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International Agricultural Research

An evaluation of the ACIAR Transformative Agriculture and Enterprise Development Program

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ACIAR

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 Australian and developing-country researchers in areas where Australia has special research competence. It also administers Australia's contribution to the International Agricultural Research Centres.

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Foreword

This report is the second in a new series of reports that are based on outcome evaluations of research programs supported by the Australian Centre for International Agricultural Research (ACIAR). ACIAR initiates, brokers, funds and manages international research partnerships between scientists from Australia and partner countries in the Indo-Pacific region to improve the productivity and sustainability of agriculture, fisheries and forestry for smallholder farmers.

As a learning organisation, ACIAR is committed to understanding the diverse outcomes delivered by the research collaborations we develop, to demonstrate the value of investment of public funds, to inform research design and to boost the capacity of our research to improve the lives of farming communities in partner countries. An important mechanism for achieving our aims is to work closely with the wider Australian aid program to transition promising research into better agricultural practices and more profitable enterprises at scale.

This report presents a suite of evaluations of the Transformative Agriculture and Enterprise Development Program (TADEP), co-funded by the Department of Foreign Affairs and Trade (DFAT) and ACIAR from 2015 to 2021. The program was an opportunity for the 2 agencies to promote agricultural development in Papua New Guinea by leveraging a foundation of strong scientific research. It focused on opportunities to scale up successful innovations from previous ACIAR projects focused on cocoa, galip nut and sweetpotato, as well as a project developing extension methodology through the family farm teams approach. The program was also an opportunity to engage the private sector, expanding reach of the projects over larger areas and to more people. The DFAT and ACIAR investment sought to deliver efficiencies and co-benefits by linking a group of 5 projects into a programmatic structure.

The evaluations ultimately seek to understand the value that this programmatic structure delivered and identify lessons for future research-for-development investments. To inform these insights, a series of project-level outcome evaluations were conducted to see how the funded projects contributed to short-term development outcomes. Outcome evaluations adopt a largely qualitative, theory-based approach and seek to empirically test project logic and underpinning assumptions. These outcome evaluations are also intended to generate data for cross-case analysis that, over time, will help us to improve our research-for-development practice.

Andrew Campbell
Chief Executive Officer, ACIAR
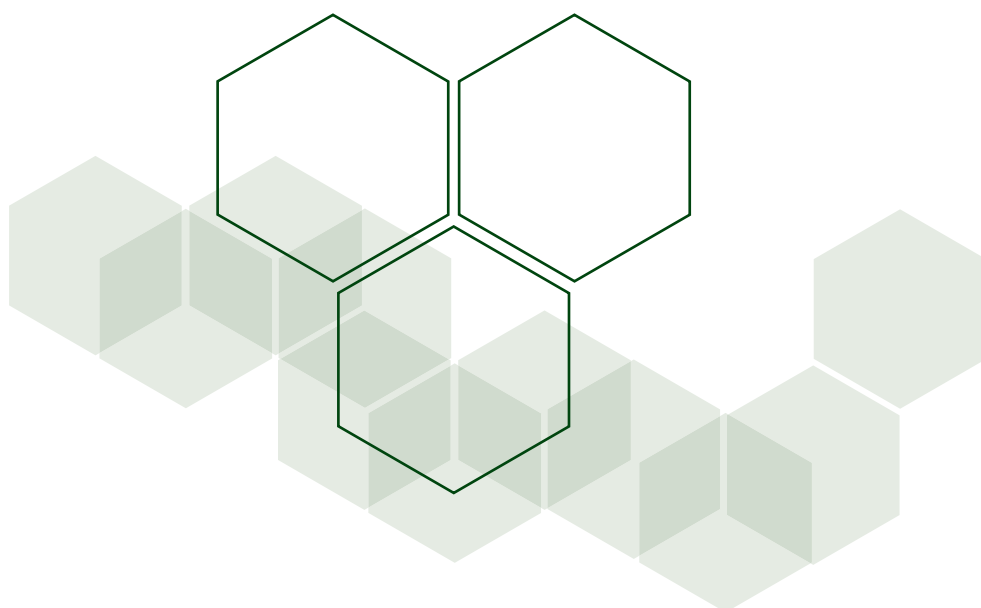
An evaluation of the ACIAR Transformative Agriculture and Enterprise Development Program

Part 1: Programmatic approach

An evaluation of the ACIAR Transformative Agriculture and Enterprise Development Program

Abbreviations and acronyms

ACIAR	Australian Centre for International Agricultural Research
ASLP	Agriculture Sector Linkages Program
CMFT	Cocoa Model Farmer Trainer
DFAT	Department of Foreign Affairs and Trade (Australia)
DPI	Department of Primary Industries (Autonomous Region of Bougainville)
FFT	Family Farm Teams
FPDA	Fresh Produce Development Agency
KEQ	Key Evaluation Question
MAD4TADEP	Mobile Acquired Data for TADEP
M&E	Monitoring and evaluation
NARI	National Agricultural Research Institute
PGK	Papua New Guinea kina
PNG	Papua New Guinea
RPM	Research Program Manager
TADEP	Transformative Agriculture and Enterprise Development Program
VCE	Village Community Educator
VEW	Village Extension Worker

Acknowledgements

Part 1 contents

Summary

From 2015 to 2021, the Australian Centre for International Agricultural Research (ACIAR) oversaw the Transformative Agriculture and Enterprise Development Program (TADEP), which was a multidisciplinary research program that aimed to improve the livelihoods of rural men and women in Papua New Guinea (PNG). The program involved 5 component research-for-development projects:

- PNG cocoa
- Bougainville cocoa
- Sweetpotato
- Galip nut
- Family Farm Teams.

TADEP was co-funded by the Department of Foreign Affairs and Trade (DFAT) and ACIAR.

ACIAR Outcome Evaluation No. 2 summarises the outcomes of TADEP and identifies lessons that can inform the design and implementation of future ACIAR programs. The evaluation is divided into 7 parts: Part 1 outlines the lessons learned from the TADEP programmatic approach. Parts 2–6 are evaluations of 4 commodity-based projects and the Family Farm Teams project within the program.

A similar evaluation was conducted on the Agriculture Sector Linkages Program (ASLP) and is reported in ACIAR Outcome Evaluation No. 1.

A separate synthesis report, ACIAR Outcome Evaluation No. 3, will summarise lessons from the 2 ACIAR programs, ASLP and TADEP.

Key findings

1

What was the process, timing and rationale for bringing projects together under this program?

TADEP was conceptualised during 2014 in response to a request from DFAT, which was seeking to rapidly fund a set of projects that supported agricultural development in PNG. ACIAR saw value in grouping these projects together as a program to maximise opportunities for sharing and learning across projects, and streamline monitoring and evaluation, reporting and capacity development activities. The selection of the 5 otherwise distinct component projects was also influenced by the ability to scale previous research in cocoa, sweetpotato and galip nut (*Canarium* nut), and to generate larger scale development outcomes by actively engaging women's groups and the private sector.

The rapid development of TADEP meant that it followed an unconventional design process, with the projects designed before full attention could be given to how the program would function. No overarching program framework or theory of change was developed to which the individual project designs could contribute. Whereas a normal project design process for ACIAR can take up to 18 months and is highly participatory, the design of TADEP projects was condensed, sometimes into as little as 6 months. There is general agreement amongst key stakeholders that this design process and timing was less than ideal but also unavoidable as it arose from a political imperative.

A key implication of the design process was that project leaders were not fully on board with the concept of TADEP as a program in the beginning, and didn't necessarily see the potential value-add of the program structure. They also had not budgeted both time and resources for any program-level activities. As a result, TADEP by design had a reasonably slow start, with many of the program-level initiatives not getting underway until well into project implementation.

2

What is the program's theory of change? To what extent have program goals and outcomes been achieved?

TADEP was not underpinned by a theory of change, and it was not until after the project designs had been completed that a set of overarching objectives for TADEP were developed. These objectives were drawn from the commonalities between each of the 5 component projects, broadly articulating how they contribute to the program goal.

Given the theory of change approach was not used within TADEP, the program's achievements have instead been assessed against the 5 TADEP objectives. A 5-point rating scale was used (ranging from none to very high) to rate the contribution of each project towards each TADEP objective, considering the extent of relevant outputs, evidence of adoption amongst next users, and evidence of outcomes. Table 2 on page 18 provides a summary of the assessment.

Overall, there was good alignment between project-level objectives and the broader TADEP objectives, with all projects contributing to the TADEP objectives to at least some degree. Greatest outcomes or likely outcomes appear to have been achieved in relation to increasing agricultural production and productive capacity of farmers, and improving individual and institutional capacity building. All projects also produced outcomes in relation to private sector-led development to some degree. While all projects expressed an intent to strengthen gender equality and some outputs were evident in most projects, there was limited evidence of adoption and outcomes in this area, except in the Family Farm Teams project.

Key findings (*cont.*)

Benefits and challenges of the programmatic approach

This section covers the key evaluation questions:

- What are the main factors that influenced program performance?
- What benefits were realised by adopting a programmatic approach, compared to an individual project approach?
- What challenges arose from the programmatic approach?

To address these questions, the evaluation team, drawing on available literature, identified the potential benefits of adopting a programmatic approach. We also developed a rubric to assess whether ACIAR programs aimed to achieve, and ultimately realised, these benefits. The potential benefits and rubric are summarised in Appendix 1.2.

Potential benefit 1: Increasing impact

Low–Medium: Projects have similar goals but don't align with a theory of change or strongly complement each other

A key dimension of a programmatic approach is that it can increase impact beyond what would be achieved by individual projects. The extent to which TADEP realised this benefit is rated as **low–medium**. This idea was reflected in the narrative of the perceived benefits of TADEP, but not fully realised in practice.

At the heart of TADEP were 5 individual research projects that were implemented largely independently of each other. **While the projects mapped reasonably well to the TADEP overarching objectives, they were not mutually reinforcing or underpinned by an overarching program theory**.

To encourage more meaningful collaboration between projects, the program introduced Collaborative Research Grants following the 2017 Annual Meeting. These had a range of benefits. They provided a tangible mechanism for projects to work together, which strengthened relationships and communication between project teams. They also provided a highly valued mechanism for projects to fund activities that were not identified at the time of the project design, and in some cases enabled projects to have a broader geographic footprint than would have been possible independently. **While the concept of the Collaborative Research Grant certainly holds merit, it is questionable whether the design and selection process adopted led to the most strategic range of grants**. In addition, activities completed through the Collaborative Research Grants weren't always strongly integrated into the broader structure of the TADEP projects they were connected to, which may have reduced their effectiveness.

Potential benefit 2: Increasing knowledge and learning

High: There was strong evidence of sharing and learning between most projects

A second potential benefit of a programmatic approach is that it can increase knowledge and learning between its constituent parts. The extent to which this benefit was realised by TADEP is rated as **high**.

Sharing knowledge and learning between projects was a key strength of TADEP. This was achieved through structured sharing and learning events, written communications, and informal opportunities for sharing and collaboration. A key benefit of TADEP was that meaningful relationships could develop and mature over time, to enable discussion of challenges from a position of trust.

Of particular benefit was the interaction between the Family Farm Teams project and the other projects, with many stakeholders describing this project as the 'glue' that held TADEP together. The nature of Family Farm Teams as a social science project meant its approach and lessons were relevant across different commodity projects. Multiple project leaders indicated that their exposure to both the Family Farm Teams approach and project team had strongly influenced their approach to agricultural research.

Annual meetings were the main mechanism for structured sharing and learning within the program and were highly regarded by all who attended them. Alongside the formal meeting agenda, opportunities for informal networking and sharing, such as dinners and field tours, were also seen as a critical component of what made these meetings successful. A key limitation was the relatively restricted attendance, which was necessary due to budget constraints but meant that many project team members were not able to participate. In addition, some stakeholders indicated these meetings were somewhat 'Australian-centric', which should be addressed in future programs.

Other communication products, such as the TADEP updates (written newsletters), also contributed to sharing and learning between projects. For project team members who did not attend the annual meetings, this was the main avenue through which they had visibility of the other projects. In addition, many stakeholders emphasised how valuable the informal sharing and learning was, particularly as the project teams got to know each other better.

