakes in analysis that lead to concerns about intentional burns (and thus allow the fuel loads to accumulate unchecked) can be very costly in terms of flora and fauna biodiversity, human and animal lives, and the constructed environment. Many researchers have tried to explain the role of cool fires. It is not a simple exercise: natural fires, perhaps started by lightning strikes, burn fast and hot when they have a good supply of fuel, including dry understorey plants and debris from the canopy. The fuel available itself depends not just on how long it has been accumulating but also the nature of the soil. Establishing the many relevant factors scientifically means being able to compare before and after circumstances over a long period and in many different and variable locations. A single unique set of factors is very unlikely to be able to be generalised effectively. Multiple sets of factors are not easily determined in ways that make for accurate generalisations. In fact, researchers are confirming that fires are somewhat idiosyncratic and unpredictable.

## Cool burning and culture

Steffensen says that recently, because his people could not access the plants they need for cultural practices and because they get very frustrated about not being able to burn their land, the movement to think harder about these issues has started. Now, with years of practice, Steffensen's demonstrations and explanations are very persuasive (see, for example, Steffensen 2017). Caring for country is a cultural practice for traditional Indigenous people. Cool burning was just another cultural practice, and this suggests that younger Indigenous people would accompany Elders undertaking a burn many times before being left in charge of it themselves. Cultural practices are often documented orally in stories. The characters, such as the fire itself, the undesirable plants that are destroyed and the plants that are promoted, all have roles. The attraction of the poetic language and imagery surrounding this highly subsidiary approach to land management, is strangely disarming. Steffensen tells us that cool fires help heal the land.

In the past, Indigenous people have explained to me that cultural stories contain deep knowledge that is shared at the right time, with the right people, in the right place. Young people are shown key cultural practices when they are ready, but the repetition of stories enables them to take in the knowledge being shared. The repetitive nature of the story is a reminder of a practice that is already known intuitively, like an aide-mémoire.

Cultural practices can be hard to define in general terms. People often are prompted to act in a particular way in a particular location. Their actions are often based on intuition rather than following a fixed recipe. Intuition can be hard to learn and evaluate. Very often, outsiders without the local intuition can find it hard to learn through observation alone.

Governments are now accepting the research and listening to Indigenous voices, acknowledging that for millennia Indigenous people have managed the land using fire and that they have maintained a high level of biodiversity. Researchers such as Gammage, Jurskis and others point to a rapid decline in the health of Australian landscapes in recent centuries. They agree that the 'recipe' for cool burns is not simple or generally applicable, and that different conditions warrant different action. At this point in the debate, however, there is not wide agreement about what exactly constitutes effective cool burning, or what factors need to be considered, or how to do it on every occasion. The complex nature of the many combinations of factors makes modelling, a significant scientific method, very difficult.

**Governments are now accepting the research and listening to Indigenous voices, acknowledging that for millennia Indigenous people have managed the land using fire and that they have maintained a high level of biodiversity.**

## Conclusion

What is there to learn from all this about fires and caring for country? Well, for a start, in content terms, let's be sure that we are talking regionally and, preferably, very locally. This means supporting real subsidiarity in decision-making about land management. Whatever is learned for use in one context is not necessarily going to be useful in another. Different regions in Australia have been classified according to best guesses about what Australia might have been like pre-European settlement. Today, landscape-scale differences exist, but they are new differences that have resulted from a different set of causes, including misunderstanding about the nature of the countryside.

To combat fire risk in the Australian landscape, we must take a multipronged approach that includes innovative local strategies, such as designing new spatial patterns for prescribed burning, manually removing fuels from areas in which prescribed burning is not possible, improving the standards for buildings and defensible spaces, and most importantly, engaging the local community in all of this.

> Only by attacking this problem from multiple angles, and through close collaboration with the community and all levels of government, can we effectively face our fiery future (Furlaud and Bowman 2017).

Today, a major constraint that severely and appropriately inhibits the initiation of any kind of fire is related to risk management. The cost of insurance is exorbitant and it is sometimes hard to convince people that fires are good! There is, however, more to learn about cool fires from Indigenous people. This means spending time with Indigenous Elders. These learnings can also differ significantly across different Indigenous cultures. Australian Indigenous people have shown themselves to me to be custodians of caring for country knowledge. In the wake of Australia's disastrous bushfires in 2019–20, these voices are increasingly being heard. Indigenous culture provides for the dissemination of such knowledge by word of mouth or demonstration, but usually, it is only shared to someone suitable to take on the responsibility of maintaining it or passing it on.

Such knowledge is often protected, and can be preserved in stories that could be mistaken as being designed to convey all the knowledge. Learning to learn from others employing different epistemologies and pedagogies takes as much time as learning the content to be conveyed, but is frequently well worth the effort and time.

Landcare, like all newcomers to the management of the Australian landscape, has yet to discover how those who have inhabited Australia for thousands of years can help with caring for our shared country. There is no clear method for this task, but it must be undertaken.

## Acknowledgements

I would like to thank Andrew Campbell, Jayne Curnow and Allan Dale for their wonderful work to help turn my musings into a paper for publication.

## References

Brown B (2015) *Firestick ecology,* ABC website, accessed 15 December 2017. www.abc.net.au/local/photos/2015/09/14/4312198.htm

Bush Heritage Australia (2018) *Grass trees*, Bush Heritage Australia website, accessed 15 December 2017. https://www.bushheritage.org.au/species/grass-trees

Clark J and Whitelaw B (1985) *Golden summers: Heidelberg and beyond,* International Cultural Corporation of Australia, Sydney.

Furlaud J and Bowman D (2017) *To fight the catastrophic fires of the future, we need to look beyond prescribed burning*, The Conversation website, accessed 15 December2017. https://theconversation.com/to-fight-the-catastrophic-fires-of-the-future-we-need-to-look-beyond-prescribed-burning-89167

Furlaud J, Williamson G and Bowman D (2017) *Simulating the effectiveness of prescribed burning at altering wildfire behaviour in Tasmania, Australia*, CSIRO website, accessed 15 December 2017. https://www.publish.csiro.au/WF/WF17061

Gammage W (2012) *The biggest estate on earth: how Aborigines made Australia,* Allen & Unwin, Sydney.

Gammage W (12 October 218) 'Learning from 1788: water, grass, salt, trees, fire' [keynote address], *National Landcare Conference*, Brisbane.

Jurskis V (2016) *Firestick ecology: fairdinkum science in plain English,* Connor Court Publishing, Ballarat.

King M (2016) *Our country needs to burn more: Indigenous fire management*, Volunteer Fire Fighters Association website, accessed 15 December 2017. https://volunteerfirefighters.org.au/our-country-needs-to-burn-more-indigenous-fire-manager

SBS (2016) *Our country needs to burn more: Indigenous fire manager*, SBS website, accessed 15 December 2017. https://www.sbs.com.au/news/insight/article/2016/02/15/our-country-needs-burn-more-indigenous-fire-manager

Steffensen V (2017) *Traditional fire burning is alive*, SBS website, accessed 15 December 2017. http://www.sbs.com.au/yourlanguage/aboriginal/en/audiotrack/traditional-fire-burning-alive

Victorian Bushfires Royal Commission (2009) *Final report* [PDF], accessed 15 December 2017. http://royalcommission.vic.gov.au/finaldocuments/summary/PF/VBRC_Summary_PF.pdf


Photo: NZ Landcare Trust

# CHAPTER 22

# The contribution of landcare towards gender equity: the accidental equaliser?

**Jayne Curnow and Mary Johnson**

## Abstract

**The principles of landcare do not explicitly address gender inequality, nor are the practices of landcare primarily designed to attract women in equal numbers to men. Yet landcare presents a more level playing field that consistently disrupts patriarchal norms in various country contexts. Landcare provides an enabling context for women to participate more fully and to take up leadership roles. Was this deliberately orchestrated by Joan Kirner and Heather Mitchell-Carmichael, who created the highly successful Australian Government Landcare program?**

**In analysing the trajectory of landcare, one contributing factor is the conceptualisation and practice of landcare being conducted primarily in the realm of community. Community is a space where the gendered roles of women and men intertwine with greater ease than private spaces, where the roles of women are more pronounced, and the public space, where men tend to dominate. The community locus of landcare is spatially grounded in a defined landscape and sphere of influence, and hence is irrefutably place-based. This immutable link to place is conducive for increasing the visibility and recognition of women's talents and unremunerated labour and offers women a segue to public roles.**

## Introduction

The dominant vision of a farmer, or indeed anyone pursuing a life on the land or conducting business in a natural environment, has been constructed as inherently masculine. This image is consistently reinforced by the broader patriarchal social relations that pervade most societies. In Australia, challenging the norm of defaulting to the masculine is an ongoing project. When landcare emerged in the 1980s, it was in the context of a burgeoning phase of analysis and critique of the public–private realms of gendered activity. It was an era of new opportunities and new horizons for women. More women were gaining academic degrees as there was free access to universities. Women as the 'second sex' (de Beauvoir 1949) were well served by razor-sharp analyses that theorised and exposed the bind of women after the 1960s sexual revolution in treatises such as *Damned whores and God's police* (Summers 1975). Feminism was influential in the establishment of the rural women's movement and networks that proliferated across the country. At the same time, the publication of the seminal book *Silent spring* (Carson 1960), an expose on agricultural pesticides, changed global public opinion and prompted reconsideration of agricultural practices. In the early 1980s, one of the most dramatic manifestations of Australian land degradation were the dust storms, a consequence of groundcover loss and the devastating drought that impacted Australia. This stirred the environmental movement into action, along with a broader awakening interest in the impacts of farm practices on land, water and food production.

**When landcare emerged in the 1980s, it was in the context of a burgeoning phase of analysis and critique of the public–private realms of gendered activity. It was an era of new opportunities and new horizons for women.**

It is within this context that landcare took a quantum leap to be an Australian Government program that relied heavily on voluntary effort. Driven by two stateswomen from opposite ends of the political ideological spectrum – Joan Kirner from the left and Heather Mitchell-Carmichael from the right – landcare was elevated onto the environmental platform in Victoria in 1986, then nationally in 1989 under Prime Minister Hawke's Decade of Landcare. Landcare thrived in communities with more than one-third of rural households, and urban dwellers in cities becoming involved (Brown 1996:31). Feminist thought formed part of a critical thread of scholarship examining women's involvement in landcare (for example Beilin 1997 and Lockie 1997). More than 20 years on, we take the work of these scholars as inspiration for the reflections and analysis in this chapter.

As we skip forward to the 21st century, Australia has had its first female prime minister in Julia Gillard. Fiona Simpson is currently the first female head of the National Farmers' Federation. Patriarchal relations are still the default cultural norm in Australian public life; however, the tectonic plates of masculine hegemony are shifting. Increasingly, public and academic discourse is questioning these norms as being detrimental to women and men, many of whom seek more heterogenous, divergent forms of masculinity (Flood and Howson 2015).


Heather Mitchell-Carmichael (left) and Joan Kirner at Winjallok celebrating the tenth anniversary of Landcare in Victoria. Photo: Landcare Victoria Inc. archives.

The global #MeToo movement has shifted the private shame and damage of sexual assault onto the international agenda, paving the way for a renewed questioning of the tenets of the institutions that structure society to overwhelmingly serve and favour the dominant position of men. More broadly, the spectre of sexual and gender-based violence towards women is now firmly on the agenda. While not a formal theme, the impact of sexual and gender-based violence on agricultural livelihoods and productivity came up repeatedly in presentations and plenary discussions at the 2018 international conference, *Seeds of change: gender equality through agricultural research for development*.

## Landcare in the community: equity beyond public and private domains

In this chapter, we argue that landcare, in no small but yet quiet and unassuming way, has made a significant contribution to making women visible and placing them on an equal footing with men in the landscape, associated public institutions and forums. This has not required feminist advocacy or protest action within or directly targeted at landcare. We make this argument at the macro level to investigate how landcare creates an enabling environment for equality. This necessitates the omission of a discussion of the inequalities that surely occur in landcare; that is a given in the broader context of structural and societal gendered inequity. The point is not to dismiss these occurrences, but to take this opportunity to fully explore how the structures and practices of landcare have apparently managed to foster equality, without an intentional or systematic strategy to do so.

While so many other organisations and groups grapple with entrenched sexism that maintains persistent barriers to women's leadership, access to resources and equal benefits from policies and legislation, Landcare has quietly been achieving gender equity that it never explicitly set out to achieve. Research conducted in south-west New South Wales, Australia, in the 1990s found that Landcare was the only local agricultural organisation that did not have a significantly gendered membership skewed towards males, 'offering women an acceptance and legitimacy denied to them by other farm organisations' (Lockie 1995). 'Women farmers find that they have a voice in local agricultural meetings for the first time' (Brown 1996:31). Landcare organisations were also more likely to have women in professional roles than 'traditional' government extension services. Campbell contrasted the 100 or so nationally funded Landcare facilitators, many of whom were women:

> pioneering a new role in which they are expected to use communication and facilitation skills, with an emphasis on process rather than content', with 'their regional bosses and other colleagues, groups consisting overwhelmingly of male agricultural science graduates … in a system dominated by the linear technology transfer paradigm … in which scientific rationality is pre-eminent, and the traditional notion of community consultation is a public meeting to announce departmental policy to anyone who turns up' (Campbell 1994:206).

Landcare is conceptualised as a group endeavour, enacted through community relations by and for the benefit of the community, at the intersection of gendered public and private realms. Here we will borrow and extend an analytical framing of women's labour in international development to put forward the proposition that one of the reasons Landcare has been so successful in attracting both women and men is its location in the realm of community. It is here that women and men are more easily able to interact beyond the norms demarcating the private as feminine and the public as masculine. The expertise, labour and multiple other contributions of women are more visible and hence can be valued in community spaces.

While heterogeneity abounds, there is a clear, dominant pattern of undervaluing, discounting or simply ignoring the labour of women in most societies. Since the 1980s there has been a strong movement to recognise and value women's labour, notably through the work of Waring (1988) and others who questioned why women's work was not counted in national gross domestic product data. Beyond gross domestic product, how do we account for the informal and unremunerated work of women? How can women's roles be fully recognised and valued? As the COVID-19 virus rages across the globe, data on how women are disproportionally and negatively impacted by the pandemic is pouring in from Australia and across the globe (for example, Burki 2020; McLaren et al. 2020; Yildirim and Eslen-Ziya 2021). It is clear that social systems are ill-equipped for gender equity in good times and, unsurprisingly, this is exacerbated in bad times.

One way of illuminating women's unpaid economic contribution is Moser's framing of women's labour into three distinct arenas: reproductive, productive and community (Moser 1993). Reproductive labour includes childbearing and rearing, and the full gamut of domestic duties that maintains and cares for men, other women and children. Productive labour includes work for payment in cash or in kind. This may be performed in the formal or informal sector and includes subsistence activities, such as food grown for direct consumption. In the community arena, Moser differentiates between women's unpaid, informal roles in the provisioning and maintenance of local social relations and community resources, and men's remunerated formal organising and political roles in the community.

Landcare provided a new dimension to the realm of community that valued the normative roles of women and men, while providing new opportunities for women to take on more organising, leadership and political roles in the community alongside men. It is at sites of community that the principles and power of landcare manifested as an accidental equaliser in gender relations.

## Place-based: location, location, location

The practice of landcare is a grounding exercise – recognising and legitimising the relationship of the individual to a specific physical environment and other people in that area. A sense of place permeates all aspects of landcare and the identity of landcarers. 'Place-based' as a construct assumes a geographical context that can be understood in terms of its social, cultural, political, economic and institutional characteristics, and the interactions of people therein. Place influences how individuals and groups perceive the world through human experience, social relationships, emotions and ideas.

A place-based approach provides people with a framework for identifying and responding to local needs, including the social, environmental, spiritual and economic wellbeing set within a particular location. Landcare asks people to take a place-based approach: to start where they are, with what they have, without recourse to any higher authority or source. It encourages participants to value the contributions of all, both women and men, and often children. Indeed, adherence to landcare principles creates space for social inclusion beyond a gendered binary. Those who find themselves on the margins of public power and access to resources can also find a place that does not just enable but values and celebrates their contributions. For example: young people (Intrepid Landcare), Aboriginal people (Ginninderra Catchment Group) and people living with disabilities (Nature Freedom). Place-based approaches also legitimise participation in landcare of 'other' types of farmers who may have been (or felt) excluded from conventional extension activities, such as 'hobby farmers' or 'lifestylers' (Campbell 1994:257).

Landcare is strongly local and based on the strength of human relationships mediated in the community sphere by a shared interest in the land or seascape. That said, the global spread and replication of landcare since the 1990s has been facilitated by more affordable air travel, mobile phones and internet linking people and organisations. The physical settings are unique but, in each instance, the common thread is people's commitment to each other and care for the environment. The landcare style of commitment brings women and men together to focus on commonalities and navigate mutually beneficial outcomes. This is in stark contrast to the cyclical building and maintaining of gendered norms and hierarchies of power that require a sustained focus on biological and socially constructed difference.

## Gender equity and subsidiarity in landcare

The apparatus of the Australian Government, and many democratic nation-states, is structured around top-down hierarchies of power modelled on patriarchal military structures. A place-based orientation of governance, such as that set up by Kirner and Mitchell-Carmichael for Landcare, provides a framework for multiple sites of power in the service of the individual and the local. This is the heart of the principle of subsidiarity as defined by Michael Seigel in Chapter 3. The policies and programs of the Australian Landcare program dispersed and shared power with a focus on community control of

community affairs. Kirner and Mitchell's polycentric structure provided entry points for numerous women to incrementally broach the private–public divide on the middle ground of community. It brought a mechanism of subsidiarity into rural homes and towns that served the agency of not just male but also female individuals. The largely undervalued productive and reproductive labour of women came into view, albeit as the backdrop of their community landcare activities. With visible positions in the community, acknowledged in the public domain as being on an equal footing with men, women had a platform that attracted social capital beyond the private sphere.

Landcare presented an opportunity for women to not only have a voice, but to be heard; to make choices and decisions that influenced the allocation of public resources. Landcare became the accidental equaliser, providing women a segue into the domain of public discourse and power. A pathway emerged that enabled women to draw on intra-community bonding capital to build bridging capital and inter-community networks. This did not occur in isolation. Change was afoot in other dimensions of gender relations. The rhetoric and representation of the quintessential Australian farmer as male was being challenged. In 1994, women were afforded recognition as farmers in law. Prior to this, the permissible legal status of women who worked on the land was to be described as unproductive silent partners, domestics, helpmates or farmers' wives.

**Landcare presented an opportunity for women to not only have a voice, but to be heard; to make choices and decisions that influenced the allocation of public resources. Landcare became the accidental equaliser.**

Over the past decade, there has been a groundswell of youth-led campaigns to address global challenges such as climate change (Greta Thunberg), gender equality and social justice (Malala Yousafzai) and human rights (Manu Gaspar). A new generation of landcare leaders are emerging as Landcare groups, networks and supporters invest in the future through youth initiatives. One Australian organisation, Intrepid Landcare (see Chapter 27), has focused on building teams of skilled youth and volunteer facilitators through leadership development programs. Intrepid has also conducted conversations between youth and elders where ideas and experiences are shared. Emerging from these conversations has been 'a depth of connection with others and a sense of belonging across the community' (Lee et al. 2020).

The Intrepid Landcare example of intergenerational interaction shows that landcare can create a space where conversations, reflection and learning occur within a community of practice. These social transactions are used to accompany meaningful interaction, where the past can inform the future, yet past practice can also be challenged. This space is where participants develop a strong relationship to the social construction of knowledge and a collective sense of purpose is created. Engagement between generations and cultures becomes the precursor for effecting change, the transfer of explicit and implicit knowledge and where serendipitous opportunities present. Importantly it is a space where societal matters such as gender equity can be explored.

## Conclusion

In many of its incarnations, Landcare provides equitable opportunities for participation and leadership by both females and males. Without any dedicated effort, women made up 50% of delegates at the 2018 Australian Landcare conference (Landcare Australia 2018). That said, the broader operating environment is still predominately patriarchal. In Australia at least, a farmer is still most frequently imagined to be male. The Australian Research Council recognised this disjuncture and funded The Invisible Farmer project, which is working to address this bias in perception and representation (Forge and Dale-Hallett 2015). This and other initiatives to foster equity and to eliminate gendered discrimination are all parts of an ongoing process of change.

This chapter has been informed primarily by the Australian experience of landcare. However, the concepts – place-based, community-driven and subsidiarity – are understood and enacted by numerous societies across diverse geographic and political settings. These concepts and the principles of landcare have created an enabling environment for women's participation, the recognition of their roles in reproduction, production and the community, and increased gender equity. Beyond the position of women that has been our focus here, dialogues that promote mutual interests and that identify common priorities, partnerships and principles for cooperation have always been present in landcare. The facilitation of intergenerational conversations encourages futuristic thinking, while simultaneously tapping into elder wisdom, knowledge and experience. Landcare's platform also arranges the operating space that enables social inclusion and civic participation, and allows for independent advocacy and the identification of dominant interests, which can then be more accountable and engaged.

The spectacular achievements of the Landcare program and its enduring presence, despite the winding back of Australian government support, also begs the converse question posed in this chapter about the contribution of landcare to gender equity. How much of the success of landcare is because of the opportunity and greater equality it affords women? What would landcare look like if it had been skewed towards male interests, as so many programs are? What can this teach us about how much more successful other programs can be when founded on gender equity?

## References


Beilin R (1997) 'The construction of "woman" in landcare: does it make a difference?' *in* Lockie S and Vanclay F (eds) *Critical landcare,* Centre for Rural Social Research, Charles Sturt University, Wagga Wagga, NSW.

Brown V (1996) 'Landcare in Australia: talking local sustainability in policy, practice and place', *Rural Development Forestry Network Paper,* 20e:31–41, Winter 1996/97.

Burki T (2020) 'The indirect impact of COVID-19 on women', *The Lancet*, 20(8):904–905, accessed 18 May 2021. https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(20)30568-5/fulltext?utm_source=miragenews&utm_medium=miragenews&utm_campaign=news

Campbell A (1994) *Landcare: communities shaping the land and the future,* Allen & Unwin, Sydney.

Carson R (1960) *Silent spring*, Houghton Mifflin, Harcourt.

de Beauvoir S (1949) *The second sex*. Reprint, London: Vintage, 2009.

Flood M and Howson R (eds) (2015) *Engaging men in building gender equality,* Cambridge Scholars, Newcastle upon Tyne.

Forge C and Dale-Hallett L (2015) *The Invisible Farmer project*, Museums Victoria website, accessed 21 May 2022. https://collections.museumsvictoria.com.au/articles/14480

Landcare Australia (2018) *Women in landcare,* Landcare website, accessed 4 May 2022. https://landcareaustralia.org.au/women-in-landcare/

Lee (Rowlatt) M, Edwards N and Robinson P (2020) *Intrepid Landcare conversations with our elders: co-creating a wise future*, Intrepid Landcare website, accessed 15 September 2020. https://intrepidlandcare.org/a-wise-new-future/

Lockie S (1997) 'Rural gender relations and landcare', *in* Vanclay F (ed) *With a rural focus: conference proceedings of the 1994 Annual Conference of The Australian Sociological Association Inc.,* Centre for Rural Social Research, Charles Sturt University, Wagga Wagga, NSW.

McLaren H, Wong K, Nguyen K and Mahamadachchi K (2020) 'Covid-19 and women's triple burden: vignettes from Sri Lanka, Malaysia, Vietnam and Australia', *Social Sciences,* 9(5):87, accessed 18 May 2021. https://doi.org/10.3390/socsci9050087

Moser C (1993) *Gender planning and development: theory, practice and training,* Routledge, London.

Summers A (1975) *Damned whores and God's police: the colonisation of women in Australia,* Penguin, . Sydney.

Waring M (1988) *If women counted: a new feminist economics,* Harper & Row, San Fancisco.

Yildirim TM and Eslen-Ziya H (2021) 'The differential impact of COVID-19 on the work conditions of women and men academics during lockdown', *Gender Work Organ,* 28(1):243–249, accessed 18 May 2021. doi: 10.1111/gwao.12529

# CHAPTER 23

# Landcare: leveraging the opaque to build resilience

**Pip Job**

## Abstract

**This chapter is an opinion piece, full of observations from 12 years of my experience in various roles in the landcare sector in Australia and more widely. Through this chapter, I aim to explore landcare as a great example of subsidiarity in action and discuss what can be achieved at a local level. The landcare movement brings a solutions-oriented view to the world. It shows that when community members come together around a shared vision, their resilience will be significantly enhanced. Overlay this with leadership, social fabric and a holistic approach to managing environmental, economic and social dynamics, and I consider that landcare provides a very formidable partner, influencer and change-maker. Adopting landcare's somewhat opaque elements and qualities has the potential to provide governments and communities across the globe with a tremendous return on investment when applied to complex problems. We can leverage these opaque elements to achieve better community outcomes.**

## Landcare as an integrator

When we think of environmentalism and conservation, we tend to think of 'green' issues. If we think of agriculture, it's generally described as 'brown'. But when I think of landcare, it's a lovely shade of khaki. It's green and brown together, blended, intricately connected.

There are parts of the landcare concept, however, that are less tangible and harder to quantify. I see these as the opaque elements of landcare. Let's take a closer look at these opaque elements and the value they bring in making our people, families and communities resilient and robust as part of the landcare ethic. I have loosely grouped these opaque elements into three areas of thinking: social fabric, leadership and holistic thinking. Many of these opaque elements are covered elsewhere by authors such as Curtis and van Nouhuys (1999), Sobels et al. (2001), Cullen et al. (2003) and Henry et al. (2017).

### Social fabric

Landcare institutions, especially the larger networks of Landcare groups, generally have a high level of governance and are well respected within their communities. These groups are an integral part of the social fabric of a community and individuals, and communities often feel a strong sense of pride and ownership in their Landcare group.

Landcare can bring people together across a wide variety of themes, expanding the circle of interest across a community. I recall an event hosted by the Little River Landcare group called Breakfast with the Birds. This organised field trip saw farmers rubbing shoulders with hardcore conservationists, urban community members and people they may not have crossed paths with on a normal day. They all came together to appreciate birds and enjoy a wholesome breakfast. Landcare brings people together.

Landcare in larger regional communities creates the opportunity for the urban community to reconnect with nature and feel ownership for their local environment. In Dubbo, in the central west of New South Wales, Australia, city landcarers often frequent the banks of the Macquarie River while undertaking bank restoration projects, planting trees and transforming the vein that runs through the heart of the city. Families of all ages mix with people from all walks of life, joined by a common cause. Landcare connects people.

**The level of trust and respect that the community has for its local Landcare group should never be underestimated.**

Connectedness is an essential ingredient of the social fabric of communities**.** In regional communities, Landcare groups are the conduit for social cohesion and belonging, and they provide a safe place for social interaction during workshops and events. Landcare has an inclusive culture that brings people together regardless of their age, race, culture and gender. As an example, the Little River Landcare group ran a workshop to coincide with World Environment Day to encourage the more senior citizens in their community to share their local stories, all as part of collecting the oral history and anecdotes of the region. Residents of the local aged-care facility thrived under the opportunity to be part of Landcare for the day, weaving their history into the tapestry of the future.

People trust Landcare, especially its local staff and volunteers, and they want to be engaged in what Landcare is doing. The level of trust and respect that the community has for its local Landcare group should never be underestimated.

Just prior to my time as CEO of the Little River Landcare group, I sat in a community meeting where the group committee informed the community that they had decided to shut the group down, following major changes to funding structures in 2010. There was a critical turning point during this meeting. A former chair of the group and dedicated member patiently listened to the committee present their views and reasoning for the proposed closure. He waited for his time to stand and share his view. In his wise words, he stressed the value of Little River Landcare as the social fabric of the community. He said that in a time when many other leading community groups had closed, Little River Landcare provided much more than field days. It provided a diversity of interaction points for the community, and this is what the community valued. A representative from another Landcare group then said that other Landcare groups looked to Little River as leaders – if we couldn't do it, nobody could.

This meeting was a turning point that resulted in a number of changes, including leadership, the organisation's goals and a deeper understanding of the value of the group, which came from listening to the members. I am proud that today, the Little River Landcare group is still operating and running strong many years later and that these wise words about social fabric created a different outcome.

### Leadership

Landcare can provide leadership during adverse conditions and times of stress and pressure. This can be during natural disasters or even during farm biosecurity threats. This is often the case where other forms of community leadership are not strong or are non-existent. During an anthrax occurence in the central west of New South Wales – a time when landholders were scared and untrusting – people looked to the Landcare group for help in breaking through the community resistance concerning the issue that was being experienced. Landcare was able to achieve desired outcomes in increasing on-farm livestock vaccinations and incidence reporting.

More recently, in New South Wales in 2017, an extreme bushfire burned out more than 37,000 hectares, destroyed nearly 30 farming homes, sheds and equipment, and caused livestock losses in the order of 7,000 head. The local Landcare community surrounding the Sir Ivan fire zone helped connect with impacted farmers to determine their support needs and how they could receive aid in a strategic way. This was, of course, because Landcare had localised knowledge, existing governance and tremendous respect and trust within their community.

Leadership is also key to problem-solving. Landcare can be a spontaneous organisation, addressing the needs of the community in an innovative way by looking at the problem from a solution-oriented angle. Sometimes this means Landcare embarks on solving issues it has never dealt with before. Landcare can look at problems from different perspectives and overcome barriers through an organic and spontaneous approach to local issues.

A good example is when the Little River Landcare group addressed mental health and set a goal to not lose a single member to suicide during the Millennium Drought. We embarked on an ambitious endeavour to break the stigma around mental health and give the topic a voice so that everyone could normalise their understanding of this serious health issue. As a group, we had no preconceived ideas about how mental health should be approached

and we had very few connections with mental health experts to tap into. Within months, we were planning a community day with guest speakers from Beyond Blue (a mental health advocacy group), local farmers who shared their personal mental health stories and a variety of support groups who attended as stallholders. More than 300 people attended what was an emotional day, with both tears and laughter.

This event initiated a wide range of initiatives, including mental health training. We developed a mental health peer support structure and did regular mailbox drops reminding people to be watchful of their own wellbeing and those around them. We advocated for a mental health expert to visit the community every month, and established a network with trusted individuals across the community who could drop in on people who needed someone to chat with.

As leaders, we weren't deterred by venturing into areas in which we had no knowledge or experience. We saw an issue in our community and found solutions. The loss of a single member to suicide was not negotiable.

**The Little River Landcare group ... set a goal to not lose a single member to suicide during the Millennium Drought. ... We weren't deterred by venturing into areas in which we had no knowledge or experience. We saw an issue in our community and found solutions. The loss of a single member to suicide was not negotiable.**

### Holistic thinking

Landcare in Australia is increasingly moving towards the triple-bottom-line approach and endorsing practices and programs that encompass environmental, economic and social outcomes. This is resulting in Landcare being engaged by industry groups that are developing industry sustainability frameworks. In 2016, I sat on the steering group that formed the first Australian Beef Industry Sustainability Framework and I was very proud when Landcare was identified as a key stakeholder during the consultation phase. Landcare is demonstrating its professional integrity and leadership in this space. Young landcarers now regard their involvement in Landcare as giving them skills, capabilities and experience and helping them along a career path. Many employment opportunities in the sector have been created through initiatives such as the NSW Government's $22.4 million investment in 2019 to fund 84 Landcare coordinator roles (Landcare NSW n.d.). The skills developed through Landcare, such as community consultation, stakeholder engagement, project management and problem-solving, means that landcarers are eagerly sought for their skills. Landcarers make excellent employees across the private, corporate and public sector because they are customer-focused, passionate individuals with tremendous purpose.

## Landcare cutting through the red tape

There is an additional opaque element worth mentioning: red-tape reduction. An important element of the Landcare model is its ability to reduce red tape between funding bodies and the land managers who undertake projects. This helps to increase engagement and participant satisfaction. This is often undervalued, but it reflects the key role Landcare can play as a crucial conduit, especially for government bodies that are rolling out funding programs with complex reporting requirements. As Landcare builds as a professional non-government organisation model and moves into the social enterprise world, its governance structures and delivery capacity will also be enhanced.

An example of managing red tape occurred during my time as CEO of Little River Landcare. We secured funding for a $1 million program targeting biodiversity hotspots and looked closely at how we could enhance our engagement to maximise the environmental outcomes of the program. Many natural resource management programs are rolled out with the primary producer outlaying the costs initially, and seeking reimbursement or receiving funding in part payments. Instead, Little River Landcare set up a corporate partnership to supply its members with bulk loads of fencing and water reticulation supplies. This meant that the work could be completed when they had time to do it, rather than only when they had sufficient financial resources. At this time, the region was recovering from the Millennium Drought and landholders had eroded their farm equity to survive. The corporate partnership enabled us to negotiate the cost of the supplies and achieve cost efficiencies, and the cumbersome elements of the funding agreement didn't need to be passed on to the farmers. As a result, we delivered even more kilometres of fencing than anticipated – on time and within budget! Everyone was happy!

## Conclusion

Landcare is a great example of what can be achieved at a local level with a solution-oriented approach. When community members come together with a shared vision, their resilience will be significantly enhanced. Overlay this with leadership, social fabric and a holistic approach to managing environmental, economic and social dynamics, and this makes Landcare a very formidable partner, influencer and change-maker.

Never underestimate Landcare. Its opaque elements offer a tremendous return on investment. They may be the hardest parts to quantify, but just because it may be a little difficult, it doesn't mean they don't exist.

## References


Cullen P, Williams J and Curtis A (2003) *Landcare farming: decuring the future for Australian agriculture,* Landcare Australia Limited, Chatswood, NSW.

Curtis A and van Nouhuys M (1999) 'Landcare participation in Australia: the volunteer perspective', *Sustainable development,* 11(2):98–111.

Henry A, Koech R and Prior J (unpublished) *The value of Landcare to the community.*

Landcare NSW (n.d.) *NSW Landcare program 2019–2023*, Landcare NSW [website], accessed 9 May 2022. https://landcarensw.org.au/nsw-landcare-program-2019-2023/

Sobels J, Curtis A and Lockie S (2001) 'The role of Landcare group networks in rural Australia: exploring the contribution of social capital', *Journal of Rural Studies,* 17(3):265–276.

Photo: Andres Arnalds

# CHAPTER 24

# Knowledge and progress: building bridges to empower community action

**Andres Arnalds, Jonina Thorlaksdottir, Brian Slater and Fred Yikii**

## Abstract

**This chapter examines the concept of participatory knowledge management in research, monitoring, evaluation and planning. The goal is to enhance progress in caring for the land. We draw on experiences from community-based approaches in Iceland, stakeholder viewpoints from Africa and Central Asia, and considerations from literature on efficiency of both knowledge generation and utilisation. The chapter further discusses conditions that need to be in place to strengthen knowledge gain and adoption, founded on the emerging principle that knowledge is most effectively applied when it is jointly produced by experts and the potential participants in decision and action. Building stronger bridges between the worlds of science and community boosts capacities, with benefits extending much further than implied by the knowledge gain itself, especially in terms of awareness, environmental literacy and advancement of skill in various areas of caring for the land. Such a paradigm shift has the potential to generate knowledge and facilitate effective action across elevated scales and at lower cost than through conventional approaches.**

## Introduction

Over many decades, massive investments have been directed towards conserving and restoring ecosystems worldwide. However, challenges are still mounting, with land degradation caused by human activities undermining the wellbeing of two-fifths of humanity, driving species extinction and intensifying climate change. Land degradation is also a major contributor to mass human migration and increased conflict (IPBES 2018). The tasks ahead are both large and complex and require transdisciplinary approaches to develop solutions that must meet a wide range of (often conflicting) goals.

The global agenda for sustainable development towards 2030 rests to a large extent on socioeconomic, political and cultural foundations. Among issues that need to be elevated are active community participation and fostering of environmentally responsible behaviour among a broader range of stakeholders. One should 'never doubt that a small group of thoughtful committed citizens can change the world; indeed, it is the only thing that ever has' (a quotation widely attributed to Margaret Mead).

The importance of community action as a key element in caring for the land was highlighted during the First International Conference on Landcare Studies held in Nagoya, Japan, in November 2017. Speakers clearly demonstrated that decisions made by individuals and communities at the local level are a major determinant of land health and thus the quality of the diverse ecosystem services they depend on. The conference illustrated that community action and collaborative learning, meeting multiple goals and expectations, is a key factor in creating enabling conditions for improving environmental sustainability.

