



Australian Government
**Australian Centre for
International Agricultural Research**

Final report

Small research and development activity

project **Investigating the potential of
international Landcare**

project number ASEM/2018/117

date published 20 August 2020

prepared by Mary Johnson and Clinton Muller

*co-authors/
contributors/
collaborators* Alice Muller

approved by

final report number FR2020-010

ISBN 978-1-922345-49-3

published by ACIAR
GPO Box 1571
Canberra ACT 2601
Australia

This publication is published by ACIAR ABN 34 864 955 427. Care is taken to ensure the accuracy of the information contained in this publication. However, ACIAR cannot accept responsibility for the accuracy or completeness of the information or opinions contained in the publication. You should make your own enquiries before making decisions concerning your interests.

© Australian Centre for International Agricultural Research (ACIAR) 2020 - This work is copyright. Apart from any use as permitted under the *Copyright Act 1968*, no part may be reproduced by any process without prior written permission from ACIAR, GPO Box 1571, Canberra ACT 2601, Australia, aciarc@aciarc.gov.au.

Contents

1	Acknowledgments	3
2	Executive Summary	5
3	Background	7
3.1	Landcare.....	8
4	Methodology	10
4.1	Study objectives	10
4.2	Framework for analysis.....	10
4.3	Methods.....	11
4.4	Data Sources.....	13
5	Country Landcare Models	14
5.1	Fiji.....	14
5.2	Indonesia	17
5.3	Philippines.....	20
5.4	South Africa.....	24
5.5	Sri Lanka.....	26
5.6	Uganda.....	29
6	Findings	33
6.1	Landcare Philosophy.....	33
6.2	Landcare Movement	34
6.3	Landcare Model	40
7	Discussion	41
8	Conclusions and recommendations	45
8.1	Conclusions.....	45
8.2	Recommendations.....	45
9	References	47
9.1	References cited in this report	47
9.2	List of publications produced by project.....	50
10	Appendixes	51
10.1	Appendix 1: Study activity outputs and deliverables	51
10.2	Appendix 2: Semi-structured interview questions	54

1 Acknowledgments

The project was a great collaboration from a range of international Landcare stakeholders, and we thank the Landcare community for their generous time, observations and support to complete this study.

We would like to acknowledge ACIAR for funding this research, and particularly the time and valuable contributions of Jayne Curnow, Bec Cotton and Andrew Campbell for supporting the in-country missions and data collection. We also thank the Royal Melbourne Institute of Technology (RMIT) and RM Consulting Group (RMCG) for supporting the research initiative.

Additional research and data analysis are acknowledged from Alice Muller and CJ Wilkens.

Valuable suggestions and contribution into the research design were provided through the Program Advisory Group, in particular:

- Joy Tukahirwa - Uganda Landcare Network
- Julian Prior - University of New England
- Shang Fuentes - University of the Philippines
- Stewart Lockie - James Cook University
- Victoria Mack - Secretariat for International Landcare

Our in-country facilitators provided valuable networks, introductions and logistic organisations to support the in-field data collection, in particular:

- Indonesia: Ujung Pramudiyanto and Victoria Mack
- Fiji: Solomoni Q. Nagaunavou; Alan Peterson and Theresa Fox
- Philippines: Emily Garcia, Evy Carusos and Shang Fuentes
- South Africa: Mangaliso Percy Mbuli and Francis Steyn
- Uganda: Joy Tukahirwa and Wakulira Mathias
- Sri Lanka: Kamy Melvani, Jerry Moles and Victoria Mack