Potential benefit 3: Increasing influence and adoption

Medium: Some evidence of the program structure being used to promote the program or influence stakeholders

A further dimension of a programmatic approach is that it can assist with increasing influence and adoption. The extent to which TADEP realised this benefit is rated as **medium**. Benefits were mostly realised in relation to communicating research activities and program outcomes. Fewer benefits are evident in relation to enhancing leverage through joint action, and building relationships.

It is clear that TADEP was able to harness resources for communications beyond what would typically be expected in a standalone research project. The program produced a range of communication materials to showcase program achievements to different audiences, which were distributed widely. Interviewees also felt that the program structure enabled ACIAR to gain greater traction with DFAT and key PNG research partners, as the TADEP brand was widely recognised and had more weight as a larger program than individual research projects would have. TADEP communications could have been strengthened through further development of a communications strategy to ensure products met the needs of key stakeholders such as DFAT.

While communications were a substantial focus of the program, **less attention was given to using the program structure to leverage influence with key stakeholders to encourage awareness or adoption of research outputs**. Communications instead appeared to focus on what TADEP projects had been doing and individual success stories, rather than key research findings and what this meant for agricultural development in PNG. This is a key missed opportunity.

Potential benefit 4: Streamlining management

Medium: Streamlined reporting and communications with funders, monitoring, evaluation and learning and cross-cutting issues could be improved

A final dimension of a programmatic approach is that it can streamline management. The extent to which TADEP realised this benefit is rated as **medium**.

ACIAR engaged a part-time program coordinator to manage program-level initiatives and reporting, and this is widely seen as central in achieving the benefits of TADEP. The coordinator's ability to bring stakeholders together, build momentum around shared initiatives and encourage collaboration was particularly critical. Further clarity in roles and responsibilities between the program coordinator, ACIAR Country Manager and ACIAR research program managers (RPMs) would further enhance the effectiveness of this position.

TADEP was able to streamline reporting requirements and some interactions with DFAT through the program coordinator role. This helped to shield project leaders from frequent requests from DFAT for information although this was still a cause of frustration for project teams.

A shared monitoring and evaluation (M&E) framework was also developed, however challenges with mapping project-level achievements against this framework impacted its effectiveness. While this could have been partially addressed by developing project-level M&E frameworks, the nature of the way the program and projects were initially designed meant that it was always going to be challenging to tell a coherent program story.

Some capacity building support was provided on themes of common interest, such as electronic data collection platforms and communications, but this could have been enhanced to cover a broader range of topics. In particular, additional technical support on developing gender and social inclusion strategies, and strengthening approaches to monitoring outcomes would have strengthened project implementation.

Program governance is also an area that could have been strengthened. A program steering committee was introduced midway through implementation, involving the 5 project leaders, program coordinator and key ACIAR staff. This was valuable for enhancing communication between the projects and planning program-level events, but focused more on operational concerns than the strategic direction of the program. **There could have been value in a more strategic governance arrangement for the program, involving external stakeholders such as DFAT, PNG government and key partner organisations**.

Overall, there were very few reported challenges or negative aspects to the program approach. The main challenge reported by project teams was the additional time taken to engage in program-level learning events and reporting. Streamlining reporting requirements further, and budgeting for time associated with major program events, would help to manage these transaction costs in future programs. The COVID-19 pandemic also presented a challenge, both for the projects and at the program-level. While efforts were made to adapt activities to utilise online platforms, many of the larger program-level learning events for 2020 and 2021 were cancelled. This reduced the realisation of potential benefits around sharing and learning.

Conclusion and lessons learned

TADEP and its component projects were rapidly designed in response to a funding opportunity from DFAT. This design process was not ideal and limited the extent to which the projects could be complementary. That said, the projects did have enough commonality to contribute towards common objectives and provide useful opportunities for sharing and learning. **All projects contributed meaningfully towards the 5 TADEP objectives with some examples of strong outcomes, particularly in relation to improving agricultural productivity, building capacity and gender equality**. Unfortunately, the lack of systematic data for some projects means it is difficult to draw conclusions on the achievement of outcomes.

This evaluation outlined a framework of the potential benefits of a programmatic approach, which was then used to assess how well these benefits were realised in TADEP. **The main benefits came from sharing and learning between project teams, shared communications, and streamlining some management functions**, although fewer benefits were realised in this last area. The influencing of stakeholders could have been improved by a more thorough communications strategy and collaborative approach between projects.

Overall, there were substantial benefits realised through the programmatic approach used in TADEP, and very limited disadvantages of taking this approach. Given that there is potential for even greater benefits to be achieved, the associated costs appear to be a worthwhile investment.

Lessons learned

The TADEP programmatic approach highlights several lessons for ACIAR to consider in future programming. **A key overarching lesson is that there is value in intentionally identifying the type of benefits ACIAR wishes to achieve through the programmatic approach, and structuring the program with appropriate resourcing to help realise these benefits**.

The rubric at Appendix 1.2 could provide a useful starting point for such an exercise. A consolidated list of lessons is provided at the end of the report. In summary, these are:

1. To maximise development impacts, the overall program framework should be developed first, ideally utilising a theory of change approach to identify what individual activities are required to contribute towards the desired outcomes. Projects should then be complementary to achieve these outcomes.

2. Collaborative Research Grants were a useful addition to the program structure. Ensuring these are used strategically and linked into their 'parent' projects will help maximise their effectiveness.

3. ACIAR should consider alternative mechanisms that provide greater flexibility for adaptive planning at the project level.

4. Sharing and learning between projects was a key strength of TADEP. These could be further enhanced by considering additional informal mechanisms to reach a wider audience than can attend international face-to-face meetings.

5. Programs should have a well-developed communications strategy that focuses not just on sharing outcomes from project activities but also on seeking to influence in-country stakeholders to encourage adoption of research outputs.

6. Dedicated staffing, such as a program coordinator, is critical to realise the potential benefits of a programmatic approach. The particular resourcing profile should consider the type of benefits that ACIAR aims to achieve, and the staffing and technical assistance needed to realise these.

7. Program-level monitoring frameworks are critical to enable the program to tell a coherent performance story, but are only useful if projects systematically collect data and report against a set of common indicators. In addition, more emphasis must be given to monitoring the outcomes of project activities, rather than just outputs.

8. It is important to clearly define the roles and responsibilities of ACIAR staff and dedicated program staff when establishing the program structure, and clearly communicate these to all parties.

9. Future programs would benefit from more strategic, high-level governance arrangements that include DFAT (if a funding partner), partner government representatives, and key partner organisations.

Introduction

Purpose, scope and audience

Since 1982 the Australian Centre for International Agricultural Research (ACIAR) has brokered and funded research partnerships between Australian scientists and their counterparts in developing countries. As Australia's specialist international agricultural research-for-development agency, ACIAR articulates its current mission as 'achieving more productive and sustainable agricultural systems, for the benefit of developing countries and Australia, through international agricultural research partnerships'. ACIAR receives a direct funding appropriation from the official development assistance budget, as well as contributions for specific initiatives from external sources including the Department of Foreign Affairs and Trade (DFAT).

From 2015 to 2021, ACIAR managed the Transformative Agriculture and Enterprise Development Program (TADEP) in Papua New Guinea (PNG). The program focused on opportunities to scale up successful innovations from previous ACIAR projects in PNG, with impetus provided by private sector involvement, over larger areas and for more people. It was expected to achieve economic benefits, especially increased employment and incomes in rural areas, and enhanced rural–urban supply chains. It worked in the sectors of greatest benefit to rural communities and had a particular focus on the empowerment of women and commodities that could be brought to market.

ACIAR commissioned a program-level evaluation to identify lessons that will inform the design and implementation of future ACIAR investments and improve the quality of outcomes.

Purpose

The program-level evaluation has 5 key purposes:

1. Compile performance information from each project under a program and investigate the contribution to specific project outcomes, with a particular focus on differential effects for women and men.

2. Generate project-level case studies for use in a qualitative cross-case analysis.

3. Summarise the contribution to outcomes of each program, with a particular focus on differential effects for women and men.

4. Establish how the different approaches to programmatic management adopted by each program influenced the achievement of outcomes.

5. Identify lessons related to programmatic management of agricultural research-for-development to inform future ACIAR investments.

Scope

This program-level evaluation focuses on the whole TADEP and its constituent projects. Five project-level evaluations were undertaken of projects (or groups of projects) within TADEP and these form Parts 2–6 of Outcome Evaluation 2. Drawing on these project evaluations, this program-level evaluation includes an analysis of the program structure and the value-add from these management arrangements.

A similar evaluation has been undertaken for the ACIAR Agriculture Sector Linkages Program (ASLP) in Pakistan (Outcome Evaluation 1), and the ASLP and TADEP evaluations will be synthesised into a final report to outline common lessons from ACIAR programs (Outcome Evaluation 3).

This TADEP program-level evaluation was guided by the following key evaluation questions:

1. What was the process, timing (vis-à-vis constituent projects) and rationale for bringing projects together under this program?
   – How is the program structured?

2. What is the program's theory of change? To what extent have the intended program goal and outcomes been achieved?
   – What was the contribution of each project?

3. What were the main factors that influenced program performance?
   – To what extent were the program's scope, scale, structure and management arrangements appropriate?
   – How did the program's particular structure and management arrangements influence program achievements?
   – What external factors arose, for example, budgetary, natural hazards, policy settings?

4. What benefits were realised by adopting a programmatic approach, compared to an individual project approach?
   – What evidence is there of learning or cross-collaboration between projects within a program?
   – To what extent were project-level outcomes mutually reinforcing within the program?
   – Did the programmatic approach result in improved implementation strategies and/or additional resourcing, for example, on gender equality?

5. What challenges arose from the programmatic approach?
   – To what extent did the benefits outweigh the challenges?

Audiences

The primary audience for this program-level evaluation is ACIAR staff with direct responsibilities for programs and/or their constituent projects. This includes Canberra-based research program managers (RPMs) and any future field-based program managers and coordinators. The ACIAR Executive and senior managers, and DFAT fund managers, are also important audiences particularly for the program-level assessments and synthesis report.

Methodology

Data collection and analysis

The evaluation team developed a Program Evaluation Framework (see Appendix 1.3), which details the data and process used for addressing each of the key evaluation questions. Data for the Transformative Agriculture and Development Enterprise Program (TADEP) evaluation was collected through:

- Reviewing project-level evaluation reports and programmatic documentation, including TADEP annual reports, design documents, the mid-term review, and other program updates and reporting.
- Semi-structured interviews with Department of Foreign Affairs and Trade (DFAT) and Australian Centre for International Agricultural Research (ACIAR) staff, conducted online using Zoom and WhatsApp. Six interviews were conducted with 9 stakeholders in total. Stakeholders were intentionally selected in consultation with ACIAR. Appendix 1.4 provides a list of stakeholders consulted.

Systematic analysis of data was undertaken using NVivo qualitative data analysis software to distil findings.

The evaluation team developed 2 data analysis tools to support synthesis of evaluation findings. The first tool was a 5-point rating scale (ranging from none to very high) to rate the contribution of each project towards each TADEP objective, taking into account the extent of relevant outputs, evidence of adoption amongst next users, and available evidence of outcomes (see Appendix 1.6).

The second was a framework outlining the potential benefits of a programmatic approach (see Appendix 1.2). This framework was developed drawing on literature, particularly Buffardi and Hearn (2015), as well as the evaluation team's expertise. This framework:

- Outlines the potential benefits of a programmatic approach under 4 topic areas:
  - increasing impact
  - knowledge and learning
  - influence and adoption
  - streamlining management.
- Provides a rubric to assess the extent to which an ACIAR program achieved the potential benefits. The 3 possible rubric ratings are low, medium and high.

The data analysis phase specifically focused on understanding whether TADEP aimed to achieve a potential benefit, and the extent to which it did (or didn't) achieve this benefit. The Agriculture Sector Linkages Program (ASLP) evaluation also uses this framework. This will allow for the identification of common themes and program comparison in the final synthesis report.

Preliminary findings were shared and tested in a validation workshop involving the stakeholders previously consulted, ACIAR staff and project-level staff. Stakeholders were also given the opportunity to provide written comments on a draft executive summary. These activities provided the opportunity to 'ground-truth' the assessments, identify any key issues not addressed, clarify any areas of uncertainty, and correct any misinterpretations. A draft evaluation report was then prepared for review by ACIAR and finalised in accordance with feedback received.