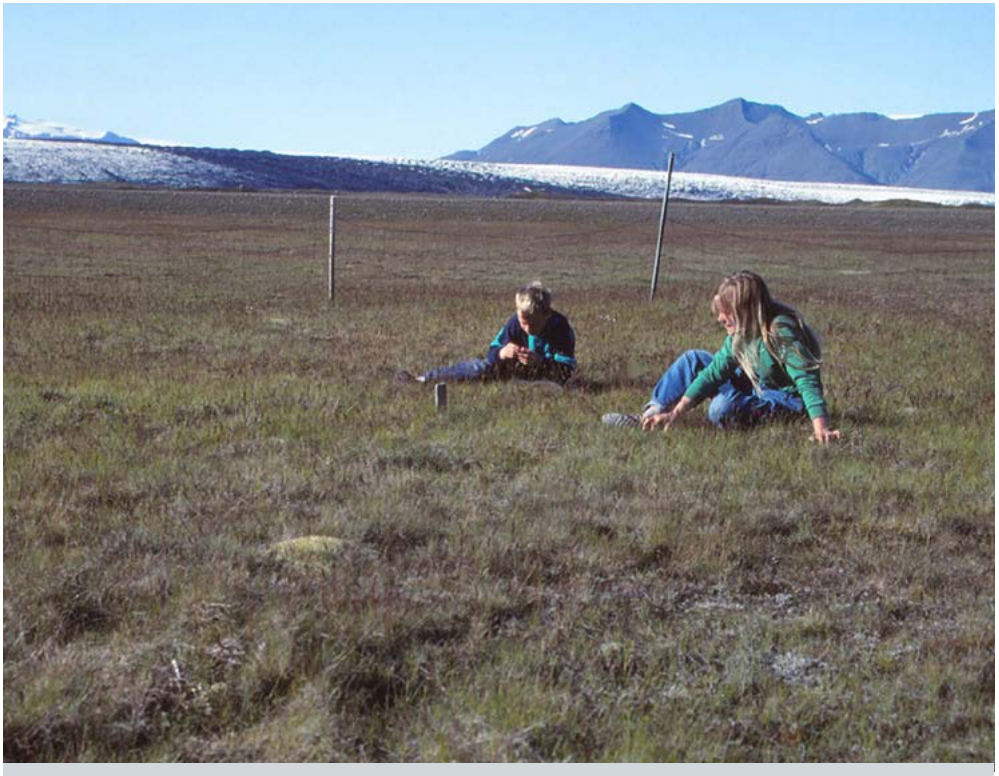


Photo: Andres Arnalds

A constant flow of knowledge and empowerment needs to exist, leading to the environmental awareness, ethics, land literacy and management skills that are among the pillars for responsible action. These principles have long been recognised, but where do we stand in terms of action? Why is land degradation still an alarming problem globally despite massive investments in research, knowledge, management and mitigation efforts over the years?

Part of the explanation may rest in lack of recognition of the role of proper activation mechanisms for community-based action, cross-fertilisation of ideas, experience sharing and co-production of knowledge in advancing the mindsets that environmental stewardship rests on. Inefficient knowledge management systems may be slowing down progress, as relevant knowledge is too often lacking, inaccessible, or not utilised for various reasons (Yikii 2009). Even the knowledge that exists may not be integrated into systems that can support decision-making and action (Thorlaksdottir 2015). This persistent gap between the generation and the utilisation of knowledge may in many countries be among the key barriers to better environmental management. Democratisation of knowledge is fundamental for increasing efficiency in management for environmental sustainability. To reach such goals, various roles in the generation and management of knowledge need to be revised, forging stronger links with community involvement and empowering change.

**Why is land degradation still an alarming problem globally despite massive investments in research, knowledge, management and mitigation efforts over the years?**

The main purpose of this chapter is to examine the concept of participatory knowledge management in research, planning, monitoring and evaluation, with a view to enhance progress in caring for the land. This includes asking the following questions:

- What kind of conditions need to be in place to foster the co-production of knowledge, advance social learning and form bonds between groups such as researchers, professionals, farmers and communities?
- How can participation further help in advancing our understanding of the needs of the land, fostering land literacy, awareness, environmental ethics and the skills connected with adaptive co-management and effective policy formation?
- How do we gain greater recognition of the fundamental importance of participatory approaches in the process of generating knowledge for progress?
- Is a paradigm shift in applied research required to build stronger bridges between knowledge and action?

The value of participatory knowledge management is purposely highlighted here, influenced by the authors' own experiences. It is important, however, to keep in mind that the appropriateness of such approaches spans a broad range of scales depending on the circumstances.

## The need for a new paradigm in knowledge management

The roots of inefficiency in caring for the environment are many and complex. However, there is growing evidence from both literature and undocumented experience that current knowledge management systems lack efficiency in many aspects, especially in terms of linking knowledge and action for progress.

Conventional approaches to knowledge generation rely to a large extent on research conducted within the domains of formal research institutions such as universities and other public agencies (Green and Mercer 2001) or by scientists practising within the private sector. Interaction with potential users of the generated knowledge tends to be low and incentives for them to participate weak. Even in studies where communities are involved to some extent, such as when information is obtained through surveys, it has been claimed that while science and personal strength of the respective researchers may be advanced, the collaborators may commonly receive little benefit (Blumenthal 2011).

Scientists tend to generate knowledge in isolation (Asenso-Okyere et al. 2008) and research funding is often insufficient in key areas needed for better understanding principles behind conservation, management and restoration by a wider range of stakeholders. Without proper contact with the potential users, some of the knowledge becomes irrelevant or low impact, regardless of its scientific quality. A further drawback of such approaches is that, with weak linkage to the massive experiential and Indigenous knowledge available and the knowledge generation power at the grassroots level, important user needs are not satisfied.

This adds to concerns related to the conventional model that the publication of scientific papers as the main means for dissemination of research findings and common extension systems tend to be passive. There is an inherent inefficiency in bridging knowledge, attitude and action. This model assumes linear relationships between knowledge and action (that is, one step leading to the next). However, when it comes to the foundations of environmental sustainability, as elaborated by Monroe et al. (2000), there may be a weak cause-and-effect progression from knowledge to attitude to behaviour. The reason is that, although people may have good knowledge about the issues of concern to them, this might not be enough to affect their behaviour. The pathway of translating knowledge to action is complex and has an array of limitations, such as land policy, lack of technological access or insufficient economic options to engender environmentally sustainable behaviours.

In their guide to funding and managing applied research, *The getting of knowledge,* Campbell and Schofield (2007) discuss the importance of research for enabling change, solving problems, developing opportunities, supporting innovation and building new knowledge. To succeed, one should no longer 'simply fund the research and hope that someone will adopt or extend the results' (Campbell and Schofield (2007:46). In their view, a more targeted approach would be to involve the users of knowledge at all stages from defining the problems, selecting topics, designing research questions, participating in the research, disseminating the findings and deciding on continued programs. It should be recognised that inefficiencies portrayed by lack of adoption may be more representative of a failure within research and extension than a fault on the practitioner's end.

## Research efficiency: stakeholder viewpoints

The need for a new paradigm with a focus on improving research efficiency is strongly reflected in viewpoints presented by United Nations University Land Restoration Training Programme (UNU-LRT) fellows from 13 countries in Africa and Central Asia who attended the GRÓ Land Restoration Training Programme in Iceland. Exploring the state of research and uptake of knowledge in their countries, they represented a broad range of disciplines, such as research, teaching and lecturing, policymaking, extension, knowledge brokering and facilitation, and on-ground project management at district and local levels (Arnalds 2019).

Commonalities in their views include the issue that top-down approaches often overlook the voices, existing knowledge and needs of the communities in question. Regarding efficiency of knowledge use, they expressed a tendency for low appreciation of the role of research, and that duplication of research was common. In addition, a clear gap seemed to exist between research and farmers. Faulty links between research and extension were mentioned as major factors limiting the flow of information, knowledge, useful new technologies and resources.

The UNU-LRT fellows stressed that research findings should be shared in a timely manner and be accessible and tailored to specific needs. They remarked on the diversity of target groups and the importance of appropriate language and presentation of results for the respective readers or audiences. This links with their experiences that scientific presentation may not be very appealing to people not well versed in such writing styles. They pointed out various means to make such writing more accessible, such as through advice outlined in the sarcastic paper *How to write consistently boring scientific literature* (Sand-Jensen 2007).

Among the challenges, in their opinion, were that the research agenda was often donor driven or determined by researchers with undue attention to needs and a lack of proper coordination between organisations. They felt that stronger emphasis should be on uptake and utilisation of research results in public policy, and that decision-making and application need to be ensured within the project planning stages. The fellows also emphasised the need to bring farmers and other stakeholders into research as partners to strengthen the connection between identification of research needs and development of solutions.

## Knowledge for progress: different views of purpose

To increase the efficiency of both knowledge generation and use, an elaboration of four key questions may aid in the process. These are:

1. **What?** – Clearly defining new knowledge and prioritising research topics and targets as reflected in the views of prospective users.
2. **Why?** – The purpose of applied research and other knowledge generating projects in addressing such needs.
3. **For whom?** – Consider the often numerous and diverse key beneficiaries of the added knowledge.
4. **How?** – This depends on the answers to the preceding questions governing the project design.

Such an approach, while also recognising the importance of basic research and academic freedom, can have multiple benefits that need to be accounted for. This includes actual use of the generated knowledge, policy effects and returns from investments in research projects and programs, and success in terms of progress at the ground level.

It is also important to recognise at the early stages in the research cycle the potential factors that may interfere with effective mobilisation of knowledge to support decision-making for sustainable development. According to the extensive work of William Clark and colleagues (for example, Clark 2010), three such efficiency barriers may stand out:

- mutual incomprehension between scientists and decision-makers
- fragmentation of the knowledge system
- inflexibility.

These are further elaborated to include key factors affecting the ability of new knowledge to influence decisions, such as perceptions on whether the knowledge was credible (Is it true?), salient (Is it relevant?), and legitimate (Is it unbiased, respectful and accountable?). Scientists and practitioners commonly have different perceptions of problems, solutions and what constitutes reliable knowledge. New knowledge must be trusted by decision-makers and practitioners alike before it is allowed to influence their behaviour.

Part of the problem may also rest in different views of purpose. If potential users of knowledge consider themselves to be part of some undefined mass in separate silos from researchers, this obscures the purpose and targets of the research. It also makes it difficult to determine where on the scale from data to progress successful knowledge management should operate (Figure 24.1).

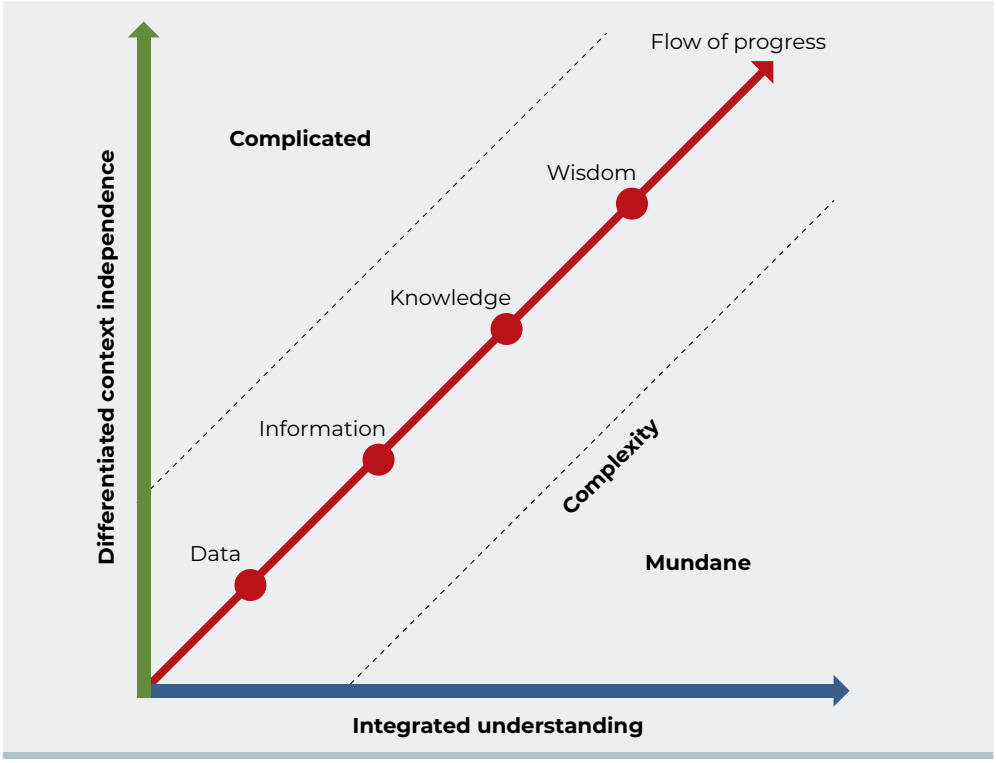



**Figure 24.1** The role of context in understanding

Source: Bellinger G (2004) *Knowledge management: emerging perspectives*, Systems Thinking website.

## Research: building the bridges

There is a growing awareness that collaborative learning approaches involving a broad range of stakeholders may hold a key to more effective adaptive management of environmental challenges. New learning approaches such as experiential, multi-loop, social, and transformational learning all involve aspects of broad participation of stakeholders across multiple scales (for example, Percy 2005; Armitage et al. 2009; Reed et al. 2010; Kolb and Kolb 2012; Medema et al. 2014). These partnerships have many names reflecting purpose, level of engagement and geographic area.

Such modes of research and knowledge management are gaining increasing attention as means to enhance more informed decision-making and practice. They represent a move beyond researching 'on' towards partnering 'with' participants and working together towards shared goals (building the bridges). Essentially this is a process of building new knowledge, which is generated and 'conceptually owned' by the participants themselves (for example, Oettle et al. 2014). There are almost endless possibilities when it comes to applicability and involving individuals and groups in generating information, developing understanding and new technologies, monitoring, evaluating, planning and aiding policy. Such involvement may also be regarded as a powerful tool to address emerging challenges resulting from conventional transfer-of-technology being inadequate for managing the complexity of issues affecting sustainable agriculture and natural resource management (Gonsalves et al. 2005).

**Collaborative learning approaches involving a broad range of stakeholders may hold a key to more effective adaptive management of environmental challenges.**

A collaborative process, one which aims to successfully involve all partners in research and include their broad area of knowledge management processes, needs to build on the unique strength that each partner brings to the table. In addition, it should enhance their autonomy and right for self-determination. However, there are many challenges to this task. Defining the scale of collaboration and moving the focus from simply gathering data towards a vision of practical purpose can be difficult. For those participating, new roles are assumed and the democratisation of knowledge changes existing environmental, economic and social relationships. A common base often becomes the nature of information, resources and technologies people need to better take care of the land (Moles 2008).

For the scientist, this means moving from solely being a provider of expert information or opinion based on research findings, to becoming an active contributor to achieving community goals by collective action. This also means that the act of identifying projects and posing of research questions is challenged by new players working together, guided by principles of sustainability and recognising the need for a long-range horizon. The need for stakeholder empowerment and responsibility also implies a moral or ethical right to shape the research agenda. Thus, to optimise research features and impact the public, researchers need to make sure they are asking relevant questions.

## The power of local knowledge and experiential learning

Efficiency in knowledge management can in many cases be elevated by recognition of local knowledge, which is usually more extensive than documented sources may indicate. There is also a need to develop strategies to advance knowledge by tapping into the interest and power of many stakeholders in experimenting, learning and developing innovative, efficient and effective solutions. Such approaches span a broad range. At one end of the scale are observations of what stakeholders such as farmers are doing to improve land management and ecosystem conditions locally. This can strengthen the base for clarifying knowledge needs and subsequent research. At the other end are guided trials and experimentation in adaptive modes that can gradually build the foundations for more formal research explanations and verify the nature of such findings.

The potential of such informal collaborative modes in generating knowledge and stimulating further research and development can be illustrated by participatory-based knowledge development in Iceland. It further demonstrates the power of bridging divides between stakeholder groups by forming an adaptive learning process for all involved.

Around 1990, an Icelandic version of landcare started developing, inspired and influenced by Australian experiences. This change in conservation strategies gradually brought soil conservation in Iceland from a tradition of top-down approaches with little local involvement towards building bridges between farmers and conservation. The farmer–government collaborative program Farmers Heal the Land, operated by the Soil Conservation Service of Iceland, was established in 1990 and remains a flagship of soil conservation and ecosystem restoration within the country.

At the time the Farmers Heal the Land program was established, land restoration methods in rangeland environments were largely based on concepts from agronomy, with high input levels of seeding and fertilisation, and were too cost ineffective. New techniques were needed to aid large-scale vegetation establishment in severely degraded land. By visiting, observing and actively listening to farmers who had been independently trying low-input solutions, a more cost-efficient and ecologically relevant methodology was quickly developed, linked with scientific understanding available at that time. These techniques were strengthened and expanded by experiential approaches, like using a 'this is one big experiment' reply attitude instead of giving the revegetation farmers direct advice. Scientific experimentation has since refined and developed these methodologies further. Through such partnerships, a growing group of participating farmers was able to develop solutions much faster than conventional research approaches could have, at a lower cost and with methodologies tailored to a broad scope of local site conditions (Arnalds 2011).

## Realising the potential of evaluation and monitoring

Participatory-based approaches in monitoring and evaluation have a massive range of benefits but vastly underutilised potential for application. The use of such methodologies has become highly relevant (for example, in the broad areas of assessment of land condition and trend, reporting on actions like revegetation, restoration of biodiversity and forestry, and in programs aimed at offsetting release of greenhouse gases by carbon sequestration). Participatory collaboration can lower costs, elevate knowledge generation and expand the impact of both monitoring and evaluation, all depending on how well the project design serves the purpose of such efforts.

The need for detail, choice of methods and level of community engagement is strongly linked to the fundamental questions of *why* and *for whom* the activity is carried out, just as in all other areas of knowledge management. Is the purpose primarily to add contributions to science or, as sometimes felt by farmers, to compile a database to fulfil documentary needs? Is the data collection intended to support policymaking? Alternatively, is the evaluation and monitoring meant to have an important role as a practical tool to adjust management or methodologies so techniques and skills can be improved at the 'action' level. Factors such as the effect on both virtual and conceptual 'ownership', platforms for learning, environmental literacy, awareness, behaviour, action and cost efficiency from broad perspectives are important elements in choosing the most appropriate approaches for the monitoring or evaluation of projects at hand.

Although stakeholder engagement is on the increase (for example, in the quest for sustainable use of natural resources), top-down methodologies in assessments of condition and trend are predominant in many countries. Experience shows that limited local involvement can be a barrier to efficiency. The long-running battle for better management of the severely degraded rangelands of Iceland (Arnalds 2011; Crofts 2011) is an interesting example. There are indications that, no matter how detailed, the various efforts conducted over the years to monitor land use, map vegetation and assess habitat types and soil erosion may not have resulted in the management improvements needed, despite the massive data accumulated. Indeed, management changes appear to have been fraught with difficulties, in part resulting from low levels of trust and conceptual 'ownership' in the results from these programs and subsequent development of solutions (Thorlaksdottir 2015).

In her evaluation of the land use part of the current Icelandic quality verification scheme, which highly impacts the level of governmental payments to sheep farmers, Thorlaksdottir (2015) found the system to be characterised by top-down approaches. The farmers in turn felt that their knowledge about the resources and efforts in land improvements, such as revegetation of degraded land, was not accounted for and the land evaluation process was often seen as being unclear. Thus, acceptance and understanding of cause-and-effect relationships and needs for land condition improvements was limited, leading to a partial failure of the system. As the flow of information and knowledge management was impeded, a weakness was created that limited the ability of the scheme to affect the management and sustainability of the production. This study demonstrates a need for stronger ties between knowledge, policies and action, and locally based win-win approaches that link understanding and management of natural resources.

Experience demonstrates that verification and monitoring systems dealing with land use need to be based on actual local involvement as much as possible, be flexible and encourage adaptive management. Local and scientific knowledge should be considered as equally relevant, and used jointly – they should both be tools for documenting and advancing local management, as well as encouraging independent thinking, innovation and implementation of new ideas and measures. Appropriate communication platforms and information pathways that encourage sharing and aid in identifying potential problems and solutions can immensely increase the value of such schemes while aiding consensus building between stakeholders, including scientists. A constant re-evaluation and adjustment of the implementation process can be aided by having feedback mechanisms in place that incorporate local achievements, ideas and knowledge (Thorlaksdottir 2015).

## Continuing the legacy of participatory planning

The potential for the application of participatory approaches is broad. In the land-use arena, the Australian Potters Farmland Plan set up in the 1980s (Campbell 1991) may be considered as a true pioneer in whole-farm planning. It clearly illustrated the value of empowering landholders in planning and decision-making, showing that they can be leaders of change and that conservation and production are two sides of the same coin.

In 2001, based on the Australian experience and as a follow-up to an Icelandic landcare study tour the year before, the Soil Conservation Service of Iceland spearheaded a collaborative project on good farming practices and planning as a tool to foster sustainability. The aim was to empower landowners to make their own plans on a whole-farm basis, and coordinate services by various institutions like agricultural extension, soil and nature conservation and forestry accordingly (Schmidt and Arnalds 2020).

This program consisted of two one-day workshops run a few weeks apart. The participants were provided with high-quality aerial images of their land and taught how to interpret them, read the land and to classify the condition and utilisation of the land. They were then guided into a six-step cycle, repeating the cycle as needed:

1. situation and land resources analysis
2. vision, ideal and long-term goals
3. assessment of present land use and conservation efforts
4. setting goals and priorities
5. drafting a plan, using double clear overlays
6. lessons learned, evaluation and changes.

The program emphasised participation on a family basis, and regular visits and advice from consultants as needed. It illustrated the multiple benefits of participatory property planning, most notably the conceptual ownership, learning, pride and utilisation of the plans made by the farmer families themselves with aid from specialists. Participants often remarked that they felt they saw their environment differently. By getting to know the land better, they could more easily detect positive or negative changes in its condition and respond accordingly. The aim was to gradually expand the focus from planning at the farm level to linking such planning on adjacent farms and to district levels.

It was hoped that this approach would become a framework for increased institutional cooperation and better integration of their goals, advice and service on a farm basis. However, the project did not evolve beyond the promising trial stage, possibly in part due to weak policy guidance and inherent institutional tendency to stay within conventional operative frameworks.

This example is in harmony with experiences in many other countries, demonstrating the potential of well-organised participatory planning to bring about empowerment on wide scales. Thus, more voices are heard and integrated, which can create understanding and commitment with substantial socioeconomic and environmental benefits (Kpierekoh 2011).

## Citizen science

As discussed in the preceding chapters, civic engagement plays an increasingly important role in knowledge management. Currently, community participation in scientific processes is discussed widely under the heading of ‘citizen science’. This bridge between

the worlds of science and community boosts capacities, with benefits extending much further than implied by the knowledge gain itself, especially in terms of awareness and environmental literacy.

The phenomena's main strengths are in the areas of research, evaluation and monitoring, with mobile technology and new media boosting the capacities. As an indication, there are more than 1,500 active and searchable global citizen science projects listed on the SciStarter website. Earth Challenge 2020 involved more than 1 million volunteers globally in gathering data. At a country level, the Australian monitoring programs Saltwatch, Frogwatch and Streamwatch involved more than 300,000 people – individuals, schools and groups – leading to manifold knowledge gain (Sullivan 2009). Using modern technology, enriched environmental data can be collected on a scale inconceivable only a few years ago and trends, for instance in response to management and changing climate, become evident through the use of standardised methods.

Community engagement in citizen science has two tiers of benefits:

- the contributions that the huge observational effort makes to environmental science
- the education of the people involved (Sullivan 2009).

Volunteer contributions can significantly push research fields ahead and are increasingly significant in our rapidly changing environment. Efforts should be made to encourage more volunteer participation in research, with confidence that it will improve the scope of science, acknowledging the contributions and giving credit where credit is due (Yikii 2009). There is much advancement in this field, as reflected by Hecker et al. (2018).

**Using modern technology, enriched environmental data can be collected on a scale inconceivable only a few years ago and trends … become evident.**

## Conclusion

Fostering both community and stakeholder involvement in co-production and management of knowledge spans a broad range of applicability and can have multiple benefits way beyond the importance of the actual data or information itself. Among them is the increased flow of information, communication, cooperation and trust that successful knowledge projects bring. Feedback loops stemming from involvement can both speed generation of knowledge and advance knowledge uptake and skill-building through the principles of learning-by-doing adoption, and thus reduce costs, enhance efficiency and foster real change. Depending on the nature and level of involvement, being a participant in gaining more information and developing solutions that relate to your local context can be very motivating and cultivate a conceptual 'ownership' that applies to both success and failure of the knowledge or techniques being developed. Curiosity and pride are stimulated, adding to commitment and important flow-on educational benefits from participants to user groups, families and the wider community.

Hearing the voices of communities in setting a research agenda, with a design that enables all actors to have a say in the research process, aids in adoption of results being part of the study, but not an isolated component. These attributes increase the likelihood

of decisions being effectively informed by science. A bridge is built between relevant stakeholders through the stages of problem identification, formation of research questions and experimental design, to the dissemination and utilisation of the newly generated knowledge. This becomes a tool for learning where the process aids in the development and uptake of output.

Participatory approaches to knowledge management can deliver much if carefully integrated throughout all the different processes and levels of action. This includes within research, monitoring, evaluation, planning and policy and involving relevant stakeholders as much as possible. However, it is necessary to keep in mind at every step that all environments, every challenge and every group of actors is unique. Knowledge management processes must be tailored to the needs and mindsets of each situation.

Participatory knowledge management is a fast-evolving field where nothing should be taken as a set principle. The development of enabling conditions for such approaches should be encouraged, underlining their power to enhance means for caring for the land.

## References


Armitage D, Plummer R, Berkes F, Arthur R, Charles A, Davidson-Hunt I, Diduck AP, Doubleday N, Johnson D, Marschke M, McConney P, Pinkerton E and Wollenberg E (2009) 'Adaptive co-management for social-ecological complexity', *Frontiers in Ecology and the Environment,* 7(2):95–102.

Arnalds A (2011) 'Farmers heal the land: a social licence for agriculture in Iceland', *in* Williams J and Martin P (eds) *Defending the social licence of farming: issues, challenges and new directions for agriculture*, CSIRO Publishing, Collingwood.

Arnalds A (unpublished) *Research efficiency: stakeholder viewpoints*.

Asenso-Okyere K, Davis K and Aredo D (2008) *Advancing agriculture in developing countries through knowledge and innovation, Synopsis of an International Conference*, International Food Policy Research Institute, Washington DC.

Bellinger G (2004) *Knowledge management: emerging perspectives,* Systems Thinking website, accessed 29 October 2020. http://www.systems-thinking.org/kmgmt/kmgmt.htm

Blumenthal DS (2011) 'Is community-based participatory research possible?', *American Journal of Preventive Medicine,* 40(3):386–389.

Campbell A (1991) *Planning for sustainable farming: the Potter Farmland Plan story*, Lothian, Melbourne.

Campbell A and Schofield N (2007) *The getting of knowledge: a guide to funding and managing applied research*, 2nd edn, Land and Water Australia, Canberra.

Clark WC (2010) *Linking knowledge with action for sustainable development* [PDF]. Accessed 29 October 2020, https://www.ipcinfo.org/fileadmin/user_upload/sciencecouncil/EVENTS/Science_Forum/Science_Forum_2009_website/Clark-pres.pdf

Crofts R (2011) *Healing the land: the story of land reclamation and soil conservation in Iceland* [PDF], Soil Conservation Service of Iceland, accessed 29 October 2020. https://land.is/wp-content/uploads/2018/01/Healing-the-land.pdf

Gonsalves J, Becker T, Braun A, Campilan D, De Chavez H, Fajber E, Kapiriri M, Rivaca-Caminade J and Vernooy R (eds) (2005) P*articipatory research and development for sustainable agriculture and natural resource management: a sourcebook. Volume 1: understanding participatory research and development,* International Potato Centre-Users' Perspective with Agricultural Research and Development, Laguna, Philippines and International Development Research Centre, Ottawa, Canada.

Green LW and Mercer SL (2001) 'Can public health researchers and agencies reconcile the push from funding bodies and the pull from communities?', *American Journal of Public Health,* 91(12):1926–1943.

Hecker S, Haklay M, Bowser A, Makuch Z, Vogel J and Bonn A (2018) *Citizen science: innovation in open science, society and policy*, UCL Press, London.

IPBES (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services) (2018) *Worsening worldwide land degradation now critical*, accessed 20 October 2020. https://www.ipbes.net/news/media-release-worsening-worldwide-land-degradation-now-%E2%80%98critical%E2%80%99-undermining-well-being-32

Kolb AY and Kolb DA (2012) 'Experiential learning theory', *in* Seel NM (ed) *Encyclopedia of the Sciences of Learning,* Springer, Boston, MA.

Kpierekoh J (2011) *Participatory planning: fostering stakeholder engagement in sustainable land management*, final project in the UNU Land Restoration Training Programme, United Nations University, Iceland.

Medema W, Wals A and Adamowski J (2014) 'Multi-loop social learning for sustainable land and water governance: towards a research agenda on the potential of virtual learning platforms', *NJAS-Wageningen Journal of Life Sciences,* 69:23–38.

Moles JA (2008) 'Landcare and science: who poses the research questions? The introduction of landcare in SW Virginia, USA' [conference presentation], *International Congress for Conservation Biology,* Chattanooga, TN.

Monroe MC, Day BA and Grieser M (2000) 'GreenCOM weaves four strands', *in* Day BA and Monroe MC (eds) *Environmental education and communication for a sustainable world: hand book for international practitioners,* Academy for Educational Development, Washington DC.

Oettlé N, Koelle B, Law S, Parring S, Schmiedel U, Archer van Garderen E and Bekele T (2014) *Participatory adaptation handbook: a practitioner's guide for facilitating people centred adaptation,* Indigo development & change, Cape Town.

Percy R (2005) 'The contribution of transformative learning theory to the practice of participatory research and extension: theoretical reflections', *Agriculture and Human Values,* 22(2):127–136.

Reed M, Evely A, Cundill G, Fazey I, Glass J, Laing A, Newig J, Parrish B, Prell C, Raymond C and Stringer L (2010) 'What is social learning?' *Ecology and Society,* 15(4).

Sand-Jensen K (2007) 'How to write consistently boring scientific literature', *Oikos,* 116:723–727.

Schmidt G and Arnalds A (unpublished) *Better farms*.

Sullivan R (2009) 'Citizen science breaks new ground', *ECOS: Science for Sustainability,* accessed 29 October 2020. http://www.ecosmagazine.com/?paper=EC149p10

Thorlaksdottir JS (2015) *Connecting sustainable land use and quality management in sheep farming: effective stakeholder participation or unwanted obligation?* [master's thesis], University of Iceland.

Yikii F (2009) *Research approaches for maximising knowledge gain and adoption,* final project in the UNU Land Restoration Training Programme, United Nations University, Iceland.

# PART F

# Laying the groundwork for landcare's future

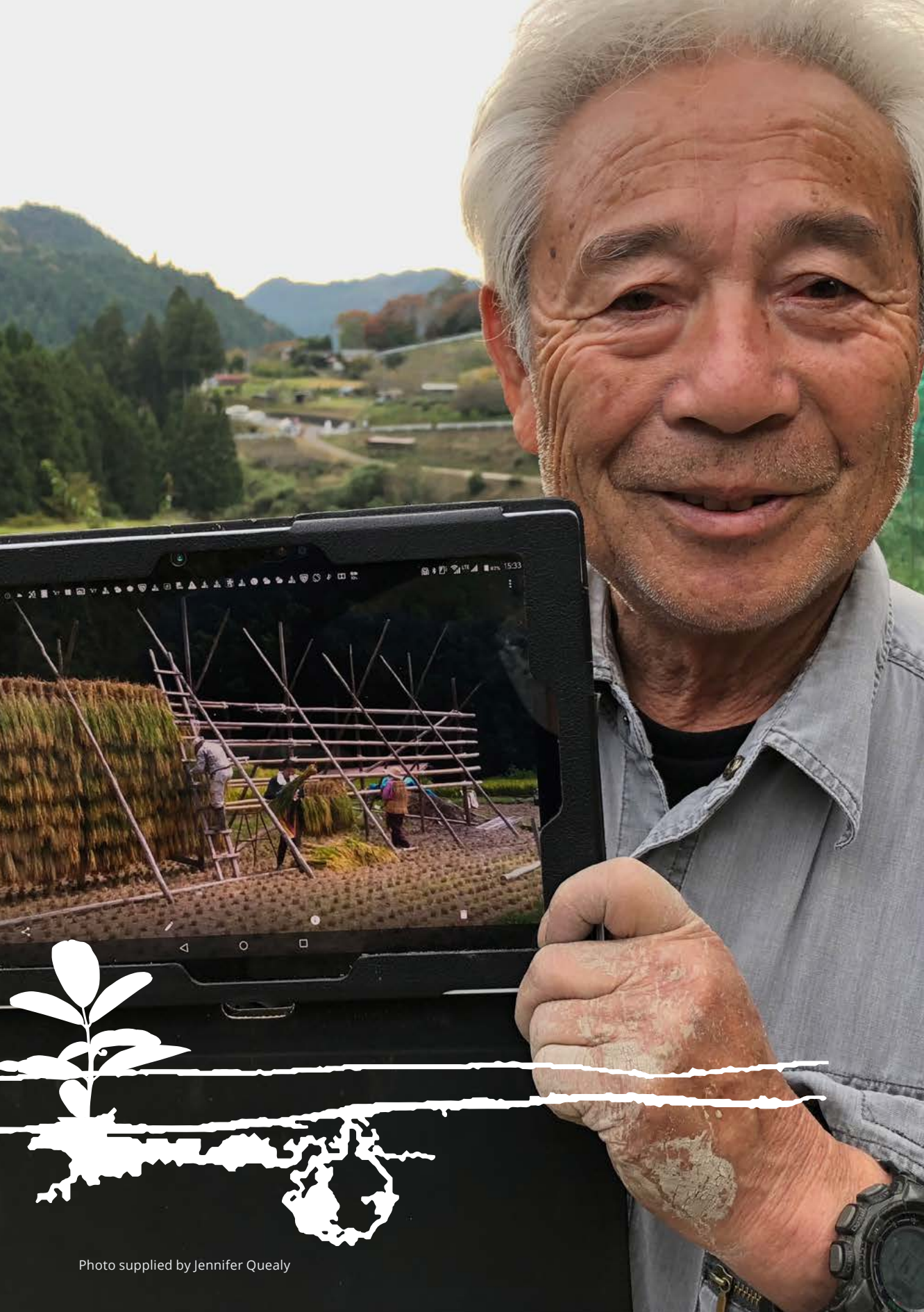
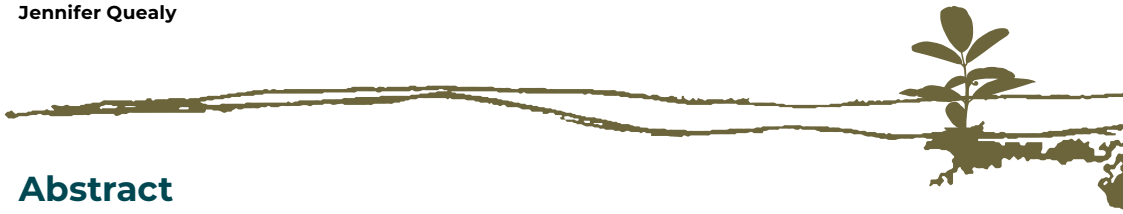


Photo supplied by Jennifer Quealy

# CHAPTER 25

# Landcare practice: from little things, big things grow

**Jennifer Quealy**



## Abstract

**This chapter explores Australian landcare to distil a model that can be shared to build local self-reliance. It lays the groundwork for developing landcare further, and beyond Australia, to become a globally significant network for community-level sharing of knowledge and practices, for investment into community networks, and to support climate change adaptation outcomes. The landcare model essentially involves neighbours collaborating on self-driven local projects to meet the needs of local people. Additional developments and benefits bring and build community capacity, self-reliance and resilience alongside escalating global climate change impacts. This accessible and pragmatic model of community self-reliance and resilience, knowledge-sharing and capacity building can be adapted and applied anywhere by individuals, families, producers and communities. Landcare is an open-access and low-cost community approach that is an ideal grassroots response to global needs and programs. It is becoming even more successful, recognised and supported by non-government organisations, governments, business, industry and the wider public. Landcare enables people to experiment in ways to care for their land, environment and community (with support) and to create local social, environmental and economic outcomes and impacts for whole nations.**

**This chapter reveals the core features, benefits and drivers of Landcare that any community could pursue. The landcare model would assist communities to create community purpose through ingenuity, to build localism and agency, for wellbeing outcomes for people and communities, as well as productivity and sustainability for landscapes. This chapter provides guidance and recommends an online, landcare-specific knowledge-sharing database, accessible to the world, creating a global Landcare Academy. It would be a platform for sharing knowledge about how to 'learn and build stuff' in the landcare labs (the farms and shared spaces) of the world.**

## Introduction

This chapter offers insights into some ideas from people engaged in landcare over this past 30 years, and points to expertise and references on both the practical and theoretical aspects of landcare that others might find useful in creating their own version of landcare. This model is not hierarchical or prescriptive; it is an evolving, dynamic, sometimes disruptive and ultimately enlightening, process and network. Members gets things done for the good of their people and the place they live and work in and enjoy. Landcare is about groups, and their on-ground projects that have social, ecological and agricultural impacts. It is also about getting friendly with researchers, scientists and agency people, sharing knowledge, energy and other resources for the best impacts possible. Landcare involves risk-taking – trying new practices in a safe, supported space where mistakes can be made. It is about finding innovative ways to deal with both new and persistent issues. Landcare helps rebuild community capacity, resilience and self-reliance. Groups cultivate local ingenuity and purpose through their practical, shared care, repair and development of landscapes and enterprises. Landcare's very essence eschews the principle of subsidiarity, which is the key theme of this book. This is the landcare model.