ACRONYMS

ACIAR Mindanao Agricultural Extension Project	AMAEP
Australian Centre for International Agricultural Research	ACIAR
Australian Conservation Foundation	ACF
Australia Landcare International	ALI
Africa Landcare Network	ALN
Bangsamoro Autonomous Region in Muslim Mindanao	BARMM
Community-based natural resource management	CBNRM
Department of Agriculture, Forestry and Fisheries (South Africa)	DAFF
Demand Driven Approach Programme	DDA
Department of Science and Technology - Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development	DOST-PCAARRD
Farmers Field School	FFS
Food and Agriculture Organisation	FAO
Institute for Forest and Environment	INFRONT
International Fund for Agricultural Development	IFAD
International Union for Conservation of Nature	IUCN
Landcare Foundation of the Philippines, Inc.	LFPI
Landcare International	LI
Livelihood Improvement through Facilitated Extension	LIFE
National Farmers Federation	NFF
National Landcare Programme	NLP
Pacific Organic and Ethical Trade Community	POET-COM
Research for Development	R4D
Rural Transformation Centre	RTC
Rural Producer Organisations	RPOs
Sustainable Development Goals	SDG
Sahabat Lahan Indonesia	SLI
Secretariat for International Landcare	SILC
Secretariat for Pacific Communities	SPC
University of the Philippines Mindanao	UPMin
World Agroforestry Centre	ICRAF
World Wide Fund for Nature	WWF

2 Executive Summary

Landcare, a grassroots community-led approach to sustainable land management, began in Australia in 1986. The model has evolved within the Australian community to a fully-fledged national program that has enjoyed bipartisan support from Government.

The spread of Landcare internationally has occurred without systematic co-ordination or scaling up strategy. Nonetheless, this study finds that Landcare can traverse diverse country contexts which highlights the potential of the approach for community led livelihood and natural resource outcomes. Moreover, Landcare has the capacity to complement existing societal and cultural norms and programs i.e. non-threatening, non-denominational and apolitical.

This study was undertaken across six countries, Fiji, Indonesia, the Philippines, South Africa, Sri Lanka and Uganda, to determine how sustainable agricultural land management, mobilised through Landcare, contributes to development outcomes. The study explored how different Landcare practices operate under different country contexts, and whether there are processes and/or commonalities that can be replicated to achieve desired community scale agricultural and land management outcomes.

Australian Landcare's natural resource management focus is not the primary focus for many of the international Landcarers in this study. Rather sustainable livelihood improvement, implemented within a natural resource management framework, is the primary driver.

The report describes how Landcare has been adapted in different country level contexts and includes identifying five commonalities or preconditions. The preconditions for Landcare adoption are: 1. Clear Purpose: 2. Leaders/champions and facilitators: 3. Strategic Partnership: 4. Resources and 5. Collaborative Learning. These preconditions are described in detail in Section 7.

The study also identifies constraints that have impeded the uptake of Landcare including sustained resource base, ability to scale, political instability and a lack of community participation and ownership.

Opportunities for the establishment of a coordinated approach to Landcare at the global scale are emerging with the formation of a new entity, Global Landcare. The Global Landcare platform is an alignment of three previous international entities who offered individual strengths. This included small grants and training through Australia Landcare International (ALI), early advocacy, study tours and project establishment through the Secretariat for International Landcare (SILC) and networking, facilitation and alignment to strategic international programs that has been provided through Landcare International (LI).

Impacts:

Significantly the study has provided impetus to a growing desire by key Fijian agricultural officers, NGOs and community members to reignite Landcare in Fiji. This desire is generated from Fiji's overwhelming challenges with land and water degradation and the need for collective action to address these issues. This study connected with several Fiji Government Ministries and NGOs who identified various challenges that require district, provincial and national responses. This included land management issues of declining soil fertility and soil erosion, and environmental (and health) issues related to fire management, catchment protection and climate change. Future research is recommended to build on the existing projects and initiatives to address these issues and apply and evaluate the implementation of Landcare/LIFE at district (community) level in Fiji.

Another impact resulting from the study was a facilitated study tour of Australian Landcare for Ugandan and Philippine representatives that has directly resulted in a project to initiate a Junior Landcare Group in Mindanao, Philippines and contributed to harnessing

Australian support for the Ugandan National Landcare Conference and Awards 2019, held in Kabale, Uganda.

Participants noted that the study enabled a reflection of their Landcare role and how this contributes to sustainable development efforts. This included Landcare farmers and groups, government agency representatives, education providers and NGO's.