Limitations

The evaluation team relied heavily on pre-existing documentation provided by ACIAR and the project-level review reports. Significant data gaps remain in relation to assessing the outcomes from the TADEP projects, given 3 of these projects had not finished at the time of the evaluation and therefore final project reports were not available. In addition, there were insufficient evaluation resources to explore project-level data beyond that which was reported in the project annual reports to ACIAR. The summary of contribution towards TADEP objectives should therefore be considered as preliminary. Additional data collection and analysis of project-level data should be undertaken, including in-country consultations, to fully assess project-level achievements.

Stakeholder consultations were also quite limited in this phase, although the evaluation team drew strongly on interviews conducted early in the program implementation. As primary data collection was restricted to online interviews, the evaluators had limited ability to build rapport with participants and interpret non-verbal communication. Interviewees for the project were intentionally chosen by ACIAR and the evaluation team, and were predominantly ACIAR staff. This means they were not a representative sample of program stakeholders.

Ethical considerations

The evaluation was conducted in accordance with the *DFAT Monitoring and Evaluation Standards* (2017). This included considering:

- **Informed consent:** All participants in consultations were provided with a verbal overview of why they were being consulted, how the information would be used and that their participation was voluntary prior to the consultation. Consultations were only undertaken once verbal consent was obtained.

- **Privacy and confidentiality:** The identities of any project stakeholders involved in the evaluation have been protected. Key informants in professional roles may be referred to by their position title in the report where explicit consent has been obtained; otherwise they are referred to as a representative of the organisation they work with.

Overview of program

Context

Poverty is a significant issue for all Papua New Guinea (PNG) provinces, including the Autonomous Region of Bougainville, with over 80% of the nation's population being rural-based subsistence smallholder farmers (ACIAR 2020). About half of the labour force work in agriculture, which generates 15% of gross domestic product (ACIAR 2020). While an estimated 30% of the land is suitable for agriculture, only 2.2% is used for commercial agriculture (ACIAR 2020). Enhancing the livelihoods of rural men and women in PNG will enable the nation to reduce poverty and promote sustainable economic development. Increasing agricultural productivity and supply-chain efficiency for both domestic and export commodities is essential to promote economic growth in the rural sector. Long-term commitment and holistic approaches are needed to address these complex challenges and generate sustainable solutions.

The Australian Centre for International Agricultural Research (ACIAR) has a long history working in PNG to address these issues, including in partnership with the Department of Foreign Affairs and Trade (DFAT). This partnership is a key component of Australia's involvement in the PNG agriculture sector and reflects Australia's interests in enhancing the lives of rural people and promoting stability in PNG. There is a strong focus on Australia's development cooperation programs on economic development as a pathway out of poverty and on empowering women and girls. These objectives are reflected in the PNG development priorities articulated by both the PNG and Australian governments, and as such are central to ACIAR and DFAT collaborative efforts in PNG.

Previously, ACIAR and DFAT have predominantly worked together to co-fund specific projects or to provide financial investment to support country budgets. The Transformative Agriculture and Enterprise Development Program (TADEP) represents the first programmatic intervention cofunded by ACIAR and DFAT in PNG.

The program

TADEP is a multidisciplinary research program that aims to improve the livelihoods of rural men and women in PNG through 5 component research-for-development projects. TADEP is co-funded by DFAT and ACIAR. The program commenced in July 2015 and concluded in December 2021.

The overall aim of TADEP is to **improve livelihoods of rural men and women in PNG**. TADEP has 5 specific objectives:

- To stimulate and strengthen inclusive partner-led development in agriculture.
- To sustainably increase agricultural productivity, quality and value.
- To improve access to markets and strengthen value chains.
- To promote gender equity and women's empowerment in rural communities.
- To build individual and institutional capacity.

The 5 projects under TADEP are outlined in Table 1. Each of the projects has a legacy of successful research and innovation in PNG which TADEP seeks to scale up, including through increasing private-sector involvement, working over a larger area and with more people.

Table 1   Projects in TADEP

Program / Project	Project full name	Duration
PNG cocoa	Enterprise-driven transformation of family Cocoa production in East Sepik, Madang, New Ireland and Chimbu provinces of Papua New Guinea	March 2016 to March 2021
Bougainville cocoa	Developing the Cocoa value chain in Bougainville	Feb 2016 to Dec 2022
Galip nut	Enhancing private sector-led development of the *Canarium* industry in Papua New Guinea	June 2015 to Dec 2018
Sweetpotato	Supporting commercial sweetpotato production and marketing in the Papua New Guinea highlands	Feb 2016 to Feb 2021
Family Farm Teams	Improving opportunities for economic development for women smallholders in rural Papua New Guinea	July 2015 to Dec 2018

The role of TADEP as a program was to facilitate opportunities for cross-program collaboration, to build capacity among projects, and deliver a communications strategy to enhance value beyond the sum of the component projects. In addition, TADEP developed and maintained a program-wide monitoring and evaluation framework and sought to ensure the guiding principles of gender equity and private-sector led development were embedded across all program-level activities. A part-time program coordinator oversaw program-level logistics and communications.

Smallholders selling sweetpotato at a market in Papua New Guinea. Photo: Conor Ashleigh, ACIAR

Findings

1. What was the process, timing and rationale for bringing projects together under this program?

The Transformative Agriculture and Development Enterprise Program (TADEP) was conceptualised during 2014. At this time, the Australian Centre for International Agricultural Research (ACIAR) was approached by the Department of Foreign Affairs and Trade (DFAT), which was seeking to rapidly fund a set of projects that supported agricultural development in Papua New Guinea (PNG) due to a political imperative. These projects were to have a particular focus on women smallholders and engaging the private sector. While DFAT was prepared to fund individual research projects, ACIAR saw value in grouping these projects together as a program to maximise opportunities for sharing and learning across projects, and streamline monitoring and evaluation (M&E), reporting and capacity development activities.

The rapid development of TADEP meant that it followed an unconventional design process, with the projects designed before full attention could be given to how the program would function. To streamline the design process, all the projects selected to be part of TADEP built strongly on previous ACIAR projects. The researchers had existing relationships with in-country counterparts and were able to scale-up or scale-out agricultural practices or innovations resulting from previous work, whilst also furthering the research agenda. While limited attention was given at this stage as to how TADEP would function, ACIAR did have the foresight to ensure a social science project (the Family Farm Teams project) was included from the beginning, which had been a key learning from previous ACIAR programs.

Whereas the normal ACIAR project design process can take up to 18 months and is highly participatory, the design of TADEP projects was condensed. This had several implications:

- It led to projects within TADEP having staggered start and end times (see Table 1) as not all projects were ready to commence in July 2015. This had ongoing repercussions for the program as it was implemented, as projects were then at different stages throughout implementation.

- It resulted in fewer in-country consultations and less engagement with in-country partners than would normally be undertaken during a design process. For some projects, this led to a lack of clarity in roles and responsibilities between implementing partners, and a sense that in-country stakeholders had not had adequate voice in the design process.

- For some projects it appeared insufficient preparatory analysis was undertaken during the design phase. For example, the Bougainville cocoa project (and to some extent the PNG cocoa project) would have benefited from additional market analysis; the sweetpotato project would have been strengthened by additional analysis of partner capacity; and multiple projects would have benefited from additional gender analysis. While there isn't clear evidence that time constraints were the key factor limiting this analysis, it is plausible that rushing the design process may have contributed to this.

- Project teams were not able to budget for program-level activities – this meant any time spent on collaboration, learning or reporting were additional responsibilities on top of planned workloads.

A key implication of the design process was that project leaders were not fully on board with the concept of TADEP as a program in the beginning, and didn't necessarily see the potential value-add of the program structure. They also had not budgeted time or resources for any program-level activities. ACIAR was acutely aware of this when developing the programmatic approach, as it needed to maximise the potential benefits while also being palatable to the project teams. As a result, TADEP by design had a reasonably slow start, with many of the program-level initiatives not getting underway until well into project implementation.

2. What is the program's theory of change? To what extent have the intended program goal and outcomes been achieved?

TADEP was not underpinned by a theory of change, and it was not until after the project designs had been completed that a set of overarching objectives for TADEP were developed. TADEP engaged an M&E specialist in 2016 to help develop an impact pathway and performance framework for the program. Through this process a generic impact pathway diagram was developed which provided a theoretical overview of how research projects contribute to development outcomes (see Appendix 1.5). However, this impact pathway did not provide any specific detail on how outputs from the 5 TADEP research projects would contribute to the TADEP objectives. Similarly, the performance framework for the program provided a narrative of 'what success looked like' and identified indicators for each objective, but was not structured using a theory of change or logic model approach (for example, identifying immediate, intermediate and end-of-program outcomes).

Drawing on program documents and discussion with stakeholders, **the evaluation team developed a suggested theory of change** for TADEP. A visual representation of the theory of change is at Appendix 1.1. The essence of the theory of change is that identification and adoption of new approaches to agricultural production, increased engagement with the private sector and support for farmers to commence or expand agricultural business activities, would result in improved productive capacity of men and women farmers and increased private sector-led development in agriculture. Emphasis was also placed on ensuring women were actively engaged in project activities and taking a leading role in agricultural production and enterprise development to improve gender equality and women's empowerment.

Contribution towards TADEP objectives

Given a theory of change approach was not used within TADEP, the program's achievements have instead been assessed against the 5 TADEP objectives, as this formed the basis of the monitoring framework. The evaluation team used a 5-point rating scale (ranging from none to very high) to rate the contribution of each project towards each TADEP objective, taking into account the extent of relevant outputs, evidence of adoption amongst next users and available evidence of outcomes.

The contribution of each project towards the TADEP objectives is summarised in Table 2. The rating scale and further examples of evidence of each project's contribution is outlined in detail at Appendix 1.6. It should be noted that not all TADEP projects had finished at the time this report was completed[1], and the evaluation team was also unable to review primary data beyond the project annual reports. This therefore should not be seen as a definitive assessment of the final program outcomes. Furthermore, in some cases outcomes may have been achieved but a lack of systematic evidence has restricted the ability of the evaluation team to determine their extent. Investing additional resources in building monitoring systems which focus on measuring outcomes rather than outputs would strengthen the performance story of future programs.

Overall, there was good alignment between project-level objectives and the broader TADEP objectives, with all projects contributing to the TADEP objectives to at least some degree. **Greatest outcomes or likely outcomes appear to have been achieved in relation to increasing agricultural production and productive capacity of farmers, and improving individual and institutional capacity building**. Substantial outputs were also achieved in relation to private sector-led development, although it is less clear whether this will result in long-term outcomes.

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1   Bougainville cocoa project was extended to December 2022. The PNG cocoa project and sweetpotato project concluded during the evaluation, but final data was not available to the evaluation team at the time of report writing.

Table 2   Contribution of each project towards TADEP objectives

Project	TADEP Objectives				
	Private sector-led development	Agricultural production	Access to markets	Capacity building	Gender equality
PNG cocoa	Medium	High	Medium	High	Low
Bougainville cocoa	Medium	High	Low	High	Medium
Galip nut	Very high	High	Very high	Medium	Medium
Sweetpotato	High	High	High	High	Low
Family Farm Teams	High	Medium	Low	High	Very high

All TADEP projects included a focus on **building or utilising the private sector as a vehicle for development**. For some projects, such as Family Farm Teams, PNG cocoa and Bougainville cocoa, this targeted individual farming families to encourage more business-oriented agricultural production or related services. Others such as the galip nut and sweetpotato projects, had a greater focus on influencing larger-scale commercial production. The galip nut project took a particularly strong private sector-led approach, establishing a demonstration factory at the National Agricultural Research Institute (NARI) in East New Britain, and market testing galip nut products in PNG supermarkets. This contributed to 4 private sector processors entering the industry, which is now also providing opportunities for smallholder farmers to sell galip nut for processing.