Landcare has been greatly influenced by wilderness and environmental conservation movements and the needs of peri-urban and coastal communities and the landscapes they are caring for. It has also been a collaboration between science, researchers, schools, governments, industry and the public. It has taken a broad-spectrum approach and is a broadly supported community group action model that could be applied to any community and place. Equally, the Australian landcare movement can learn from communities in other nations. There is much in both developing and over-developed nations, their histories and practices that can guide the ongoing evolution of the landcare model.

Many Landcare groups have different versions of the basic model but they share some characteristics: a network of local people and organisations who aim to protect and regenerate landscapes that have degraded, usually by working together, sharing experiences and knowledge. They reach out beyond their local area, invite others in, host visits and visit elsewhere. They make friends and build partnerships. Ultimately it is local people with a common aim, trying new methods to care for their lands and livelihoods, and building local self-reliance within individuals, enterprises and communities.

## Landcare emerges from the dust of droughts and other scars of land use

The focus of the last 30 years (1990 to 2020), since landcare was initiated by farmers in Australia's rural Victoria, is of a movement that followed 200 years of introduced land management paradigms and methods – practices that transformed landscapes through a radically different European-style management of this country from that previously practised by Indigenous nations.

The introduced transformations may have been hugely productive, growing the nation into a major global exporter, but they haven't all been ideal. It became clear in the 1980s that the country was impacted by widespread land and water degradation. Communities, productivity and biodiversity were suffering unintended impacts. Something needed to change. A radical rethinking began, and it continues to evolve.

The broader context and precursors to landcare were both the Australian networks of environmental groups and farmer associations. All were coming to similar realisations with knowledge from researchers, scientists and agencies about the actual spread and types of degradation that were occurring – and escalating.

Introduced farm practices were compounded by droughts and other degrading processes, causing productivity and biodiversity losses and impacts on the wellbeing and survival of regional and rural communities.

The period from the 1990s to now has seen a steady (and lately dramatic) nationwide escalation of losses of biodiversity and compromised ecologies, despite landcare efforts. There have been many steps forward, but there is still much to learn, build and do.

The landcare concept almost didn't come soon enough.

The 1980s was a time that required a creative rethink of how to manage land and water resources. How could we farm with growing evidence of degradation and what could Australia's landscapes sustain? How could we increase productivity while caring for a degraded land and natural resource base? How could we respond to dramatic losses in biodiversity? It also heralded the beginning of a time of reflexive rediscovery of the way the original Australians managed the land. Indigenous Australians had largely been dispossessed of that much misunderstood (yet knowledge-rich) capacity and role. While some incredible productivity and wealth generation was possible in the century after colonial settlement and change, Australia has been grappling with 'wicked' challenges as a result ever since. The increasing population and settlement patterns and methods have both exponentially compounded this scenario.

What developed into the post-Indigenous landcare farming model, emerging during the late 1980s, has become a popular and critical action-focused network of groups across the nation. The experience of thousands of active groups enables us to draw on 30 years of grassroots activity and knowledge. The best of landcare, however, combines understanding from both the modern Australian landcare experiment, as well as the deep and complex understanding of Australian landscapes through Indigenous knowledge. Historians, ecologists, farmers, researchers and practitioners have recently flooded the Australian consciousness with a deeper and more comprehensive understanding of Indigenous landscape management knowledge and practices. Works by Indigenous Elders, for example on 'cultural burning', and on Indigenous farming practices, have been uncovered and documented by researchers including Bruce Pascoe, Bill Gammage and Charles Massey. This is greatly assisting transformative thinking. These works are helping to further develop the landcare model.

## Science tells the compounding story that communities were facing

Farmers and environmentalists haven't been alone in this. Science, industry and governments have been instrumental partners who are critical to the landcare model. The New South Wales Soil Conservation Service published a survey of land degradation in New South Wales in 1992 (Graham 1989), after a two-year statewide research project that mapped the widespread and devastating incidences of 10 different forms of land and water degradation that impacted farms and landscapes, and the communities and families that rely on them. This survey, published just a few years after the official start and recognition of landcare in Australia and the devastating drought of the late 1980s, indicated what land

managers and regional communities were struggling with, and needed new approaches to deal with, at a time when Landcare groups began appearing in districts across the country. From that relatively simple survey to initiatives and programs like the *Atlas of Living Australia* and hundreds of programs and initiatives, science is engaging communities in monitoring, recording, mapping and understanding approaches to and new practices for our shared challenges. Citizen science now rides on the back of Landcare networks, with initiatives like *RabbitScan* engaging grassroots networks, schools and communities to assist scientists and policymakers to respond to particular challenges.

## The landcare model evolves

Landcare is now a much-loved, 30-year-old Australian action and research network that has high public recognition among the Australian community and growing recognition globally. It has had its ups and downs, regarding funding support and prominence, and competition with other programs and approaches. But it has survived, thrived and evolved. Landcare has also become an actor in community development, building connected communities with immense new capacities and readiness. Thousands of Landcare groups across Australia assist with major challenges wrought by climate change, and the impacts of increasing natural disasters and emergencies, on rural and regional communities and landscapes. Landcare networks in Far North Queensland were critical players following cyclones Larry and Yasi. Their local knowledge, strong networks and ability to activate quickly and expertly have been critical to achieving recovery.

Landcare groups and members drive ingenuity in approaches to challenges. This is increasingly important with increasing impacts from climate change across all landscapes. Landcare networks play a role in preparation (of people, practices and methods, and of properties and landscapes) and in building resilience in systems and place. Landcare groups are also critically important in recovery. They are local, have knowledge, connections, skills and experience, and are there 'for the long haul'.

Landcare groups grow to expand their view and aims, and through sharing knowledge, take on more complex issues and challenges. A subsequent key feature is that, after initial small project successes, most Landcare groups, encouraged by what they can achieve as a group, plan 'bigger', and seek support from others to take on broader projects. Landcare groups can 'wax and wane' in activity, but are there when a community needs them, and the group can quickly re-emerge; this is particularly seen (and useful) in emergency and natural disaster scenarios.

No two Landcare groups are exactly alike. Each group forms its own committees, membership networks (often based on catchment or district boundaries), plans of action and aims and objectives, often becoming a formal committee with some basic legal protections (incorporation and insurance). Many of these groups still exist, alongside and partnering with other important local groups like the bushfire brigades, country women's associations, Red Cross and service groups like Lions and Rotary.

## Landcare's global presence – talk it up!

Landcare has spread globally largely by word of mouth. Australian Landcare group members have reached out over 20 years to communities in 22 countries, offering help and encouragement and giving practical and financial help on small projects. But for all the benefits, landcare has very little profile in global food security, biodiversity conservation,

community development, regenerative agriculture and climate change adaptation, self-reliance and resilience programs. A key reason for this may be the lack of a cohesive and coherent landcare model that could slip easily into global discourse (and support) around agroecological, food security and climate change programs and policies.

We need to better define landcare as a model for discourse with these global fields and players. Landcare is a relevant, adaptive community-based model of care for people and places that can fast track knowledge sharing and capacity building. Landcare assists communities to build their resilience and self-reliance. Landcare can assist government, industry and business to support community knowledge and action. It is a model that can be adapted for any community, anywhere in the world, to approach any problem, challenge or vision.

**[Landcare] is a model that can be adapted for any community, anywhere in the world, to approach any problem, challenge or vision.**

Through this process, Australian landcare practitioners could continue to improve their practice by connecting with and influencing new global collaborations. Landcare will continue to be adaptive to new and improved outcomes and collaborations that are critical for global responses to climate change impacts. Additionally, many landcarers are willing and able to share their expertise and passion for landcare, both within and outside Australia.

Building a useful global landcare model will require a more sustained look at how Landcare began and adapted. Landcare groups have regularly invited community and agency experts to speak at Landcare meetings, field days and conferences. Landcare groups have also been highly engaged in reaching out to others. Much landcare activity revolves around tours to other districts to see how other groups are working. Landcare is a safe space, in kitchens, on farms, in community halls and schools, in council chambers, agency offices, libraries and business venues. Landcare is nearly always a social gathering. This explains how landcare has developed into a transferable model of self-reliance at the community scale, bringing local farm-based knowledge and learning together with science, innovative extension, Indigenous need and knowledge, and developing interactions with unlikely, unusual but transformative partners and collaborators. And it's all done at social occasions and with homemade food!

This review in this book is very timely, as landcare has reached maturity and can share useful, pragmatic and practical content through its many advocates. This enables researchers and practitioners to analyse the landcare 'model' to determine how it can develop further. Readers are encouraged to collectively reflect on, share and distil the essence of landcare, so we can state what the shareable model needs to contain. We need an 'elevator pitch' and a smart definition for a global 'Everyone, Everywhere, Landcare' model to define landcare as a legitimate and potentially important world model of local and empowered self-reliance, and ground landcare as a continually adaptive model within a context of climate impacts on agriculture, food security and ecology. At the centre of this is the role landcare plays in community knowledge sharing, self-discovery and project co-development.

A useful starting point is the findings of social researcher Hugh Mackay's 2010 research in his book *What makes us tick: the ten desires that drive us*. Mackay's research found that people are driven by the social need to:

- be taken seriously
- find their own place in the world
- have something to believe in
- connect (with each other and nature)
- be useful
- belong (be connected through small 'herds' of five to eight people, as well as larger groups)
- have more and more (experiences and better engagement)
- have control (over their lives)
- have something happen
- experience love.

This list is a useful place to start when thinking about landcare as a model of subsidiarity because landcare is first and foremost about people and what drives them to connect, learn, act and care. Landcare connects people to place and with their community. Landcare connects people with nature and allows people to feel useful, to belong and to have meaningful experiences, even through uncertainty. Landcare enables people to find their place in the world and have something to believe in. The landcare model can easily reference these 10 desires as intrinsic values of landcare. Landcare meets the basic needs of people, and, like the hierarchy of needs, they are precursors for a community to look after shared places and resources.

**For landcare to be globally relevant and useful, it needs to be understood and helpfully defined.**

For landcare to be globally relevant and useful, it needs to be understood and helpfully defined. This start-up model and guide can be shared and adapted to suit local circumstances and needs of people and place. This guide need not be definitive, just instructive. Landcare is best when it avoids being too academic, bureaucratic, amorphous or unwieldy. Landcare needs simplicity and needs to be practical, understandable and shareable. Landcare also needs to be grounded enough to be useful to the 'herds' we all hang out with. Landcare needs to have the characteristic of 'plasticity' – a term arising from the neurosciences – so it can change its form and be modified to suit the community's needs. These underlying attributes form the core adaptability of the landcare model.

## Building self-reliance and resilience into the landcare model

Landcare starts with local self-reliance, which, when coupled with resilience thinking and recovery practice, builds the capacity of individual members for bigger-picture capacities. Early in their development, Landcare groups need to be both self-reliant and resilient.

They may start as a small group and develop networks and skills as they grow. With support, they can become empowered and then become able to develop sustaining partnerships with others. During this process of growth, some Landcare groups slip into a (less sustainable and less desirable) co-dependency with funding organisations. This can steer the group towards doing what others want them to do, rather than staying clear about their own needs and aims. Guidance from publications like *Working together for land care* (Chamala and Mortiss 1990) can help Landcare groups with effective strategies for starting and continuing a local group's growth, development and achievement.

Across Australia, many groups are moving back to a stronger self-reliance approach, recognising their purpose as being about more than chasing after grants, partners and sponsors. Self-reliance for Landcare groups is about having greater ownership of their own processes and resources and bringing in partners to help achieve that. It's about resilience thinking, matched with shared values of community-level self-reliance. To borrow a phrase from the 1970s and 1980s, landcare is an excellent example of the 'think global, act local' mantra. When and if Landcare connects to global networks and resources, it will be recognised that the landcare model can contribute to the greatest challenges of our times. Global networks and organisations can greatly help empower local groups through knowledge-sharing and resourcing and by building connections with supporters.

Landcare needs to keep its community grassroots origins and avoid becoming a (less-empowered) service-delivery provider for government, industry or corporate organisations. A local Landcare group that cares and works locally on natural resources and community, with a strong sense of self-reliance and resilience thinking, fits neatly into need for action to keep within the limits of our planet's resources (see, for example, the concept of planetary boundaries, as defined by the Stockholm Resilience Centre (2014)).

Landcare in Australia passed its 30-year mileston in 2019 and we increasingly share this landcare model with the world. But instead of thinking we've 'made it', and continuing to do what we've been doing, landcare desires change, an improved model and further sharing of the knowledge and experience both within Australia and around the globe. This is especially important for other nations that are interested in developing their own forms of this community-built movement. It is equally important for Australian landcare to remain fresh, relevant and supported, so it can continue its popularity, achievements and growth. The next stage for landcare is recognition within other important global networks for climate change adaptation, food security and biodiversity conservation. This is where the landcare model can both give and receive, and excel.

The partnerships that Landcare has built over the past 30 years are critical. Landcare can't go it alone. While this seems to contradict the emphasis on self-reliance and resilience thinking, it is in fact essential to both. Subsidiarity requires good decision-making at all scales (global, national, provincial, regional and local). Landcare requires continuing deep partnerships with researchers, government, business, industry, and education, media and corporate sectors as well as with the unexpected, the left out, the forgotten and the silent voices. When Landcare forms partnerships with the unexpected, resilience is enabled and self-reliance is empowered.

Landcare is not a uniform experience for everyone or every group. It can be hard to capture as a concept and tricky to define and share, particularly with other nations and cultures but sometimes even with our own neighbours and families. But that shouldn't stop us trying to gain acceptance and support.

This model for landcare is not prescriptive – it is a flexible and dynamic guide that states the essence of landcare in a way that others can share. It needs to include a simple short definition (an 'elevator pitch') so that anyone can say what landcare is and means. It also needs enough depth to warrant easy adoption by individuals and groups anywhere.

Landcare deserves a greater global presence among the more prominent sustainability networks – it has much to offer as a flexible, adaptive and powerful model for local action and influence. The driver is that landcare is sought-after and being modified by other communities across the world. Collectively, we need to continually adapt the landcare model, by defining and testing our landcare experience with the experience of other cultures and people. We know we have much still to learn and adapt as our needs for landcare change and mature as well. We need researchers and practitioners to collaborate further to provide the basic model for others to use, based on the findings in this publication.

Landcare can be summarised by outlining some useful characteristics and features with a simple theme, along the lines of 'Everyone, Everywhere, Landcare'. Landcare is about caring for the land and the community, by people, anywhere and everywhere needed. Landcare has already been modified to suit coastal, school, urban and peri-urban places and people, while retaining this very generic theme. The definition needs to be simple, so people can start with a basic understanding of the role and concept of landcare and create their own customised local model.

What comes next? What must be included in the list of characteristics of landcare? Are there rules, principles and practices? Would other places and cultures find the model suitable for the issues they face and the way they organise and operate? What does landcare offer to communities around the world? How is it linked with sustainability, food security, the United Nations Sustainable Development Goals, environment and conservation initiatives and needs, and natural disasters and emergency management issues and challenges?

## How some Japanese communities and researchers are approaching wicked regional challenges through an emerging landcare model

In November 2016, a small group of Australian and Japanese academics and landcare practitioners visited regions and communities in regional Japan that were going through immense changes and challenges following various disasters. The group met amazing and resilient people, including farmers, educators, relief workers, students and teachers, as well as Landcare and community coordinators. Issues included rural population decline, decreasing rice and forestry production, and the significant impacts of the 2011 earthquake and subsequent disaster at Fukushima. These communities had their own version of a landcare approach, adapted to their challenges, and were interested in collaborating and learning more. The tour group wondered how a landcare approach could come anywhere near helping in such situations. Australia's challenges seemed relatively easy in comparison, and it gave us a new appreciation for current and future challenges we will all collectively experience in our changing world, as well as those currently facing Japan.

The group saw how Japan deals with the layering of persistent, massive, wicked problems that had never been seen anywhere in the world. They saw detailed responses, from major national approaches through to personal responses. They visited concrete tsunami-protection structures whose size and design concerned both the landcare-minded visitors

and local community members. They saw people surviving and thriving through both rural decline and destruction of agricultural, ecological, social, infrastructure and industry assets. They saw amazing resilience in the people they met – local community members who were picking up the pieces and getting on with life after tremendous losses. They wondered and argued about what might be possible using a landcare approach to assist in such circumstances.

The following model needs to be able to contribute in such extreme circumstances. It must also fit with local and global systems and infrastructures and be well supported. Would we overload landcare by adding such layers of complexity, or is this simply landcare's core business?

## Critical elements in a model for landcare for everyone and everywhere

Landcare is all about local people organising themselves to learn, think, plan, work, socialise and act to care for their local environment, resources, farms and enterprises, and community. The critical element for landcare as a model is a network that would include most of these shared characteristics:

- bringing people from a social or geographic area together to create a happy, learning and sharing space and responding to shared needs
- having regard for Indigenous knowledge and ways of being and sharing
- learning from and with nature, to protect and conserve biodiversity as the critical structure within which to farm, live and learn
- using plain language, but inviting technical and professional knowledge to assist with learning, which helps everyone to be ecologically and land literate
- seeking and encouraging partners – business, government, researchers, schools and non-government organisations – to join and helping them be more effective
- building networks that are living 'labs' – local sites for 'learning and building stuff' for innovation and ingenuity, experimentation and acceptance
- being multidimensional (as compared to single issue) in focus (although they often start with a single issue and grow from there)
- being self-reflexive and looking at what people are doing as a group and as members, and in connection with the land and other species
- being strongly self-directed and self-reliant, with local governance and diversity (ages and backgrounds)
- experimenting – members learning by doing, in safe, supported environments.

As researcher Jim Woodhill (1998) found, Landcare groups 'emerge and grow naturally' and are 'flexible and adaptable to local situations'.

## The landcare model – summary of common features

This potential model for Landcare groups and networks has a set of principles and practices that Landcare groups might share and that could be relevant across the world. These features include:

- forming a core group of local volunteers
- developing friendships and partnerships with others to share knowledge that helps everyone to care for the land and water, and for environmental and community resources

- working as a group on projects on public or private land
- looking after your own place, family and enterprise, within the context of being a part of dynamic catchments, environments and communities
- stepping up and collaborating after crises (like natural disasters and emergencies) and treating these as moments of great challenge, loss and disruption, followed by a need for innovation, localism, listening and rethinking how to move forward
- engendering trust within and outside the group
- reaching out and inviting in others to share knowledge, expertise and resources
- visiting other places to learn and share
- getting to know and documenting both the natural capital and social capital within your areas and groups
- keeping information and maps up to date and building local databases that hold social and project data
- running tours and site visits to other places and farms, including global visits such as farm stays, internships, etc.
- being nimble and non-hierarchical, with valued innovators and connectors
- continuing to talk to your neighbours (even if they aren't supportive)
- making friends and building partnerships and creating informal supportive networks (for example, with industry and government agencies, businesses and scientists) to collaborate and share knowledge
- being tech-savvy and highly networked, able to show and tell what you achieve through mapping, reporting, documenting and evaluating
- experimenting with new ideas, often by using a continual adaptive change process to reflect and adapt and change as needed
- recognising the planetary boundaries and their part in reducing and adapting to climate change impacts
- building the natural or 'green infrastructures' for global socioecological futures by being productive farmers and natural resource managers
- appealing to all ages and backgrounds, and having specific succession plans for young people
- respecting the wisdom of elders and the innocence, energy and passion of the young
- sharing knowledge in person and online, in traditional and dynamic and social forums and proudly promoting your activity and inviting others to join in
- often starting with a shed, schoolyard, bushland, coastal or farm meeting and social gathering and working from there to more complex projects
- following what matters and asking what people are going through, to determine the next group priority
- constantly looking forward
- doing things that are not always for your own benefit and having a sense of a greater good and giving people a sense of purpose within community and place
- being artistic and theatrical, to engage the community and others over the long term through engaging and sustaining social methods
- being partners, not simply clients, in extension models and knowledge transfer from those 'in the know'
- having fun gatherings that inspire and deliver on the human need for belonging, and instil a sense of purpose, place and importance in our world.

In the future, Landcare groups can create successful grassroots community networked responses to climate change impacts. They can become a perfectly placed network in local areas of skilled, aware and connected people who know their landscapes and networks. They can assist with preparation, recovery and other self-reliance and resilience needs in a world facing severe climate change impacts on local communities and enterprises.

## Conclusion

This chapter helps capture the meaning and significance of landcare for a global audience. It has aimed to help find the shareable message and model of landcare and its approaches, and translate that for anyone, anywhere to take to their own communities. It provides guidance on a global network that locals anywhere can connect to and use to search for ideas, knowledge and people who can advise and support.

The next step is to trial, circulate and debate this list – pull it apart and transform it into a useful and evolving model. Landcare needs to connect into the global resilience and self-reliance models that would fit landcare so naturally and easily. It also needs to (and can easily) connect with the Japanese model of socioecological and productive landscapes, and other sustainability programs and goals. Landcare can be a grassroots answer to achieving such global goals and program outcomes.

A simple online search using the search keywords 'Landcare Scholarly Papers' reveals 81,100 accessible papers. That is a staggering amount of shared knowledge, but that's not all there is. Those papers and publications don't include the many thousands of llandcare projects designed, coordinated, completed and invested in by the community across Australia and elsewhere. These have also been reported on. There are many thousands of additional reports sitting in paper archives, held by the originating Landcare groups, who would be happy and proud to share both their successes and failures. Landcare has achieved a substantial and valuable body of highly creative work, experiences and examples, with much of it accessible, and yet more needing to be made accessible. The plain language, the transferable language and writings about landcare are a bit harder to find and use. But we must try.

The experience and amassed data of the landcare experience is much studied, mapped, analysed and surveyed, but the results of such works are fundamentally missing from the practice and records of major global programs and platforms and the language of the sustainability, environment, food security, emergency and natural disaster recovery, and community development fields. That can be remedied, as all those fields are natural fits for landcare. Landcare is both a builder and a provider of 'green infrastructure' and the local response and eco-literacy that all life depends on. This chapter provides some pointers, but recommends an easily accessible, universally available, online, landcare-specific database as a great addition to the global landcare academy. We need to share, through a range of methods, that knowledge about how to 'learn and build stuff' in the landcare labs (the farms and shared spaces) of the world. That is something practical that could come out of this book.

Landcare has created a popular model for voluntary, local, resilience-focused and partnership-fuelled action. We must share our 'good thing'. Landcare has inspired a whole nation. Around 6,000 community Landcare and Coastcare groups can be found working regularly and actively in local landscapes, building both community and natural values and assets, and improving social and agroecological landscapes. Hundreds of projects have been inspired by the Australian landcare model in over 20 nations around the world.

An immense amount of work, commitment, investment and personal blood, sweat and tears has been invested as landcare has been taken up by communities in other nations. The landcare journey has been one of fits and starts, of highs and lows, of successes and failures, but the journey has ultimately been made successful by the persistent inspiration drawn from the achievements and approaches of Landcare people, despite the setbacks and challenges. The time is right to distil what landcare is in plain and shareable language. This is needed, as landcare offers a model for communities and people anywhere and everywhere, to implement responses and adaptations to the critically important climate change impacts and other problems that are eating away at our other planetary boundaries. Come join us.

## References


Chamala S and Mortiss P (1990) *Working together for land care: group management skills and strategy*, Australian Academic Press, Brisbane, Queensland.

Gammage B (2012) *The biggest estate on earth,* Allen & Unwin, Crows Nest, NSW.

Graham O (1989) *Land degradation survey of New South Wales 1987–1988*, Soil Conservation Service of New South Wales, Sydney.

Mackay H (2010) *What makes us tick? The ten desires that drive us,* Hachette, UK.

Pascoe B (2014) *Dark emu: black seeds: agriculture or accident?*, Magabala Books, Broome, Western Australia.

Stockholm Resilience Centre (2014) *What is resilience? An introduction to socio-ecological research* [PDF], Stockholm Resilience Centre Stockholm University, accessed 21 May 2022. https://www.stockholmresilience.org/download/18.10119fc11455d3c557d6d21/1459560242299/SU_SRC_whatisresilience_sidaApril2014.pdf

Toyne P and Farley R (2000) *The Decade of Landcare: looking backward–looking forward,* discussion paper no. 30, The Australia Institute, Canberra.

Woodhill J and Robins L (1998) *Participatory evaluation for landcare and catchment groups: a guide for facilitators*, Greening Australia with The Land and Water Resources Research Development Corporation, Bushcare, The National Landcare Program, The International Institute for Environment and Development, Canberra, ACT.

Photo supplied by Landcare Australia

# CHAPTER 26

# Behind Landcare's success: sound management at state and national levels

**Rob Youl**

## Abstract

**Today in Australia, some 5,000 to 6,000 Landcare groups operate nationwide and many have formed into networks to better use regional resources. In Australia, Landcare's major motivations are community action on environmental restoration with a multidisciplinary approach. The movement supports sustainability projects and provides advice to all spheres of government. It delivers training at many levels, covering coordinators and community. It supports the on-ground management of numerous public reserves, citizen science, environmental education for schools and the public, and, increasingly, post-disaster rehabilitation within communities affected by cyclones, floods and wildfire. Perhaps unusually, although many government policies have been drafted, there is no formal set of rules and the definition of landcare remains open-ended. This has ensured great flexibility in Landcare's operations, although sustaining and growing this broad charter requires much unrecognised effort behind the scenes.**

**This chapter lists the many key supporting elements (or ingredients for success) that have evolved in Australia. Other countries initiating landcare will probably need similar provisions. Firstly, Landcare requires excellent internal communications, readily achieved via the internet. It also demands specialised support from governments and targeted budget allocations that cover community projects and contribute towards group and network overheads. Having been involved in Landcare since its inception, I briefly discuss these managerial elements from the Australian standpoint. I am also interested in online training and helping Landcare's international spread. As a forester for 55 years, I have promoted major multi-network revegetation projects, especially across state boundaries. Crossing state and national boundaries will be important to continue growing the landcare concept.**

## Introduction

Landcare started in Australia some 35 years ago when a group was launched at Winjallok in northern Victoria in November 1986. This was part of a statewide initiative of the Minister for Conservation, Forests and Lands, Joan Kirner. Kirner's background included promoting community support for schools through parents' groups, so she understood the key concept of subsidiarity, and she was determined to build an environmental program to involve people, initially farmers, in land restoration projects. Recognising the diverse but complementary skills (soil conservation, salinity research, weed and pest animal control and private forestry) that existed within the land protection sector serviced by her vast, newly created and integrated department, she enlisted a small team of skilled public servants to draft plans (Poussard 2006). The team also came up with the very useful term 'Land Care'. Before this, there was no brief, catchy or credible term in English for a holistic approach to land management.

Today, some 5,000 to 6,000 Landcare groups operate nationwide in Australia. Many have since coalesced into regional networks to better use regional resources and to undertake large-scale projects. In Australia, Landcare's major functions are community action on environmental restoration, with a multidisciplinary approach from neighbourhood to national levels. The movement drives sustainability projects (especially among farmers), provides advice to all spheres of government and organises training at many levels covering coordinators and the community. The movement guides on-ground management of numerous public conservation reserves, waterways and coastlines, and participates in citizen science (such as Waterwatch programs), environmental education for schools and the public, and, increasingly, post-disaster rehabilitation within communities affected by cyclones, floods and wildfire.

**There is no formal set of rules, and the definition of landcare is open-ended. Indeed, the concept is so flexible that there are rural, urban, peri-urban, coastal, marine, Indigenous, youth, schools and sector-based Landcare groups.**

Leading networks largely operate as community enterprises, deriving income from service and sometimes labour provision, diverse fundraising and even voluntary levies. They are also canny at spotting underutilised resources that can be directed to appropriate landcare activities. Perhaps unusually, however, there is no formal set of rules, and the definition of landcare is open-ended (Youl 2006). Indeed, the concept is so flexible that there are rural, urban, peri-urban, coastal, marine, Indigenous, youth, schools and sector-based Landcare groups. Moreover, Landcare members are very alert to new ideas, which they can often adopt quickly. Policy documents and formal detailed plans, however, are frequently drafted to assist government budgeting, accountability for external fundraising and program management.

## Key features of Landcare's success

Not unexpectedly, such a broad charter requires much planning and maintenance effort behind the scenes. This paper lists most of the key infrastructural or support elements that have evolved in Australia. Other countries initiating landcare may well need similar provisions. These key institutional elements include targeted publicity, non-government fundraising (from corporate, philanthropic and community sources, including crowdsourcing), political lobbying, liaison and direct collaboration with all spheres of government. Administrative workloads are driven by insurance, accounting and audits, performance monitoring, legal support for incorporation, and logo and signage development. Miscellaneous landcare concerns include appointing official and celebrity patrons, fostering and supporting revegetation contractors and nurseries (often slanted towards indigenous trees, shrubs and grasses), coordinating volunteers and projects, ensuring safe working conditions, spreading the word overseas, ensuring involvement of ethnic and Indigenous communities, presenting awards and honours to recognise and thank outstanding groups and individuals, and forging links with artists, musicians, writers and poets.

Not yet achieved, but highly desirable, would be policies or systems of modest environmental payments to landowners who help the broader community by protecting biodiversity, sequestering carbon, restoring landscapes and maintaining catchment values. The delivery of public goods from private land, and rewarding landholders for the provisions of such goods over and above a reasonable duty of care, remains one of the most tantalising and challenging public policy challenges in natural resource management (NRM) in Australia.

All this complex effort needs excellent internal communications, readily achieved today via the internet and various social media channels, especially Facebook, YouTube and Twitter. It also demands specialised support from government departments (not conventional 'leadership' or domination, but shared goals, understanding, collaboration and guidance), realistic budget allocations covering community projects, contributions towards group and network overheads, and formal advisory committees where appropriate.

## Advancing landcare

### Coordinating volunteers

A crucial defining characteristic of landcare in Australia is voluntarism. Landcare group members give their valuable time freely, and landcare activities overwhelmingly depend on voluntary effort. This makes efficient use of scarce public funds and ensures community ownership of local activities. It also means that landcare does not lend itself to 'command and control' or top-down direction or prescription. Governments and other interests need to be prepared to work *with* the community, conforming to the grain of voluntary effort.

It is imperative to effectively and sensitively employ Landcare volunteers, of which there are perhaps three kinds. First, there are group and network members directly involved in Landcare. Second, there are members of the public who are attracted to specific projects and events. In both cases, volunteers must be treated well or they will evaporate. Events must be well run, safe, well catered for, fun, educational and welcoming. Pre-event and post-event publicity must be impeccable, with provision for insurance at appropriate levels throughout. Tools must be adequate and well maintained. Photographic appearances

must be confirmed and legal requirements for group support adhered to, including requisite police checks when working with children. The goal is for people to come back and help next time, with their friends. A bonus is that bringing city people to work on rural projects generates fellowship and lowers social barriers between the city and the country. I have been involved for 21 years in Hindmarsh Biolinks, a tree-planting weekend in the Victorian Wimmera district in which 150 or so Melbourne conservationists have annually participated.

Employees from companies are the third kind of volunteer. Some businesses pay networks to arrange landcare activities as team-building days for employees. This is a useful source of both funds and labour.

### Landcare coordinators and facilitators

Landcare networks, and indeed many individual groups, employ coordinators, generally part-time, to manage planning, administration, grant applications, communications, safety, monitoring and extension advice. In Australia, coordinators are sometimes also known as facilitators, although this term is also applied often to individuals skilled in fostering consensus in community groups. Having paid staff to look after managerial detail often frees community (that is, volunteer members) from a demanding suite of administrative duties. This allows volunteers to concentrate on more practical, fruitful and rewarding projects in the field. Reducing the administrative load on volunteers has been a key to Landcare's success (Campbell and Siepen 1994).

Coordination offers interesting and worthwhile part-time and occasionally full-time jobs to a wide array of rural people, including young graduates and older women. Indeed, these experiences often provide a springboard to middle-level positions and beyond, and sometimes they direct individuals into research. Past appointments were generally based on skills, regional knowledge and personal abilities. However, land management qualifications are increasingly required (Andrea Mason, personal communication, 2017). The development of flexible vocational and degree courses in landcare would be desirable.

Given the importance and number of paid coordinators, workplace disputes will occasionally occur. In the future, the National Landcare Network is likely to make provision for some sort of tribunal to deal with employment issues.

### Specialised support from government departments

In many ways landcare is a manifestation of 21st century public service management: less technocratic, bundling disciplines to reduce direct government involvement in technical extension, streamlining the provision of government grants, and increasing community responsibility by devolving decision-making and works supervision.

This has proven generally advantageous, although Landcare has from time to time been taken for granted, possibly because it has been so reliable and docile, concentrating as it does on on-ground results at local and regional levels. This has led to the recent emergence of the National Landcare Network and its state satellites.

This all needs a judicious approach by Landcare and the state, ideally resulting in bipartisan government support. Governments and ministers who support Landcare do need public recognition too, but they should not seek to dominate or direct community decision-making.

### Internal communications

Most Landcare groups and networks have websites, social media platforms and even online administration and fundraising systems, enabling invaluable external and internal communications. These include regular newsletters, readily achieved via the internet and the various social media, especially Facebook, YouTube and Twitter. In addition, programs such as Survey Monkey can rapidly gather feedback from the community.

### Publicity

The Australian Government set up Landcare Australia Limited in late 1989. Since then, Landcare Australia (as it is now known) has promoted many major community environmental events, assisted Landcare groups and networks develop projects, and helped with government initiatives. Landcare Australia has also been the leading promoter of landcare in Australia's media. A body with this sort of vital, creative and exciting charter must be flexible, collaborative and not egocentric. The landcare movement comes first! Arguably, a mix of land management professionals and experienced public relations, events and marketing specialists within Landcare Australia, with effective administrative support, has produced strong promotional results (Jennifer Quealy, personal communication, 2017). Interesting promotions have included the application of Landcare motifs on coins, postage stamps and reusable shopping bags. To better describe the ideal relationships sought, over time the use of the word 'sponsorship' has declined in favour of 'partnership'.