From an Australian perspective the study promoted reflection and discussion during the Australian Landcare International (ALI) focus group activity and ongoing global discussions between ALI members about the future of international Landcare. These discussions widened to include Landcare International and the Secretariat for International Landcare and subsequently the three entities have agreed to amalgamate to form Global Landcare.

Future actions:

An emerging research gap is knowing whether a Landcare approach, using the Landcare Improvement through Facilitated Extension (LIFE) model of improved extension, can successfully transfer from one country to another. The hypothesis is that a Landcare LIFE combination can transfer between nations.

A test case for this hypothesis could be between a Philippines to Fiji adaption and adoption of Landcare and LIFE. Significantly as there are no other Philippines-Fiji collaborations in Agriculture, Forestry or Fisheries facilitated by an ACIAR commissioned project trialling a new partnership will strengthen tripartite cooperation (including across the Pacific region) and contribute to the international discourse on research for development (R4D) and extension.

Recommendation: develop a four-year project between Fiji, the Philippines and Australia to test the hypothesis is that a Landcare LIFE combination is transferable between nations and support the development of a tripartite partnership between Fiji, Philippines and Australian with an aim to extend this to other Pacific Islands.

3 Background

The agenda of the United Nations Sustainable Development Goals (SDGs) requires a transformative and sustainable trajectory for improving lives and livelihoods, that needs to also promote sustainable access to food, water and energy while protecting biodiversity and ecosystems (Griggs et al., 2013). This will take dynamic and reciprocal collaborations, with greater awareness placed on mechanisms that position community at the forefront of landscape management and decision-making activities, through the adoption of participatory community mobilisation approaches such as Landcare (Catacutan et al., 2015).

The growing evidence and understanding of real-world changes are increasingly demonstrating that humanity is driving global environmental change (Sachs, 2012; Griggs et al., 2013; Lewis & Maslin, 2015). As a result, in addition to poverty eradication, the focus of the SDGs includes the promotion of sustainable patterns of consumption and production. This includes protecting and managing the natural resource base of economic and social development as overarching objectives, essential for sustainable development (United Nations General Assembly, 2014).

It is widely recognised the process to facilitate a sustainable trajectory of eradicating poverty, whilst improving lives and livelihoods, needs to also promote sustainable access to food, water and energy while protecting biodiversity and ecosystems (Griggs et al., 2013). The nexus of issues of poverty, environmental degradation and food security prioritises the need to intensify and expand agricultural technologies to create food secure communities, whilst reducing the degradation of natural resources (World Bank, 2008). Greater awareness is being placed on mechanisms that position community at the forefront of landscape management and decision-making activities, through the adoption of participatory community mobilisation approaches, such as Landcare (Catacutan et al., 2015).

Landcare, a grassroots community-led approach to sustainable land management, began in Australia in 1986. The model has evolved within the Australian community to a fully-fledged national program that has enjoyed bipartisan support from Government. The spread of Landcare internationally has occurred without any systematic co-ordination or scaling up strategy. Accounts suggest that the Australian model of Landcare has been deployed and adapted in up to 30 countries, many of these being low- or medium- income countries in the Pacific, South-East Asia and Africa (Australia Landcare International, 2018). The observations of the successes and failures of Landcare as an approach in these various country contexts has confirmed that Landcare is not universal (Catacutan et al., 2014; Catacutan et al., 2009; Prager & Vanclay, 2010). As a result, there is a critical opportunity to identify lessons and common factors for success based on the different modalities of Landcare in different country contexts.

For several years Australian and international Landcare proponents (i.e. Landcare International, Australia Landcare International and Secretariat for International Landcare) have called for a study to capture learning from international Landcare. A consultation meeting was held at RMIT Melbourne on the 25 August 2017 to discuss opportunities for international Landcare. Key themes emerged from this discussion and influenced the design of this study including:

- Theme 1 Monitoring, evaluation and review
- Theme 2 Landcare, food security and climate change
- Theme 3 More equitable gender relations
- Theme 4 Partnerships and institutions/Government and policy models
- Theme 5 Developing suitable research methodologies and infrastructure - Building Capacity for integrated R&D

This study has collated and compared experiences and lessons from selected sites to analyse the effectiveness of Landcare in international contexts as an approach to specifically targeted development objectives.