Agricultural production was increased through introduction of new planting materials, such as the sweetpotato clean seed scheme and new cocoa varieties; new, more intensive farming practices; and improved post-harvest processing. This resulted in higher, better-quality yields amongst the target commodities, which in some cases contributed to higher incomes for farmers and more food available for consumption. The PNG cocoa project successfully introduced cocoa production into new areas of PNG, while the galip nut project was able to more than double production at the NARI demonstration factory through refining processing techniques. Results from the Islands Hub of the Family Farm Teams project indicate that most households now 'always' or 'mostly' have enough food to feed their families as a result of the project.

Improvements in individual and institutional capacity were closely related to improvements in agricultural production. At an individual level, farmers received a raft of training on agricultural techniques, business skills, and post-harvest processing. All projects reported good levels of adoption of these new skills, particularly amongst next users. For example, while rigorous data is not yet available, project coordinators of the PNG cocoa project estimate around 50% of Cocoa Model Farmer Trainers (CMFTs) have applied new agricultural methods learned, with many farmers adapting new practices to suit their local growing conditions. At an institutional level, the program built the capacity of NARI, Fresh Produce Development Agency (FPDA), Department of Primary Industries (DPI) in Bougainville, the Cocoa Board, and university research partners, strengthening research skills and capacity to provide extension services. For example, the sweetpotato project provided extensive staff training for FPDA in community development, which led to a broader institutional commitment to adopt this approach within the organisation.

Efforts were made by some projects to **increase access to markets and strengthen value chains**, but this wasn't a major focus of all projects. The galip nut project was able to demonstrate consumer demand for galip nut products through the commercial sale of products in supermarkets. This was critical in building confidence in the new industry and encouraging private sector investment. The Bougainville cocoa project was able to help facilitate a small number of new commercial arrangements between farmers and PNG-based food manufacturers, and raised awareness of market forces amongst cocoa farmers. Unfortunately, export licence restrictions limited further outcomes in this area. Through supporting production of higher quality produce, the sweetpotato project enabled sales to new markets such as supermarkets.

While all projects expressed an intent to strengthen **gender equality and women's empowerment** and some outputs were evident in relation to this in most projects, there was limited evidence of adoption and outcomes in this area, except in the Family Farm Teams project. This project was successful in influencing communication and decision-making within families to be more equitable, and resulted in some women taking on greater leadership roles within their communities.

The COVID-19 pandemic and associated travel restrictions also impacted on the delivery of projects during 2020–21. While in-country teams were able to progress delivery of most activities, technical support from Australian team members was more limited. This interrupted delivery of some activities, including end line data collection for the PNG cocoa project, and contributed to a one-year extension to the Bougainville cocoa project.
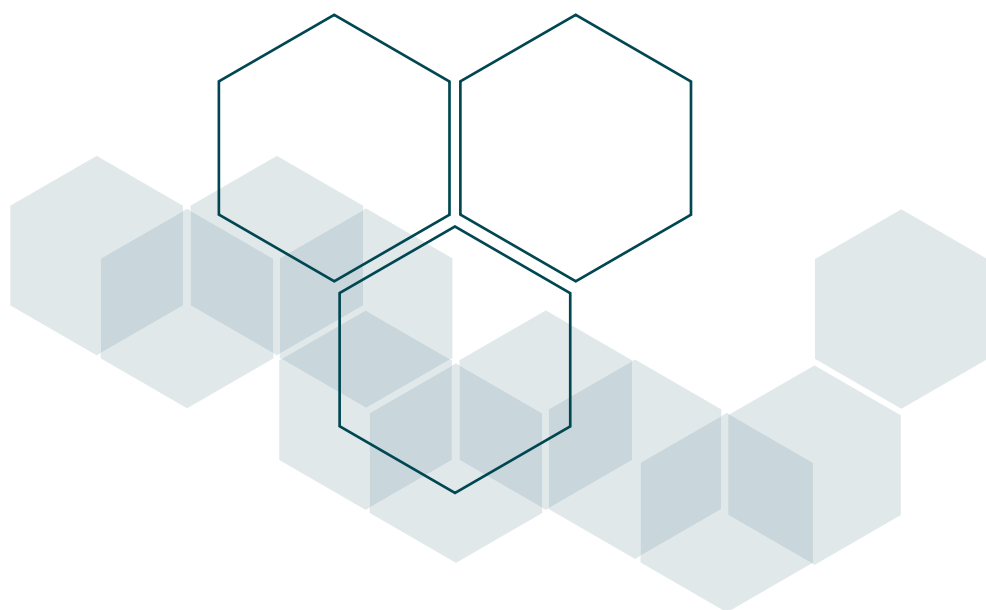
3. Benefits and challenges of the programmatic approach

This section discusses the factors that influenced TADEP performance and the benefits and challenges of the programmatic approach as it was applied to TADEP. It covers the key evaluation questions of:

- What are the main factors that influenced program performance?
- What benefits were realised by adopting a programmatic approach, compared to an individual project approach?
- What challenges arose from the programmatic approach?

As discussed in the methodology section of the report, to address these evaluation questions the evaluation team developed a framework outlining the potential benefits of a programmatic approach (see Appendix 1.2). The framework identifies 4 potential ways in which a programmatic approach can add value beyond what individual projects can achieve:

- by increasing impact
- by increasing knowledge and learning
- by increasing influence and adoption
- by streamlining management.

The framework also outlines criteria to determine whether an ACIAR program realised these program benefits to a low, medium or high extent.

Potential benefit 1: Increasing impact

> **Low–Medium:** Projects have similar goals but don't align with a theory of change or strongly complement each other

A key potential benefit of a programmatic approach is that **it can increase impact beyond what would be achieved by individual projects**. Specific ways that increased impact can be achieved include:

- projects work collaboratively towards a program theory of change, combining results for greater impact
- a program extends the reach of interventions to multiple geographic areas
- a program broadens the diversity of perspectives and strategies to provide a holistic response to a common problem.

This idea was reflected in the narrative of the perceived benefits of TADEP, but was not fully realised in practice.

The 5 TADEP projects were designed prior to development of a coherent set of program objectives and were therefore essentially independent research projects. That said, all the projects did have key points of similarity which enabled development of the TADEP objectives. These were:

- the focus on improving agricultural production within PNG and the Autonomous Region of Bougainville
- seeking to actively engage women farmers
- engaging the private sector to stimulate development
- building individual and institutional capacity.

Key points of difference were that the projects were operating in different locations within PNG and focusing on different commodity crops.

While the projects mapped reasonably well to TADEP overarching objectives, they were not mutually reinforcing or held together by an overarching program theory. This indicates that the benefits of the programmatic approach were not fully realised on this dimension. This was reflected in stakeholder interviews where there was a mixed sense of the value of grouping the projects together under the TADEP umbrella.

> 'On a high level we can all see how they [the projects] relate to each other but more closely it started to become more difficult to see how they were complementary.'
>
> – Galip nut project representative

To achieve additional benefits on this dimension, a program-level design process would need to have preceded the project-level designs. This could have involved taking a systems-based or theory of change approach, identifying a few key challenges within the PNG agricultural sector to focus on, and identifying specific research topics / projects that were required to address these challenges. This would have enabled much clearer aggregation of outcomes across the individual projects and allowed for a stronger program-level performance story. However, this process would also have taken additional time, and substantially delayed the start date of individual research projects. **Given the political pressure to get the projects underway quickly, this is unlikely to have been feasible in this instance**.

Another alternative would have been to develop a program-level theory of change early in implementation. While this may not have influenced the design of the projects, it would have made more explicit the ways or extent to which the projects were complementary, which may have stimulated additional collaboration, sharing and learning.

Collaboration between projects

At the heart of TADEP were 5 individual research projects that were implemented largely independently of each other. Each project had its own goals and objectives, and could have been completed without the involvement of the other projects.

To encourage more meaningful collaboration the program introduced **Collaborative Research Grants** following the 2017 Annual Meeting. This was a small, competitive grant scheme that funded research activities which involved collaboration with at least 2 TADEP projects. Four research grants were funded, all involving the Family Farm Teams project (see Figure 1). The sweetpotato project did not participate in any of the collaborative grants. The sweetpotato project-level review report indicates, 'the different focus of projects, dispersed geographies and differing challenges faced by the projects were raised as possible reasons given for this lack of collaboration.'

The Collaborative Research Grants had a range of benefits:

- They provided a tangible mechanism for projects to work together, which strengthened working relationships and communication between project teams. This is likely to have stimulated sharing and learning beyond the specific Collaborative Research Grant project focus.

- They provided a highly valued mechanism for projects to fund activities that may not have been identified or budgeted for at the time of the original project design. For the Bougainville cocoa project, this provided an avenue to trial interventions aimed to improve nutrition as a direct response to findings from the project's Livelihoods Survey.

- In some cases, they enabled projects to have a broader geographic footprint than would have been possible independently. For example, through a Collaborative Research Grant with the Family Farm Teams project, the galip nut project was able to extend awareness of galip nut as a newly emerging industry into New Ireland, Bougainville and new areas of East New Britain.

- The Collaborative Research Grants were seen as a useful way to role model collaboration between organisations for PNG stakeholders.
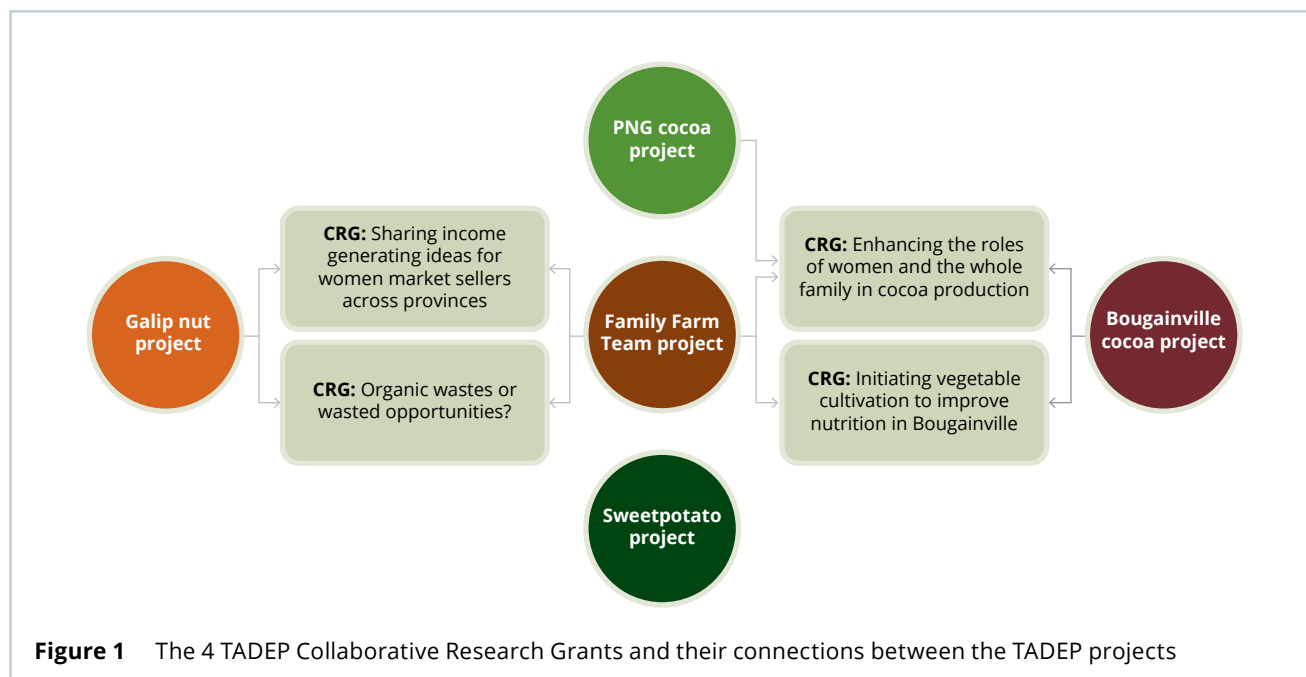

Figure 1   The 4 TADEP Collaborative Research Grants and their connections between the TADEP projects

While the concept of the Collaborative Research Grants certainly holds merit, it is questionable whether the design and selection process adopted led to the most strategic range of grants. **The Collaborative Research Grant projects appeared to be borne from a brainstorm of what additional activities could be funded, rather than looking strategically at gaps in knowledge across TADEP and how Collaborative Research Grants could be used to address these**. Existence of a program-level theory of change would have aided the program in identifying gaps in existing activities or assumptions that needed testing. In addition, activities completed through the Collaborative Research Grants weren't always strongly integrated into the structure of broader TADEP projects, which may have reduced their effectiveness. For example, in both the PNG cocoa project and Bougainville cocoa project, Collaborative Research Grants were used to enable the Family Farm Teams project to provide training on the Family Farm Teams approach to project stakeholders. In Bougainville, this involved conducting a training of the trainer activity with project staff, DPI staff and the Bougainville Women's Federation, with the intention that participants would integrate the Family Farm Teams training in their own agency work and with their families. However, it does not appear that any follow-up support or mentoring was undertaken to support this outcome.