### Non-government fundraising

While the Australian and state governments are by far the main fiscal contributors to Australian landcare, along with innumerable instances of useful municipal (direct and in-kind) support, Landcare Australia has over the last 28 years negotiated many partnerships with all kinds of funding sources. These have included corporate (especially national corporations), philanthropic and community funding, including crowdsourcing. As a project broker, Landcare Australia has often employed leverage to expand partnerships. Furthermore, by providing tax-deductibility for donations, it can also attract philanthropic and personal donations.

### Insurance and legal support for incorporation and concomitant occupational health and safety action

Securing insurance and incorporation are essential activities because of the complexity and public nature of many Landcare programs, and the need to minimise individual liability. In Victoria, the Victorian Farm Trees and Landcare Association provided this support for some 30 years. It was recently subsumed into Landcare Victoria Incorporated, which took over this responsibility.

### Accounting and audits

Thanks to the importance attached to landcare, many groups and networks have substantial annual budgets, sometimes worth over $2 million. Consequently, they often must employ accountants and auditors. Occasionally these services are provided at reduced costs or pro bono. Community involvement in the management of these funds, however, goes a long way to ensuring probity.

### Monitoring

The need for monitoring landcare effort is widely appreciated. However, in terms of transparency, fiscal and technical efficiency, public relations, community education and building cases for further government and corporate support, there is often no national uniformity. It is fair to say that Australian landcare could improve in this area. Drafting a national system for monitoring effort would be a useful academic project, and would encourage the emergence of more consultants or specialist teams. Monitoring is not just about probity; continuous learning can improve technical efficiency and promote and disseminate new technologies.

### Supporting revegetation consultants, contractors and revegetation nurseries

Many Landcare groups undertake revegetation activities. Unlike countries with severely altered environments, in many parts of Australia, indigenous ecosystems continue to survive in relatively intact, although often fragmented, conditions. Hence revegetation generally aims at restoring and reconnecting these ecosystems, as far as is practicable. Larger-scale projects will often need commercial support, as voluntary effort will not suffice. After three or more decades of serious revegetation, Australia has a suite of experienced multidisciplinary consultants and a competent rehabilitation industry that sometimes also works on post-mining rehabilitation projects. Numerous local private and community nurseries and seedbanks provide great support, typically specialising in regionally indigenous trees, shrubs, wildflowers and wetland plants and ferns. Many nursery managers are superb sources of local knowledge.

### Signage and logos, including usage for commercial purposes

Widespread recognition of landcare is highly desirable, hence the importance of the movement's logo, which must be deemed a huge success in the Australian context. Devised in the early 1990s by artist Cliff Burk for Landcare Australia, the now very familiar 'caring hands' symbol crystallises the spirit of the movement. Landcare Australia has simple and accessible rules for the use of this logo by groups, networks, programs and projects. At the same time, because the logo has commercial value when used by companies under licence to promote products and services, it has generated considerable income over the years.

### Appointing official patrons and celebrity ambassadors

Involving notable and respected Australians can also increase broad awareness. Official patrons have mostly been governors. In Australia these are vice-regal appointments at national and state levels. Having a patron of this stature may help generate funds, but the biggest benefit has been their participation in award ceremonies. The use of celebrities, especially actors, musicians and sporting personalities, has also very positively promoted many landcare activities.

### Ensuring the involvement of ethnic and Indigenous communities

Australian society is very multicultural. Accordingly, some rural Landcare groups and programs have made special provisions for participation by citizens of migrant origin. Much more obvious is the involvement in landcare (in all Australian states) of Indigenous Australians. Indeed, Landcare has stimulated reconciliation by educating non-Indigenous Australians in Aboriginal and Torres Strait Islander values and traditions, generating shared understanding and respect. Many Landcare projects employ Indigenous youth.

### Awards and honours

Australia bestows biennial landcare awards, which are organised and well publicised by Landcare Australia, and have corporate and government support. Regional and state awards precede a national ceremony, with a dozen or so categories covering individuals, schools, groups, coastal and Indigenous projects, municipalities and businesses and more. This raises morale and recognises outstanding contributions and innovations, as do successful nominations for membership of the Order of Australia.

### Forging links with artists, musicians, writers and poets

Connecting landcare with the national culture via dance, art, music, literature, food and theatre intensifies commitment to environmental restoration and personal satisfaction. In Australia, this has included concert tours, revues, painting exhibitions, poetry competitions, filmmaking, themed food festivals, outdoor sculptures and photography. Sometimes landcare is linked to major sporting events. Occasionally, religious services centre on people and the environment, ensuring an even wider reach of landcare concepts.

### Political lobbying, liaison and direct collaboration with all spheres of government

As governments are subject to so many requests and demands, representing the needs of landcare in the contested arenas of national and state politics is important to ensure the movement's viability and reputation. In the last five years, state 'councils' (activist listening posts rather than bodies seeking authority) have emerged – most recently, the National Landcare Network, based in Canberra. These institutions take a big-picture view and coordinate diplomatic approaches to government by providing timely and unfiltered grassroots advice (Terry Hubbard and Kaye Rodden, personal communication, 2017). Victoria's forum is Landcare Victoria Incorporated, now a decade old. In a recent development, Parliament House in Canberra has a Friends of Landcare group for politicians and associates.

At regional levels, groups generally work productively with municipal governments, which sometimes house groups and networks and provide administrative support (accounting, payroll, printing and so on). At the same time, municipal governments can use Landcare staff and members and their knowledge to manage planning, pest and weed control, fire protection, open-space and ecosystem management, training and other day-to-day issues.

The other entities at regional level across Australia, although they vary in detail from state to state, are the 56 catchment management authorities, also known as regional NRM bodies. These are fostered and funded by government, and are charged with planning and coordinating regional effort and initiating and overseeing environmental projects in their chartered areas. Most, if not all, work closely with Landcare entities.

### Academic aspects

The Nagoya Global Landcare conference in 2017 bore out the view that, in the main, academic research has been centred on social aspects of landcare. This has been helpful, with major contributions from Charles Sturt University in south-eastern Australia. The Nagoya conference also indicated that research directions today include overseas landcare, especially the unique approach evolving in the Philippines, and community education and training. Perhaps network development, post-disaster recovery and major project management and monitoring will attract the next wave of research workers (Mary Johnson,

personal communication, 2019). Furthermore, from experience in Mindanao, Mary Johnson and Evy Elago-Carusos cite landcare's capacity for bringing communities together after conflicts (Chapter 17).

### Spreading the word overseas

Two small Australian organisations have worked in this arena: the Secretariat for International Landcare (for 23 years) and Australian Landcare International (for 13 years), covering some of the South Pacific, New Zealand, a dozen countries in Africa, the Philippines, the Indian subcontinent, Indonesia, Jamaica, St Kitts and Nevis, and North America. Although not directly connected with Australia's formal overseas aid program, both bodies have received government money to deliver landcare promotion and training activities internationally. Personal, philanthropic and Landcare group donations have also been important. Both the Secretariat for International Landcare and Australian Landcare have worked closely with Nairobi's World Agroforestry Center (ICRAF), which has, since 2004, maintained a small cell entitled Landcare International. The Australian Agroforestry Foundation, Otway Agroforestry Network and Beyond Subsistence have also collaborated with ICRAF to launch a Master Tree Grower training program in Africa. With considerable impetus from the Nagoya attendees, the Secretariat for International Landcare, Australian Landcare and ICRAF's Landcare International team amalgamated in 2019–20 to form Global Landcare.

## Conclusion

Undoubtedly, a positive force such as Australian landcare will continue to evolve and grow. It seems likely that it will work more closely with emergency services to better manage planning for and recovery from disasters such as fires and floods. So far not achieved, but highly desirable, without blunting the value of group action, would be systems of environmental payments to individual rural landowners, helping the broader community by promoting more sustainable farming, protecting and increasing biodiversity (often by conserving endangered species, reconnecting scattered ecosystems, creating new habitat, buffering national parks, sequestering vegetative and soil carbon, restoring landscapes, enhancing rural recreation and maintaining catchment values to increase water supplies and improve quality).

Over the last 32 years, the Australian landcare movement has achieved many things. It has proved the virtue of the tenet 'Think globally, act locally'. It has enabled numerous communities to contribute to national environmental goals. It has been accessible and democratic, creative and trusting, non-discriminating, welcoming and personally rewarding. It has been more or less free of corruption, thanks to transparent administration and expenditure. It has promoted reconciliation between Indigenous Australians and the broad national community. It has enriched our social and intellectual lives and fostered an ever-deepening respect for our land and waters, their beauty, venerability, utility and fragility.

Landcare has also helped students to form their views on their environmental rights and future, and to work with the community to rehabilitate and restore. It has surely informed and motivated politicians many times, something that must be energetically sustained. Arguably, it has brought the community and the public service closer, and it has provided many talented people with a new and rewarding career.

Australians are keen to share these experiences with other countries.

## References

Campbell A and Siepen G (1994) *Landcare: communities shaping the land and the future*, Allen & Unwin, Sydney.

Poussard H (2006) 'The making of LandCare in Victoria', *in* Youl R (ed) *Landcare in Victoria,* Rob Youl, South Melbourne.

Youl R (ed) (2006) *Landcare in Victoria,* Rob Youl, South Melbourne.


Photo: Peter Pigott

# CHAPTER 27

## Intrepid Way: an adventurous way forward

**Megan Lee, Naomi Edwards and Peter Pigott**


## Abstract

Since its inception more than 30 years ago, landcare has grown to be one of Australia's largest grassroots environmental movements and is actively addressing some of the nation's greatest environmental and sustainability issues. For all its successes, landcare has been missing an effective community engagement strategy that targets young people and supports their development into adaptive, compassionate leaders for the issues we face locally and globally. Intrepid Landcare was founded to address this missing link.

Intrepid Landcare is an innovative youth brand for Landcare that engages and empowers young people to act and lead on 'stuff that matters'. 'Stuff that matters' involves addressing issues young people are concerned about, such as marine debris, biodiversity decline, habitat loss and climate change. The Intrepid Landcare model supports young people to develop their skills, confidence, connection and knowledge to tackle these issues as a community. Intrepid Landcare has further inspired and supported the establishment of many youth-led networks, and projects being delivered by young people for young people.

This chapter explores the evolution of Intrepid Landcare and how taking risks and pushing boundaries, backed by evidence and passion, can build successful youth engagement initiatives.

## Introduction

The idea of Intrepid Landcare was seeded in the Illawarra region of New South Wales, Australia, in 2009 by a local Landcare coordinator. Megan Lee, a young science and ecotourism graduate, grew up in the Illawarra, unaware that an established environmental movement existed right on her doorstep. It wasn't until Lee applied for a job as a local Landcare coordinator to support the landcare movement across the Illawarra that she became aware that there were more than 100 volunteer 'land care' groups working to restore the local environment. With her new role came a responsibility to inquire into how to best support this network.

In this inquiry, common concerns and questions expressed by the older generation who occupied most of the leadership roles were 'We need more young people!', 'Where are all the young people?' and 'How do we engage young people in Landcare?' It became apparent that Landcare lacked an effective youth engagement strategy that appreciated the changing citizenship role of young people. This was not only true in the Illawarra but across Australia, and beyond the institution of Landcare (Vromen and Collin 2010; Black et al. 2011; Maesepp 2012; Zuo et al., 2016; Walsh and Black 2018).

With a newfound appreciation of the power of citizen-driven initiatives, Lee set out to change the way young people were engaged and supported in Landcare. She decided to focus on creating meaningful co-designed opportunities, encouraging young people (late teens to 30-somethings) to appreciate the value of volunteering with Landcare. Lee's passion and sense of mission enabled her to push through an initial mix of resistance and rejection of her ideas from members of her local community. She established a local Landcare group for young people who had an interest in the environment and nature-based adventures and who were looking for social connection.

Illawarra Youth Landcare (now Illawarra Intrepid Landcare) was established in 2009 and set out to test assumptions that young people were lazy, not interested, and dismissive of the environment (Connell et al. 1999; Maesepp 2012). The average size of a Landcare group in the Illawarra at the time was four to six volunteers, so when 18 young people showed up on a Sunday morning to volunteer, these assumptions were challenged. The pilot project was a collaboration with a local Bushcare group, which had been restoring an iconic environmental and historical site near the city centre of Wollongong in the Illawarra. The idea was to bring young people together to assist a local group with an existing project. They could learn from experienced volunteers about environmental issues and land management techniques, and develop social connections with an older generation and their peers who shared a common interest. The experience would also include something recreational to encourage social connection. The idea was simple, yet attractive. Lee also took the opportunity to listen on a deeper level about what motivated young people to participate in short-term volunteering, and what it would take for them to become repeat volunteers.

This initial inquiry demonstrated that, while many young people brought diverse motivations, there was a common thread. They wanted to meet other young people who shared their values and interests, go on nature-based adventures and give something back to the environment and local community. The Zuo et al. (2016) study into people participating in nature-based activities in Australia grounds some of the assumptions and observations observed in the Illawarra group. This study found that, although young people generally have the lowest level of participation in environmental causes, they do

place an increasing value on the environment and have a higher likelihood of engaging with nature for recreational purposes, such as bushwalking. Interestingly, it also found that, of those reported as participating in environmental causes, 87% have a bachelor degree or postgraduate equivalent qualification.

**Although young people generally have the lowest level of participation in environmental causes, they do place an increasing value on the environment and have a higher likelihood of engaging with nature for recreational purposes.**

Volunteers drawn to Illawarra Intrepid Landcare have diverse backgrounds, including secondary school and university students pursuing arts, education, engineering and environmental studies. It also included young professionals in administration, government, teaching, marketing and media, bush regeneration, building trades and management. This diversity demonstrates that young people do place an increasing value on the environment and are increasingly interested in participating, regardless of their education backgrounds or careers. Illawarra Intrepid Landcare has partnered with over 90 conservation, Landcare and government organisations to co-design projects and share experiences, which speaks to young people's diverse motivations and backgrounds.

Anecdotal evidence and peer-review research into volunteer needs, wants, fears and frustrations support an understanding that young people seek environmental volunteerism opportunities for diverse reasons. Some of the most common reasons include the need for a safe space to 'connect', 'be yourself' and 'be part of a cause'. Social connections from volunteering provide a release from the sense of isolation experienced by those who struggle to establish a sense of belonging and purpose. Becoming part of a network enables them to access information and knowledge about conservation and environmental management, and interestingly, to align themselves with a type of action that isn't direct activism and campaign work. Others seek mentoring relationships with older and more experienced people to stretch their knowledge and understanding of conservation and the natural world, and build their employability in the environment industry. For more adventurous spirits, one driver is to have unique experiences, including meeting local leaders and gaining access to different landscapes and environments. For those in full-time work and study, the lure is to get outside, reduce stress and have fun with a sense of purpose and meaning. These elements of safety, belonging and purpose are identified by Coyle (2018) as a foundation for strong group culture that can provide both positive experiences and results.

## Lesson in advancing your investment

### Stepping out of fear into possibility

*If not us, who? If not now, when?*
John F. Kennedy, 1962

Establishing a group that inspired and empowered young people had many challenges. Lee, as a young person herself, contended with initial scepticism from peers and an older

generation within her immediate community. However, her drive for change, along with the encouragement, mentorship and support of Landcare Illawarra, helped support the development of a new group for young people.

After successfully establishing Illawarra Intrepid Landcare, Lee was contacted by Naomi Edwards, a young person from the Gold Coast, Queensland. Edwards's immediate focus was on succession in Landcare: to engage and build the capacity of those with passion and energy for the environment and sustainability to take on leadership roles within Landcare and broader natural resource management (NRM) and coastal management networks.

Lee and Edwards both recognised common factors that contributed to their capacity as leaders for the environment. Apart from both having naturally effervescent personalities, they had each had access to mentors, leadership courses and further education that developed their capacity to overcome fear and limiting beliefs. The ongoing support they received in their leadership development increased their self-awareness and confidence and provided a solid platform from where they could step up. Through their learning and practice, they had developed a relational and systems-based style of leadership practice, placing relationships and networks within their communities as central to collaborate and co-create projects (Lord et al. 2016). One question that they were interested in exploring was whether they could fast track this development in young people to enable them to build their leadership capacity to act and lead with Landcare.

### Pilot for change: starting from where you are

Three key elements were credited with enabling and empowering the success of the landcare movement in its first decade:

- the bringing together of like-minded people
- the democratic and inclusive processes
- the will to do something about the enduring destruction to Australia's land and water resources (Lang 1998).

Voluntary participation in Landcare at the time was a 'testimony to the community's willingness to contribute to improved NRM and rehabilitation of degradation for the greater public good' (Lang 1998:15).

Lee and Edwards's enabling and empowering vision generated an idea to host a pilot – Leadership Retreat for Students – co-designed as a short, sharp, facilitated program to fast track youth leadership. Emerging young leaders would come together and be introduced to what is possible with Landcare, be supported in their leadership development and become empowered to do 'stuff that matters'. The first Leadership Retreat for Students was held on the Gold Coast in 2015. It was supported by a local Landcare network and a regional NRM group, Landcare Australia and local experts in conservation, food systems and community volunteering. The retreat offered an immersive journey for 12 local participants aged from 12 to 26 years to experience a range of Landcare projects. The focus was on self-awareness and team-building skills. This was coupled with encouragement, inspiration and support from local leaders to guide the participants as they identified their passions, which informed the design of a project they could lead.

The outcome was nothing short of inspiring. A group of secondary school students went back to their school and led a large-scale tree-planting project, engaging over

500 students and planting 2,000 trees. Others collaborated with community groups to facilitate waste-free workshops and carried out scaled-up marine debris clean-ups with scuba diving expeditions. Some of the participants have since transitioned into environmental-based tertiary education, gained employment in their chosen industry, moved interstate, volunteered overseas, established new networks and run their own sustainability social enterprises. The pilot retreat, a success that far exceeded expectations, was the catalyst to found Intrepid Landcare as a national organisation to drive a focused youth engagement agenda for Landcare.

Intrepid Landcare was established in 2015. It focuses on community development, leadership and personal development for young people who are passionate about the environment. The core objective of Intrepid Landcare is to support young people to do 'stuff that matters' for the environment, the community and themselves. 'Stuff that matters' can be a cause, project or interest that is important to them and makes a difference.

## Leading from the inside out

> Real leadership challenges in organisations seemed to require something different: Letting go of the past in order to connect with and learn from emerging possibilities (Scharmer and Kaufer 2013:20).

Young people face many barriers to their participation in community-building projects. Historically, youth engagement in Landcare has not been youth-centred, but instead has largely focused on organisational and group succession. Many efforts to involve young people have not recognised the depth and diversity of the contribution that they can make to Landcare, which also limits their participation. These strategies have not delivered the level of youth engagement that Landcare has sought.

Intrepid Landcare embraced this challenge by asking, 'What do we need to change and let go of in the current paradigm, and what new ways need to be embraced to create a thriving network that serves the needs of young people and communities?'

Firstly, Intrepid Landcare applied a wise practice for youth engagement and group development processes, and integrated human-centred design principles to build an effective network that could sustain the cause. This work involved developing systems that could critically reflect on current practice, what worked and what could be done better, look at the changing attitudes of young people, and explore practices that could adapt as needs changed.

Next, Intrepid Landcare sought a leadership team that could build a positive and collaborative culture from the onset. This team brought together diverse, experienced, passionate and self-aware young people who shared a desire to develop authentic relationships with each other, communities, partners and networks. The team initially came together as a reflexive group of leaders to set a clear purpose and direction based on shared values and a genuine passion for the environment and community. This work informed a culture based on trust, connection, accountability, openness, authenticity, integrity and having fun. The team valued the importance of culture building for organisations, especially in social movements (Martins and Terblanche 2003). Culture influences all aspects of organisations. For Intrepid Landcare, culture impacted the design and delivery of programs and services, and flowed through to the experiences of young people.

The following leadership and organisational development models have had a significant influence on the Intrepid Landcare model for youth engagement:

- Bass and Avolio's four components of transformational leadership and the 'Full Range Leadership Model' encourages commitment and fosters change (Bass and Avolio 1993:112; Bass 1996:5).
- Creating spaces that offer psychological safety for teams enables a level of risk-taking, speaking your mind and creativity, which strengthens the ability of the group to respond to complex challenges (Delizonna 2017).
- In his book *The culture code,* Danny Coyle (2017) writes that organisations that have demonstrated a strong and positive culture send clear, simple signals about connection and sharing risk, which builds culture. Intrepid Landcare's culture building exercises respond to the need for simple, clear signals about safety, shared risk and direction. The practice Coyle refers to is a key team-building process of Intrepid Landcare's systems.
- Research into how leaders with highly developed meaning-making systems design and engage in sustainability initiatives suggests that the presence of factors such as the ability to think strategically, collaborate more, seek out feedback, resolve conflicts and make efforts to develop subordinates increases success in redefining challenges to capitalise on connections (Joiner and Josephs 2007).
- Lencioni's 'Five dysfunctions of a team' model points out that when there is a safe level of conflict within the team, this strengthens accountability to deliver outcomes. By embedding this model in practice, the leadership team and local groups can engage in productive conflict, knowing that the purpose is to produce the best possible solution. The benefit is discussing and resolving issues more quickly and completely, and to emerge from heated debates with no residual feelings or collateral damage, but with an eagerness and readiness to take on the next important issue (Lencioni 2002:202–203).

The Intrepid Landcare leadership team established agreements that would enable ideas to be shared and practices to be questioned, and allow them to move through conflict and become aligned with purpose and focus. For instance, this founding leadership team was able to bring their 'whole selves' to this work. This practice of authenticity enabled honest communication free from unhealthy ego and judgement, and supported individuals to let go of limiting beliefs or getting caught up in gossip or the drama of stories. This work is an ongoing practice, which is important for new leaders as they step up into the leadership team. Personal development and wellbeing practices such as mindfulness, coaching, peer support, mentoring and further education are also ongoingly encouraged and supported. The awareness, agreements, principles and practices enable an efficient and productive environment, which continues to be reflected in the people and local groups who make up the Intrepid Landcare community.

Underpinned by an informed culture, Intrepid Landcare sought a structure that would enable a degree of freedom and fluidity while still meeting governance requirements. Research on other not-for-profits and social enterprises pushing the status quo pointed to flatter structures and self-organising models where responsibilities were shared, encouraging collaboration, leadership and contributions from all team members. Leadership and responsibility is shared, and members on the core leadership team and in local groups are encouraged to contribute in ways that align with their passions and interests, and what they want to grow. Importantly, this enables contributors to opt out when alignment or capacity is not available. Skills, knowledge, wisdom, time and energy are shared to support the focus of getting stuff done in ways that reflect the intent and culture of Intrepid Landcare, its people and young people.

Intrepid Landcare as an incorporated association requires governance and structural requirements, including a constitution that gives the organisation legal standing and protection for committee members and staff. Intrepid Landcare's flat management system enables people to take on leadership responsibility in areas where they have energy, passion and interest.

Young people drive strategy and policy for the organisation to ensure Intrepid Landcare remains innovative and relevant. In fact, the founding leadership team designed a succession and diversity plan from the beginning, which continually engages new contributors.

By role modelling the organisational culture, contributors are exposed to key principles while a safe space is created to share perspectives. This approach to succession enables honest perspectives and on-ground feedback to be shared with intention, which further offers research insights and practitioner experience. Contributors are also encouraged to take on leadership roles within the organisation when they can, making participation accessible and on their terms. The 'contributor' approach acts as an incubator for the organisation while developing the leadership capacity of the contributors and broadening the Intrepid Landcare network.

Intrepid Landcare also embraces mentorship from people who have been active in the landcare movement for a substantial amount of time. Bass and Avolio (1993) suggest that good leaders understand and respect the past, regularly returning to it for inspiration and instruction and to identify what is still relevant and important. Developing mentor relationships allows Intrepid Landcare to access wisdom and knowledge about the broader principles of the landcare movement. It also provides opportunities to honour the past and those who have contributed. Interestingly, many of the mentors who have gravitated towards Intrepid Landcare have a deep sense of self, purpose, compassion and support. Their mentoring styles tend to embody the idea of empowering others and enabling successional leadership.

The culture that underpins Intrepid Landcare extends from the inside out. Intrepid Landcare is best understood as a thriving ecosystem where everyone is heard, valued and can have an impact. By embracing principles and practices from a diversity of social movement models, and by encouraging reflexivity, Intrepid Landcare has been able to sustain its passion and energy and remain relevant and innovative for youth engagement in landcare.

**Intrepid Landcare is best understood as a thriving ecosystem where everyone is heard, valued and can have an impact.**

## Backing it up

A core focus of Intrepid Landcare has been understanding the implications of young people participating and leading in Landcare. Early research revealed that the top five barriers to young people getting involved in Landcare were (lack of) time, not knowing what opportunities were available, not feeling comfortable turning up to projects alone, not knowing anyone and not feeling invited. Intrepid Landcare has worked with its network of local groups and broader Landcare groups to understand these barriers and co-design solutions to make volunteering safe, inviting and accessible.

### Getting the invitation right

Clearly there has been something missing in the invitation for young people and the way relationships are nurtured when they step into a volunteer experience. Intrepid Landcare has worked with communities and young people to develop and consider new ways of inviting and including volunteers in Landcare and understand what it takes to encourage and support people to turn up to local initiatives. This starts with being connected to the 'why' of important projects and initiatives, and having clear and effective communications and branding.

### Timing things well

When it comes to on-the-ground projects that young people want to show up to and volunteer at, the 'no pressure' approach has proven appealing to busy youth and young adults who want to build purpose into their day-to-day lives, yet have limited time and competing priorities. Volunteer opportunities that require ongoing commitment and loyalty are seen as unappealing initially, and many young people have avoided or removed themselves from opportunities because they don't want to let people down.

Intrepid Landcare offers opportunities for young people to opt in and out as they please and to offer what they can, when they can. Intrepid Landcare always asks what they need to feel supported. For example, in the Illawarra group, this has allowed members to take on responsibilities that align with their 'time-of-life' focus. The younger, less settled volunteers are interested in sporadic, entry-level experiences, while those who are more stable in their lives and rooted in their community can take on more leadership roles. When looking at global trends of leadership and volunteerism for the environment, Landcare has much potential to support the life development of people at all stages of life. Intrepid Landcare does this particularly well by filling the gap between Junior Landcare and Landcare itself.

Intrepid Landcare is open to supporting young people at any stage of their development, making sure that there are opportunities for them to step in and up whenever they are ready (where an opportunity exists). Intrepid Landcare builds this readiness by developing young people's confidence, skills and awareness of what they can do, so they are ready when the time is right. Research by Chawla (1999) and Lakin and Mahoney (2006) highlight that when young people are nurtured and supported and have the freedom to express themselves through project design and self-autonomy, this can be a powerful tool for engagement and support.

### Creating safe spaces and belonging

Intrepid Landcare designs, hosts and facilitates activities in a way that makes it safe for participants to experience their vulnerabilities. They feel supported and nourished in their learning journey, and have the space to listen, think, learn, talk and, ultimately, to choose. Zimmerman (1995, 2000) found that empowerment and sense of community can encourage a sense of belonging and the confidence to influence change.

### Connecting and empowering

The work of Intrepid Landcare connects young people to networks and projects that already exist in their community and offers the possibility of new initiatives. Creating a safe space for young people naturally enables connection and encourages creativity. Through workshops and leadership retreats, the skills gained in ways of working together lead to empowerment and the establishment of a community of practice. Intergenerational

connection results in young people and communities collaborating and co-designing projects, which encourages more young people to participate. A key outcome of this approach is that it constructs a level of practice and reflexivity to nurture connection and empowerment that sustains participation.

### Using failure as learning

Experience in working with emerging young leaders through Intrepid Landcare has also revealed that young people experience fear of failure. The demands on them to be role models for change and take on leadership roles can contribute to burnout. This is carefully considered and factored in when setting up expectations, to embed an understanding that it is okay to say no, to ask for help, or for things to turn out differently to how they were designed, and that we are all in practice as leaders.

### Looking after ourselves and each other

Intrepid Landcare brings a focus to personal and group wellbeing to ensure young people manage their time and commitments effectively. This is vital so that young people can cope with the stress that can be associated with leadership, personal growth and transformational experiences. Setting goals and working as a community of leaders can support this in practice. Intrepid Landcare explores the balance between individual and collaborative pursuits, helping young people develop an understanding of when to go it alone and when to seek out others to collaborate with.

### Building individual leadership

> Leadership is a concept we often resist. It seems immodest, even self-aggrandizing, to think of ourselves as leaders. But if it is true that we are made for community, then leadership is everyone's vocation, and it can be an evasion to insist that it is not. When we live in the close-knit ecosystem called community, everyone follows and everyone leads (Palmer 1999:74).

Integrating a diversity of leadership styles, teachings, experience, research and practice, as well as unique facilitation styles and hosting processes, Intrepid Landcare has designed a suite of effective youth engagement programs. One overarching program is a leadership retreat that aims to support young people to reflect on their leadership style, identify ways to overcome limiting beliefs, and strengthen their capacity to lead on matters that are important to them. Similar to the initial Leadership Retreat for Students, young people are taken on an immersive experience, connecting them to like-minded peers and leaders in the broader community. These instant networks of collaborators, supporters and mentors and the relationships they form over a weekend become an important foundation. They are also introduced to a range of projects that exist in their community so their awareness of local opportunities increases, and they can seek inspiration from these established initiatives.

Young people are also introduced to diverse personal and community wellbeing practices, and project management and co-design tools they can integrate into their everyday lives. These aspects of the retreat combine well to reduce the risk of being overwhelmed when implementing new ideas and projects. The participants appreciate having a toolkit of new ways of looking after themselves and each other on their journey as leaders and practitioners. The retreats leave young people feeling skilled and empowered to create change. Many young people report shifts in their thinking, confidence and ability to 'do stuff'.

> Before this retreat I was not feeling the best about the environment and generally uninspired. The positive-minded people gave me a sense that change is possible when you take the right steps and we are more powerful then we think! (retreat participant, 2016).

> The Intrepid Landcare leadership retreat was a complete mind shift. Not only did I get to connect with like-minded and passionate people, it was really inspiring to hear the story of Intrepid Landcare and empowering to understand how I can contribute (retreat participant, 2016).

> Before doing the Intrepid Landcare retreat, I wasn't sure how I could help the environment and I didn't know many people who had the same values as me. I now have so much more confidence and a great group of people to start projects with! (retreat participant, 2016).

Over 75% of young people who have participated in a leadership retreat say that it has changed their Landcare experience and their life. Over 80% of all participants say that it has impacted their engagement and leadership practice. Regional and metropolitan communities that Intrepid Landcare has worked with say such programs encourage cross-sectoral, cross-regional, intergenerational and cross-cultural collaborations. Participants value the purposeful support brought through mentorship, sponsorship and personal relationships. Young people are constantly sharing how happy they feel about being involved in Intrepid Landcare.

As the impact of these programs is evidenced in increasing youth engagement in Landcare, communities and Landcare groups genuinely seek a collaboration with Intrepid Landcare to support young people to take on leadership roles in their communities.

## Connection – the heart of Intrepid Landcare

Intrepid Landcare values the diverse ecosystem that we are all a part of and places connection at the heart of all that it does. The work of Intrepid Landcare nurtures spaces for connection to self and purpose, to community and environment, to Australia's Indigenous cultures (and their continuing connection to place) and to what brings us sustenance and wellbeing. Also, as Landcare evolves into an international movement, Intrepid Landcare recognises the diverse combination of needs that exist within each community and landscape that it works in. When we are well and connected, we can understand more intimately what communities wish to respond to, and the needs and drivers that will lead to sustained action. While it is important to operate from a set of values centred around connection, Intrepid Landcare further recognises that every local group and community will explore and interpret what these values mean for their local context. Community-led grassroots action underpinned by collaboration and connection will look different in each community and this diversity should be encouraged and celebrated.

Evidence of the enabling conditions of connection, as outlined in this chapter, is frequently expressed as a sense of 'happiness' by individuals who are part of local groups and communities we collaborate with.

> I feel happy, empowered, grateful and overall inspired to make change (retreat participant, 2018).

Young people looking for connection, fun and adventure value Intrepid Landcare as a place where they can be themselves, make meaningful connections, and have the freedom to express the ways in which they want to take action as a community.

## Conclusion

As the world faces many challenges – socially, culturally, spiritually and environmentally – it can be easy for young people to sink into despair and become overwhelmed by the road ahead. It is equally easy for generations who have been part of a 30-year movement to feel a level of concern for what the future holds for the organisation and ethos they have invested in so solidly and believe so strongly in.

Recognising that strategies employed to engage young people by institutions and communities have not necessarily delivered the level of youth engagement that Landcare seeks to achieve, Intrepid Landcare offers an effective model. Intrepid Landcare has achieved this by essentially asking what we need to do to change, what we need to let go of in the current paradigm, and what new ways need to be embraced to serve the needs of communities and young people in a local context and more broadly. These are questions that any organisation or initiative can ask to discover or rediscover the purpose of their existence.

**From little things, big things grow. The little ripple that was Intrepid Landcare is now becoming a wave.**

In the case of Intrepid Landcare, this has involved being open to diverse thinking, doing the research, piloting systems and learning by doing. This approach has enabled Intrepid Landcare to become a trusted brand and a thriving ecosystem where everyone is heard, valued and has an impact. This approach has also enabled team members, contributors and volunteers to contribute in ways that support the ongoing development of youth engagement and acknowledge the changing attitudes of young people.

Intrepid Landcare has evolved into a collective of young people who are passionate and ready to step in and up and do stuff that matters. These young people have a diversity of values but share a collective vision for a just future. By bringing everyone along on the journey, the ecosystem that Intrepid Landcare has become can continue to embrace change.

From little things, big things grow. The little ripple that was Intrepid Landcare is now becoming a wave. Landcare as an environmental movement and international brand must be able to support change that is emerging and needed as new ideas, like Intrepid Landcare, are founded.

## References


Bass BM and Avolio BJ (1993) 'Transformational leadership and organisational culture', *Public Administration Quarterly,* 112.

Bass BM (1996) *A new paradigm for leadership: an inquiry into transformational leadership*, US Army Research Institute for the Behavioural and Social Sciences, Alexandria, Virginia.

Black R, Walsh L and Taylor F (2011) 'Young people on the margins: what works in youth participation', *Youth Studies Australia,* 30(1):42–48.

Chawla L (1999) 'Life paths into effective environmental action', *The Journal of Environmental Education,* 31(1):359–374.

Connell S, Fien J, Lee J, Sykes H and Yencken D (1999) 'If it doesn't directly affect you, you don't think about it: a qualitative study of young people's environmental attitudes in two Australian cities', *Environmental Education Research,* 5(1):95–113.

Coyle D (2018) *The culture code: the secrets of highly successful groups,* Random House, New York.

Delizonna L (2017) *High-performing teams need psychological safety: here's how to create it,* Harvard Business Review, accessed 26 June 2021. https://hbr.org/2017/08/high-performing-teams-need-psychological-safety-heres-how-to-create-it

Joiner B and Josephs S (2007) 'Developing agile leaders', *Industrial and Commercial Training,* 39(1):35–42.

Lakin R and Mahoney A (2006) 'Empowering youth to change their world: identifying key components of a community service program to promote positive development', *Journal of School Psychology,* 44:513–531.

Lang R (1998) 'Will Landcare survive its seven year itch?', *Australian Journal on Volunteering,* 3(1):111–18.

Lencioni P (2002) *The five dysfunctions of a team: a leadership fable,* Jossey-Bass, San Francisco.

Lord RG, Gatti P and Chui SLM (2016) 'Social-cognitive, relational, and identity-based approaches to leadership', *Organisational Behavior and Human Decision Processes,* 136:116–134.

Maesepp E (2012) *Engaging the 20-something year old in Landcare,* Australian Department of Agriculture, Fisheries and Forestry, Australian Landcare Council, Canberra.

Martins E and Terblanche F (2003) 'Building organisational culture that stimulates creativity and innovation', *European Journal of Innovation Management,* 6(1):64–74.

Palmer Parker J (2000) *Let your life speak: listening for the voice of vocation,* Jossey-Bass, San Francisco.

Scharmer O and Kaufer K (2013) *Leading from the emerging future: from ego-system to eco-system economies,* Barrett-Koehler Publishers, San Francisco.

Vromen A and Collin P (2010) 'Everyday youth participation?: contrasting views from Australian policymakers and young people', *Nordic Journal of Youth Research,* 18(1):97–112.