3.1 Landcare

3.1.1 Situating Landcare

With an increasing focus on people-centred approaches to integrated landscape management (Sayer et al., 2013) there is demand for models that strike a social-ecological balance to engage disconnected communities and to support strengthened institutional arrangements. Landcare is centred on place-based, community empowerment and collective action to develop and apply solutions that deliver social, economic and environmental benefits. It is founded on the tenet of caring for the land and principles of stewardship and volunteerism; community driven but supported by government and agency. These foundations also stimulate interest in gaining and sharing knowledge about practices that can improve income generation whilst conserving and protecting natural resources. The approach is underpinned by the acknowledgement that land and water management issues do not exclusively impact or occur at the farm scale, but also ramify into the surrounding landscape.

In Australia, Landcare has played a major role in raising awareness and influencing farming and land management practices with the intent of achieving environmental outcomes across the landscape. Landcare first emerged in 1986 as a distinctive entity in the state of Victoria (Lockwood, 2000) and was initiated by the then, state government, in response to worsening land degradation. Initial focus was on property and farm planning to address salinity issues. Through the alliance of the National Farmers Federation and Australian Conservation Foundation, bipartisan support was secured from the Australian government and the National Landcare Programme (NLP) and the Decade of Landcare was launched in 1990. From the government perspective, Landcare was a catalytic programme that attempted to engage the rural population and produce more aware, engaged, informed, skilled, and adaptive resource managers with a stronger stewardship ethic (Curtis & De Lacy, 1996). Landcare captured the broad spectrum of technical and social aspects in natural resource management (Johnson et al., 2009); hence, it quickly spread as a grassroots-led movement, and a new discourse entered into environmental policy that included partnerships, reciprocity, community building and inclusiveness. Community-based natural resource management (CBNRM) was then, emerging as a powerful idea and a central organizing platform for public policy in other global contexts.

The spread of Landcare has occurred primarily by word of mouth through Landcare champions and networks, without any formalised systematic scaling-up strategy. Three organisations 1. the Secretariat for International Land Care (SILC), 2. Australian Landcare International (ALI) and 3. Landcare International (LI) have facilitated Landcare internationally for nearly two decades. This is done through various activities including study tours, Masterclasses, conferences, Landcare Fellowship program and raising funds for international projects.

Landcare now exists in more than 30 countries with varied social conditions and political environments, alongside a myriad of government and non-government projects, programmes and initiatives. It has also been mainstreamed, to a limited degree, within the missions and work programmes of multilateral organizations, for example, the World Bank.

In South Africa, Landcare was introduced following a study tour to Australia and was then conceptualised by the government in 1997, a framework was developed to minimise the risk of Landcare being a synonym for natural resource management alone. The South African government, as part of their national LandCare programme, developed six core

principles of LandCare to aid in defining the landscape approach (Prior & Holt, 2006). These principles are:

- 1) Integrated sustainable natural resource management embedded within a holistic policy and strategic framework where the primary causes of natural resource decline are recognized and addressed;
- 2) Fostering community-based and led natural resource management within a participatory framework that includes all land users, both rural and urban, so that they take ownership of the process and the outcomes;
- 3) The development of sustainable livelihoods for individuals, groups and communities utilising empowerment strategies;
- 4) Government, community and individual capacity building through targeted training, education and support mechanisms;
- 5) The development of active and true partnerships between governments, Landcare groups and communities, non-government organisations and industry and
- 6) The blending together of appropriate upper-level policy processes with bottom-up feedback mechanisms.

A global research agency, the World Agroforestry Centre (ICRAF) has explicitly adopted a Landcare approach with support from various donors in the Philippines, Kenya and Uganda.