Lessons for ACIAR

1. To maximise development impacts, the overall program framework should be developed first, ideally utilising a theory of change approach before projects are designed. Projects should be designed to be complementary to work towards the broader program goal.

2. CRGs were a useful addition to the program structure. Ensuring these are used strategically and link into their 'parent' projects will help maximise their effectiveness.

3. In some cases CRGs were used to enable projects to adapt to changes in context, or fund activities not identified in the design. ACIAR should consider additional mechanisms for adaptive planning within projects to better enable projects to adapt throughout implementation. For example, projects could undergo an annual planning process, through which ACIAR could approve research activities based on findings from the previous year. Reporting would then be against the annual plan rather than the original design. Alternatively, ACIAR could consider having competitive small grants available (similar to CRGs) to support projects to fund new ideas that align with project objectives, but don't necessarily require collaboration.

Potential benefit 2: Increasing knowledge and learning

> **High:** There was strong evidence of sharing and learning between most projects

A second potential benefit of a programmatic approach is that it can increase knowledge and learning between its constituent projects and areas of work. This can be achieved by:

- sharing information between projects to build knowledge and strengthen outcomes
- comparing intervention approaches across different contexts.

The extent to which this benefit was realised is rated as high. **Sharing knowledge and learning between projects was a key strength of TADEP,** and is widely regarded as one of the main benefits of grouping the projects under a program structure. This was achieved through structured sharing and learning events, written communications, and informal opportunities for sharing and collaboration.

Unlike a standalone networking event or conference, a key benefit of TADEP was that meaningful relationships could develop over time, and mature from initial sharing of ideas and success stories to really being able to discuss challenges from a position of trust. Multiple stakeholders referred to the level of collegiality which developed, particularly between the Australian project leaders, which would not have developed otherwise.

> *'You can get everyone in the room into a meeting, but it takes time to really trust and start sharing and not feeling defensive. The program provides that opportunity to get to know each other over a longer period of time.'*
>
> – ACIAR representative

Of particular benefit was the interaction between the Family Farm Teams project and the other projects, with many stakeholders describing this project as the 'glue' that held TADEP together. The nature of Family Farm Teams as a social science project meant its approach and lessons were relevant across different commodity projects, and multiple project leaders indicated that their exposure to both the Family Farm Teams approach and project team had strongly influenced their approach to agricultural research. The interest and uptake of the Family Farm Teams approach through the Collaborative Research Grants is an indication of the extent to which project leaders recognised the value of the approach. While ACIAR had the foresight to include a social science project within TADEP to encourage cross-fertilisation of ideas, the extent to which this would influence the other projects was not fully anticipated. This aspect of programs providing space for unexpected outcomes was highlighted by some interviewees as particularly important for ACIAR.

The Family Farm Teams project was also able to share a range of practical skills and approaches which supported implementation of the other projects. Some examples include:

- developing culturally appropriate surveys
- participatory research, monitoring and evaluation techniques
- the importance of working with husband/wife teams as community extension workers, rather than just individuals
- the importance of engaging men in initiatives to progress gender equality, rather than only working with women.

Annual project meetings

Annual project meetings provided the main avenue for structured sharing and learning within the program. These were held over 2 days and involved 50–60 people coming together from across the projects, along with representatives from ACIAR, DFAT and key partner organisations. **These meetings were highly regarded by all who attended them**. They provided an opportunity for project members to share key achievements, discuss common challenges, and identify and undertake program-level activities such as development of the impact pathway and capacity building.

Alongside the formal meeting agenda, opportunities for informal networking and sharing, such as dinners, were also seen as a critical component of what made these meetings successful. Importantly, this provided opportunities for researchers from different academic backgrounds and sectors, at different stages of their careers and from different areas of PNG, to meet and learn from each other.

While there were clear benefits to the annual meetings, there were a few limitations which should be acknowledged. **A key limitation was the relatively restricted attendance, which was necessary given the budget implications of hosting an international face-to-face event**. Many of the project-level stakeholders consulted for this evaluation had not attended the annual meetings, or had only attended one. For people who attended only one meeting, the potential benefits discussed above in terms of allowing development of longer-term relationships were not realised. Some stakeholders also indicated that the meetings were somewhat 'Australian-centric' – not just related to their participation, but also in terms of agenda setting and identification of participants.

> *'One thing I'll always remember, there was a cocoa researcher in PNG who would never have had the confidence to approach [one of the Australian team leaders] – having the space where we could brainstorm, meet, have dinner – it broke down some of the hierarchy and enabled collaboration.'*
>
> – ACIAR representative

It is worth noting that with the onset of the COVID-19 pandemic, face-to-face annual meetings have not been possible due to travel restrictions and social distancing requirements in 2020 and 2021. This has limited the realisation of potential benefits in relation to sharing and learning in the latter years of the program.

Other sharing and learning

TADEP updates, which were written newsletters providing an update on project activities, relevant ideas and lessons learned, were another key communication product which contributed to sharing and learning between projects. These updates were originally provided monthly, and then shifted to bimonthly to reduce the administrative burden following the mid-term review. The newsletters reached a much broader range of stakeholders than could attend the annual meetings and for some people this was the main engagement they had with the program. Most stakeholders indicated these updates were very useful and informative, with a few indicating they helped to build a healthy competitive tension between the projects. The main drawback of these updates was the heavy administrative burden that they placed on project leaders, who were required to prepare a project-level update to feed into the newsletter. While some project leaders found this helpful for preparation of the annual project reports, most indicated the reporting load was too high.

While the updates were revised to be bimonthly following a recommendation from the mid-term review, other recommendations from that review about changing the format of the updates to focus on a few key highlights, with possibly a spotlight (in-depth focus) on one project, were not fully implemented. This may have helped to lessen the reporting burden while still maintaining the benefits.

Many stakeholders also emphasised that the informal sharing and learning throughout TADEP was valuable, particularly as the project teams got to know each other better. Project team leaders would cross paths during in-country visits, sometimes staying at the same accommodation and informally checking in with each other to discuss issues as they arose. For example, the 2 cocoa projects regularly communicated on issues relevant to cocoa farming, while the galip nut project and PNG cocoa project had ongoing discussion and engagement on cocoa-*canarium* intercropping systems. While this occurred between the project leaders, it does not appear there was as much informal collaboration between PNG stakeholders.

The introduction of the project steering committee also encouraged regular communication and interaction between the project team leaders.

> *'One of the key strengths of the program is what happens outside the formal program activities. It provides an organic space for meaningful connections, networking and communication between participants.'*
>
> – ACIAR Mid-term review

Lessons for ACIAR

1. Sharing and learning between projects was a key strength of TADEP. Many of the features of the TADEP approach, such as annual meetings, TADEP updates and the steering committee should be taken forward in other programs. Sharing and learning could be further enhanced by considering additional informal mechanisms to reach a wider audience than can attend international face-to-face meetings. This could include, for example, smaller, more frequent in-country meetings, virtual meetings or discussion groups.

Potential benefit 3: Increasing influence and adoption

Medium: Some evidence of the program structure being used to promote the program or influence stakeholders

A further dimension of a programmatic approach is that it can assist with increasing influence and adoption. This can be done by:

- enhancing leverage through joint action with government, market institutions or other stakeholders
- fostering sustainability by building relationships
- strengthening communication of research findings.

The extent to which this benefit was realised is rated as medium. Benefits were mostly realised in relation to communicating research activities and program outcomes. Less benefits are evident in relation to enhancing leverage through joint action, and building relationships.

TADEP produced a range of communication materials to showcase program achievements to different audiences. These included:

- the monthly / bimonthly TADEP update
- short videos aligned with the TADEP objectives
- media releases
- impact stories
- program- and project-level fact sheets.

These were distributed widely to interested stakeholders and available on a targeted website at **https://research.aciar.gov.au/tadep**. TADEP also funded a professional photographer to capture images of each project to use in communications and program reports, and provided capacity building on communications to project teams.

It is clear that TADEP was able to harness resources for communications beyond what would typically be expected by an individual research project. The TADEP website ensured these communications were widely available, and also provided a central repository for key project-level resources such as extension manuals and training materials.

Interviewees also felt that the program structure enabled ACIAR to get greater traction with DFAT and other stakeholders, as the TADEP brand was widely recognised and had more weight as a larger program than individual research projects would typically have.

> '…being part of the broader TADEP program meant that the project had greater prominence. This assisted the project garner traction and political leverage with the key PNG partners, FPDA and NARI.'
>
> – Sweetpotato project-level review

TADEP prepared a communications plan which provided a useful starting point for thinking through the different potential audiences and communication strategies suited to each one. This could have been further developed to identify the key purpose of communications and the information needs of each key stakeholder to ensure communications were more tailored for particular purposes. A similar recommendation was also provided in the mid-term review but does not appear to have been fully implemented. One consequence of not fully developing a communications strategy is that in some cases TADEP communications were not always fit for purpose. For example, DFAT noted that it was often very difficult to understand the performance story of TADEP in a way that could be shared with DFAT stakeholders. This contributed to frequent additional requests for information from DFAT, which was a source of frustration for project teams.

While communications were a substantial focus of the program, **less attention was given to using the program structure to leverage influence with key stakeholders to encourage awareness or adoption of research outputs**. Communications instead focused on what TADEP projects had been doing and individual success stories, rather than key research findings and what this meant for agricultural development in PNG. This is a key missed opportunity. For example, TADEP trialled 2 different community-based extension models for cocoa production through the PNG cocoa and Bougainville cocoa projects. TADEP could potentially have developed communications to compile the key findings from these to influence the Cocoa Board, DPI and other stakeholders. Similarly, TADEP resources could have helped amplify project-level dissemination of findings from the Livelihoods Survey (conducted by the Bougainville cocoa project) with national-level stakeholders in PNG. With regards to DFAT, a key focus of ACIAR engagement could have been to assist DFAT to identify how key research findings could be adopted or integrated into other Australian aid investments – this would have substantially amplified the impact of TADEP as a program.

Lessons for ACIAR

1. Programs should have a well-developed communications strategy that focuses not just on sharing outcomes from project activities but also seeking to influence in-country stakeholders to encourage adoption of research outputs.

Potential benefit 4: Streamlining management

Medium: Streamlined reporting and communications with funders, monitoring, evaluation and learning, and cross-cutting issues could be improved

A final potential benefit of a programmatic approach is that it can streamline management. This can be achieved by:

- coordinating implementing entities and interactions with funders
- standardising management and specialised support (for example, monitoring and evaluation (M&E) and reporting processes, approach to cross-cutting issues, capacity development support)
- shared governance arrangements.

TADEP sought to achieve most of these benefits through its programmatic approach. **The extent to which these benefits were realised is rated as medium**.

About 6 months into implementation, **ACIAR engaged a part-time program coordinator to manage program-level initiatives and reporting for TADEP. The existence of this role is widely seen as central to achieving the benefits of TADEP**. The coordinator's ability to bring stakeholders together, build momentum around shared initiatives and encourage collaboration across projects was particularly critical. The level of collaboration and shared learning achieved is unlikely to have occurred without this dedicated role.