Walsh L and Black R (2018) 'Off the radar democracy: young people's alternative acts of citizenship in Australia', *in* Pickard S and Bessant J (eds) *Young people re-generating politics in times of crises,* Palgrave Studies in Young People and Politics, Palgrave Macmillan, Switzerland.

Zimmerman MA (1995) 'Psychological empowerment: issues and illustrations', *American Journal of Community Psychology,* 23(5):581–599.

Zimmerman M (2000) 'Empowerment theory', *in* Rappaport J and Seidman E (eds) *Handbook of community psychology,* Kluwer Academic/Plenum Publishers, New York.

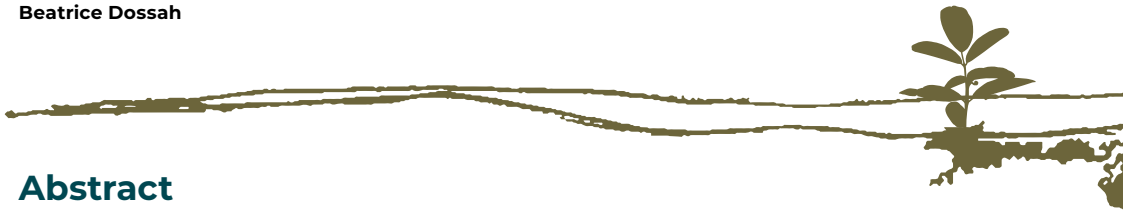
Zuo A, Wheeler SA and Edwards J (2016) 'Understanding and encouraging greater nature engagement in Australia: results from a national survey', *Journal of Environment Planning and Management,* 59(6):1107–1125.


Photo: Hipsters of Nature

# CHAPTER 28

# Place-based education for sustainability: a strategy that promotes environmental awareness in Ghana through the arts

**Beatrice Dossah**



## Abstract

The arts have the potential to empower young learners by helping them develop feelings towards nature and giving them a voice to actively participate in environmental protection and to take up leadership roles in their communities. Unfortunately, in the educational system of Ghana, the arts have not been explored significantly in the context of solving the low participation of students in environmental sustainability.

This chapter investigates how the arts can be used in the education curriculum in Ghana and elsewhere to empower all young learners to act for the environment. The research was planned in four steps.

- inquiring how young learners in Ghana learn about nature and whether the arts have been used as a medium to connect students to their local environment
- investigating how environmental arts education programs are conducted in Iceland, with the aim of adapting and transferring it to the Ghanaian context
- visiting events and spaces in Sweden and Iceland that have succeeded in blending arts and environment to help people connect to nature and develop positive attitudes towards their environment
- making recommendations for teachers, parents and policymakers on how to design environmental education programs that connect students to their real-life situations and empower them to act for their environment and livelihoods.

These lessons were also presented in the form of a hymn to nature.

## Introduction

Four years ago, I launched Hipsters of Nature, a Ghanaian non-government organisation that uses innovative ways to reconnect youth to nature and encourage them to act against plastic pollution. Hipsters of Nature believes that the younger generation would do more for the environment if environmental issues were brought to them in a pedagogical and interesting way. Music, dance and fashion are part of everyday life in Ghana. Members of Hipsters of Nature are leveraging their artistic talent to educate people about plastic pollution and encourage positive behaviours towards the environment. The group frequently collaborates with a diverse community of artists, art festivals, schools, non-government organisations and eco-hotels to organise events that mix entertainment, educative workshops and concrete environmental actions such as beach cleaning. With the sponsorship of the GRÓ Land Restoration Training Programme under the auspices of the United Nations Educational, Scientific and Cultural Organization, I conducted a study on how the arts can contribute to making environmental education more attractive to younger people in Ghana and empower them to participate in environmental conservation. This chapter also provides an overview of my investigation of developing a pedagogy of environmental art education for young people.

### The problem

Ghana's national environmental policy recognised several social issues that require action, such as low awareness, low participation and poor public attitudes towards the environment (Ministry of Environment, Science, Technology and Innovation n.d.). These challenges are described by Rademaekers (2011) as social issues, which artists rather than environmental scientists can solve. As an artist with a background in environmental science and community engagement, I was inspired to study how the arts can be combined with environmental topics to promote participation among young people. The objective of the study was to find solutions to the social problems reported in Ghana's national environmental policy by looking at the potential of the arts to involve learners in environmental protection.

The research was carried out with the following objectives:

- study educational initiatives in Iceland and Sweden that use the arts to promote environmental awareness and nature protection
- assess ways in which the arts can be used in Ghana to empower students locally in acting for the environment
- define recommendations for educators and ecologists who are designing environmental education programs for the youth.

To help set the context for this research, the next section of this chapter provides an overview of pedagogy research in environmental issues.

## Education systems, environmental education and participation

Rodenburg (2019) reported that the current state of the education system worldwide is such that today's children are seldom sent outside the classroom to experience and explore their local environment. According to Sobel (1991), teachers prefer to use approaches that are convenient to them, such as using pictures in books to illustrate topics, because it saves

time and is simpler. As a result, children study issues that are separated from their local environment and real-life situations. Sobel reported that, consequently, what the children learn makes no sense to them (Sobel 1991). This is why Sobel suggests that an environmental education program should reflect the growing experiences of the learner.

Another researcher, Jónsdóttir (2017), pointed to the gap in addressing the lack of understanding of wellbeing in environmental education. According to Jónsdóttir, wellbeing is often mistaken for the acquisition of materialistic things. However, a healthy ecosystem, good education, equality, citizenship, conservation of resources, ethnic diversity and an empowered community contribute to the wellbeing of an individual (Jónsdóttir et al. 2014). Consequently, Jónsdóttir (2017) proposed that education should help students reconstruct their perception about what wellbeing is and help them reshape their values to live in harmony with nature and others. Supporting this statement, Rademaekers (2011) mentions that artists can use their work to help people reconstruct their relationship with nature by creating environmentally friendly products. Moreover, Miller argued that holistic learning should focus on all aspects of the development of a student: emotional, physical and psychological. A holistic education helps students to realise that they are part of nature and the local community (Miller n.d.).

**Students and teachers who can establish the link between environmental issues and social issues are the best ambassadors to promote environmental sustainability and social wellbeing through their beliefs, attitudes and actions.**

### Place-based education and critical place-based education

Place-based education goes beyond the classroom. Learners are involved in community projects. What is more, place-based education reinhabits children into the natural world and closes the gap between classroom studies and the real-life situations of children, making learning meaningful to them (Smith 2017). Notwithstanding the merits of place-based education, Gruenewald endorsed a combination of this concept and another called critical pedagogy. Gruenewald supported this union because a critical pedagogy of place challenges educators by integrating cultural context and environmental politics into the focus of the place-based dialogue (Gruenewald 2003).

Critical pedagogy is mostly credited to a Brazilian educator, Paulo Freire. Freire emphasised that people behave in a certain way because of the influence of the conditions of a place and, in turn, they shape these places. Thinking about your behaviour means thinking about where you live, so responding to your situation is a result of human nature. Freire challenged students and teachers to examine and question the dominant powers that create inequalities among people in a place (Gruenewald 2003). Students and teachers who can establish the link between environmental issues and social issues are the best ambassadors to promote environmental sustainability and social wellbeing through their beliefs, attitudes and actions. When combined, critical pedagogy and place-based education result in a concept called critical place-based education (Gruenewald 2003).

### Education and experience

Theories of critical place-based education also reflect those of educational philosopher John Dewey. Dewey stressed that experience is linked to the interaction between people, the environment and the materials they explore. Learning should be continuous because, when an individual moves from one situation to another, their environment broadens and what they have learned becomes an instrument to effectively manage subsequent events (Dewey 1986:247–248). According to Dewey's pedagogy, educators need to use new events or activities to relate to students' previous experiences, and it can be expected that the experience will expand in the future (Dewey 1986:245–247).

### The potential of art in cultivating a love for place and nature

Rodenburg reported that educators often flood students with information on environmental issues without considering the interests of students in those issues. This can lead to students feeling helpless and less inspired to act (Rodenburg 2019). Subsequently, Eisner (2002) presented examples of the intellectual dimensions of art and credibly argued for making the arts fundamental in the teaching curriculum. The arguments put forward were that art:

- favours independent and personal judgement among young learners
- teaches young learners a variety of ways to resolve problems
- promotes discovery through student involvement in experiences that interact with their feelings
- promotes learning that involves flexible and dynamic problem-solving activities
- teaches learners to be aware of simple, small but unique effects of things
- empowers learners to communicate or express feelings in a variety of ways
- welcomes different perspectives of learners and teaches young learners to consider the views of others apart from their own
- teaches young learners to explore the sensitiveness of materials in their surroundings
- breaks barriers by allowing young learners to express themselves in ways that don't require the use of words, numbers or languages.

### Transformative power of education for sustainability and tacit knowledge

Jónsdóttir stressed the need to involve learners in a practice called Education for Sustainability. Education for Sustainability raises awareness about issues of a place, and at the same time, recognises that their fundamental context, such as social, political, economic and environmental factors, are connected. Moreover, it engages students in problem-solving issues in their environment. Education for Sustainability also enhances student interaction with nature, as well as providing a learning platform through innovative activities. In addition, Jónsdóttir underlines an interesting aspect of the Education for Sustainability called tacit knowledge. Tacit knowledge can be defined as knowledge gained from personal experience, usually hidden, unwritten knowledge with no rules, and its discovery relies upon motivation (Jónsdóttir 2017). The onus is on educators to uncover this hidden knowledge among learners (Smith 2003).

### Collaboration between artists, environmentalist, educators and the community

Inwood emphasises that a partnership between artists, teachers and their local communities can help to develop eco-artistic education that can challenge the power structure of education. For instance, British artist Andy Goldsworth and American artist Helen Mayer, among others, have used their creative artwork to highlight locally based and environmental issues, reaching a wide variety of audiences that scientists have not been able to before (Inwood 2007).

An educational music project called Biophilia, directed by musician Björk Gu-mundsdóttir in Iceland and other countries, relied on collaboration among artists and educators. Music, science, and technology were used simultaneously to explore creativity and learn more about nature. The project was developed for students between the ages of 10 and 12 years. It involves students using touch-screen pads to create music and experience the relationship between music, science and mathematics (Coleman 2014).

The activities of Hipsters of Nature in Ghana were reported by *BBC News* as another collaboration between artists and educators (Parkinson 2016). Somerville (2010) also emphasised the numerous advantages of storytelling, noting that the characteristics of storytelling, such as illustrations, performance, spoken word, among others, can be used to tell new stories to promote an invisible place.

### Learning strategies for education, citizenship and sustainability

Kozak and Elliott (2014) suggested seven learning approaches to help educators and learners make connections between social, environmental and economic issues. This framework helps ensure that students become engaged and active citizens involved in achieving environmental, social and economic sustainability. The proposed framework includes:

- **Learn where the local community functions as a classroom.** With this kind of learning, young learners study problems within their local communities and are exposed to the culture of their local community. This translates into genuine knowledge for students and gives them opportunities to expand their knowledge outside the classroom.
- **Connecting students' real-life issues to learning.** This means involving students in activities they value.
- **Linking multiple branches of knowledge to learning.** This takes into account the various interests of the students and helps them understand the links between the subjects.
- **Take action on the knowledge acquired.** This takes students beyond identifying a problem to finding solutions.
- **Guided learning through student questions.** The teacher explores the questions asked by students by helping them answer them through group or one-on-one experiences. This encourages critical thinking and the capacity to solve problems.
- **Learning where the teacher acts as a facilitator and allows students to lead the way in learning.** This promotes democracy in schools and encourages students to become actively involved.
- **Learn where different opinions, positive or negative, are taken into consideration and analysed.** This teaches students to respect different points of view and provides more alternatives to problems (Kozak and Elliot 2014:6).

## The role of gender in sustainability

A study was conducted in the eastern region of Ghana on how parents contribute to forming gender roles for boys and girls. The study showed that between the ages of 6 and 10 years, fathers were responsible for nurturing a male role for boys, usually outdoors. Mothers were responsible for nurturing girls in female roles, such as domestic chores, which usually take place in the home. Generally, girls are expected to spend more time at home, helping with domestic chores, or are required to come home early to help their mother with domestic chores, while the boys spend more time outdoors exploring (Boateng and Ampofo 2016). In light of this, gender impacts were taken into account in the research.

### Data collection and analysis

Both quantitative and qualitative methods were used for data collection, ensuring multiple ways to explore the research problem. A quantitative survey was sent to 60 Grade 6 students in Amasaman in the Ga West municipality of Ghana. The students were sampled using a stratified method. The survey included the following questions:

- How and where do students learn about nature?
- Are the arts used as a medium for communication?

The survey included closed questions that resulted in numerical data that was analysed using statistics.

For the qualitative method, open-ended questions were posed to artists and art educators in Ghana and Iceland to better understand their approach to the use of art as a vehicle for environmental education. The artists were selected because of their methods of using the arts to increase public awareness of environmental and social issues. The interviews were recorded so that they could be reviewed to identify common patterns and themes. After conducting interviews with the Icelandic artists and educators, their answers led to open-ended questions that were sent online to three Ghanaian artists.

An observation of a music festival in Sweden was used to explore how such programs could help promote inclusion and connect people to their local environment. Backafestivalen is a local festival held annually in the small Swedish community of Simrisham (Backafestivalen 2017). The festival includes music, dance workshops, painting for children, rock climbing and camping in nature. Data were collected through conversations with festival organisers, artists, participants and personal observation.

Observation of the natural setting of the Vatnajökull National Park in Iceland was used to investigate how visits to protected natural places could help connect people to nature. The park offers beautiful landscapes made up of moving glaciers, geothermal activities, and volcanic eruptions (Vatnajökulsþjóðgarður n.d.). The national park has an educational program for children to learn about the ecosystems in the park. Online interviews with the park manager were used to collect the data.

In addition, observations of the Þórbergssetur Museum were used to study how visits to historic sites could help connect people to nature. The museum was constructed in honour of the author Þórbergur Þór|arson in 2006. The exhibits in the museum show the life of the writer from childhood and a history of his native town in Iceland. The museum uses storytelling and exhibitions to inform tourists about the history, nature and the culture of the town (Þórbergssetur 2014). The data were used to conduct a thematic analysis by identifying common themes and patterns in participants' responses. The themes were based on the seven points proposed by Kozak and Elliott (2014).

## Key findings

### Quantitative data

About 61% of Grade 6 students reported learning about nature in their school more than once a week or many times a week. None of the students reported that they had never studied nature in school. The topic that most often included the study of nature was religious and moral education. Creative arts and the after-school program were the least selected by students. The findings showed that 83% of boys and 72% of girls learned about nature outside of school. The study revealed that 41% of the students received more information about nature from their mothers, and 39% received such information from their fathers. There was no significant difference between the response of boys and girls. More than half (51%) of the students felt best when they learned about Ghana. In addition, 36% of students sometimes used art to reflect on other topics and 15% of the students learned about nature from stories.

### Qualitative data

#### Integrated learning

When interviewing the Icelandic interviewees, it was obvious that they all believed it was important for students to be able to integrate skills and knowledge of all subjects when creating art, as suggested by Kozak and Elliot (2014). For example, Curver Thoroddsen, an educator involved with the Biophilia project, stated:

> The project aimed to teach music as well as science at the same time. It helps to be creative because many children lose focus after an hour. After five years, I found it interesting to teach kids the different topics at the same time. It breaks down the stuff into smaller units. It can also touch upon the teaching theory of many senses that we can be smart in brains and smart in how you move, music, creativity and many advances people can have.

#### Learning locally

All the artists said that it is important for teachers to undertake learning that takes advantage of settings in their local community, nature or outside the classroom, as suggested by Kozak and Elliot (2014). Helga Arnalds noted, 'Adults go for a hike on the mountain, camping and entertain themselves through nature. Kids are similar. They get to know nature through entertainment.' Helga Árnadóttir, park manager at Vatnajökull National Park in Iceland, supported this:

> Children should have a change [chance] to experience these protected areas, learn about their uniqueness, and mostly, learn to value and respect their nature and history. I believe, that if children and grownups are given a change [chance] and interpretation, to experience the unspoiled nature, they will have a stronger sense of the area and hopefully, stronger will of nature and environmental protection.

One interviewee insisted on the importance of connecting with one's culture and local community:

> Þorbjörg Arnórsdóttir: I think it's important for everybody to locate himself in local culture and community and find themselves connected to the environment, their language and their homeland, to know your background, part of it is to enjoy some cultural things or art, like music, literature, painting and also communicate to it, enjoy it, be part of it and find out this is part of me, also nature these wonderful things around, enjoy the moments you have and so on ...

**Real world connection and linking many branches of knowledge**

Most of the respondents mentioned that it was necessary for teachers to connect learning to the real-life experiences of students, making learning meaningful to students as suggested by Kozak and Elliot (2014:7). Curver Thoroddsen, who was involved in the Biophilia project, said:

> Because we used applications and iPads and they all looked weird, not like normal instruments like piano or guitar. When I was doing more of this kind of workshop for one week, on the first day, the kid is saying, 'I don't know how to make music', but they are saying, 'I can't play an instrument'. Everybody can make music if you use a different tool. Always on day 3 or 4 the kid is saying, 'I have done a lot of music and learned a lot about science'. The touch screen is tactile; it is about doing things with your hands.

Thoroddsen also emphasised how different branches of knowledge were linked in the Biophilia project.

> When we were developing this programme [the Biophilia project], we were thinking that maybe something else comes or people use topics like maths and knitting or maths and painting.

**Alternative perspectives and acting on learning**

Most respondents noted that integrating different opinions and methods leads to critical thinking, as noted by Kozak and Elliot (2014:7). Thoroddsen noted, 'Paulo Friere pedagogy is about self-control. The people can follow their customs and say this is who we are, we [are] not going to change, maybe the classroom is not fitting our situation.' The respondents also highlighted the importance of acting on learning, as suggested by Kozak and Elliot (2014). Thoroddsen said, 'Three girls were empowered [to] start a band after the Biophilia project. Two guys also started a band.'

**Inquiry and shared responsibility**

The respondents highlighted that educators should give learners opportunities to find their own answers through investigations, as suggested by Kozak and Elliot (2014:7). Arnalds, an environmental educator in Iceland, stated, 'Whatever the medium I would say listening, experimenting, approaching with an open mind, the mind of a beginner is the best way to learn and also to create.' The respondents in Iceland also talked about learning that involves shared responsibilities between students and teachers, as suggested by Kozak and Elliot (2014). Arnalds stated, 'Together we are finding out about our surroundings. They are also teaching me a lot.'

**Observation of Backafestivalen**

Backafestivalen festival coordinator, Hanna Hanan Thorstensen, said that Simrisham is one of Sweden's municipalities that has welcomed refugees from countries like Syria, Somalia, Iraq and Afghanistan. Thorstensen said that one of the festival's goals was to integrate immigrants into the community by encouraging them to participate. Employment opportunities were offered to some refugees to cook food for the festival team. The festival ensured equal representation of female and male artists. Thorstensen said that opportunities were given to local people who were unable to afford the gate fee to volunteer at the festival for free entry. The researcher observed that waste containers on the festival site were labelled to separate glass, paper, bottles and organic waste. The festival's food vendors served food on paper plates. At the end of the festival, the organisers ensured that the festival site was tidy and left in its original state.

**Ghanaian artists**

All the Ghanaian artists said that the arts can be used to promote awareness about environmental issues in society.

> Rufai Zakari … as much as we are all very concern [concerned] about the environment, we should think of product that are damaging the environment which is hard to do away with in our daily life. The only way to overcome this problem is to re-use them artistically [artistically] and has to be sensible in a way to impact society.

All the Ghanaian artists said that they could contribute their artistic skills if a festival was organised in Ghana to promote environmental awareness. Zakari stated, 'My contribution will [be] based on using creative thoughts to address and create beauty out of trash in order to give them another chance to live.' One artist stressed the importance of including traditional and cultural heritage in such a festival. Ackweh stated that, 'Drums and musical instruments can be used and fun songs can be composed and taught to the audience.'
All the Ghanaian artists supported an approach where artists give space for viewers to participate in their work. Ackweh said, 'It is a powerful way to experience art today. Having the audience play a part of the project leaves most lasting memories of the experience and the communication is better.'

The lessons from this research are presented in a song called 'Connect to nature' that has been circulated on YouTube (Dossah 2018) to reach a wider audience.

**All the Ghanaian artists supported an approach where artists give space for viewers to participate in their work.**

## Discussion on key findings

The findings showed that there are good structures in place for environmental education development in Ghana. Ghana already has an environmental education policy. Boys learn about nature outside the school more than girls do. This could be because boys spend more time outside their homes playing, unlike girls who have to help their mothers with domestic chores at home (Boateng and Ampofo 2016). These results show that there is potential for students to learn about environmental issues outside their classrooms, perhaps when schools collaborate with parents and the community (Kozak and Elliot 2014). Teachers could enhance learning about nature outside classrooms by equally engaging both boys and girls in projects within their local communities (Kozak and Elliot 2014; Inwood 2007).

It was good to see that some students mentioned that they learn about nature from stories. Storytelling could be used in environmental education, perhaps by using stories of students or local communities to bring a spotlight on these places (Somerville 2010). These stories could be followed up with investigations by students in the community (Kozak and Elliot 2014). More than half (51%) of the students mentioned that they feel best when they learn about Ghana.

These results show that there is potential for using local environmental issues as examples in learning, perhaps by delegating students to investigate the issues (Kozak and Elliot 2014). There is also potential for students to reflect on issues through a range of the artforms, as a way of discovering different perspectives on environmental issues (Eisner 2002; Kozak and Elliot 2014).

### Empowering teachers

Teacher empowerment is required to successfully implement environmental education. It is important to involve teachers in the design of the environmental education program so that they see themselves as part of the change. Teachers can draw on their rich experience of intellectual development that can be enriched and multiplied by artists (Inwood 2007).

### Festivals

A festival like Backafestivalen could be organised in Ghana to promote inclusiveness and connect students to their local environment. It could take place in a botanical garden where students can interact with the surroundings of the garden. Students may be motivated to use tacit knowledge to solve problems (Jónsdóttir 2017). The festival could integrate cultural aspects of Ghana, such as storytelling, drumming and dancing, to make the activities relevant to the participants (Gruenewald 2003). Educators could use such festivals to unearth the tacit knowledge of students through hands-on activities (Smith 2003).

### Interviews with Ghanaian artists

The Ghanaian artists interviewed were receptive to working with people, so there could be a collaboration between teachers, students and artists in environmental education. Zakari said he uses trash to create useful and aesthetic works of art. A similar activity could help students think about their daily consumption behaviour at home and school and translate into significant learnings (Kozak and Elliot 2014). Thoroddsen stressed the importance of building bridges between subjects by teaching multiple subjects together. This could help students understand the relationships between social, economic and environmental issues (Smith and Sobel 2010).

### Holistic curriculums

A holistic education helps students to realise that they are part of nature and the local community (Miller n.d.). One interviewee, Árnadóttir, said that when students have the opportunity to visit protected areas such as a national park, they become connected to nature and feel inspired to protect it.

### Ethical issues

Braun and Clarke noted that researchers can influence certain aspects of the study because of their values and cultural environment. Subjectivity could not be avoided in the study due to the difference in the researcher's culture and possibly her background as an environmental scientist. However, the researcher was respectful of the views presented by all the interviewees. During the investigation and interviews, certain codes and ethical requirements were respected. For example, during the school survey, students were asked not to write their names because of confidentiality concerns (Braun and Clarke 2013). A letter was sent to the principals of the schools with attached questionnaires to seek permission to interview students from the school.

## Conclusion

The results of this study inform a developing pedagogy for environmental art education young learners. Both the Icelanders and Ghanaian experts interviewed highlighted examples of learning methods that can create engaged learners and make learning meaningful for students. Learning strategies must be combined to achieve a holistic education and it is important not to forget about teachers, as they play a vital role in promoting good values in students and encouraging them to actively participate in environmental conservation. To achieve this change, teachers need to become learners themselves and be open to innovative learning methods. Further studies could consider the opinions of teachers and the challenges they face so that they can feel part of the process.

From this research, I hope that ecologists will increasingly partner with schools, educators, artists and community groups to empower future generations to participate in environmental stewardship. Additionally, I hope that this study will inspire landcare initiatives globally to combine the arts and the different pedagogy methods in ensuring holistic learning for the future generations.

## References


Backafestivalen (2017) *Backafestivalen,* accessed 21 July 2021. http://www.findglocal.com/SE/Simrishamn/188748727827437/Backafestivalen

Boateng J and Ampofo AA (2016) *How parenting in Ghana shapes sexist stereotypes*, accessed 21 July 2021. https://theconversation.com/how-parenting-in-ghana-shapes-sexist-stereotypes-51823

Braun V and Clarke V (2013) *Successful qualitative research: practical guide for beginners,* Sage Publications Ltd., London.

Coleman M (2014) *Bjork's 'Biophilia' heading to European classrooms,* accessed 21 July 2021. http://www.rollingstone.com/music/news/bjorks-Biophilia-heading-to-european-classrooms-20140615

Dewey J (1986) 'Experience and education', *The Educational Forum,* 50(3):241–252.

Dossah B (2018) *Connect to nature,* accessed 21 July 2021. https://www.youtube.com/watch?v=vLGMYxiHsdQ

Eisner E (2002) *The arts and the creation of mind,* Yale University Press, Yale.

Gruenewald DA (2003) 'The best of both worlds: a critical pedagogy of place', *Educational Researcher,* 32:3–12.

Inwood H (2007) 'Artistic approaches to ecological literacy: developing eco-art education in elementary classrooms', *Marilyn Zurmuehlen Working Papers in Art Education*, 2007(1), Article 6, accessed 21 July 2021. https://doi.org/10.17077/2326-7070.1399

Jónsdóttir AB (2017) 'Art teachers' education for environmental awareness. What is hidden in nature that we have never seen or heard?', *Visions for sustainability,* 7:7–24, accessed 21 July 2021. https://doi.org/10.13135/2384-8677/2048

Jónsdóttir AB, Gunnarsdottir E, Finbogadottir GY (2014) *Go green: a family guide to sustainable lifestyle,* Edda Publishing, USA.

Kozak S and Elliot S (2014) *Connecting the dots: key learning strategies for environmental education, citizenship, and sustainability* [PDF], accessed 21 July 2021. https://lsf-lst.ca/media/LSF_Connecting_the_Dots_February2014.pdf

Ministry of Environment, Science, Technology and Innovation (n.d.) *National environmental policy* [PDF], accessed 21 July 2021. http://extwprlegs1.fao.org/docs/pdf/gha174489.pdf

Miller R (n.d.) *Holistic education: a brief introduction* [PDF], accessed 21 July 2021. http://www.holisticedinitiative.org/wp-content/uploads/documents/ron_miller-holistic_education_a_brief_introduction.pdf

Parkinson C (2016) *How the Hipsters of Nature are encouraging Accra's youth to recycle*, accessed 21 July 2021. http://www.bbc.com/news/av/world-africa-35540792/how-the-hipsters-of-nature-are-encouraging-accra-s-youth-to-recycle

Þórbergssetur (2014) *Icelandic writer Þórbergur Þórðarson his life and times,* accessed 21 July 2021. http://thorbergur.is/index.php/en/

Rademaekers KJ (22 April 2011) 'Why the sustainability movement needs arts to survive' [conference presentation], *Staging Sustainability Conference,* Toronto, Canada.

Rodenburg J (2019) *Why environmental educators shouldn't give up hope,* accessed 21 July 2021. https://clearingmagazine.org/archives/14300

Smith GA (2017) *Place-based education,* accessed 21 July 2021. https://doi.org/10.1093/acrefore/9780190264093.013.95

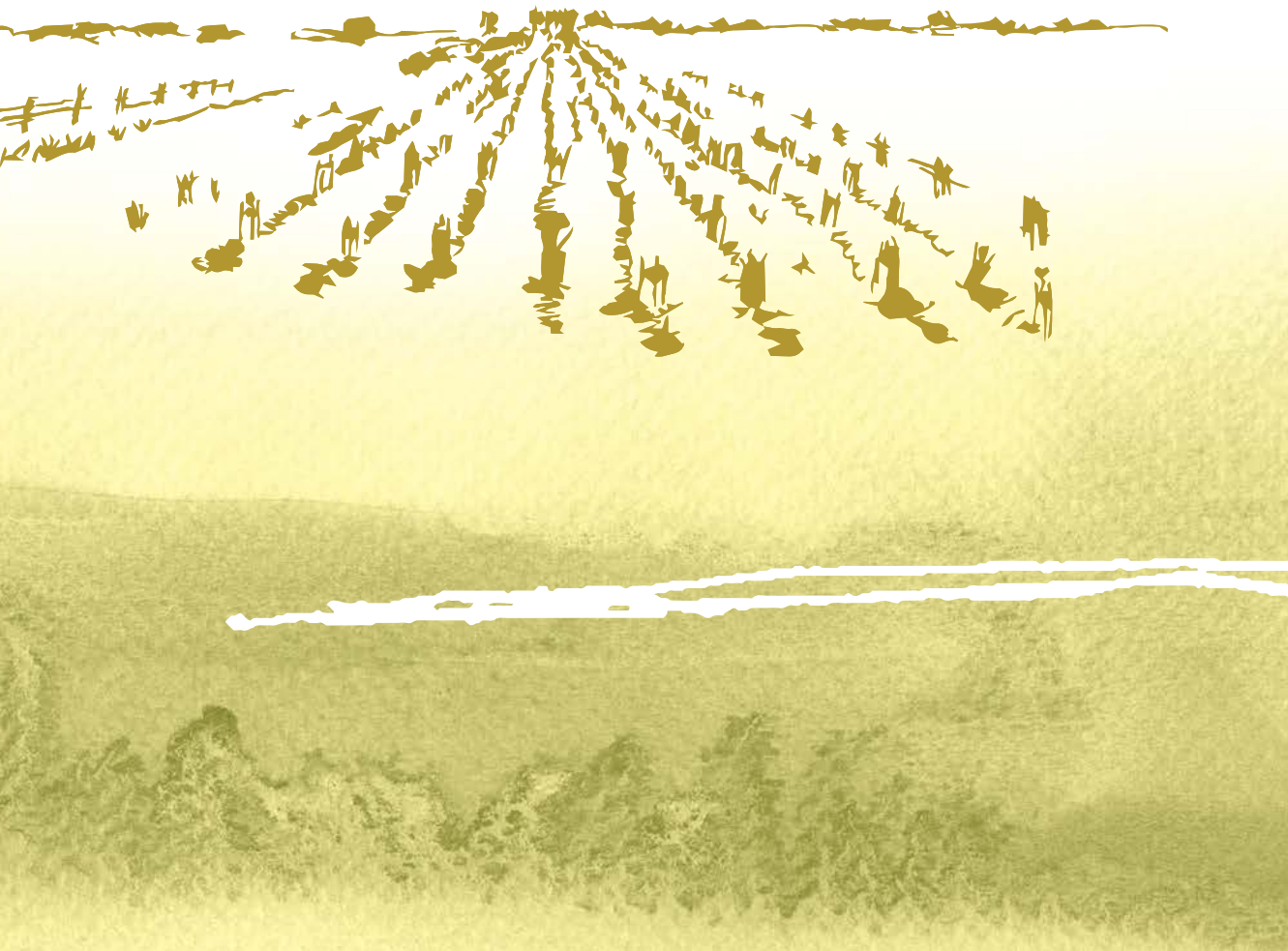
Smith GA and Sobel D (2010) *Place- and community-based education: definitions and antecedents*, Routledge.

Smith KM (2003) *Michael Polanyi and tacit knowledge: the encyclopaedia of informal education,* accessed 21 July 2021. http://infed.org/mobi/michael-polanyi-and-tacit-knowledge/

Sobel D (1991) *Beyond ecophobia: reclaiming the heart in nature education*, Orion Society.

Somerville M (2010) 'A place pedagogy for "Global Contemporaneity"', *Educational Philosophy and Theory* 42(3).

Vatnajökulsþjóðgarður (n.d) *About the national park,* accessed 21 July 2021. https://www.vatnajokulsthjodgardur.is/en/about-us/vatnajokull-national-park/about-the-national-park



# PART G

## Landcare's message for the wider world

Photo: Yvonne Everett

# CHAPTER 29

# Cross-scale community-based natural resource management stewardship capacity in the United States

**Yvonne Everett**

## Abstract

Landcare is not a commonly used term in North America, however, community-based resource management (CBRM) groups in the United States carry out analogous roles focused on collaborative community stewardship of ecosystem services. Yet only in the state of Oregon do CBRM groups (watershed councils) receive direct organisational support from government as many Landcare groups do in Australia. Instead, grassroots efforts to respond to dynamic resource management challenges began in the 1990s, and in many communities, groups worked, initially in isolation, to harness community capital for resource stewardship. Over time, successful groups have partnered with each other and with federal, state and local governments to enhance place-based socioecological resilience while also extending their influence across scale to affect regional and national policy.

Based on interviews carried out with CBRM leaders, this chapter briefly explores these relationships, discusses CBRM successes in the United States and addresses current challenges these groups face using three case examples from Northern California. Findings from this chapter indicate that CBRM groups have used diverse forms of community capital to fill in gaps in resource management caused by regulatory train wrecks and a declining federal presence on the land. They have stepped up as leaders in emerging adaptive governance of natural resources in the rural west of the United States and they have advanced approaches to restoration, peer learning, communications and networking to respond to dynamic challenges to communities such as climate change, drought, wildfire and unregulated cannabis cultivation.

## Introduction

Landcare is not a widely used term in the United States. However, even as landcare was emerging in Australia, place-based, community-led responses to challenges in natural resource management (NRM) also became widespread across the United States. Non-government community-based resource management (CBRM) groups began to take on efforts to restore ecosystems and diversify resource-dependent local economies. Unlike in the case of Australia, where various forms of state and national policy, programs and direct funding have supported the expansion of landcare, there has been no nationally recognised movement endorsed by government in the United States. Only in Oregon is there such institutional support, specifically funding from the state lottery, for community-based watershed councils. Despite the lack of centralised support, CBRM has emerged as a powerful force in NRM and environmental conservation in the United States. In this chapter, I explore how CBRM groups in the United States have managed to organise in their often tiny, remote communities, develop plans for the future, raise funds and gain political support to influence state and federal natural resource policies that affect them. After a brief introduction to the United States resource management context from which CBRM groups have emerged, I will argue that these groups leveraged their small communities' social, cultural, human and political capital to gain traction to attract financial capital to restore natural capital and become the local, regional and national force they are today. Using interviews with CBRM leaders, I provide three brief case studies of groups operating in Northern California to illustrate diverse approaches that CBRM groups have taken to succeed to date and challenges they face.

## Context for emerging CBRM groups: land tenure, natural resource policy and management in the United States

Beside populous metropolitan centres, vast rural landscapes of mountains, plains, forests and grasslands extend across the western United States with scattered communities and very low population densities. NRM, especially forest and range management in this region, is strongly influenced by complex land tenure arrangements and federal and state policy. Federal public land, 28% of the United States, is managed by large, centralised government agencies such as the United States Forest Service (US Forest Service) and the Bureau of Land Management. In some states, this includes more than half of the landscape (Figure 29.1). Much of this land includes the ancestral territories of Native American tribes and the much smaller treaty-designated tribal reservations. States also own and manage public wildlands and open space. Forest industry and ranching are based on private lands, but many landowners access resources on public lands through contracts to log or leases to graze livestock on federal or state lands.

In the 1960s and 1970s, the United States passed major environmental laws in response to public perceptions of industrial pollution and environmental degradation (Rosenbaum 2005). These included, among many others, the National Environmental Policy Act (1970), the Endangered Species Act (1973), the Federal Land Policy and Management Act (1976) and the National Forest Management Act (1976). The National Environmental Policy Act required an accounting of likely environmental impacts of any project carried out with federal funding and allowed citizens to sue the federal government to enforce the rules.

