



Australian Government

Australian Centre for  
International Agricultural Research

# Building global sustainability through local self-reliance

Lessons from landcare



Monograph 219



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## 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.

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# 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





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# 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 Neville** 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 Incheon, and recent Organisation for Economic Co-operation and Development (OECD) resilience summits in Paris, Lisbon, Tampere and Athens, and United Nations Environment Programme and ECLiE (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 Arctic 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

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