The program coordinator role was undertaken by an external contractor, which had benefits and limitations. On the one hand, this made it easier for the coordinator to remain focused at the program-level, as the role was not responsible for overseeing project-level implementation. It also helped to bridge the divide between ACIAR and DFAT, as somewhat of a neutral player. One limitation was that the coordinator had a steep learning curve to understand ACIAR approaches and processes, and in some cases became a 'go-between' for ACIAR decision-making processes and the project teams. **While there were good working relationships between all parties, in some cases there was uncertainty over who was responsible for various support roles**. For example, project leaders would approach the program coordinator about contractual issues which were most appropriately dealt with through ACIAR research program managers (RPMs), or there was uncertainty over who should lead program-level engagement with PNG partners – the program coordinator or ACIAR country manager. Further clarity in roles and responsibilities between the program coordinator, ACIAR country manager and ACIAR RPMs would further enhance the effectiveness of this position.

TADEP was able to streamline reporting requirements and some interactions with DFAT through the program coordinator role. The coordinator collected data regularly from each project and compiled this into program-level reports and newsletters. The reporting could have been streamlined further if there was greater consistency between ACIAR project-level reporting requirements and the program-level reporting. The coordinator also managed requests for information from DFAT, and in some cases was able to shield the project teams from these requests, although such requests were still a cause of frustration for some project leaders.

Monitoring and evaluation

As noted earlier, a shared M&E framework was developed early in program implementation to support collation of evidence on progress towards the TADEP objectives. This had potential, however **challenges with mapping project-level achievements against the M&E framework impacted its effectiveness**. The M&E framework could have been strengthened by developing complementary M&E frameworks at the project level, so that project teams were consistently collecting and reporting information up to the program, whilst also capturing evidence unique to project-level objectives.

To maximise efficiencies, project-level M&E frameworks should also have formed the basis of the project annual reports so that project teams were capturing one set of data that could meet both project and program reporting requirements. This would have required some flexibility by ACIAR on variation to the standard structure of annual reports. It is worth highlighting that these types of multi-layer M&E systems are complex and often very difficult to implement effectively. **Additional M&E technical support to both develop a whole M&E system for TADEP and support its implementation throughout the program would have been beneficial**.

Capacity building

Another intended benefit of the program structure was provision of capacity building to project teams on common issues. This was provided on a range of topics, such as electronic data collection, communications and most recently the Family Farm Teams approach. A strong example of capacity building was the Mobile Acquired Data for TADEP (MAD4TADEP) project, which provided projects with access to electronic data collection software (CommCare) as well as training and support to project teams to use it. As the leading agricultural research institute in PNG, NARI staff were also provided with training to ensure the capacity didn't only sit with ACIAR research teams. Project teams were then able to support each other with using the software.

While the opportunities provided for building capacity were valuable, additional capacity building on gender equality would have been beneficial, particularly early in project implementation to support projects to develop a project-level gender equality and social inclusion strategy. In addition, additional ongoing support to projects on M&E would have been beneficial.

Program governance

A program steering committee was introduced midway through implementation in response to a recommendation from the mid-term review. The steering committee included the 5 project leaders, the TADEP program coordinator, ACIAR PNG country manager and ACIAR general manager, country programs. Originally meetings were held face-to-face biannually, and then shifted to more regular online meetings. **The steering committee was highly valued by all who participated in it**. Some stakeholders suggested that it was really after this committee formed that the program started to get better traction with the project leaders. It is credited with enhancing communication between the projects, and also supporting operational planning, such as organising program-level meetings or events.

There were mixed perspectives on the membership of the steering committee and whether this was appropriate. Some stakeholders appreciated the internal, modest size of the committee as it enabled honest, open discussion that might have been stifled by a more formal, larger committee. Others noted that it was only Australian members from the projects that were in the committee, and there may have been value in widening membership to senior PNG project members. Finally, some stakeholders indicated that there may have been value in bringing DFAT into the steering committee to encourage greater engagement with the program and strengthen communication with the program's co-funder.

While there were clearly benefits in keeping the steering committee internal, there does appear to be an aspect of more strategic oversight and engagement with both PNG government stakeholders and DFAT that was missing from the arrangement. One option in future projects could be to supplement the operational-level steering committee with a higher-level strategic committee that meets annually. This may also have helped to strengthen influencing and adoption of research outcomes.

Lessons for ACIAR

1. Dedicated staffing, such as a program coordinator, is critical to realise the potential benefits of the programmatic approach. The particular resourcing profile should take into account the type of benefits that ACIAR aims to achieve, and the staffing and technical assistance needed to realise these.

2. Program-level monitoring frameworks are critical to enable the program to tell a coherent performance story but are only useful if projects systematically collect data and report against a set of common indicators. In addition, more emphasis must be given to monitoring the outcomes of project activities, rather than just outputs.

3. It is important to clearly define the roles and responsibilities between ACIAR staff and dedicated program staff when establishing the program structure, and clearly communicate these to all parties. This will help to prevent confusion amongst program teams and external stakeholders about who to contact, and also ensure staff are empowered to take forward initiatives without concerns about encroaching on others' roles.

4. Future programs would benefit from more strategic, high-level governance arrangements that include DFAT (if a funding partner), partner government representatives, and key partner organisations. This could be kept separate from a more operational, internal coordination committee involving ACIAR and the project leaders. Sufficient representation from in-country partners is critical in these committees. This type of governance arrangement would also assist with maximising influence and adoption by building interest and buy-in from key in-country stakeholders.

Conclusions and lessons learned

The Transformative Agriculture and Enterprise Development Program (TADEP) and its component projects were rapidly designed in response to a funding opportunity from the Department of Foreign Affairs and Trade (DFAT). This design process was not ideal and limited the extent to which the projects could be strongly complementary. That said, the projects did have enough commonality to contribute towards common objectives and provide useful opportunities for sharing and learning. **All projects contributed meaningfully towards the 5 TADEP objectives with some examples of strong outcomes, particularly in relation to improving agricultural productivity, building capacity and gender equality**. Unfortunately, the lack of systematic data for some projects means it is difficult to draw conclusions on the achievement of outcomes.

The evaluation has outlined a framework of the potential benefits of a programmatic approach, and this has been used to assess the extent to which these benefits were realised in TADEP. **For TADEP, the main benefits were in relation to sharing and learning between project teams, shared communications, and streamlining some management functions**, although further benefits could have been realised in this last area. Further benefits could have also been realised in relation to influencing stakeholders through a more thorough communications strategy and collaborative approach between projects. To really strengthen benefits in relation to achieving impact, the initial design process for TADEP would need to have been sequenced differently to enable development of a strong program framework which could inform the project designs. While this was not feasible for TADEP, it is an important learning for future programs.

Overall, there were substantial benefits realised through the programmatic approach used in TADEP, and very limited disadvantages of taking this approach. Given that there is potential for even greater benefits to be achieved, the associated costs appear to be a worthwhile investment.

Award-winning cocoa beans produced by TADEP participants Steven and Elizabeth Saveke. Photo: ACIAR

Lessons learned

The TADEP programmatic approach highlights several lessons for ACIAR to consider in future programming. **A key overarching lesson is that there is value in intentionally identifying the type of benefits ACIAR wishes to achieve through the programmatic approach, and structuring the program with appropriate resourcing to help realise these benefits**. The rubric at Appendix 1.2 could provide a useful starting point for such an exercise.

Other lessons include:

1. To maximise the potential development impacts, the overall program framework should be developed first, ideally utilising a theory of change approach to unpack what activities are required to contribute towards the desired outcomes. Complementary projects can then be designed within this broader framework. Designing the program first also allows projects to factor in the resources required for monitoring, attendance at learning events and reporting.

2. Collaborative Research Grants were a useful addition to the program structure. Ensuring these are used strategically and linked into their 'parent' projects will help maximise their effectiveness.

3. Some projects used Collaborative Research Grants as an adaptive planning mechanism to fund activities not initially identified in the design. Other project teams noted that the ACIAR systems did not sufficiently allow for changes in context. ACIAR should consider mechanisms that provide greater flexibility for adaptive planning at the project level.

   For example, projects could undergo an annual planning process, through which ACIAR could approve research activities based on findings from the previous year. Reporting would then be against the annual plan rather than the original design. Alternatively, ACIAR could consider having competitive small grants available (similar to Collaborative Research Grants) to support projects to fund new ideas that align with project objectives, but don't necessarily require collaboration.

4. Sharing and learning between projects was a key strength of TADEP. Many of the features of the TADEP approach, such as annual meetings, updates and the steering committee should be taken forward in other programs. Sharing and learning could be further enhanced by considering additional informal mechanisms to reach a wider audience than can attend international face-to-face such as, smaller, more frequent in-country meetings, virtual meetings or discussion groups.

5. Programs should have a well-developed communications strategy that focuses not just on sharing outcomes from project activities but also seeks to influence in-country stakeholders to encourage adoption of research outputs.

6. Dedicated staffing, such as a program coordinator, is critical to realise the potential benefits of the programmatic approach. The particular resourcing profile should take into account the type of benefits that ACIAR aims to achieve as well as the staffing and technical assistance needed to realise these.

7. Program-level monitoring frameworks are critical to enable the program to tell a coherent performance story but are only useful if projects systematically collect data and report against a set of common indicators. In addition, more emphasis must be given to monitoring the outcomes of project activities, rather than just outputs.

8. It is important to clearly define the roles and responsibilities between ACIAR staff and dedicated program staff when establishing the program structure, and clearly communicate these to all parties. This will help to prevent confusion amongst program teams and external stakeholders about who to contact, and also ensure staff are empowered to take forward initiatives without concerns about encroaching on others' roles.

9. Future programs would benefit from more strategic, high-level governance arrangements that include DFAT (if a funding partner), partner government representatives, and key partner organisations. This could be kept separate from a more operational, internal coordination committee involving ACIAR and the project leaders. Sufficient representation from in-country partners is critical in these committees. This type of governance arrangement would also assist with maximising influence and adoption by building interest and buy-in from key in-country stakeholders.

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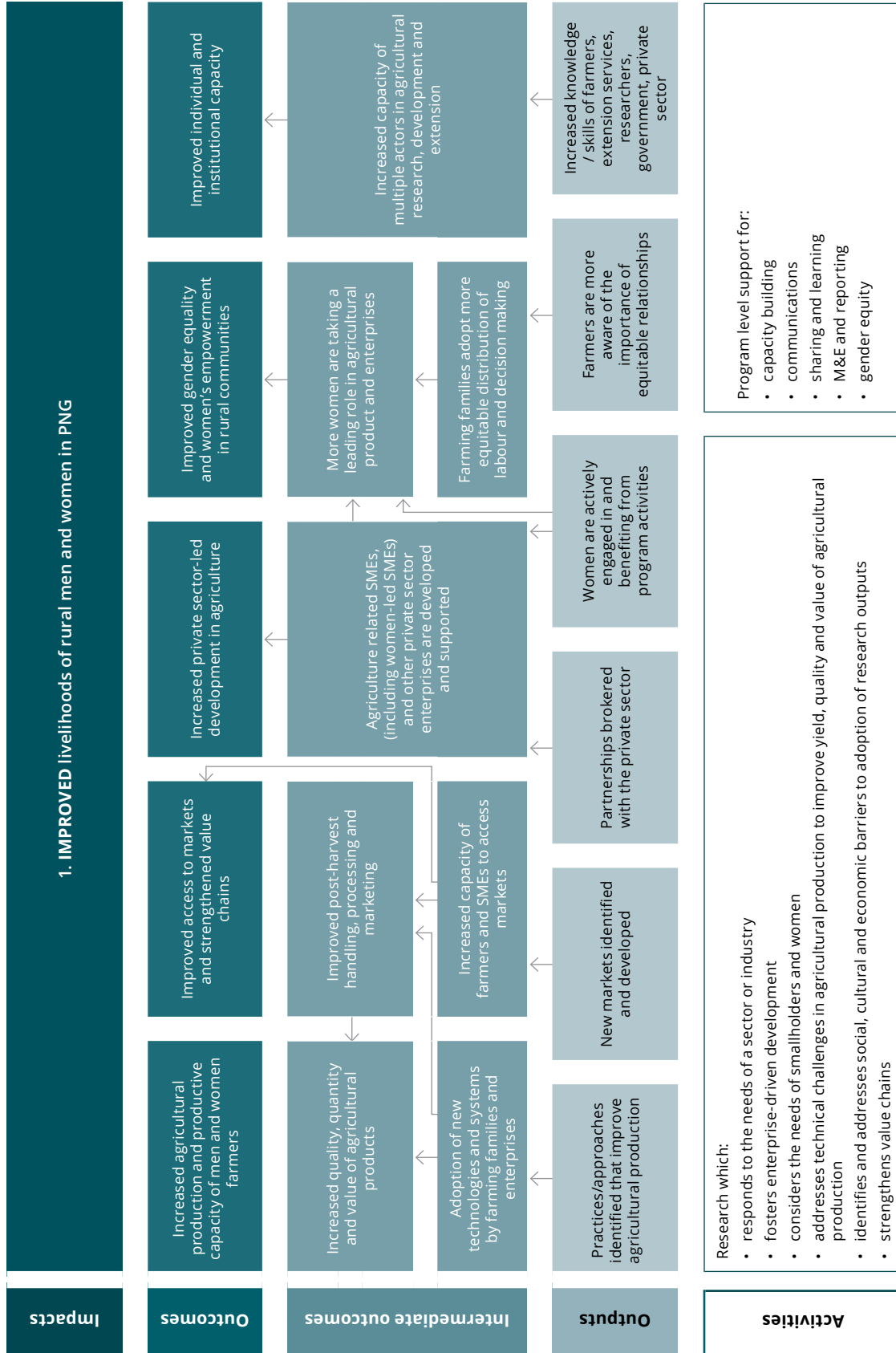
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CMFTs inspecting cocoa trees. Photo: Conor Ashleigh, ACIAR