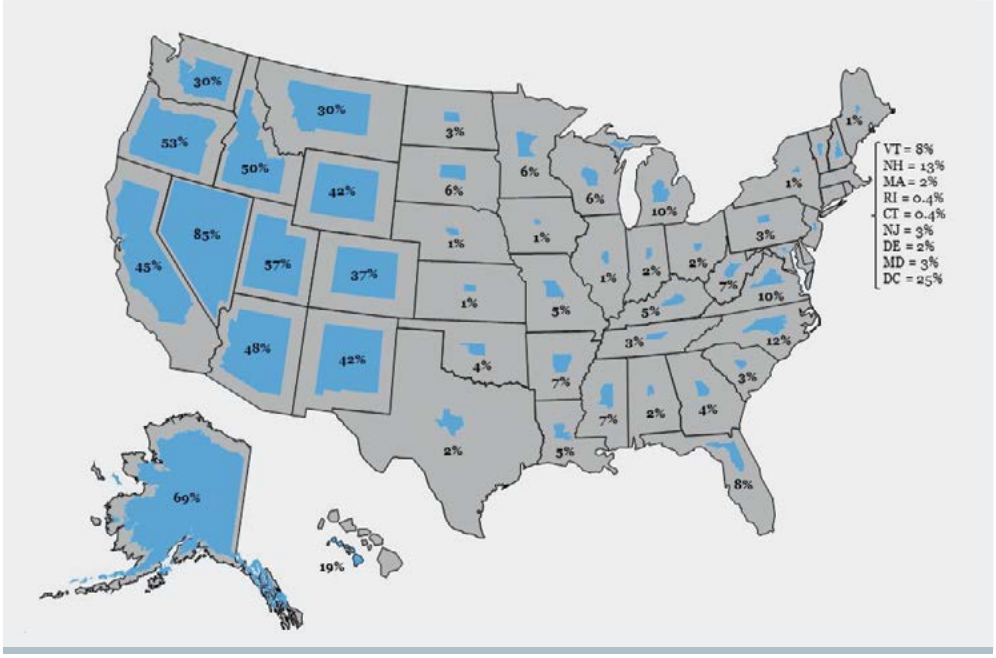



**Figure 29.1** Federal land in the United States as a percentage of total state land area

Source: Tobin M (2013) *Lay of the land: who owns the west?,* EcoWest website.

The Endangered Species Act sought to prevent the further demise of rare species by protecting the species and their habitats. The Federal Land Policy and Management Act and the National Forest Management Act provided guidelines for Bureau of Land Management and US Forest Service management accountability. Until such laws were passed, federal lands in many areas had been managed primarily for resource extraction. By the 1980s, however, as these laws began to be implemented, federal land management practices were increasingly questioned. Strategic lawsuits, brought by environmentalists seeking to ensure that the new laws were followed, led to disruption of on-the-ground logging, grazing, road construction and other management practices.

In the interior west, disputes emerged over grazing and management of grasslands, sagebrush and the rare sage grouse (Belton and Jackson-Smith 2010). In the Pacific Northwest (Washington, Oregon and Northern California), clashes between environmentalists, government land management agencies and the forest industry pitched protection of endangered species and old growth forests for the long term against timber interests and short-term economic gain (Rule 2000; Speece 2016; Maier and Abrams 2018).

Under the Northwest Forest Plan, federal land management policy shifted dramatically from resource extraction towards ecosystem management, and with reduced logging, investment in management on federal public lands slowed (US Forest Service 1994; Christensen et al. 1999). Agencies downsized staff and their capacity to maintain basic management activities on the land declined (Charnley 2006; Moseley and Reyes 2008). Simultaneously, forest industry on private lands was on the one hand downsizing and mechanising, and on the other, exporting increasing numbers of unprocessed logs abroad

and reducing the number of jobs in lumber mills (Charnley 2006; Phillips 2006). Across the Pacific Northwest, federal land management presence declined, forest harvest slowed, mills shut down and timber towns were divided by conflict and economic ruin (Charnley et al. 2008).

In recognition of the economic impacts of radical policy change, for a short five years, the federal government provided funds under the Northwest Economic Adjustment Initiative to help forest resource-dependent communities to diversify their economies (Christensen et al. 1999), and then the support ended and communities were on their own. For many communities, finding the capacity to think about what to do next and to apply for funding (while it lasted) was overwhelming (Kusel et al. 2000). However, as rural towns across the west struggled with economic decline, community-based groups began to organise in response.

**As rural towns across the west struggled with economic decline, community-based groups began to organise in response.**

These non-governmental organisations came to be known as 'community-based resource management' (CBRM) groups, 'community forestry groups', 'community-based ecosystem management groups' and/or 'watershed councils' (Gray et al. 2001; Weber 2003; Brosius et al. 1998; Lurie and Hibbard 2008). These groups worked to fill the vacuum left by reduced investment in federal lands and forest industry to restore ecosystems and to reinvent natural resources-based employment opportunities. In this research, I use the term 'CBRM groups' to refer to these groups and the wide range of landcare analogous activities they encompass. While these groups are evocative of landcare, they have not enjoyed the level of federal or state institutional support of Australian landcare groups. Instead, one approach to explaining the rise of CBRM in the United States suggests that these groups mainly leveraged their communities' social, cultural, human and political capital (Flora and Flora 2008) to gain traction within existing institutional structures in the United States and become the force they are today.

### The Community Capitals Framework

The Community Capitals Framework (Putnam 2000; Flora and Flora 2008) is an approach to defining a community's economic opportunity as made up of more than standard monetary capital or natural resource and infrastructure inventories. In addition to these financial, natural and built sources of capital, the framework recognises other forms of capital that can be developed and leveraged. Social capital is defined as the relationships of trust and reciprocity among community members. Cultural capital is place-based knowledge and experience developed over generations. Human capital refers to individuals' skills and education, and finally, political capital is the power to draw government officials' attention to issues and influence policymaking (summarised from Flora and Flora 2008).

### Social and cultural capital

In the Pacific Northwest, the first step that incipient CBRM groups took was to rebuild social capital and work to heal the conflict between community members 'across the great divide' of resource extraction vs conservation (Wondoleck and Yaffee 2000; Brick et al. 2001). These communities were small towns, where people on all sides had grown up. Their children went to the same schools, families to the same churches. They worked, recreated, hunted and fished in the surrounding landscapes. In many communities, it took leadership of individual peacemakers to invite people to share a meal and talk about how to move the community forward, and to slowly develop trust again. Everyone wanted to see these communities survive. Groups began to meet regularly to talk strategy, some with facilitation support from local government agencies. They began to recognise their own social and human capital and plan for the future. In some cases, groups emerged from or worked closely with Native American tribes, drawing on Indigenous knowledge and culture and longstanding experience with the land. Then, as tangible projects emerged that they wanted to take on, groups began to take the next steps, to incorporate as official non-profit organisations.

### Financial capital

Incorporating and registering as tax-exempt not-for-profit organisations with the US Internal Revenue Service allowed groups to apply for federal, state and private grant funding to carry out CBRM activities. As noted above, in the Pacific Northwest for a brief period of about five years from 1994 to 1999, the Northwest Economic Adjustment Initiative helped emerging CBRM groups build capacity to conceive and frame projects, write grant proposals, manage contracts, administer grants and implement work on the ground (Raettig and Christensen 1999; Kusel et al. 2007). Federal and state agencies also put out competitive contracts and some grants for resources management work on public lands that CBRM groups could apply for including all manner of contracts for planting, thinning, fuels reduction and use of prescribed fire, inventories and surveying, watershed and fisheries restoration, invasive species eradication and road removal. Major philanthropic organisations also donated to CBRM organisations (Cheng et al. 2006). A whole restoration economy emerged (Baker 2005; Baker and Quinn-Davidson 2011; Bendor et al. 2015; Formosa 2018). While most North American CBRM groups follow this standard non-profit structure, there are interesting exceptions. In Oregon, registered watershed councils receive a base level of funding to support facilitators and they can also apply for additional project funds. The program is paid for with funds from the state lottery and has been approved by voters in perpetuity (Lurie and Hibbard 2008; Montgomery 2013; Nielson-Pincus and Moseley 2013). There are also various forms of hybrid organisations such as resource conservation districts, which have a strong linkage to the Federal Natural Resource Conservation Service and special access to federal funding (NRCS 2018). In summary, this ability to mobilise and access financial capital is one indication of CBRM groups leveraging their human capital.

### Human capital

From the 1990s, CBRM groups were able to build entrepreneurial human capital to fill gaps in resource management needs in both private and public sectors. They captured funding opportunities and developed a broad range of place-based skills by building their staffs and seasonal work crews (Charnley et al. 2008; Abrams et al. 2015). In a dynamic world characterised by climate change, drought, wildfire, policy and institutional change, they carried out significant resource management–focused research and development work in order to adapt and prove resilient. Today, many have broadened their capacity, for example in watershed restoration and prescribed fire use, so much that they have become major local employers in remote areas, with multimillion dollar annual budgets that are reinvested in their communities and in restoring natural capital. An additional key aspect of community capital, developing political capital, was critical to this success.

### Political capital

In general, CBRM groups have become highly collaborative, and to varying degrees, work with other entities such as other CBRM groups and government agencies (for example, Weissberg et al. 2018). It took time to develop these relationships. Initially, emerging CBRM groups were on their own. However, they soon began to learn about and network with other groups in similar situations (Abrams et al. 2015; Maier and Abrams 2018). In the 1990s, computer technology brought email, geographic information systems and enhanced communication capabilities. Philanthropic organisations supported leadership training for CBRM directors and staff (Christoffersen et al. 2008). At these peer-learning meetings, CBRM leaders identified common challenges and brainstormed large and small solutions. A CBRM group cooperating with the US Forest Service in one region could, for example, share the memorandum of understanding it developed with the federal agency, so that another CBRM in another region could use it as a model for its own collaboration with the US Forest Service.

Working with sympathetic non-profit groups in Washington DC, CBRM groups jointly developed white papers analysing resource policy issues affecting rural communities and sent representatives to the US Congress to distribute them. They also hosted delegations who came to see what was happening out west (Cromley 2005). In this collaborative way, CBRM groups have influenced significant national legislation on funding for rural schools, wildfire management and the like (Baker and Kusel 2003; Cromley 2005; Braxton-Little 2010; Charnley et al. 2014; Abrams et al. 2015). Initially limited local CBRM networks became regional and expanded nationwide over time. Today a prominent example is the Rural Voices for Conservation Coalition of over 80 non-profit, public and private organisations from around the west (RVCC 2018). By working together, groups from all over the country have gained access to powerful legislators and now influence policy (for example, about NRM, wildfires and the role of rural communities).

In the remainder of this chapter, I will discuss three examples of CBRM groups in northern California that have each used social, cultural, human and political capital to restore natural capital and leverage financial capital to support their community's resilience. The case studies are based on interviews with staff members of the organisations carried out in 2017, participant observation at community events held by the groups and the author's long association with the groups, including in one case as a board member.

## Case studies

This section explores three case studies of relevance to US community-based natural resource management activities: Sanctuary Forest, the Mid Klamath Watershed Council in Humboldt County and the Watershed Research and Training Center in Trinity County.


**Figure 29.2** Location of Humboldt and Trinity counties, California, USA

Source: Douglas N (2017) *Public, private and tribal lands in Humboldt and Trinity counties* [map data], California Department of Transportation, Humboldt State University GIS and US Geological Survey.

### Sanctuary Forest

Sanctuary Forest (2021) is a group that has combined many forms of capital to enhance its community's socioecological resilience (Formosa 2018) and the ability of the people and their environment to adapt to dynamic changes and persist (Resilience Alliance 2018). It is one of several pioneering CBRM groups in the Mattole River Watershed of southern Humboldt County. The community in this largely privately owned watershed is diverse, libertarian and comprised primarily of ranchers and a significant group of 'back to the landers' – urban refugees who chose to move to rural areas for a simpler, more sustainable lifestyle in the 1970s.

Along with forest restoration work beginning in 1987, Sanctuary Forest emphasises water conservation activities. Past actions have focused on a range of watershed and salmon restoration efforts (House 1999). In early 2000, local creeks began to run dry in summer. My interviewees indicated that too many people were using water during the drought for domestic and agricultural uses, including illegal covert cannabis gardens. A conducive physical and social climate, remoteness and a lack of law enforcement have made northern California a major source of (federally) illegal cannabis for several decades. The crop fuelled a major underground economy with significant environmental impacts, including summer water use and stream dewatering in the Mediterranean-like dry climate. Cannabis was legalised in California in 2018, and while significant changes in how and where this highly lucrative crop is grown were underway at this writing, impacts on water flows continued.

In response, Sanctuary Forest leaders, working in partnership with other local CBRM groups, residents and state and federal agencies, developed an innovative approach to watershed restoration and groundwater recharge that combined social forbearance and Indigenous technical knowledge. Building on the extraordinary buy-in and trust of its community members, Sanctuary Forest pioneered a program of providing large, state-funded water storage tanks to landowners who were willing to fill tanks in the winter rainy season and to voluntarily abstain from taking water out of creeks in summer (Sanctuary Forest n.d.). Today, nearly half of the landowners in the 72 $km^2$ headwaters of the Mattole River practise forbearance as part of the Sanctuary Forest Program. Promotion of additional forms of water conservation are ongoing (Scavarda 2017).

**Sanctuary Forest is currently applying Indigenous knowledge drawn from India to construct rainwater storage basins for groundwater recharge along with infiltration swales and galleries, and instream ponds on land in the watershed.**

In addition, Sanctuary Forest is currently applying Indigenous knowledge drawn from India to construct rainwater storage basins for groundwater recharge (*johads*) along with infiltration swales and galleries, and in-stream ponds on land in the watershed managed by the federal Bureau of Land Management (Newlander 2016). The water conservation programs spearheaded by Sanctuary Forest demonstrate the leadership roles of place-based CBRM groups who can combine innovative ideas, appropriate technology, expertise, political savvy and a deep commitment to the land in working with local communities and with local governments, and state and federal agency partners, towards greater resilience.

### Mid Klamath Watershed Council

The Mid Klamath Watershed Council, founded in 2001, is based in the tiny community of Orleans, California, in northern Humboldt County. These lands, now largely federal public land managed by the US Forest Service, are the ancestral territory of the Karuk Tribe. The Karuk do not have a reservation and today own only a few acres of land, even though they have stayed in place on the Klamath River 'since time immemorial' (Rocha 2015:4). From the beginning, the Mid Klamath Watershed Council has partnered with the Karuk, and focused on river and watershed restoration efforts and returning fire to the landscape (MKWC 2021). As the community is surrounded by US Forest Service–managed federal lands, the council also works closely with the Six Rivers National Forest and the Klamath National Forest.

Fire is a natural ecosystem process that has shaped diverse forest ecosystems in this mountainous landscape. Summer lightning strikes bring fires that burn themselves out when the rains come in fall (Skinner et al. 2006). For thousands of years, the Karuk, like many Native Americans, regularly used fire as a tool to reduce fuel loading around village sites and at the landscape scale to enhance natural resources from browse for game to food plants and basketry materials (Kimmerer and Lake 2001; Lake 2007). Beginning in the early 1900s, after large forest fires killed many settlers and burned valuable timber, the federal government ordered the US Forest Service to suppress all wildfires (Agee 1993). Indigenous burning was equated with arson and banned. Changes in forest structure from logging and heavy fuel build-up from fire suppression as well as climate change now promote large-scale high intensity fires that threaten native ecosystems and communities (Orleans/Somes Bar Fire Safe Council 2012).

Over the course of the last 20 years, the Mid Klamath Watershed Council and the Karuk have focused on reintroducing planned fire use combining Indigenous knowledge and current fire science. In an ongoing collaborative effort, working closely with the US Forest Service and many local stakeholders in the Western Klamath Restoration Partnership (Harling and Tripp 2014; Gilles 2017), they have succeeded in landscape-scale planning and are beginning to bring federally sanctioned use of prescribed fire back into the forest. The goals are to use fire to remove fuels strategically, restore forests and protect communities while reintroducing fire to this fire-adapted landscape. In this case, CBRM has harnessed cultural, social and political capital in ways that bring ancient place-based cultural practices together with current social, human and political capital to create innovative forest management practices.

### Watershed Research and Training Center

The Watershed Research and Training Center (Watershed Center) emerged in 1992 in Trinity County, where over 70% of the land is managed by federal agencies, predominantly the US Forest Service (WRTC 2021). Private forest industry owns another 17% of the landscape, leaving very little land in private non-industrial hands. The ancestral territory of the Wintu people, this area was a focus of first the California gold rush in the late 1800s, then beef production on large ranches and, beginning in the 1950s, logging on private industrial and federal lands. The timber-based economy was strong here until federal ecosystem management policy in the early 1990s severely curtailed logging on already heavily harvested federal lands and private mills shut down. The Watershed Center initially focused on diversifying the economy and the types of employment available to local workers in the woods, including thinning forest plantations for fuel reduction and forest restoration, in-stream watershed restoration, and value-added production from small-diameter forest products (Braxton-Little 1998).

Developing new community livelihoods in a landscape managed by the US Forest Service required strong communications skills and perseverance as well as working with local partners across jurisdictional boundaries to address forest conservation issues. Abrams et al. discussed the diverse roles CBRM groups have played in 'reinforcing and reforming' institutions across scale and sectors (Abrams et al. 2015:677). The Watershed Center has been at the forefront of efforts by CBRM groups to network across the west and influence natural resource policy affecting rural communities. It has emerged as a fluid gap-filling actor at local, regional, state and national levels. Along with its innovative leadership, perhaps its greatest strength has been its capacity to develop and leverage its political capital by building networks.

The Watershed Center was able to capture early funding through the Northwest Economic Adjustment Initiative for its CBRM efforts and participated in leadership training and exchanges supported by philanthropic donors. In 2001, it was a founding partner in the western network of organisations called Rural Voices for Conservation Coalition (RVCC 2018). Working to develop opportunities for using the large quantities of forest biomass from fuel reduction efforts that in the past would have been burned in a pile on site, has led to the group's participation in the California Forest Biomass Working Group and the California Statewide Wood Energy Team. The Watershed Center (working closely with others, including the Mid Klamath Watershed Council) also chairs the Northern California Prescribed Fire Council.

Successful CBRM groups like the Watershed Center have developed and leveraged political capital and now have become facilitators of state and national networks of organisations with similar goals. In California, for the Department of Conservation, the Watershed Center works through the Regional Fire and Fuels Capacity program to mentor and train other community groups across the state in community fire preparedness and prescribed fire use (California Climate Investments 2021). It is also a member of the Governor's Forest Management Task Force currently developing a prescribed fire strategic plan for the state. At the national level, the Watershed Center facilitates the Fire Adapted Communities Learning Network (FAC Net), a key partnership initiated in 2013 by the Nature Conservancy and the US Forest Service. In this context, the Watershed Center actively moderates peer-to-peer exchange of knowledge and experience about community strategies for adaptation to wildfire (Mendoza 2017; FAC Net 2021). FAC Net has 24 core member organisations and 120 affiliates who use a managed network structure to share information on reducing community risk from wildfire and enhancing resilience (FAC Net 2021). As was noted above for the Klamath Mountains, wildfire is the most significant natural resources challenge for rural communities in the western United States. The implications of climate change, the history of fire suppression, the expansion of development into the wildland urban interface and drought combine into a wicked problem for which a centralised, top-down response is not sufficient. FAC Net recognises this need for local adaptive management by creating a myriad of flexible online and face-to-face opportunities to connect people working on fire management issues and to share experience and information.

## Emerging challenges for CBRM groups

This chapter has indicated that there are a wide range of challenges facing CBRM groups. Three are particularly significant: wildfire, localised issues and reliable funding. The single greatest challenge for resource management and communities in the western United States (and in many other countries) is wildfire and its drivers – climate change, drought, past forest management practices (especially fire suppression) and expanding housing

development in the wildland urban interface. CBRM groups are actively engaged in the reintroduction of prescribed fire and forest thinning to reduce fuels and in working with community education to be better prepared for wildfire. The challenge is huge, but the need is shared. Networks such as FAC Net are powerful new tools for collaboration.

A second set of challenges emerges from issues that are more localised, and not shared by many groups. CBRM groups in this situation are less able to draw on the political capital of networks to have their voices heard. In northern California, for example, illegal cannabis cultivation on public and private lands threatens endangered species, water supplies and the watershed restoration work CBRM groups have championed (Everett 2018), yet the groups have not been able to garner sufficient support from CBRM groups outside the region to raise the issue at regional and national levels.

Finally, all groups struggle with raising basic operational support and capacity. CBRM groups are taking on many tasks that serve the public good, including roles in resource management, stewardship of ecosystem services and communications that might previously have been undertaken by governments. Federal investment in public lands and natural resources is in flux and the attention of philanthropic organisations is often centrally driven and short lived. As noted above, Oregon is the only state in which watershed groups receive support from the government for basic operations including facilitator salaries.

CBRM is really about people taking responsibility for their community and their environment. What is interesting about this phenomenon in the United States is that CBRM has managed to emerge in a period of about 25 years from groups of volunteers in very rural communities, initially operating in isolation, to form local, regional and national level partnerships and networks to make their voices heard. Unlike landcare in Australia, which, after its beginnings in Victoria, soon enjoyed formal programmatic support from the national level (Youl et al. 2006), CBRM in the United States has remained fundamentally a grassroots movement. Across the United States, community groups have developed community capacity to take on natural resource–related challenges, each in their own ways.

**Unlike landcare in Australia … CBRM in the United States has remained fundamentally a grassroots movement.**

As the cases of Sanctuary Forest, the Mid Klamath Watershed Council and the Watershed Research and Training Center demonstrate, CBRM groups emerge from their communities in response to challenges of public interest that local, state or federal governments and private industrial interests cannot or do not address. In the process, they have built the human capital needed to collaborate with agency staff locally to get important projects implemented. CBRM groups have taken on a wide range of tasks, from fuels and road inventories to National Environmental Policy Act analysis to meet federal regulatory guidelines. The Watershed Center has been entrepreneurial in adapting to changes in forest management through efforts to develop new equipment to manage and harvest small-diameter logs and market new wood products (Braxton-Little 1998, 2010). Groups are using the latest technologies to remain adaptive and resilient as the challenges for rural communities from climate change and explosive wildfires to struggling boom and bust

economies threaten their persistence. In many cases, the CBRM groups have taken the lead on innovative developments in watershed restoration, prescribed fire management and community-scaled biomass energy development and they take the risk for testing feasibility for projects for public benefit (Abrams et al. 2015). These groups have also built and modelled peer-to-peer training capacity and are now beginning to be woven into state and national level government efforts at collaborative NRM.

It would be valuable to have more formal recognition and support from state and federal government agencies for CBRM, such as grant programs for research and development like those emerging from the California Department of Conservation (2021), and taking or sharing the risks to demonstrate feasibility. Such recognition might lead to more formalised efforts at adaptive governance (Anderson and Ostrom 2008). CBRM groups have been masters of communication, peer learning and networking, sharing innovations widely, as well as strong agency partners on the ground.

Interestingly, and unlike in Australian landcare (Lockie 1999), there has been little corporate interest in supporting CBRM in the United States or corporate greenwashing, beyond limited funding through philanthropic foundations of the timber industry.

## Conclusion

This chapter has described CBRM in the United States, a grassroots and increasingly influential phenomenon that is similar to Australia's landcare in some ways. In other ways, however, such as the lack of formal government support and corporate funding, the United States case differs in context, constraints and opportunities. I argue that CBRM groups, particularly in rural communities in the western states, have used community capitals, especially social, cultural, human and political capital, to shore up financial capital and are working to restore natural capital and sustain ecosystem services, often in the wake of reduced investment by formal government institutions. Through their grassroots efforts and networking with various partners, CBRM groups bring significant resources, provide jobs and increase communication in their communities and beyond to regional and national scales, thus contributing to socioecological resilience.

## Acknowledgements

The author would like to thank the people who agreed to interviews for this research and landcare and CBRM participants everywhere.

## References


Abrams J, Davis EJ and Moseley C (2015) 'Community-based organisations and institutional work in the remote rural west', *Review of Policy Research,* 32(6):675–696.

Agee JK (1993) *Fire ecology of Pacific Northwest forests,* Island Press, Washington, DC.

Anderson K and Ostrom E (2008) 'Analysing decentralised resource regimes from a polycentric perspective', *Policy Science,* 41:71–93.

Baker M and Kusel J (2003) *Community forestry in the United States: learning from the past, crafting the future,* Island Press, Washington, DC.

Baker JM (2005) 'Socio-economic characteristics and contributions of the natural resources restoration system in Humboldt County, California', *Ecological Restoration*, 23(1):5–14.

Baker JM and Quinn-Davison LN (2011) 'Jobs and community in Humboldt County, CA', *in* Egan DE, Hjerpe EE and Abrams J (eds) *Human dimensions of ecological restoration,* Island Press, Washington, DC.

Belton L and Jackson-Smith D (2010) 'Factors influencing success among collaborative sage-grouse management groups in the western United States', *Environmental Conservation,* 37(3):250–260.

Bendor TT, Lester W, Livengood A, Davis A and Yonavjak L (2015) 'Estimating the size and impact of the ecological restoration economy', *PLoS ONE,* accessed 10 March 2017. https://doi.org/10.1371/journal.pone.0128339

Braxton-Little J (1998) 'The woods: reclaiming the neighbourhood', *American Forests,* 103(4):12–17.

Braxton-Little J (2010) 'Community advocate', *American Forests,* 15(4):45–46.

Brick P, Snow D and Van De Wetering S (2001) *Across the great divide: explorations in collaborative conservation and the American West,* Island Press, Washington, DC.

Brosius JP, Lowenhaupt Tsing A and Zerner C (1998) 'Representing communities: histories and politics of community-based natural resource management', *Society and Natural Resources,* 11(2):157–168.

California Climate Investments (2021) *2020 profiles: regional forest and fire capacity, Watershed Research and Training Center*, accessed 6 March 2021. http://www.caclimateinvestments.ca.gov/2020-profiles/regional-forestry

California Department of Conservation (2021) *Regional Forestry and Fire Capacity Program*, accessed 6 March 2021. https://www.conservation.ca.gov

Charnley S (2006) 'The Northwest Forest Plan as a model for broad-scale ecosystem management: a social perspective', *Conservation Biology,* 20(2):330–340.

Charnley S, Donoughue EM and Moseley C (2008) 'Forest management policy and community wellbeing in the Pacific Northwest', *Journal of Forestry,* 106(8):440–447.

Charnley S, Sheridan T and Nabhan G (2014) *Stitching the west back together,* Chicago University Press, Chicago.

Cheng T, Fernandez-Giminez M, Fernandez-Gimenez M, Ballard H, Broussard S, Danks C, Daniels SE, McDermott M, Seidl AF and Sturtevant V (2006) *Ford Foundation community-based forestry demonstration program: final research report*, accessed 10 March 2017. https://scholar.google.com/scholar?rlz=1C1GGRV_enDE749SE749&um=1&ie=UTF-8&lr&q=related:mNHUDnQHXv1nJM:scholar.google.com/

Christensen H, Raettig TL and Sommers P (1999) *Northwest Forest Plan: outcomes and lessons learned from the Northwest Economic Adjustment Initiative:* proceedings of a forum; 1997 July 29–30, Portland, OR, General Technical Report, PNW-GTR-484, US Department of Agriculture, Forest Service, Pacific Northwest Research Station, Portland, OR.

Christoffersen N, Harker D, West Lyman M and Wyckoff B (2008) *The status of community forestry in the United States*: *a report of the Community Forestry Consortium to the US Endowment for Forestry and Communities,* accessed 6 March 2021. https://www.usendowment.org/the-status-of-community-based-forestry-in-the-united-states/

Cromley CM (2005) 'Community based forestry goes to Washington', *in* Brunner RD, Steelman TA, Coe-Juell L, Cromley CM, Edwards CM and Tucker DW (eds) in *Adaptive governance: integrating science, policy, and decision making,* Columbia University Press, New York.

Douglas N (2017) *Public, private and tribal lands in Humboldt and Trinity counties* [map data], California Department of Transportation, Humboldt State University GIS and US Geological Survey.

Everett Y (2018) 'A challenge to socio-ecological resilience: community based resource management organisations' perceptions and responses to cannabis cultivation in Northern California', *Humboldt Journal of Social Research,* 40:89–115.

FAC Net (Fire Adapted Communities Network) (2021) *Our story,* accessed 6 March 2021. https://fireadaptednetwork.org/about/our-story/

Flora CB and Flora JL (2008) *Rural communities,* 3rd edn, Westview Press, Boulder, CO.

Formosa M (unpublished) *Learning from a restoration innovator: building community capitals and resilience through the restoration economy* [master's thesis], Humboldt State University, Arcata, CA.

Gilles N (2017) 'Wildfires are essential: The Forest Service embraces a tribal tradition', *Yes! Magazine* April 3, 2017, accessed 6 March 2021. https://www.yesmagazine.org/issue/science/2017/04/03/wildfires-are-essential-the-forest-service-embraces-a-tribal-tradition

Gray G, Enzer M and Kusel J (eds) (2001) *Understanding community-based forest ecosystem management,* Haworth Food & Agricultural Products Press, New York.

Harling W and Tripp B (2014) *Western Klamath restoration partnership: a plan for restoring fire adapted landscapes,* accessed 10 March 2017. http://www.mkwc.org/programs/fire-fuels/policy-and-management/western-klamath-restoration-partnership/

House F (1999) *Totem salmon*, Beacon Press, Boston, MA.

Kimmerer R and Lake F (2001) 'The role of indigenous burning in land management', *Journal of Forestry,* 99(11):36.

Kusel J, Kocher S, London J, Buttolph L and Schuster E (2000) 'Effects of displacement and outsourcing on woods workers and their families', *Society and Natural Resources,* 13(2):115–134.

Kusel J, Cortner H and Lavigne P (2007) 'Institutional analysis in the evaluation of the Northwest Economic Adjustment Initiative', *International Journal of Organisation Theory and Behaviour,* 10(4):476–502.

Lake F (2007) *Traditional ecological knowledge to develop and maintain fire regimes in northwestern California, Klamath-Siskiyou bioregion: management and restoration of culturally significant habitats* [doctoral dissertation], Oregon State University Press, Corvallis, OR.

Lockie S (1999) 'Community movements and corporate images: Landcare in Australia', *Rural Sociology,* 64(2):219–233.

Lurie S and Hibbard M (2008) 'Community-based natural resource management: ideals and realities for Oregon Watershed Councils', *Society and Natural Resources,* 21(6):430–440.

Maier C and Abrams J (2018) 'Navigating social forestry: a street-level perspective on National Forest management in the US Pacific Northwest', *Land Use Policy,* 70:432–441.

Mendoza J (2017) 'In the West, communities pioneer cooperative approach to fighting wildfires', *Christian Science Monitor,* accessed 10 March 2017. https://www.csmonitor.com/Environment/2017/0921/In-the-West-communities-pioneer-cooperative-approach-to-fighting-wildfires

MKWC (Mid Klamath Watershed Council) (2021) *Home page*, accessed 6 March 2021. http://www.mkwc.org/

Montgomery C (2013) 'Institutional environments and arrangements for managing complex aquatic ecosystems in forested landscapes', *Forest Policy and Economics,* 35:50–56.

Moseley C and Reyes YE (2008) 'Forest restoration and forest communities: have local communities benefited from forest service contracting of ecosystem management?', *Environmental Management,* 42:327–343.

Newlander A (2016) 'Restoring groundwater: a vision of a resilient watershed', *Mattole Watershed News,* Summer/Fall, accessed 6 March 2021. https://www.mattole.org/resources/print-newsletters/

Nielson-Pincus M and Moseley C (2013) 'The economic and employment impacts of forest and watershed restoration', *Restoration Ecology*, 21(2):207–214.

NRCS (Natural Resources Conservation Service) (2018) *National Association of Conservation Districts,* accessed 6 March 2021. https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/people/partners/nacd/

Orleans/Somes Bar Fire Safe Council (2012) *Orleans/Somes Bar Community Wildfire Protection Plan,* accessed 6 April 2021. https://www.mkwc.org/resources-fire-forestry

Phillips RH (2006) 'Jobs and income associated with resource and recreation outputs', *in* Charnley S (ed) *Northwest Forest Plan–The first ten years (1994–2003): socioeconomic monitoring results, volume III: rural communities and economies*, USDA Forest Service General Technical Report, PNW-GTR-649.

Putnam RD (2000) *Bowling alone: the collapse and revival of American community,* Simon and Schuster, New York.

Raettig T and Christensen H (1999*) Timber harvesting, processing, and employment in the Northwest Economic Adjustment Initiative region: changes and economic assistance,* USDA Forest Service PNW-GTR-465, accessed 6 March 2021. https://www.fs.usda.gov/treesearch/pubs/2978

Resilience Alliance (2018) *Social-ecological systems,* accessed 6 March 2021. https://www.resalliance.org/social-ecological-systems

Rocha M (2015) *Karuk Department of Natural Resources Strategic Plan for Organizational Development* [PDF], Karuk Department of Natural Resources, accessed 21 May 2022. https://www.karuk.us/images/docs/dnr/Karuk%20DNR_Strategic%20Plan_FINAL_12172015.pdf

Rosenbaum W (2005) *Environmental politics and policy*, CQ Press, Washington, DC.

Rule L (2000) 'Enforcing ecosystem management under the Northwest Forest Plan: the judicial role', *Fordham Environmental Law Review,* 12(1), accessed 6 March 2021. https://ir.lawnet.fordham.edu/elr/vol12/iss1/5/

RVCC (Rural Voices for Conservation Coalition) (2018) *Our vision,* accessed 6 March 2021. http://www.ruralvoicescoalition.org/our-vision

Sanctuary Forest Inc. (2021) *Home page,* accessed 6 March 2021. http://www.sanctuaryforest.org/

Sanctuary Forest Inc. (n.d.) *Mattole Flow Program. Mattole Headwaters Groundwater Management Plan,* accessed 6 March 2021. http://www.sanctuaryforest.org/programs/water-stewardship/groundwater-recharge/

Scavarda M (2017) 'Bringing the water back', *Forest & River News,* Trees Foundation (Winter): 6–8, accessed 6 March 2021. https://drive.google.com/file/d/1SCZL0Z66an2bhyS0E54c3vRUYkapZxNL/view

Skinner CN, Taylor AH and Agee JK (2006) 'Klamath Mountains bioregion', *in* Sugihara NG, Van Wagtendonk JW, Shaffer KE, Fites-Kaufman J and Thode AE (eds) *Fire in California's ecosystems*, University of California Press, Berkeley, CA.

Speece D (2016) *Defending giants: the Redwood wars and the transformation of American environmental politics*, University of Washington Press, Seattle, WA.

Tobin M (2013) *Lay of the land: who owns the west?,* EcoWest website, accessed 1 June 2022. http://ecowest.org/?s=Portion+of+each+state+that+is+federal++land

US Forest Service (1994) *Record of decision for amendments to Forest Service and Bureau of Land Management planning documents within the range of the Northern Spotted Owl, April 1994,* accessed 6 March 2021. https://archive.org/details/recordofdecision08unit

Weber E (2003) *Bringing society back in*, MIT Press, Cambridge, MA.

Weissberg LM, Kusel JP and Rodgers KA (2018) 'From conflict to collaboration: exploring influences on community well-being', *Humboldt Journal of Social Relations,* 40:178–190.

Wondolleck J and Yaffee S (2000) *Making collaboration work: lessons from innovation in natural resource management*, Island Press, Washington, DC.

WRTC (Watershed Research and Training Center) (2021) *Home page*, accessed 6 March 2021. https://thewatershedcenter.com/

Youl R, Marriott S and Nabben T (2006) *Landcare in Australia founded on local action*, Society for International Land Care (SILC) and Rob Youl Consulting Pty Ltd., Victoria.

# CHAPTER 30

# Landcare's potential contribution to the Sustainable Development Goals: a local self-reliance approach to global sustainability

**Lisa Robins**

## Abstract

This chapter maps aspects of the Australian experience of landcare against the United Nations' framework of Sustainable Development Goals to demonstrate its potential efficacy in a global context. The landcare approach, in its contemporary form, is articulated in the Australian Framework for Landcare (2010–2020) as comprising:

- the landcare ethic (a philosophy, influencing the way people live in the landscape while caring for the land)
- the landcare movement founded on stewardship and volunteers (local community action putting the philosophy into practice)
- the landcare model (a range of knowledge generation, sharing and support mechanisms including groups, networks from district to national levels, facilitators and coordinators, government and non-government programs and partnerships).

Landcare is an example of a long-lasting local self-reliance approach that has been flexible, innovative and dynamic enough to survive and, mostly, thrive for over 30 years in an ever-changing, and occasionally hostile, policy environment. The analysis presented in this chapter suggests that the landcare approach, underpinned by supportive policy settings and institutional arrangements, has much to contribute beyond Australia to achieving the Sustainable Development Goals in both developed and developing country contexts.

## Introduction

This chapter applies the lens of landcare in Australia as a local self-reliance approach to managing natural resources to explore the potential role it may play in realising global sustainability as expressed by the United Nations (UN) Sustainable Development Goals (SDGs). In 2015, the UN passed Resolution 70/1, entitled 'Transforming Our World: the 2030 Agenda for Sustainable Development', which sets out an agreed agenda by its member states, including 17 SDGs and 169 targets (UN General Assembly 2015). The so-called '2030 Agenda' recognises 'that eradicating poverty in all its forms and dimensions, including extreme poverty, is the greatest global challenge and an indispensable requirement for sustainable development', and seeks to 'build on the Millennium Development Goals and complete what they did not achieve' (UN General Assembly 2015:1).

Robins (2018) describes the five phases of landcare over more than 30 years from its birth in the mid-1980s (the 'childhood phase') until today (the 'mid-life phase'), and emphasises that it is not a phenomenon that is static, but rather continues to evolve and be shaped over time. The Australian Framework for Landcare (2010–2020) describes landcare's approach in its modern-day incarnation as the sum of the following three elements (AFLRG 2010:1):

- **landcare ethic** – a philosophy, influencing the way people live in the landscape while caring for the land
- **landcare movement** founded on stewardship and volunteers – local community action putting the philosophy into practice
- **landcare model** – a range of knowledge generation, sharing and support mechanisms including groups, networks from district to national levels, facilitators and coordinators, government (Table 30.1) and non-government programs and partnerships.

Without explicitly referencing subsidiarity, the Australian Framework for Landcare 2010–2020 emphasises local community action and responsibility for 'owning' local problems and developing solutions to them. It sees the primary role of government at higher levels being to foster community self-reliance at local levels.

It is important to note that the landcare model became nested within a higher-level regional model for natural resource management (NRM) from mid-2002 when the Australian Government designated 56 regional NRM organisations (Figure 30.1), which span the whole continent and have a community-based management structure (Robins and Dovers 2007a, 2007b; Robins 2018).

Love, as a former National Landcare Facilitator, summarised Landcare's achievements as follows (Love 2021:52):

- provided an essential vehicle to assist a nation to change direction and work towards ecologically sustainable development
- involved more than 5,000 community-based Landcare and related groups currently operating
- harnessed major community in-kind and financial investment through broadscale community participation in sustainable resource management for the long term
- supported intergenerational learning through group corporate knowledge, family knowledge and school activities
- enabled thousands of people across communities since the 1980s to develop their capacities in skills, knowledge and application to progress
- social cohesion and community resilience across regions through incorporating social, economic, environmental and cultural considerations into everyday activities that also assist disaster recovery in farming and pastoral communities.

**Table 30.1** Major Australian Government funding initiatives for landcare-related activities

| Program | Acronym | Objective | Resourcing |
|---|---|---|---|
| National Landcare Program (announced in 1989) | NLP | To promote the uptake of land and water management practices that are ecologically, economically and socially sustainable[a] | $320 million over 10 years[b] (funds from 1992[a]) |
| Natural Heritage Trust[c] (1997–98 to 2001–02) | NHT | To directly address pressing environmental issues whether they be at a local, regional, state or national level | $1.25 billion over 5 years |
| Natural Heritage Trust Extension[c] (2002–03 to 2007–08) | NHT2 | To help restore and conserve Australia's environment and natural resources through biodiversity conservation, sustainable use of natural resources, and community capacity building and institutional change | $1.75 billion over 6 years |
| National Action Plan for Salinity and Water Quality (2000–01 to 2007–08) | NAP | An 'initial step' to achieving major systemic improvements in land and water management in regions highly affected by salinity, or contributing to salinity and water quality problems elsewhere | $1.4 billion over 8 years in 21 priority regions (incl. parts of about 30 NRM regions) |
| Caring for our Country[c] (2008–09 to 2012–13[d]) | CfoC | To achieve an environment that is healthier, better protected, well managed and resilient and that also provides essential ecosystem services in a changing climate, with focus on six national priorities, including community skills, knowledge and engagement[e] | $2.25 billion over 5 years |
| National Landcare Program/me[f] (Phase One)[g] (2014–15 to 2017–18) | NLP1 | Four strategic objectives focused on managing landscapes to sustain long-term economic and social benefits, increasing long-term returns through better management, involving the community and protecting species and natural assets | $1 billion over 4 years |
| National Landcare Program/me (Phase Two)[h] (2018–19 to 2022–23) | NLP2 | A nationwide effort to address problems such as loss of vegetation, soil degradation, the introduction of pest weeds and animals, changes in water quality and flows, and changes in fire regimes | $1 billion over 5 years |

Notes: [a] Commonwealth of Australia (1997a); [b] Hawke (1989); [c] Umbrella initiatives under which the National Landcare Program is the headline program; [d] CfoC was set aside in mid-2013 with the announcement that it 'would be combined with the National Landcare Programme' (Australian Government n.d.-a); [e] Commonwealth of Australia (2013); [f] Australian Government uses both spellings; [g] Australian Government. National Landcare Program Phase One; [h] Australian Government. National Landcare Program Phase Two.

(Adapted from Table 2 in Robins 2008:690).

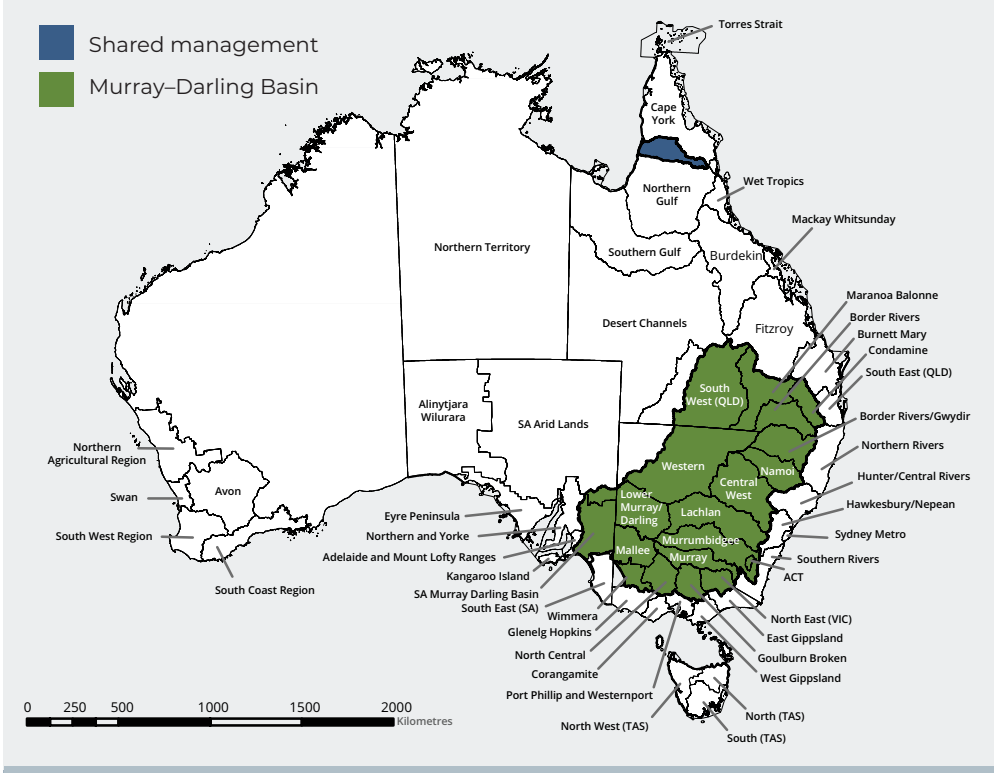



**Figure 30.1** Australia's 56 natural resource management regions, formalised under the Natural Heritage Trust Extension

Source: Robins L and Dovers S (2007) 'NRM regions in Australia: the "haves" and the "have nots"', *Geographical Research*, 45(3):274.

These considerations positioned Australia as a world leader of a national community-based process that has successfully shifted attitudes and practices at the local level, where the application of change needs to take place. Consequently, the section that follows uses the UN's SDGs framework to demonstrate the potential efficacy of landcare in a global context. The paper then concludes with reflections on the potential utility of the landcare approach as a local self-reliance approach in realising global sustainability.

## Mapping landcare against the UN's Sustainable Development Goals

Landcare in Australia has a long and diverse history spanning more than three decades. As such, mapping its rich narrative against the SDGs would require an entire book. Instead, the objective here is to present a small sample of that experience as a window into its potential for contributing to the achievement of the SDGs in other contexts. For some SDGs, an illustrative example of a particular initiative is provided or a description of the efforts of a specific Landcare group. This mapping exercise is confined to 12 of the 17 SDGs. Five SDGs have been excluded on the basis that the contribution made by landcare is only minor, as well as being secondary to its main purpose, namely: SDG 7 (Affordable and clean energy), SDG 8 (Decent work and economic growth), SDG 10 (Reduced inequalities), SDG 12 (Responsible consumption and production) and SDG 16 (Peace, justice and strong institutions).


### SDG 1: No Poverty

The first SDG is 'End poverty in all its forms everywhere' (UN General Assembly 2015:14). As a developed nation, Australia is not generally perceived as having domestic poverty issues. However, like the United States and Canada, significant disparities in health and prosperity exist in Australia between its Indigenous and non-Indigenous people. Life expectancy for Indigenous people is still at least 10 years less than for non-Indigenous people (Wright and Lewis 2017), and child malnutrition is 1.7 times higher than for the total population. The Close the Gap Campaign concludes that:

> (a) country as prosperous and capable as Australia should not still be struggling to overcome these disparities for Aboriginal and Torres Strait Islander people who constitute only 3 per cent of the population (Wright and Lewis 2017:13).

In 2015, the Senate Environment and Communications References Committee recommended that:

> the Department of the Environment undertake consultation with Indigenous groups active in natural resource management to ensure that Indigenous views are incorporated in any modifications of the National Landcare Programme (Commonwealth of Australia 2015, Rec. No. 15).

The Australian Government (n.d.-b) has produced a guideline on 'Indigenous participation in the planning and delivery of National Landcare Programme investment', which directs regional NRM organisations to involve Indigenous people in the planning and delivery of the program's investments with a view to ensuring 'that Indigenous engagement and participation features strongly as an investment, project and employment outcome for the NLP' (Australian Government n.d.-b:1). Indeed, local Indigenous communities have long been a key constituent of many of Australia's 56 designated regional NRM organisations (Figure 30.1), especially those with rangelands. Northern Queensland's (Burdekin) Dry Tropics region, for example, formed a Traditional Owner Management Group more than 10 years ago, with representation from 15 Indigenous groups. The group oversees a grants program that aims to 'maximise skills and opportunities for Traditional Owners to work on country' (NQ Dry Tropics 2015).


### SDG 2: Zero Hunger

The second SDG is 'End hunger, achieve food security and improved nutrition and promote sustainable agriculture' (UN General Assembly 2015:14). In 2009, Australian farms supplied 93% of food consumed domestically, and exported 60% of total produce, which helped to 'feed some 40 million people outside Australia each day' (ABS 2012). Landcare has played a key part in improving the sustainability and security of Australia's food production systems. One of the National Landcare Program's intermediate outcomes is defined as:

> by 2018, NLP investments have made a demonstrable contribution towards increasing the adoption of sustainable farming and fishing management practices with the intent to improve long-term productivity through improvements to the resource base (Commonwealth of Australia 2015:68).

A substantive body of evidence demonstrates that Landcare has changed landholder management practices, according to Curtis et al. (2008:16), including national surveys showing higher levels of adoption of sustainable farming practices by Landcare

participants. For example, the authors (Curtis et al. 2008:16, citing Alexander et al. 2000) indicate that Landcare group participants were 88% more likely to exclude stock from agricultural areas affected by land degradation and 77% more likely to undertake formal monitoring of pasture or vegetation conditions. A case study on 'no till' or conservation farming in broadacre cropping systems throughout southern Australia published by the National Landcare Advisory Committee in its 2016 report on the role of Landcare in building adaptive capacity and resilience says that the uptake of no till farming systems has resulted in improvements for farmers in terms of drought resilience, productivity and crop/soil/water efficiency, seeding efficiency, groundcover and soil health. The authors state that:

> (t)he use of the farmer driven group extension model which allowed the rapid adoption of No Till systems across southern Australia has increased the capacity of Landcare groups to take ownership of, and action towards, more complex issues, to develop partnerships with appropriate stakeholders to identify solutions, source funding and extend outcomes to farmer groups (Hamparsum et al. 2016).


### SDG 3: Good Health and Well-being

The third SDG is 'Ensure healthy lives and promote well-being for all at all ages' (UN General Assembly 2015:14). Landcare involves 'people of all ages from school children to retirees, from many cultures and across all environments, including agricultural, Indigenous, urban and coastal lands' (AFLRG 2010:2). In doing so, it not only makes a significant contribution to the health and wellbeing of those who engage directly as landcarers, but also to the broader community who benefit from the fruits of their labours (for example, urban tree planting that provides dust suppression, shade, shelter and amenity values). A report on the multiple benefits of landcare and NRM (Ferraro 2013:69) found that involvement in landcare, and NRM more generally, provided six categories of benefits, of which one is 'social – community health and wellbeing' comprising three subcategories (contact with natural environment, social networks, and physical and mental health benefits).

A 2015 hearing of the Senate Environment and Communications References Committee on the National Landcare Program stated in its conclusions and recommendations that it 'recognises the social benefits of Landcare … [including that] its contribution to individual and community wellbeing is immense' (Commonwealth of Australia 2015:125). The committee received evidence that funding reductions were threatening the wider benefits of landcare in rural and regional communities, which were characterised as 'the provision of employment, building social cohesion and capacity, and health and wellbeing of individuals and the community' (Commonwealth of Australia 2015:126). With respect to the social outcomes associated with the National Landcare Program, the same report stated that 'the widely observed positive effects on society are harder to demonstrate in a quantitative way and are not included in reporting mechanisms' (Commonwealth of Australia 2015:91). To this end, one informant, commenting on the broader benefits of Indigenous engagement in NRM, stated that '(t)here are flow on effects from the [Indigenous] ranger engagement, such as community pride and self-pride, economic independence, physical and environmental health' (Commonwealth of Australia 2015:122).

In the context of Indigenous health, research by Burgess et al. (2009) concluded that:

> (g)reater Indigenous participation in caring for country activities is associated with significantly better health … [and] that investment in caring for country may be a means to foster sustainable economic development and gains for both ecological and Indigenous peoples' health (Burgess et al. (2009:567).

Ferraro (2013) cites a fire recovery project conducted by the Upper Goulburn Landcare Network and Goulburn Broken Catchment Management Authority, which contributed to community health and wellbeing through disaster recovery efforts, and through individuals having 'meaningful contact with the environment and increased social connectedness and participation in community activities (including from urban dwellers and those not previously involved in Landcare or NRM)' (Ferraro 2013:i). University of Canberra publishes reports annually based on its Regional Wellbeing Surveys, the first of which was conducted in 2013, including challenges for farming challenges and farmer wellbeing (University of Canberra 2022).


### SDG 4: Quality Education

The fourth SDG is 'Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all' (UN General Assembly 2015:14). A report on the multiple benefits of landcare and NRM states that:

> (t)he report makes a compelling case for a range of positive educational outcomes for individuals (for example, continuous learning and skill development) through to the broader community (for example, spreading awareness and delivering innovation) (Ferraro 2013:i).

In its conclusions and recommendations, the 2015 hearing of the Senate Environment and Communications References Committee on the National Landcare Program gives emphasis to the following submission: 'Landcare's enduring popularity is due to the embedded philosophy of embracing local issues, empowering communities with education extension and decision support tools that deliver practical solutions' (Commonwealth of Australia 2015:125). Junior Landcare is one exemplar of quality education; it has been managed by Landcare Australia Limited (Landcare Australia) for almost 20 years and has provided an enduring platform for 'encouraging young people to play an active role in ensuring the safe future of their environment' (LAL 2018). Landcare Australia is a private company formed by the Australian Government 'for the purpose of promoting Landcare to the wider community, and attracting sponsorship from the private sector for Landcare activities' (Lockie and Vanclay 1997:3). Some Landcare groups have adopted Junior Landcare groups, including engaging them in their activities (Love 2012:33). Through Landcare Australia, major companies have sponsored Junior Landcare grants to Australian schools and youth groups since 2003 (Youl et al. 2006).

Junior Landcare enables children to work on a variety of environmental projects with their local Landcare group, and may be integrated into school curriculums drawing from educational resources developed to support teachers and their students. There is a primary school-level series of 'how to' guides on undertaking Junior Landcare projects in and around the school produced in collaboration with the Primary Industries Education Foundation ('Creating a food garden', 'Building a worm farm', 'Creating a frog pond', 'Enhancing and restoring habitats' and 'Growing healthy plants using natural pesticides') (LAL 2018). More than 1,000 Junior Landcare schools across Australia grow and consume their own vegetables (Junior Landcare 2014). The curriculum resources developed to support Junior Landcare are consistent with the Australian Curriculum, which sets national standards to improve learning outcomes. The Australian Curriculum has three cross-curriculum priorities, of which 'Sustainability' is one, that aims for students to 'develop the knowledge, skills, values and world views necessary to contribute to more sustainable patterns of living' (ACARA 2018).


### SDG 5: Gender Equality

The fifth SDG is 'Achieve gender equality and empower all women and girls' (UN General Assembly 2015:14). The Australian Human Rights Commission (2014) reports that 'women in Australia have made significant strides towards equality with men' in recent decades, but that 'women and girls continue to experience inequality and discrimination in many important parts of their lives, which can limit the choices and opportunities available to them' (Australian Human Rights Commission 2014:2). Indeed, Australia has fallen from 15th place in the World Economic Forum's Global Gender Gap Index Ranking in 2006 to 50th place in 2021 (WEF 2021:10). Sheridan and Haslam McKenzie (2009) emphasise that '(w)omen's representation in the formal leadership roles within agricultural organisations and selected regional bodies remains disproportionately low, and clustered in those organisations with a local focus, poorly resourced and with little status' (WEF 2021:x), despite the likely contribution of women in agriculture and rural communities at 'over 49 per cent of the total value of the output that might be attributed to farming communities' (WEF 2021:iii). This figure aligns with a companion report 10 years prior, which reported that '(w)omen contribute 48% of … real farm income' (Elix and Lambert 1998:2). For Landcare specifically, early research argued that those groups in which women were active participants were more effective and achieving more tangible results (Campbell and Siepen 1994). They advocated for:

> recognition and support for greater involvement of women in Landcare and the general quest for sustainable systems of land use and management in Australia, not just on the grounds of equity (which are compelling), but because society has so much to gain in sheer productivity terms if everyone has equal opportunity, credibility and legitimacy as players in this scene (Campbell and Siepen 1994:128).

In 1997, the Landcare Participation Project was initiated by the Australian Government in response to research findings that women (and people from non-English-speaking backgrounds) were not well represented in Landcare (Commonwealth of Australia 1997b). It found that 'women's participation in landcare practice was not in question but that the problem was with their representation in more formal Landcare activities' (Commonwealth of Australia 1997b:103). Around the same time, Lockie (1997) concluded:

> (t)hat Landcare groups have achieved a level of participation amongst women unseen in other farm related organisations, is something about which there can be little doubt … (but that) male hegemony is still, nevertheless, a major force in the structuring of social relations (Lockie 1997: 80).

In the 20 years since, Landcare has waxed and waned in its efforts to use existing measures or deploy gender-specific ones at different levels to improve gender equality, such as training and professional development opportunities, women's workshops (for example, Merchant 2013), event sponsorship (for example, national and state Landcare conferences), gender-based data collection and research projects, recognition awards (for example, Landcare Awards), appointment to leadership roles in formal landcare-related administrative structures, and support for rural women's networks. The formal evidence base for assessing progress in this arena is slim, and the subject of less attention than in the heydays of the Decade of Landcare. While more recent reports might mention gender issues, they do not shed light on matters beyond generalised statements like that a social benefit of landcare is 'the increased recognition of women in rural communities' (Ferraro 2013:ii).

Chapter 22 by Jayne Curnow and Mary Johnson referred to landcare as an 'accidental equaliser' in gender equity terms, with high profile women leaders in Victoria in the form of the state premier, Joan Kirner, and the president of the Victorian Farmers' Federation, Heather Mitchell-Carmichael. Like Lockie (1997), they highlight Landcare as standing out within Australian agriculture for the relatively equal status accorded to women, but lament the persistence of gendered social relations in rural communities.


### SDG 6: Clean Water and Sanitation

The sixth SDG is 'Ensure availability and sustainable management of water and sanitation for all' (UN General Assembly 2015:14). In Australia, many rural towns and farm properties source drinking water from local waterways and groundwater aquifers, which may have high salinity, bacterial contamination, herbicides, dissolved nutrients and more. Catastrophic events sometimes occur that kill in-stream life and make waters unfit for drinking like toxic blue-green algal blooms (MDBA 2018a), salt slugs (Telfer et al. 2012) and blackwater (oxygen depletion in the water column from returning floodwater containing elevated levels of dissolved organic carbon) (MDBA 2018b). The focus of landcare has been as much about water as about land – Landcare groups have, among other things, battered gullies to stop soil leaving the land and entering streams, fenced and replanted riparian lands, installed off-stream troughs for stock watering, replaced large woody debris to recreate fish habitat, and planted vast tracts of land to tackle rising saline groundwaters and run-off.

**The focus of landcare has been as much about water as about land – Landcare groups have ... battered gullies to stop soil leaving the land and entering streams, fenced and replanted riparian lands, installed off-stream troughs for stock watering, replaced large woody debris to recreate fish habitat, and planted vast tracts of land to tackle rising saline groundwaters and runoff.**

Tackling land and water salinity has been a focal point of landcare from the outset. In 2000, the first national assessment of dryland salinity estimated that nearly 5.7 million hectares was at risk of or affected by dryland salinity, with the potential for a threefold increase by 2050 (NLWRA 2001). Community monitoring programs like Saltwatch, Watertable Watch and Waterwatch were early examples of citizen science, where data collected by local communities could inform public awareness and feed into official databases and maps. Youl et al. (2006) cites the Goulburn Valley in northern Victoria, where 32 Landcare groups (1,200 farmers) 'maintain a computerised watertable mapping service, distributing monthly maps showing regional levels and potential salinity problems' (Youl et al. 2006:13). An oral history of Wagga Wagga Urban Landcare Group describes its incorporation in July 1995 in response to 'the issues of dryland salinity' that was 'creeping through sections of Wagga' resulting in 'actual destruction of bricks and mortar' (nghenvironmental 2013:4). At the time, the group focused its efforts on 'community education, tree planting, removal of introduced woody weeds, and raising awareness of salinity in the region' (nghenvironmental 2013:4).


### SDG 9: Industry, Innovation and Infrastructure

The ninth SDG is 'Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation' (UN General Assembly 2015:14). Landcare has been a significant contributor in terms of both building resilient infrastructure and as an incubator of innovation. While landcarers have put in place built infrastructure like off-stream troughs for watering stock, concrete chutes for mitigating soil erosion and evaporation basins for managing saline groundwater, the green infrastructure that has resulted from their collective tree planting and ecosystem restoration efforts is arguably their most valuable, extensive and enduring contribution.

Built and green infrastructures are both necessary to sustaining high-quality lives and lifestyles (Hull 2011). Green infrastructure, according to Angelstam et al. (2017:301), 'emphasizes the functional interconnection of sufficient amounts of natural and semi-natural ecosystems where patches of green space, protected areas, parks and recreation sites are constituent parts'.

Landcare, according to the Australian Framework for Landcare (2010–2020), has:

> changed the face of Australia's rural and urban landscapes. It has planted millions of trees, shrubs and grasses; repaired riparian zones and restored water quality by reducing erosion and fencing out stock from riverbanks; protected remnants of native vegetation; regenerated areas to provide habitat for native wildlife; improved ground cover, grazing methods and soil management; and rehabilitated coastal dunes and recreational areas (AFLRG 2010:2).

By way of example, Ferraro (2013:39) outlines the case of the Web of Trees farm forestry project (by the Otway Agroforestry Network, part of the Upper Barwon Landcare Network), which increased forest cover in the Yan Gurt Catchment from 6% to 21% of total area, involving tree planting on cleared farmland by over 20 families.

Turning to innovation, Landcare Australia argued in a submission to the House of Representatives Standing Committee on Science and Innovation Inquiry into 'coordination of the science to combat the nation's salinity problem' that 'Landcare improves access to technology by providing a structure in which groups can work together with scientists and by providing communication channels and networks' (Scarsbrick 2003:2). Youl et al. (2006:12) singles out innovative nursery and tree planting equipment that had emerged over a 20-year period, 'often from workshops of farmers and other landcarers, including tractor-drawn and manual tree planters and seeders; guards; weed control techniques; and protective fencing'. With reference to the 2008 Victorian Landcare Forum, Ferraro (2013:38) states that 'participation in and the philosophy of Landcare can lead to innovation and the adoption of new technologies in order to increase production and enhance the sustainability of our actions', and that Landcare's 'ability to foster innovation' underpins the broader than anticipated set of economic outcomes it has delivered over the long-term (Ferraro 2013:57). New technology and equipment have also arisen from Landcare's community monitoring activities (Ferraro 2013:16).


### SDG 11: Sustainable Cities and Communities

The 11th SDG is 'Make cities and human settlements inclusive, safe, resilient and sustainable' (UN General Assembly 2015:14). While the initial focus of Landcare was rural landscapes, 'many urban communities wanted to form groups to restore local publicly owned bushland remnants with environmental and

recreational values' (Youl et al. 2006:5). Love (2012) described community groups of interest in urban and coastal neighbourhoods (such as Friends of ..., Coastcare, Dunecare and Waterwatch) 'working on public recreational, waterway and coastal areas addressing weed and feral animal management, landscape restoration, public access and aesthetics' (Youl et al. 2006:26).

Urban landcare across Australia takes many forms. For Victoria's Wodonga Urban Landcare Network, urban landcare means:

- People caring for our parks and reserves
- Creeklines and bush reserves free of willows, blackberries and other exotic plants
- Corridors of native bush with insects, reptiles, birds, mammals - the whole web
- Creeks and rivers with everything waterlife needs to live in
- Places saved and places made for food and homes for native life (habitat!)
- Fire aware revegetation of bush corridors
- Everyone knowing what 'natural' looks like, why we need it, and how to help! (Wodonga Urban Landcare Network 2022).

For the rural town of Bellingen in New South Wales, its Urban Landcare Group established in 1995 focuses on rehabilitating its waterways (Bellingen Urban Landcare 2018). Other urban Landcare groups work at much bigger scales, like Bulimba Creek Catchment Coordinating Committee, covering 10% of metropolitan Brisbane, which planted a quarter of a million trees over a period of decade and involved more than 5,000 people each year in its programs, including Waterwatch and schools education (Youl et al. 2006).

Collectively, urban Landcare groups have played an important role in raising community awareness and engagement and in improving the sustainability of many towns and cities across Australia. However, there has been and remains an urban–rural tension between competing interests for what is perceived as a finite amount of (mostly government) resources. Funds channelled to urban interests have been perceived by some as being taken away from rural landholders who have a more legitimate need for funding support to tackle serious environmental degradation (and improve agricultural productivity). To some degree, urban dwellers were seen as co-opting a rural agricultural program, while their rapid proliferation threatened to overrun the predominance of their rural cousins. In Victoria, for example, the number of rural Landcare groups (approximately 800) in 2006 equalled that of urban groups (approximately 500 conservation groups plus around 300 community associations involved in Coastcare projects) (Youl et al. 2006:5). This urban–rural tension has bearing on sustaining a cohesive and functional nationwide Landcare community, and needs to be adequately accounted for in policy settings and institutional arrangements.

**Urban Landcare groups have played an important role in raising community awareness and engagement and in improving the sustainability of many towns and cities across Australia.**


### SDG 13: Climate Action

The 13th SDG is 'Take urgent action to combat climate change and its impacts', including 'Acknowledging that the United Nations Framework Convention on Climate Change is the primary international, intergovernmental forum for negotiating the global response to climate change' (UN General Assembly 2015:14). Until recently, climate action has been on the back foot in Australia. In comparison, the near 30-year-old Statement on the Environment speech by the then prime minister, The Hon. Bob Hawke (leader of the Australian Labor Party), in which the Decade of Landcare was launched, is highly progressive:

> Environmental problems today, more than ever, are global. In just over 200 years since the Industrial Revolution, human activity has significantly increased the earth's temperature, threatening the onset of the greenhouse effect … We will be taking the lead in developing international conventions on greenhouse gas emissions … Consistent with these international efforts, Australia will be developing a national strategy on greenhouse emissions … I have put greenhouse issues on the agenda for the first meeting of my Science Council (Hawke 1989).

Love (2012:52) argues that:

> Landcare has enabled thousands of people across communities since the 1980s to develop their capacities in skills, knowledge and application to progress: [*inter alia*] an understanding of the changes required to reduce greenhouse gas emissions, manage climate change adaptability and water quality and availability while maintaining food and fibre security.

Carbon farming is an informative example of what landcare might contribute to climate action. Through Landcare Australia's Landcare CarbonSMART program, landholders have a financial incentive to maintain (eligible) vegetation on their land, which is 'achieved by calculating the amount of carbon absorbed by the vegetation and selling the carbon to individuals and businesses to help them take responsibility for their carbon emissions' (LAL 2017). The initiative is supported by big businesses like Westpac, Holden, Leighton Holdings and Freehills, together with Landcare Australia's celebrity ambassadors (LAL 2017).

In a similar vein, Landcare groups (and networks) have linked with the Australian Government's Carbon Farming Initiative, which is 'a voluntary carbon offsets scheme that provides economic rewards to farmers and landholders who take steps to reduce greenhouse gas emissions' (DCCEE 2012). Carbon credits may be earned from reducing livestock emissions, increasing efficiency of fertiliser use, enhancing carbon in agricultural soil, and storing carbon through revegetation and reforestation. By way of example, Holbrook Landcare Network in southern New South Wales has a 'Carbon Farming and your business' project that has been undertaking whole-farm greenhouse gas modelling in order to assess and reduce the carbon footprint of individual farms.

The network has modelled four virtual farms (representative of the region) and audited eight real-farm case studies for their greenhouse gas profile, with the aim of:

> creat(ing) local awareness of the various sources of GHG [greenhouse gas] emissions on farms and look(ing) at the ways landholders in the Holbrook region can reduce or offset their GHG emissions (Holbrook Landcare Network n.d.:1).


### SDG 14: Life Below Water

The 14th SDG is 'Conserve and sustainably use the oceans, seas and marine resources for sustainable development' (UN General Assembly 2015:14). The condition of coastal and marine environments is a focal point in Australia given that 85% of the population live within 50 km of the sea. Indeed, only a third of Australia's 56 NRM regions (Figure 30.1) are without a coastal border. The early days of Landcare focused mostly on rural environments and agricultural production, but did not exclude coastal and marine settings. These environments featured more prominently in the establishment of a dedicated Coastcare program in 1995 (administered under the umbrella of the National Landcare Program, and delivered by Landcare Australia), with the aim of engaging local communities in coastal restoration and protection (Love 2012:24). Coastcare was one of four program streams under the Natural Heritage Trust (together with Landcare, Bushcare and Rivercare), with 'aquatic ecosystems' and 'protected areas' identified as two out of 10 broader-scale priority areas (Love 2012:38). The advent of Caring for Our Country (Table 30.1) saw 'coastal environments and critical aquatic habitats' specified as one of six national priority areas (Love 2012:47). Headline achievements identified in a five-year report on the first stage of Caring for Our Country cited 'improvements in the Great Barrier Reef's water quality [and] engagement of over 4,500 community groups to protect, restore and conserve coastal and critical aquatic habitats' (Commonwealth of Australia 2015:41).


### SDG 15: Life on Land

The 15th SDG is 'Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss' (UN General Assembly 2015:14). The Australian State of the Environment report 2016 (Commonwealth of Australia 2017; DEE 2018) is described by the Environment Institute of Australia and New Zealand, Australia's leading group of environmental practitioners, as painting 'a "sobering picture" of continuing deterioration in the Australian environment' (EIANZ 2017:1). Land degradation was the initial primary focus of Landcare, with increasing attention given to biodiversity loss marked by the launch of Bushcare under the Natural Heritage Trust. At Landcare's launch in 1989, the then prime minister declared that:

> None of Australia's environmental problems is more serious than the soil degradation in this region and over nearly two-thirds of our continent's arable land. Accordingly, we are declaring next year the Year of Landcare it will be the first year in a Decade of Landcare that will provide as never before a focus for protecting the most fundamental ingredient both of our natural environment and of our agricultural prosperity our soil (Hawke 1989).

A few years later, the preamble to the Natural Heritage Trust legislation stated '(t)here is a national crisis in land and water degradation and in the loss of biodiversity' (Commonwealth of Australia 2015:9).

An assessment by Love (2012) of Landcare's achievements states that it has:

> enabled thousands of people across communities since the 1980s to develop their capacities in skills, knowledge and application to progress:
> - the repair of land degradation on private and public land across the country including soil erosion, water quality and ecological decline
> - the prevention of further degradation to the natural resource base (Love 2012:52).

**The story of Landcare is one of partnerships.**

According to Curtis et al. (2014):

> (t)here is credible evidence that participation in Landcare activities, including meetings, workshops, field days, trials, property and catchment planning is a precursor to the accomplishment of on-ground work expected to lead to improved environmental condition (Curtis et al. 2014:185).

Wilson (2004) argues that 'Landcare's innovative approach of mutual farm visits, and its emphasis on the demonstration of "best practice", has led to both an increased awareness of land degradation problems and the creation of grassroots "information networks"' (Wilson (2004:461). A comparison of Landcare and non-Landcare participants found that landcarers had 'significantly higher levels of knowledge of land and water degradation processes and sustainable farming practices recommended mitigating or preventing the degradation of natural resources' (Ferraro 2013:16, citing Curtis 2003).


### SDG 17: Partnerships for the Goals

The 17th SDG is 'Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development' (UN General Assembly 2015:14). The story of Landcare is one of partnerships. Firstly, in the mid-1980s between farmers cooperating across boundaries, which became elevated to a partnership and pact between the National Farmers' Federation and the Australian Conservation Foundation, and the uptake of their proposal by the Australian Government at the time (Robins 2018). At the time of the announcement of the Decade of Landcare, the government added another partnership to the mix in form of Landcare Australia, with its mandate of promoting Landcare and seeking private sector sponsors. Since then, Landcare has built many partnerships for sustainable development both horizontally (within levels, like collaborations across Landcare groups or individual Landcare groups working with local businesses) and vertically (between levels, like collaborations across tiers of government). According to Victoria's Department of Environment, Land, Water and Planning, Landcare is 'a partnership between production and conservation, with whole communities caring for the land – local councils, conservation groups, schools and interested individuals' (DELWP 2018). A 2012 review of Caring for Our Country gave emphasis to partnerships stating: 'It is vital that our society achieves a sustainable relationship with the Australian environment. This can only be done through partnering at all levels' (Munday 2017:223). Munday (2012) offers an alternative vision than that presented in Australian Framework for Landcare, namely 'a partnership between the community, government and industry that leads the world in continuous improvement of the condition of our natural environment'.