Appendices

Appendix 1.1: Theory of change

Impacts	Outcomes	Intermediate outcomes	Outputs	Activities
1. IMPROVED livelihoods of rural men and women in PNG	Improved individual and institutional capacity	Increased capacity of multiple actors in agricultural research, development and extension	Increased knowledge / skills of farmers, extension services, researchers, government, private sector	Program level support for: • capacity building • communications • sharing and learning • M&E and reporting • gender equity
	Improved gender equality and women's empowerment in rural communities	More women are taking a leading role in agricultural product and enterprises	Farmers are more aware of the importance of equitable relationships	
		Farming families adopt more equitable distribution of labour and decision making		
	Increased private sector-led development in agriculture	Agriculture related SMEs, (including women-led SMEs) and other private sector enterprises are developed and supported	Women are actively engaged in and benefiting from program activities	Research which: • responds to the needs of a sector or industry • fosters enterprise-driven development • considers the needs of smallholders and women • addresses technical challenges in agricultural production to improve yield, quality and value of agricultural production • identifies and addresses social, cultural and economic barriers to adoption of research outputs • strengthens value chains
	Improved access to markets and strengthened value chains	Improved post-harvest handling, processing and marketing	Partnerships brokered with the private sector	
		Increased capacity of farmers and SMEs to access markets	New markets identified and developed	
	Increased agricultural production and productive capacity of men and women farmers	Increased quality, quantity and value of agricultural products	Practices/approaches identified that improve agricultural production	
		Adoption of new technologies and systems by farming families and enterprises		

Appendix 1.2: Potential benefits of a programmatic approach and rubric

Dimension	Description of potential benefits from a programmatic approach	Extent to which benefits were realised		
		Low	Medium	High
Increasing impact	• Projects work collaboratively towards a program theory of change, combining results for greater impact. • Extending the reach of interventions to multiple geographic areas. • Broadening the diversity of perspectives and strategies to provide a holistic response to a common problem.	• Projects are loosely related to program goal/objectives but operate independently. • No program level theory of change. • Geographic locations of projects are not strategic.	• Projects are closely connected to a program goal / objectives but without a strong theory of change. • Projects operate largely independently but collaborate on some activities.	• Projects are highly interdependent and complementary. • A combination of project outcomes is required to meet program goals. • A strong overarching theory of change drives selection of projects. • Projects may address different aspects of a common problem or operate in different locations to strategically broaden outcomes.
Increasing knowledge and learning	• Sharing information between projects to build knowledge and strengthen outcomes. • Comparing intervention approaches across different contexts.	• No or limited evidence of sharing and learning between projects.	• Some evidence of sharing and learning between projects. • Examples of where learning has influenced project implementation.	• Strong evidence of sharing and learning between projects with clear evidence of how this learning has strengthened project implementation.
Increasing influence and adoption	• Enhancing leverage through joint action with government, market institutions or other stakeholders. • Fostering sustainability by building relationships. • Strengthening communication of research findings.	• No or limited evidence that the program structure is being used to promote the program, or influence stakeholders.	• Some examples or evidence of the program enhancing leverage or influence with stakeholders and communicating results (over what could have been achieved by individual projects).	• The program routinely works to influence stakeholders to raise awareness of program outcomes, and increase adoption and sustainability of results. • There is evidence that this has had a positive effect.

Dimension	Description of potential benefits from a programmatic approach	Extent to which benefits were realised		
		Low	**Medium**	**High**
Streamlining management	• Coordinating implementing entities and interactions with funders. • Shared governance arrangements. • Standardising management and specialised support (M&E and reporting processes, approach to cross-cutting issues, capacity development support).	• No or minimal benefits in relation to streamlining reporting or communication with funders and other stakeholders. • No or minimal support for M&E, cross-cutting issues, or capacity development. • Governance provides oversight of projects, without significant value-add to the program.	• Some benefits in relation to streamlining communication with funders and reporting. • Shared M&E Framework. • Some examples of shared capacity building to projects. • Governance provides oversight of projects, with some value-add to the program.	• Clear benefits achieved by streamlining communication and reporting. • Shared M&E Framework effectively used to aggregate program results. • Program structure supports projects to strengthen approach to cross-cutting themes and build capacity on common issues. • Governance contributes strongly to achievement of program-level outcomes.

Appendix 1.3: Program evaluation framework

The data and process used for addressing each of the key evaluation questions (KEQs) is summarised in this table. Bold questions are high priority and were explored in more depth.

Key Evaluation Question	Evidence/information required	Data sources	Data collection and analysis approach
1. What was the process, timing (vis-à-vis constituent projects) and rationale for bringing projects together under this program? – How is the program structured?	• Documentation on discussion and decision processes • Perspectives of key stakeholders • Program structure documentation	• Program concept / design documents, ROUs, file notes etc. • Key program-level stakeholders (as above)	• Documentation review, stakeholder interviews, triangulation
2. What is the program's theory of change? To what extent have the intended program goal and outcomes been achieved? – What was the contribution of each project?	• Documented theory of change at program commencement and/or subsequently • Documented evidence of program progress and achievements • Assessments of project-level achievements • Perspectives of key stakeholders	• Program concept / design documents, ROUs, variations • Program-level progress reporting and reviews • Project-level evaluations • Key program-level stakeholders (for example, program manager/coordinator, ACIAR country managers, RPMs, country network managers; DFAT; government partners)	• Documentation review, stakeholder interviews, triangulation • ACIAR Outcomes Framework (as relevant) • Quantitative assessments (where feasible)
3. What were the main factors that influenced program performance? – To what extent were the program's scope, scale, structure and management arrangements appropriate? – How did the program's particular structure and management arrangements influence program achievements? – What external factors arose, for example, budgetary, natural hazards, policy settings, etc.?	• Existing analyses of program achievements and contextual factors • Project-level assessments • Information on program structure and management • Perspectives of key stakeholders	• Project-level evaluations • Program documentation, for example, operational guidance, annual reports, reviews, aid quality checks • Key program-level stakeholders (for example, program manager/coordinator, ACIAR country managers, RPMs, country network managers; DFAT; government partners)	• Documentation review, stakeholder interviews, triangulation

Key Evaluation Question	Evidence/information required	Data sources	Data collection and analysis approach
4. **What benefits were realised by adopting a programmatic approach, compared to an individual project approach?** – What evidence is there of learning or cross-collaboration between projects within a program? – To what extent were project level outcomes mutually reinforcing within the program? – Did the programmatic approach result in improved implementation strategies and/or additional resourcing, for example, on gender equality?	• Documented evidence of cross-project interactions (learning events etc.) • Project-level assessments • Information on program structure and management • Perspectives of key stakeholders	• Program-level progress reporting and reviews (including aid quality checks) • Project-level evaluations • Assessments of KEQs 1–3 • Key program-level stakeholders	• Documentation review, stakeholder interviews, triangulation
5. **What challenges arose from the programmatic approach?** – To what extent did the benefits outweigh the challenges?	• Documentation on challenges • Perspectives of key stakeholders	• Program-level progress reporting and reviews (including aid quality checks) • Project-level evaluations • Assessments of KEQs 1–4 • Key program-level stakeholders	• Documentation review, stakeholder interviews, triangulation • Verification workshops for each program (pertinent for all program KEQs)

Appendix 1.4: Stakeholders consulted

| Name	Title	Organisation or location
Dr Jayne Curnow	Research Program Manager, Social Sciences	ACIAR
Ms Irene Kernot	Research Program Manager, Horticulture	ACIAR
Dr Peter Horne	General Manager Country Programs	ACIAR
Maree Livermore	Coordinator of Country Partnerships	ACIAR
Ms Doreen Iga	PNG In-country Manager	ACIAR
Ms Elizabeth Brennan	TADEP Program Coordinator	ACIAR
Ms Nina Eliseo	Second Secretary, Economic Development	DFAT – PNG Post
Ms Julienne Leka-Maliaki	Senior Program Manager, Economic Section	DFAT – PNG Post
Mr Joshua Kaile	Program Manager, Economic Section	DFAT – PNG Post

Appendix 1.5: Impact pathway for TADEP
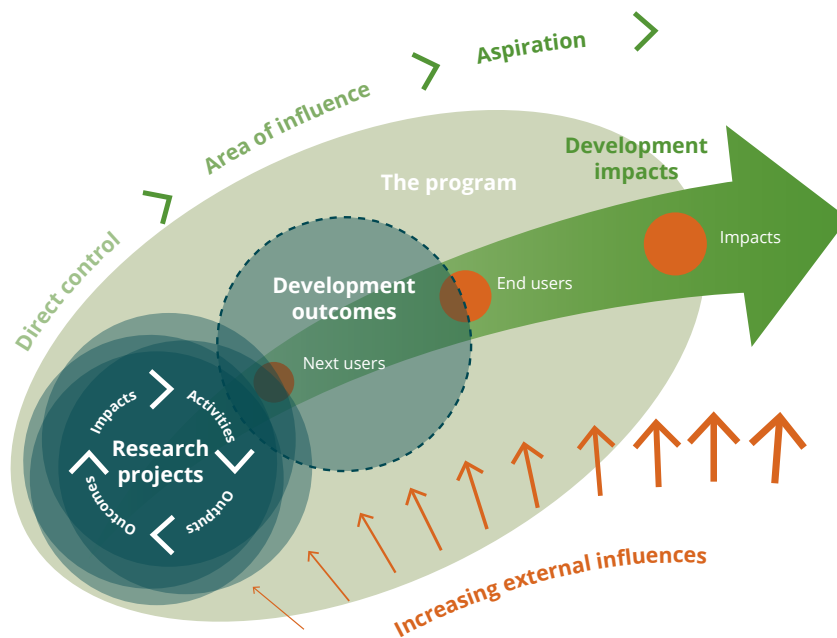
Appendix 1.6: Summary of project contributions to TADEP objectives