One partnership that was not envisaged from the onset was Landcare networks, which now form an important tier of NRM governance. Curtis et al. (2014:186) reports that 56% of all Landcare-type groups in Victoria were part of a larger Landcare network in 2009, and 'there was evidence that these networks substantially enhanced the capacity of groups to engage other partners … and increase the amount of work implemented by groups'. The authors also reported that 'networks of groups typically engaged more landholders

and volunteers, developed partnerships with other organisations, operated across larger areas, managed larger budgets, and accomplished more on-ground work across a wider range of topics' (Curtis et al. 2014:186, citing Curtis and Sample 2010). There now exists a National Landcare Network, formed in 2011, to 'foster a cohesive and cooperative forum to collaborate, support, advocate for and add value to Landcare and other community, volunteer natural resource management groups; foster strategic partnerships; celebrate Landcare achievements; represent community-based Landcare at the national level; and speak as the national voice in the development of Landcare and broader natural resource management policy' (Love 2012:50). Similar networks exist across regional NRM organisations like NRM Regions Australia – 'the representative group of the National NRM Chairs' Forum – where chairs from Australia's 56 regional NRM bodies convene to build networks, share information and receive briefings on strategic direction for NRM policies and programs' (NRM Regions Australia 2018) – and the Rangeland NRM Alliance, which comprises 15 regional NRM organisations.

## Conclusion

This paper has focused on 12 of the 17 SDGs in mapping aspects of Australia's Landcare experience. Each offers a window into the richness and diversity of how Landcare has unfolded across the nation over a period of more than three decades. These SDG-framed vignettes demonstrate the versatility of the landcare approach across issues, landscapes and communities, and its resilience in the face of an ever-changing operating environment. Despite the challenges, Landcare has made and continues to make a significant contribution to achieving the SDGs in Australia, and has provided a blueprint that has been taken up and adapted in other country contexts like the Philippines, Iceland and New Zealand.

Love (2012:51) concluded that 'Landcare, an approach consisting of an ethic, movement and model, has been instrumental in achieving broadscale community involvement and improved systems of sustainable resource use and management across Australia', and that '(a)chievements directly attributable to Landcare are profound' (Love 2012:52). She emphasised that both the landcare ethic and the landcare movement have been 'enduring' compared to the landcare model, which has 'waxed and waned' (Love 2012:53). Robins (2018) cautioned that the landcare story is not one of outright success or failure, venturing 'that it has been thwarted by misguided policy settings and associated institutional arrangements, which has undermined realisation of its full potential'. The evidence suggests that landcare could have been (and could still be) much more successful in Australia with better policy settings and institutional arrangements (Robins and Kanowski 2011; Robins 2018).

Munday (2012), at a national-level Landcare conference, reflected:

> Landcare commenced with a big bang. It has served Australia well for over two decades during which it has been admired and envied, loved and abused. It has a level of recognition that many commercial and organisational brands would kill for.

If Landcare is to provide a useful local self-reliance approach in realising global sustainability, and in achieving the SDGs in particular, attention in other country contexts will need to extend beyond the many success stories of individual groups to considering the status of, and how to build and sustain, the necessary supportive policy settings and institutional arrangements.

# References


ABS (Australian Bureau of Statistics) (2012) *4102.0 – Australian Social Trends, Dec 2012*, accessed 17 December 2018. http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4102.0Main+Features10Dec+2012#MEN

ACARA (Australian Curriculum, Assessment and Reporting Authority) (2018) *Sustainability,* accessed 17 December 2018. https://www.australiancurriculum.edu.au/f-10-curriculum/cross-curriculum-priorities/sustainability/

AFLRG (Australian Framework for Landcare Reference Group) (2010) *Australian Framework for Landcare*, The Australian Landcare Council Secretariat, Department of Agriculture, Fisheries and Forestry, Canberra.

Angelstam P, Khaulyak O, Yamelynets T, Mozgeris G, Naumov V, Chmielewski TJ, Elbakidze M, Manton M, Prots B and Valasiuk S (2017) 'Green infrastructure development at European Union's eastern border: effects of road infrastructure and forest habitat loss', *Journal of Environmental Management,* 193:300–311.

Australian Government (n.d.-b) *Indigenous participation in the planning and delivery of National Landcare Programme investment*, National Landcare Program, Canberra.

Australian Government (n.d.-a) *Previous programmes*, accessed 18 December 2018. http://www.nrm.gov.au/news-and-resources/resources/previous-programmes

Australian Human Rights Commission (2014) *Face the facts: gender equality 2014*, Australian Human Rights Commission, Sydney.

Bellingen Urban Landcare (2018) *Landcare, community and environmental education*, accessed 17 December 2018. https://www.bellingenurbanlandcare.org.au

Burgess CP, Johnston FH, Berry HL, McDonnell J, Yibarbuk D, Gunabarra C, Mileran A and Bailie RS (2009) 'Healthy country, healthy people: the relationship between Indigenous health status and "Caring for country"', *Medical Journal of Australia,* 190(10):567–572.

Campbell CA and Siepen G (1994) *Landcare: communities shaping the land and the future,* Allen & Unwin, Sydney.

Commonwealth of Australia (1997a) *Evaluation report on the Decade of Landcare Plan: national overview,* The Standing Committee on Agriculture and Resource Management and the Agriculture and Resource Management Council of Australia and New Zealand, Canberra.

Commonwealth of Australia (1997b) *More than a question of numbers: working with women and people from non-English speaking backgrounds towards total catchment participation*, a report of the Landcare Participation Project, Department of Primary Industries and Energy, Canberra.

Commonwealth of Australia (2013) *Caring for our Country 2008–2013 achievements report: synthesis* [PDF], independent summary to Caring for our Country, accessed 17 December 2018. http://www.nrm.gov.au/system/files/resources/96c5fc3f-87d7-4fd4-bce2-52314e5562a7/files/achieve-report-synthesis.pdf

Commonwealth of Australia (2015) *National Landcare Program*, The Senate Environment and Communications References Committee, Australian Government, Canberra.

Commonwealth of Australia (2017) *Australia State of the Environment Report 2016: inland water state and trends at a glance,* accessed 17 December 2018. https://soe.environment.gov.au/frameworks/state-and-trends

Curtis A, Lucas D, Nurse M and Skeen M (2008) *Achieving NRM outcomes through voluntary action: lessons from Landcare, discussion paper,* Victorian Government Department of Sustainability and Environment, Melbourne.

Curtis A, Ross H, Marshall GR, Baldwin C, Cavaye J, Freeman C, Carr A and Syme GJ (2014) 'The great experiment with devolved NRM governance: lessons from community engagement in Australia and New Zealand since the 1980s', *Australasian Journal of Environmental Management,* 21(2):175–199.

DCCEE (Department of Climate Change and Energy Efficiency) (2012) *An overview of the Carbon Farming Initiative,* Australian Government, Canberra.

DEE (Department of Environment and Energy) (2018) *State of the Environment (SoE) reporting*, accessed 18 December 2018. http://www.environment.gov.au/science/soe

DELWP (Department of Environment, Land, Water and Planning) (2018) *Landcare*, Department of Environment, Land, Water and Planning, Victoria.

EIANZ (Environment Institute of Australia and New Zealand) (2017) *2016 state of the environment report: a sobering document*, accessed 17 December 2018. https://www.eianz.org/eianznews/2016-state-of-the-environment-report-a-sobering-document

Elix J and Lambert J (1998) *Missed opportunities: harnessing the potential of women in Australian agriculture, volume 1: social survey and analysis,* Rural Industries R&D Corporation and Department of Primary Industries and Energy, Canberra.

Ferraro T (2013) *Multiple benefits of Landcare and natural resource management: final report*, Australian Landcare Council, GHD, Sydney.

Hamparsum J, O'Neil C and Walker D (2016) *Landcare's role in building adaptive capacity and resilience,* prepared by the 2016 National Landcare Advisory Committee, Department of Agriculture and Water Resources, Canberra.

Hawke RJL The Hon. (Prime Minister of Australia) (1989) *Speech by the Prime Minister launch of statement on the environment Wentworth, NSW 20 July 1989*, accessed 17 December 2018. http://pmtranscripts.pmc.gov.au/release/transcript-7687

Holbrook Landcare Network (n.d.) *#01 Whole-farm greenhouse gas modelling* [PDF], on-farm greenhouse gas emissions factsheet series, Carbon farming and your business project, Holbrook Landcare Network, Albury NSW, accessed 17 December 2018. https://holbrooklandcare.org.au/wp-content/uploads/2020/04/1.-Whole-farm-GHG-modelling.pdf

Hull RB (2011) 'Forestry's conundrum: high value, low relevance', *Journal of Forestry,* January/February: 50–56.

Junior Landcare (2014) *How-to-guide: creating a food garden … it's fun and easy!* [PDF], Australian Government National Landcare Programme, Junior Landcare and Primary Industries Education Foundation, accessed 10 May 2022. https://landcareaustralia.org.au/wp-content/uploads/2016/05/Creating-a-food-garden-12.9-LR.pdf

LAL (Landcare Australia Limited) (2017) *Landcare CarbonSMART*, accessed 22 September 2017. https://www.landcareonline.com/%3Fpage_id%3D1153

LAL (Landcare Australia Limited) (2018) *About Junior Landcare*, accessed 17 December 2018. https://landcareaustralia.org.au/junior-landcare/what-is-junior-landcare/

Lockie S (1997) 'Rural gender relations and landcare', *in* Lockie S and Vanclay F (eds) *Critical Landcare*, Key Papers Series No. 5:71–82, Centre for Rural Social Research, Charles Sturt University, NSW.

Lockie S and Vanclay F (eds) (1997) Key Papers Series No. 5:1–7, Centre for Rural Social Research, Charles Sturt University, NSW.

Love C (2012) *Evolution of Landcare in Australia: in the context of Australian Government natural resource management policy and programs,* perspectives from the former National Landcare Facilitator, Australian Landcare Council Secretariat, Australian Government Department of Agriculture, Fisheries and Forestry, Canberra.

MDBA (Murray-Darling Basin Authority) (2018b) *Blackwater*, accessed 17 December 2017. https://www.mdba.gov.au/managing-water/water-quality/blackwater

MDBA (Murray-Darling Basin Authority) (2018a) *Blue-green algae,* accessed 17 December 2018. https://www.mdba.gov.au/managing-water/water-quality/blue-green-algae

Merchant C (2013) *Earthcare: women and the environment in Australia*, Routledge, Taylor & Francis Group, London and New York.

Munday B (5 September 2012) 'Landcare: no time for incremental steps, time for the quantum leap' [conference presentation], *National Landcare Conference*, Sydney.

Munday B (2017) *Those wild rabbits: how they shaped Australia,* Wakefield Press, South Australia.

nghenvironmental (2013) *Wagga Wagga Urban Landcare – celebrating biodiversity enhancement on the Wiradjuri Track: 20 years of Wagga Wagga Urban Landcare*, Wagga Wagga, NSW.

NLWRA (National Land and Water Resources Audit) (2001) *Dryland salinity in Australia, a summary of the National Land and Water Resources Audit's Australian Dryland Salinity Assessment 2000: extent, impacts, processes and management options*, National Land and Water Resources Audit, Canberra.

NQ Dry Tropics (2015) *Community network areas boosting traditional owner engagement: 2015 case study,* NQ Dry Tropics, Townsville.

NRM Regions Australia (2018) *NRM Regions Australia*, accessed 17 December 2018. http://nrmregionsaustralia.com.au/about_us/

Robins L (2008) 'Perspectives on capacity building to guide policy and program development and delivery', *Environmental Science & Policy,* 11(8):687–701.

Robins L (2018) 'More than 30 years of "Landcare" in Australia: five phases of development from "childhood" to "mid-life" (crisis or renewal?)', *Australasian Journal of Environmental Management,* 25(4):385–397.

Robins L and Dovers S (2007a) 'Community-based NRM Boards of management: are they up to the task?' *Australasian Journal of Environmental Management,* 14(2):111–122.

Robins L and Dovers S (2007b) 'NRM regions in Australia: the "haves" and the "have nots"', *Geographical Research,* 45(3):273–290.

Robins L and Kanowski P (2011) '"Crying for Our Country": eight ways in which "Caring for Our Country" has undermined Australia's regional model for natural resource management', *Australasian Journal of Environmental Management,* 18(2):88–108.

Scarsbrick B (2003) *Landcare Australia Limited, submission to the House of Representatives Standing Committee on Science and Innovation Inquiry into coordination of the science to combat the nation's salinity problem,* Landcare Australia Limited, Canberra.

Sheridan A and Haslam McKenzie F (2009) *Revisiting missed opportunities: growing women's contribution to agriculture*, Rural Industries Research and Development Corporation, Canberra.

Telfer A, Burnell R, Woods J and Weir Y (2012) *River Murray floodplain salt mobilisation and salinity exceedances at Morgan*, MDBA Publication, no 53/12, Murray–Darling Basin Authority, Canberra.

UN General Assembly (2015) *Transforming our world: the 2030 Agenda for Sustainable Development,* 21 October 2015, A/RES/70/1, accessed 17 December 2017. https://www.refworld.org/docid/57b6e3e44.html

University of Canberra (2022) *Reports*, Health Research Institute website, University of Canberra, accessed 18 May 2022. https://www.canberra.edu.au/research/institutes/health-research-institute/regional-wellbeing-survey/survey-results/reports

WEF (World Economic Forum) (2021) *Global gender gap report 2021*, *insight report March 2021* [PDF], World Economic Forum, Geneva, accessed 30 May 2021. http://www3.weforum.org/docs/WEF_GGGR_2021.pdf

Wilson GA (2004) 'The Australian landcare movement: towards "post-productivist" rural governance?', *Journal of Rural Studies,* 20(4):461–484.

Wodonga Urban Landcare Network (2022) *What is urban landcare? We encourage and support …* accessed 18 May 2022. https://wodongalandcare.org.au

Wright P and Lewis P (2017) *Close the gap: progress and priorities report 2017* [PDF], Close the Gap Campaign Steering Committee for Indigenous Health Equality, accessed 17 December 2018. https://www.humanrights.gov.au/sites/default/files/document/publication/Close%20the%20Gap%20report%202017.pdf

Youl R, Marriott S and Nabben T (2006) *Landcare in Australia founded on local action* [PDF], SILC and Rob Youl Consulting Pty Ltd., accessed 18 May 2022. https://catalogue.nla.gov.au/Record/3912654

Photo: Jeffrey Maitem

# CHAPTER 31

# Strengthening national governance systems to support local self-reliance

**Allan Dale and Michele Dale**

## Abstract

The Australian and increasingly international landcare movement reflects renewed recognition of the concept of personal and local self-reliance within national, provincial and local governance systems. While the word 'subsidiarity' is seldom used to describe landcare, the concept deeply espouses and reflects a key governance system principle. Subsidiarity is all about the making of decisions at the most appropriate scale to effect positive outcomes for society. In many of our nations, the emergence of more centralised forms of governance have tended to eschew the subsidiarity principle, implicitly (and often explicitly) diminishing the importance and profile of local self-reliance. This ongoing problem in governance systems across the world brings significant risk to policy domains that fundamentally rely on the behaviour of individuals, property owners and local communities as the first line of action.

This chapter explores why local self-reliance is so critical in many policy domains, ranging from environmental management to health and social welfare, disaster preparedness and response, law and order, counterterrorism and even economic development. It then explores several common dilemmas and trends in national approaches to governance that weaken local self-reliance. Finally, the paper explores what governments can do (from national to provincial and local levels) to revisit the subsidiarity principle. In doing so, we celebrate the concept of landcare as a grassroots movement of extremely wide importance.

## Introduction

In this book, Landcare is not so much celebrated in its own right, but as an exemplar of the concept of communities adopting local self-reliance in securing key societal (in this case improved natural resource management (NRM) or environmental) outcomes. While the Landcare brand and terminology originated in rural Australia in the 1970s and 1980s, similar movements based on related concepts have emerged across other parts of the world. Australian landcare originally emerged as a result of higher-level policy failures to recognise and arrest land degradation in more developed agricultural landscapes within Australia, and most particularly to deal with soil erosion in cropping lands and the insidious spread of soil salinity. In many localities, this movement for building local self-reliance is credited with preventing the economic, social and ecological collapse of several agricultural production systems, regions and local communities (Cary and Webb 2001). Whether in Australia or elsewhere, several key features of the movement are essential for building local self-reliance.

**In many localities, [the landcare] movement for building local self-reliance is credited with preventing the economic, social and ecological collapse of several agricultural production systems, regions and local communities.**

### Shared solutions to shared problems

Landcare builds on the principle that 'a problem shared is a problem solved'. Farmers facing rising saline water tables, for example, are simply unable to resolve such complex problems through individual actions within their own farm boundaries. Solutions to problems like these require collective and evidence-based action at the landscape scale (for example, through extensive reforestation of upper slopes and coordinated drainage). This is a feature of many other economic, social and environmental problems facing local communities. Through Landcare-like movements building local social capital, the prospect of resolving shared problems improves, contributing a bit-part in the resolution of recognised national policy problems.

### Building an informed and shared response narrative

The building of a strong, scientifically informed understanding of complex shared problems is often a key feature of landcare. Many complex problems facing the sustainable use of natural resources, for example, have emerged because of longstanding and outdated local philosophies and cultures that may no longer be useful in the modern context. Through people in the local community coming together around acceptance and analysis of shared problems, a social framework for the injection of scientific and new knowledge is often secured. Groups often initially come together in a problem identification phase, either just to share local knowledge or to partner up with the science community to explore the nature of the problem being experienced. As Andres Arnalds, Jonina Thorlaksdottir, Brian Slater and Fred Yikii argue in Chapter 24, ordinary people – local community members – contribute to and become participants in the scientific process. Arnalds et al. also show that action learning–type experiments are often set up as an important step in problem analysis, contributing to the building of trust between farmers and scientists.

### Extension and individual capacity building

Once a shared social narrative begins emerging around locally agreed problems, then the diffusion of knowledge can start to seep beyond the innovators and leaders who have taken the initiative to move things forward. Landcare-like movements often actively diffuse new approaches and set the foundations for more collective action from within the community itself. Many governments have experimented in more top-down and regulatory approaches to changing local behaviours, often with more limited success and at a much higher cost than mobilising and normalising local community action.

### Local action, global impact

Landcare-type movements frequently espouse the notion that, while the actions taken are essentially local, when viewed together, these local responses can collectively add up to meaningful change at higher levels, building the sense that more national or global problems can be manageably solved through local self-reliance. In the context of complex national policy problems, this again reminds us of the subsidiarity principle, and particularly that the resolution of national, or even global, problems might have very local foundations. The subsidiarity concept, however, reminds us that not all change has bottom-up or top-down qualities, but that an alignment of policy vision, strategies and delivery systems should indeed be polycentric and vertically integrated – that local self-reliance movements can inform national policy, while national policy might be able to foster and enhance the strength and resilience of local self-reliance movements.

## Landcare as a self-reliance exemplar

While not exhaustive, the above discussion articulates just some of the key features of landcare that are equally suitable to policy and delivery settings related to many broad societal problems. Additionally, while the landcare movement has tended to be associated with the resolution of rural productivity or environmental problems at the local scale, it is clear that these key features could indeed be applied to health, disaster response, law and justice, and many other complex societal problems that resonate at the local or community scales. While this is the case, however, strong national policy narratives that might espouse landcare-type concepts or principles remain rare.

### A tendency towards more centralised governance systems

The pervasive tendency for governments to centralise and micromanage control over society at even the most localised levels is nothing new. It's a problem that has plagued modern humans ever since our governance systems started stretching beyond tribal and clan-based forms of human organisation. In a governance and political sense, however, the major downsides that more centralised societies experience are well known compared to those that have a higher level of polycentric subsidiarity. The most obvious is the potential risk of a slide towards dictatorship, ultimately leading to more risk of international conflict, and, just as importantly, domestic civil unrest and societal fracture. Well before these extreme outcomes, however, come far more mundane but no less-problematic concerns.

Greater power centralisation within society and less local self-reliance can have significant implications for the timeliness of responses, usually leading to the unnecessary escalation of the problem at hand. This might be best recognised when there are low levels of local self-reliance and when highly centralised governments are tardy in their response in post-disaster scenarios. There are countless examples in the governance literature of

governments becoming increasingly inert or 'constipated' as more and more decisions are retracted closer to the top of the power tree. A second major problem simply emerges through greater inefficiencies and cost implications arising from less individual and local self-reliance. This, for example, is well understood in the context of health budgets internationally. Greater self-reliance emerges from people looking after their own personal health, and communities taking greater responsibility for ensuring all individuals have good nutrition and are active. The same outcomes are understood across environmental, social and economic policy domains.

Finally, national governments always run the risk of significant local disenfranchisement and indeed secessionist movements when there is not a strong interplay between national policy and programs and delivery systems that greatly enhance regional or local self-reliance. This reminds us that subsidiarity is a significantly different concept to devolution in the policy and delivery context. Societies that just leave local and regional communities entirely to fend for themselves without demonstrable support for strong capacity building for local self-determination can often foster fractures within the relationships between the nation-state and specific geographic areas or ethnic communities. This is a complex balance for societies to reach, but it is one that always needs to be explicit in any political narrative.

This chapter suggests that in any societal governance system, there will be constant forces or tendencies seeking to centralise power and to implicitly or explicitly diminish local self-reliance. This, for example, is often seen through the development and delivery of government programs that are reactive, short-term and oriented towards influencing the voting behaviour of key political constituencies. Such programs often explicitly diminish the building of local self-reliance. Over the long term, this style of governance and program delivery can increase local community dependence on government programs and diminish local capacities needed for self-reliance, building a cargo-cult type political culture.

## Why maintaining subsidiarity and local self-reliance is critical in building more resilient societal governance systems

In the international literature, it has perhaps been the discipline of psychology that most considers the importance of individual resilience, leading to a higher level of self-reliance. High levels of individual self-reliance are in turn considered to lift collective local forms of self-reliance. The social or community resilience literature has in turn stressed the importance of local self-reliance (most particularly in the context of disaster preparedness and recovery). Many thematic specific literatures, independently of each other, tend to draw on both the psychological and community resilience and social capital literature in hinting that high levels of self-reliance and social capital building are often the key foundations needed for the achievement of key societal outcomes (for example, in the health, environment, law and justice sectors). Few of these literatures, however, are embedded within an integrative governance narrative extolling the importance of the subsidiarity principle in enhancing decision-making from policy to delivery scales. The following briefly visits these literatures and examples from the practical world to show how building local self-reliance is a key feature of any robust but polycentric governance system (see Corlis 2017) and therefore that local self-reliance is a key to policy success.

### Experiences in the health sector

Several features of health policy rely on the development of significant self-reliance building systems at local scale. Recent learning based on experiences in pandemic responses (such as Ebola in Africa or, more recently, the global COVID-19 response) have reinforced the critical importance of local self-reliance in disease control (for example, see McKee et al. 2004; Abramowitz et al. 2015). Such experiences implore the importance of local trust building and neighbourhood-shared knowledge exchange. Similarly, in tackling the global growth of non-communicable diseases, greater emphasis is increasingly being placed on communities becoming the first line of defence in improving nutrition and encouraging an active and healthy lifestyle.

### Experiences in the military and law and justice sectors

For many years, local self-reliance concepts have been used in the law and justice sector, with many militaries increasingly adopting more socially informed approaches focused on 'winning the peace' as much as 'winning the battle' or 'winning the war'. Initiatives in both military and counterterrorism policies and the law and justice sectors often support such approaches. Local policing approaches, for example, recognise local self-reliance building efforts that can range from supporting the operation of neighbourhood watch–type programs, towards more community-based approaches to judgement making and sentencing, cross-business cooperation in electronic surveillance and security, and so on. In the fight against terrorism, law enforcement and intelligence agencies are increasingly working with faith-based institutions and different ethnic communities to increase their resilience against internalised radicalism. Equally, this sector also illustrates the distinction between devolution and subsidiarity. A purely devolved approach could result in an increase in vigilante groups responding to crime or terrorism, whereas a much more nuanced approach integrating different scales of action at national, provincial and local scales is required. This also means adopting policies for addressing these complex problems that are adaptive, seek to balance multiple objectives and trial multiple approaches.

### Experiences in the disaster management sector

There are strong parallels between the landcare movement and local disaster preparedness and response approaches that have increasingly been recognised in Australia and more broadly. Across Australia, for example, local rural bushfire brigades and emergency response groups (State Emergency Services) have been explicitly supported by policy and program funding for decades. Indeed, in recent years, there has been increasing connectivity between these movements and Landcare organisations, enabling the mobilising of more people more quickly in post-disaster scenarios. As many communities can frequently be highly isolated in the aftermath of natural or other disasters, the concept of self-reliance building and strong cross-sectoral connectivity is particularly important (Toshitaka 2014; Vance 2014). Equally, the sudden onset of disaster (for example, tsunamis, fires, storms and earthquakes) means a rapidly mobilised and timely response is often required.

### Experiences in the economic and sustainable development sector

The building of individual self-reliance is seen as a foundation for community development approaches to economic development (Godfrey 2008). Scaling up, through economic cooperatives for example, is perhaps one of the most enduring

and progressive examples of local (or in some cases sectoral) self-reliance building for economic development. Local cooperatives might form for several reasons, including knowledge sharing, input sharing and the building of a critical mass of product to improve market competitiveness. Successful economic cooperatives are those that apply many Landcare-like principles in their operation. Local community (or regional) development approaches are also often adopted in facilitating economic development (Binns and Nel 1999), particularly in developing nations and small towns subject to fluctuating economic or climatic conditions.

### Experiences in the environment and natural resource management sector

While Landcare is the classic Australian-oriented example of self-reliance building as a key to delivering environmental outcomes, there are numerous parallel examples across the globe in many local communities. It has only been in more recent years that the Australian Landcare brand has become increasingly recognised internationally. Examples of enduring and growing environmental or local self-reliance movements across the globe include cooperation and local approaches to the management of community gardens (food security), fisheries, forestry, hunting, farming and conservation activities.

**While Landcare is the classic Australian-oriented example of self-reliance building as a key to delivering environmental outcomes, there are numerous parallel examples across the globe in many local communities.**

### Self-reliance building and the creation of functional societies

If the above demonstrates that the building of local self-reliance is indeed critical to the achievement of key social, economic and environmental themes from many key national policy portfolios, it remains the case that few national governance systems explicitly espouse subsidiarity principles or extoll the virtues of explicitly building decision-making and delivery systems to grow local self-reliance. Even fewer seek to integrate their self-reliance building activities across sectors. There are several key reasons for this. These at least include:

- the strong influence of rationalistic or managerial policymaking theories or cultures at play in many nation-states
- a tendency towards centrist, less values-rich governing cultures
- an over-reliance within democratic systems (or even less democratic ones) on vote-buying populism, contributing to less self-reliance in communities and engendering a cargo-cult approach to governance
- strong departmental silos.

Given these systemic governance problems facing many nations, the following final section outlines some key strategies that politicians, administrators and leaders in civil society might be able to institutionalise to encourage self-reliance.

## How can national governance systems embrace local self-reliance?

Many policy and delivery systems can be better conceptualised and strengthened to build stronger individual and local self-reliance capacities within society. Establishing these foundations, however, is often best embedded within an explicit policy narrative that champions the concept of personal and local self-reliance as an important societal value. In terms of political narratives, perhaps most famously, this concept might simply be recognised in John F. Kennedy's famous inaugural address narrative: 'Ask not what your country can do for you – ask what you can do for your country'. While inspiring, however, that narrative should equally be balanced with a strong sense of mutual obligation: a sense that governments should be excelling in the policy and budgetary space while also providing the societal safety nets required for those who do fall through the self-reliance cracks.

To ensure that a well-institutionalised and consistent governance system and cross-governmental culture emerges and blossoms, governments might champion policy capacity building in fields like self-reliance. This could help build a policy focus on subsidiarity across all portfolios and departments. As in the examples mentioned above, it is easy to see how such concepts could be useful across health, welfare, environment, law and order, economic and other typical portfolios of government. Some other core cross-governmental strategies, however, can be focused on building a societal wide self-reliance culture.

### Making federalism and local governance genuinely integrated

Many nations suffer from competitiveness between different levels of government, with politicians at different scales seeking to be the policy saviours for local communities at various points in the electoral cycle. While polycentric and federalist governance systems might have great constitutional clarity about the responsibilities of different scales of governments, it does not always follow that the intent of national constitutions is always adhered to in practice. Strong federalist systems were often forged explicitly to maintain more regionalised or local notions of self-reliance, while creating higher layers of government that can more successfully achieve or prosecute shared local priorities (for example, defence). For societies to deliver on their constitutional intent to encourage local self-reliance while protecting the common good, there often needs to be a very explicit governance culture espousing subsidiarity.

### Developing policy with an explicit focus on building capable delivery systems

Within the international governance systems literature, the concept of implementation failure is increasingly being recognised in situations where policy problems are intractable or failing. Where implementation failure is being recognised, highly centralised forms of decision-making are often identified as problematic, alongside a lack of clear design around appropriate delivery arrangements. In policy arenas relating to preventing the loss of coral cover in Australia's Great Barrier Reef for example, Dale et al. (2017) recognise several factors contributing to slow policy progress that relate to a limited focus on grassroots implementation. These factors include a lack of explicit policy vision related to implementation, divergent delivery approaches being adopted by federal and state governments and stop-start funding cycles. In policy domains like this, which essentially rely on multiple small-scale actions, an explicit focus on building delivery systems based in local self-reliance is essential.

### Delivering integrated investment through more devolved delivery systems

Supporting the development of strong local self-reliance movements at the local scale can often have multiple benefits across different societal interests. In Australia and in parts of the Pacific, for example, there is an increasing focus of supporting the emergence of land and sea Indigenous ranger units, primarily to support sustainable management of land and marine resources. These units, however, are increasingly being used as key delivery agents for health, education and disaster-response activities. As these self-reliance movements grow in local areas that face critical resource shortages, integrating effort across portfolios makes a lot of sense. Such approaches improve response times when required and mean an integrated response can often be made when very complex problems face local communities.

### Building individual and group self-reliance within the education system

As many learning institutions transition to greater digital delivery of education, there is much new thinking in the educational design sector about building individual self-reliance. Another factor driving this discussion is the need to produce graduates for a very different future workplace environment – one that is focused on entrepreneurial innovation and the management of constant change. Within this context, it might be equally important to ensure that education for the future also lifts societal capacity for local self-reliance. A generational opportunity exists for governments to rethink these capacities in an integrated way across the preschool, school, vocational, tertiary and adult-learning education sectors.

As early as the mid-1980s, there was a growing realisation that an increasingly turbulent and complex workplace needed people who were self-reliant, creative, adaptable, collaborative and resilient (Hase and Kenyon 2003). Educational institutions charged with developing such personal qualities as self-reliance, creativity, adaptability, collaborative skills and resilience to produce these 'work ready plus' graduates (Scott 2016) inevitably mine the familiar realms of 'helping theory' – how do you help people to help themselves? This requires a rethink of traditional pedagogies, where learners are mostly guided by the 'sage on the stage' and moving beyond even the self-directed learner to heutagogical approaches, where self-determined learners not only decide when and how but also what to learn. The resulting learning environment provides for deliberate self-reflection on experiences, authentic learning, the nurturing of collaborative skills and lifelong learning (Narayan and Herrington 2014).

The combination of the contemporary focus on graduate attributes and an increasing capacity to convey them to a broader audience via digital technology bodes well for nurturing individual self-reliance on a broad scale. The arrival of the COVID-19 pandemic dramatically forced the hand of education providers globally to fast track the integration of education and online technology. Although the rapid pivot was generally unwelcome and chaotic, arguably it has the potential to facilitate equitable access to education for traditionally under-served cohorts on a broad scale.

### Strengthening everyone's capacity in institutional governance

While there is an increasingly strong focus on education and capacity building to improve the governance of public and corporate institutions, there is very little awareness raising of, and education about, the importance of developing healthy societal governance systems. Within this deficit sits an even bigger lack of awareness raising and education about the

importance of building subsidiarity across scales within these systems, in particular, the important role of local self-reliance systems. Many different players within complex governance systems would benefit from such a capacity-lifting approach, including politicians, administrators, service delivery agencies and policy advocates.

### Towards a 'systems doctor' within complex governance systems

Finally, there is some emerging insight into the increasing need for legitimate third-party advocates within the system of governance for complex governance domains (see Dale 2015). If the role of such advocates is accepted and supported by different layers of government and key stakeholders within the policy domain, then the opportunity exists for someone in the system to agitate for continual improvements in the way the governance system operates. We refer to such a party here as a form of 'systems doctor' – an independent but collaborative agent charged with bringing key players in the governance system (from policymakers to service agents and clients) together to help analyse problems facing the system in delivering its intended policy outcomes. Such a party could also help those responsible for the system to design and institutionalise adaptive reform. Such arrangements would need to focus on understanding healthy governance systems, and in theory, should fully understand the need to build subsidiarity (and local self-reliance) into the system. While rare, such arrangements do exist, and more so in some sectors than others. In the justice system of many countries, for example, the coroner's office or an ombudsman's office may play such a role, but these arrangements are generally not focused on 'whole of system' analysis, and may not be responsible for driving the implementation of continuous reform. In New South Wales, Australia, the state's NRM portfolio recently ran a natural resources commission, while the Australian Government ran a water resources commission. Both institutions have since been abolished, suggesting that the position of such third-party arrangements can be tenuous if there is not a strong political commitment to open and accountable governance and continuous policy improvement.

## Conclusion

With Landcare being a strong exemplar of the importance of local self-reliance movements, this chapter has aimed to outline why the concept of subsidiary is essential within the system of governance underpinning many different policy domains. These range across economic, social development and environmental policy themes and portfolios. While it provides the first line of action in policy delivery, the theoretical literature on strengthening complex governance systems has not strongly espoused the importance of local self-reliance. We would call for a more significant focus on subsidiarity and local self-reliance building within policy debates across the globe and within the wider academic literature. Many factors see governments (at national, state and local levels) tend towards greater centralisation of decision-making, often leading to significant policy and delivery failure, inefficiency and poor outcomes for local communities. Landcare and other similar local self-reliance movements across the globe help provide solutions to this problem.

## References


Abramowitz SA, McLean KE, McKune SL, Bardosh KL, Fallah M, Monger J, Tehoungue K, Omidian PA (2015) 'Community-centered responses to Ebola in urban Liberia: the view from below', *PLoS Neglected Tropical Diseases,* 9(4).

Binns T and Nel E (1999) 'Beyond the development impasse: the role of local economic development and community self-reliance in rural South Africa', *The Journal of Modern African Studies,* 37(3): 389–408.

Cary J and Webb T (2001) 'Landcare in Australia: community participation and land management', *Journal of Soil and Water Conservation,* 56(4):274–278.

Corliss S (2017) *Resilience and self-reliance from a protection and solutions perspective (EC/68/SC/CRP.4)* [PDF], response to member state interventions, paper presented at the 68th Meeting of the Standing Committee, accessed 4 October 2020. http://www.unhcr.org/58cbdd487.pdf

Dale AP (14 November 2015) 'If you have a pulse, you're a politician' [video], TEDxJCUCairns, YouTube, accessed 4 October 2020. https://www.youtube.com/watch?v=ZdSWFe89grk

Dale AP, Vella K, Gooch M, Potts R, Pressey RL, Brodie J and Eberhard R (2017) 'Avoiding implementation failure in catchment landscapes: a case study in governance of the Great Barrier Reef', *Environmental Management,* 12:1–12.

Godfrey PC (2008) 'What is economic self-reliance?', *Journal of Microfinance/ESR Review*, 10(1):4–7.

Hase S and Kenyon C (2003) *Heutagogy and developing capable people and capable workplaces: strategies for dealing with complexity, proceedings of the Changing Face of Work and Learning Conference,* University of Southern Queensland, Toowoomba.

McKee N, Bertrand J and Becker-Benton A (2004) *Strategic communication in the HIV/AIDS epidemic,* Sage Publications, New Delhi.

Narayan V and Herrington J (2014) 'Towards a theoretical mobile heutagogy framework', *in* Hegarty B, McDonald J and Loke S (eds) *Proceedings Ascilite Dunedin,* accessed 4 October 2020. http://researchrepository.murdoch.edu.au/id/eprint/26680/

Scott G (2016) 'Transforming graduate capabilities and achievement standards for a sustainable future', *VOCEDplus*, Ako Aotearoa (National Centre for Tertiary Teaching Excellence), Wellington, accessed 4 October 2020. http://www.voced.edu.au/content/ngv:73089

Toshitaka K (2014) *Addressing natural disaster risks: the need for greater self-reliance*, accessed 4 October 2020. http://www.nippon.com/en/in-depth/a03502/

Vance D (2014) 'Toward self-reliant communities: a cultural comparison of disaster response in Thailand, Guyana and the United States', *Journal of Intercultural Communication*, 35.