Rating scale used to identify contribution to TADEP objectives

Level of contribution	Definition of rating
None	No or very minimal outputs focused on this objective.
Low	Some outputs that contribute towards this objective, limited evidence of adoption by next users and limited evidence of outcomes.
Medium	Considerable outputs that contribute towards the objective, some evidence of adoption by next users. Limited evidence or outcomes or primarily anecdotal evidence. Positive outcomes are seen as likely.
High	Considerable outputs that contribute towards the objective, evidence of widespread adoption by next users. Good evidence of outcomes, moving beyond individual examples.
Very High	Extensive outputs – achieving this objective is a key focus of the program. Evidence of widespread adoption by next users and strong evidence of outcomes from multiple sources.
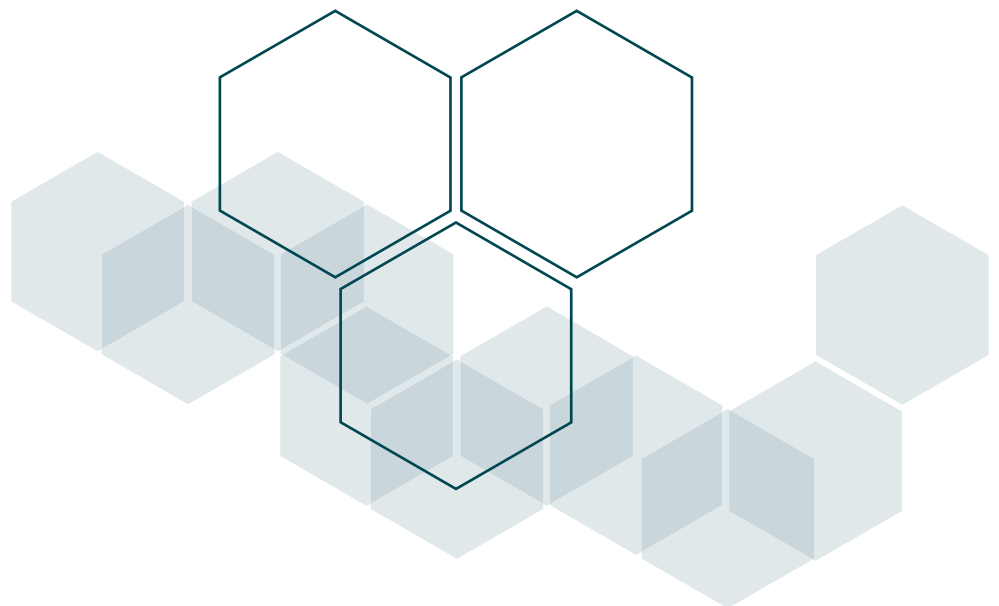
Appendix 1.6: Summary of project contributions to TADEP objectives (*cont.*)

Ratings for each TADEP project and summary of evidence

Project	Contribution	Summary of evidence
1. Increased private sector-led development		
PNG cocoa	Medium	• Reports indicate that many Cocoa Model Farmer Trainers (CMFTs) have begun establishing self-sustaining cocoa-related businesses as a result of the project, with several having been formally registered, including nurseries, budwood gardens and drying businesses. • CMFT businesses appear to primarily be supporting other donor programs or government initiatives rather than farmers directly, given limitations in the ability of farmers to pay for cocoa advisory services and planting materials.
Bougainville cocoa	Medium	• Reports suggest that some Village Extension Workers (VEWs) were generating increased income through diversification of farming and establishment of small enterprises focused on cocoa nursery and seedling sales, cocoa wet bean buying, fermentation and drying, and budwood gardening. • Reports also indicate that some budders trained through the project have been intermittently contracted to do budding in other commercial nurseries.
Galip nut	Very high	• Building private sector involvement in processing and selling galip nut was a substantial focus of the project. • By the project's conclusion, 4 private sector processors were actively engaged in the industry, and numerous smallholder farmers were selling galip nut to private processors. • Due to the project, commercial sale of premium galip nut products had commenced at supermarkets in East New Britain, Port Moresby and Prouds duty free, with demand exceeding supply.
Sweetpotato	High	• The project worked with 14 commercial growers to establish secondary multiplication sites for the newly established clean seed scheme. This has provided growers with a new product (in the form of clean vines) that they can sell to other farmers, with monthly sales of clean vines averaging PGK500–1000 for commercial growers. • Training and support to growing groups and community members has led to the emergence of new sweetpotato-related businesses for post-harvest processing and value-added product sales.
Family Farm Teams (FFT)	High	• Business skills were an aspect of the FFT training, which resulted in farmers diversifying their crops and growing new crops specifically for sale. • Between 40% and 60% of farmers reported changing marketing practices as a result of the project. • A majority of Highlands Village Community Educators (VCEs) indicated they had increased their usual income from selling food crops and this was statistically significant. Almost all households surveyed in this hub had increased the amount of crops they grew for sale, but income increases were lowest in Western Highlands where there was more limited access to markets than in Eastern Highlands and Jiwaka.

Project	Contribution	Summary of evidence
2. Increased agricultural production and productive capacity of men and women farmers		
PNG cocoa	High	• The project successfully introduced cocoa production in new areas, including the highlands and East Sepik grasslands. • Stakeholders estimate around 50% of CMFTs have adopted new agricultural practices through the project, including field grafting, central and field nurseries and budwood garden establishment, and solar drying techniques. Evidence suggests this has had a positive effect on enhancing cocoa production and renewing interest in cocoa.
Bougainville cocoa	High	• Training on cocoa farm management, soil nutrition and composting enabled many VEWs to implement new practices and increase the quality and quantity of their yield. • The Livelihoods Survey resulted in widespread recognition of the nexus between health and agricultural productivity. This has influenced stakeholders to place greater attention on improving the nutrition and health of farmers.
Galip nut	High	• The project investigated how to improve key stages of galip nut processing to improve efficiency and maximise quality within a medium- to large-scale factory setting. This led to the National Agricultural Research Institute (NARI) demonstration factory more than doubling production of processed galip nut products each year, to a total of over 2.4 million tonnes in the project's final year. • The project was able to increase farmers' awareness of the type and quality of unprocessed galip nuts that could be sold to private sector processors, increasing the productive capacity of farmers through sales of unprocessed nuts.
Sweetpotato	High	• The clean seed scheme and improved agricultural practices have resulted in higher yields and higher quality produce, with these sweetpotatoes reported to have superior taste and improved appearance. This has provided growers with access to new, higher value markets including direct sales to supermarkets in urban centres.
Family Farm Teams (FFT)	Medium	• Encouraging farming families to grow separate crops for subsistence and sale was a key part of the FFT approach. As a result, the majority of farmer's households (both VCEs and farmers trained by them) reported that they had diversified their crops and farming practices. • In the Island Hub, VCEs reported that 'nearly everyone' now has a FAITH garden which produces nutritious food for home consumption.[2] As a result, the majority of households now report they 'always' or 'mostly' have enough food to feed the family.

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2   A FAITH garden stands for 'Food Always In The Home'. This was a central concept of FFT training.

Appendix 1.6: Summary of project contributions to TADEP objectives (*cont.*)

Project	Contribution	Summary of evidence
3. Improved access to markets and strengthened value chains		
PNG cocoa	Low	• Improving access to markets and strengthening value chains was not a major focus of this project, as market linkages were thought to be well established in project areas. • Some activities were undertaken to increase access to markets in New Ireland towards the end of the project, however this proved challenging.
Bougainville cocoa	Medium	• The project has been able to help facilitate a small number of new commercial arrangements between farmers and PNG-based food manufacturers, including Queen Emma Chocolates and Paradise Foods in Port Moresby. • Capacity development activities with farmers increased their awareness of cocoa prices and marketing strategies. • Annual chocolate festivals and other marketing events and reports helped to raise awareness of Bougainville chocolate with potential buyers, but export licensing issues restricted outcomes in this area.
Galip nut	Very high	• This project worked at multiple levels to strengthen the value chain for galip nut and galip nut products within Papua New Guinea (PNG). • Prior to the project there were limited opportunities for local smallholders to sell unprocessed galip nut to private processors. This increased substantially as production at the NARI factory increased and other private sector processors entered the market in 2019. • The project established a partnership with a local supermarket in East New Britain, and PNG company City Pharmacy Limited to distribute and sell galip nut products in its retail stores in Port Moresby. This secured a market for products produced by the NARI demonstration factory and tested the market for other private sector processors.
Sweetpotato	High	• The project conducted a number of studies to understand the sweetpotato value chain and identify market opportunities. • Introduction of the clean seed scheme and new farming practices resulted in production of higher quality sweetpotato, which increased the value of sweetpotato commercial production. This is encouraging more market-oriented production and sales to new markets such as supermarkets.
Family Farm Teams (FFT)	Low	• This wasn't a major focus of the project and limited outputs were evident. • Changes in VCE marketing practices were evident in households who participated in the project. In the Highlands Hub, many households had changed where they sold their produce and all areas reported selling more often.

Project	Contribution	Summary of evidence
4. Improved individual and institutional capacity		
PNG cocoa	High	• The project has significantly contributed to building the capacity of CMFTs to manage improved cocoa farming and viable small enterprises. Model farms are operating successfully and driving the rollout of new practices. • CMFTs have been active in building the capacity of farmers within their groups, with several CMFTs also establishing satellite groups in other villages to share advice and resources. • Cocoa Board staff within the project team have strengthened their capacity to provide extension services.
Bougainville cocoa	High	• Through the project, VEWs and other cocoa farmers improved their knowledge of the link between high-quality cocoa beans, post-harvest practices and quality chocolate products – this is driving improved production practices. • Department of Primary Industries (DPI) and Cocoa Board extension staff have improved research skills, and knowledge of post-harvest cocoa production and diversification of cropping. • Through support for the DPI Chocolate Laboratory there is now additional capacity to conduct quality testing of beans and chocolate products.
Galip nut	Medium	• The project built the capacity of NARI staff in galip nut processing and value-adding, and shared the knowledge gained through the project with other private sector processors. • Extensive training was also provided to women smallholder farmers on post-harvest processing and value-adding techniques, but there is limited evidence of widespread adoption of new practices from this training.
Sweetpotato	High	• The project was instrumental in building Fresh Produce Development Agency (FPDA) staff capacity in community development, after recognising that this was critical to support achievement of project objectives. This also led to a broader institutional commitment to community-led engagement by FPDA. • The project built technical capacity of NARI and commercial sweetpotato farmers in the clean seed scheme, and shared skills with sweetpotato farmers and grower groups on enhanced production and post-harvest practices, business planning and management.
Family Farm Teams (FFT)	High	• VCEs developed skills as peer educators to deliver the FFT approach in their villages. • Approximately 100 women also completed leadership training and commenced in leadership roles to provide ongoing support to small teams of VCEs. • Partner organisations (particularly local universities) have improved capacity in participatory research and designing and delivering training in low-literacy contexts. These skills are being applied in other training settings. • Ninety-eight people (45 female and 53 male) from FPDA, Oxfam and other organisations received training on the FFT approach to build buy-in for the approach and enable the model to be replicated in other settings.

Appendix 1.6: Summary of project contributions to TADEP objectives (*cont.*)

Project	Contribution	Summary of evidence
5. Improved gender equality and women's empowerment in rural communities		
PNG cocoa	Low	• The project integrated concepts around equity and involvement of women into CMFT training, and encouraged husband/wife teams to be CMFTs. Participation of women early in the project was disappointing but this improved over time and by the end there were multiple examples of women actively contributing to and benefiting from the project. • Project stakeholders observed that while women were more active as cocoa farmers they were still largely excluded from decision-making, although discussions are beginning to take place around more equitable financial decision-making through the FFT training.
Bougainville cocoa	Medium	• Promoting gender equity and community wellbeing was a key part of the project's aim. Strategies to achieve this included setting targets of 40% for women's participation as VEWs and integrating FFT training into the project's training approach. However, the project faced challenges in reaching the targets around women VEWs, with women only comprising 9% of VEWs as of December 2020. • Twenty-two farmers (6 female and 16 male) engaged in the main project sites were trained in the FFT approach. These farmers plan to implement the approach within their own families, however there is no evidence as to whether this occurred.
Galip nut	Medium	• The project completed a range of activities to contribute to this goal, targeting women smallholders for training, and supporting female-owned enterprises. Adoption and outcomes from these activities were limited. • The project contributed to a steady increase in the number of smallholder farmers selling galip nut to the NARI factory, many of whom were women. It is unclear whether women had control of this income.
Sweetpotato	Low	• Women were actively involved in project activities and through this, experienced some benefits such as improved income from sweetpotato sales. However, beyond this participation, no targeted activities were undertaken to ensure the project contributed to gender equality and empowerment. • A lack of gender analysis and monitoring of gender outcomes meant there was no evidence of how the project impacted on women's empowerment and control over income.
Family Farm Teams (FFT)	Very high	• Many farming families trained in the FFT approach noted that they had implemented new ways of communicating as well as greater shared planning and decision-making within the family. • Some women have taken on greater leadership roles within their communities, for example, being represented on school boards or ward committees. Women in all areas reported that they gained increased respect in their village. • There were some indications the project improved family cohesion and led to a reduction in family violence.