With a focus on empowering communities and farmers, Landcare has been explored as a viable and complementary approach to existing activities and programmes addressing sustainable livelihoods and natural resource management (Prior & Johnson, 2009). Landcare programmes at the local and country level are both different, and similar, as each approach has been adapted to meet local conditions and local needs (Catacutan et al., 2009).

The Landcare approach promotes information sharing and the use of social action amongst land managers for change. This encompasses all land users within the landscape, encouraging ownership of the process and outcomes to facilitate sustainable adoption of the change in practices. Additionally, Landcare recognises the importance of improving peoples' livelihoods and the natural resource base upon which they depend, paying attention to social, economic, environmental and cultural sustainability. Finally, Landcare is about integrated sustainable natural resource management programmes in which the resource components are linked (Catacutan et al., 2009).

4 Methodology

4.1 Study objectives

This Landcare study takes place within diverse cultural, social, economic, demographic, climatic and geographic contexts in Fiji, Indonesia, the Philippines, South Africa, Sri Lanka and Uganda.

Specific objectives considered in the comparative assessment of the application of a Landcare process in the six different country contexts included:

- Defining the principles of community development models operating within the six study countries
- Defining the Landcare process that has occurred within the six study countries
- Analysing pre-adoption conditions and the modalities and triggers to adopt a Landcare process within six the study countries, including how the Landcare process was implemented
- Assessing the contribution of a Landcare process to the achievement of the intended sustainable resource management outcomes
- Defining the circumstances (modalities) in which a Landcare approach may be replicated.

An assessment was undertaken that described the principles of the Landcare models operating within the study countries. The research analyses the pre-conditions for adoption (point of practice change), how the Landcare process has been applied and the characteristics of where these have been applied. Data was collected from two perspectives, primarily civic – i.e. Landcare participants and institutional.

Specific outputs and deliverables produced through the small research activity are outlined in Section 10.1.

4.2 Framework for analysis

Three research questions underpin the study:

- 1) What are the preconditions for Landcare to flourish and to be replicated?
- 2) How does Landcare contribute to agriculture development in comparison to other extension approaches?
- 3) What does the Landcare model look like within the different country contexts?

The research questions are set in the context of development outcomes including food security and poverty reduction; better management of natural resources and climate; gender equity and empowerment of women and girls; as well as post-disaster management and recovery, and social cohesion.

In order to answer these questions, the Australian Landcare Framework (2011) was used as a basis for analysing the modalities of Landcare in each of the study countries. This framework has three key elements:

1. **Philosophy or Ethic:** the way people live and work in the landscape while caring for the land and natural resources. (Values)
2. **Movement:** local community action founded on stewardship and volunteerism, putting the philosophy into practice. (Actions)
3. **Model:** a range of knowledge generation, sharing and support mechanisms including groups, networks (from district to national levels), facilitators and coordinators, government and non-government policies, structures, programs and

partnerships influencing broad-scale community participation in sustainable resource management. (Process)

In addition to comparisons with this framework, data was also explored to map out the **Landcare development process**, and to identify what enablers/drivers and barriers/challenges there were for the development of Landcare in each country. Data relevant to the influence of gender and youth engagement in Landcare was also identified, as well as the types of agricultural practices and technologies Landcare has been most frequently associated with.

Finally, data was queried to identify any **evidence of social/community, livelihood/economic and biophysical/environmental outcomes** as a result of Landcare style activities. Where possible these outcomes were **compared to other extension approaches** that were identified, however this comparison is not a comprehensive study, as this was outside the scope of the study.

4.3 Methods

The methodology for this study was exploratory and iterative, commencing with a desk top study of the literature, including academic literature (e.g. journals, books) and grey literature (i.e. reports, government policy documents). The literature encompassed not only Landcare but also development in the context of agricultural extension, community development, natural resource management, conflict and gender equity. The literature was examined to develop a broad understanding of the key themes relating to agricultural extension and community development in each study country. The desktop analysis used standard academic research search engines and citation to identify relevant literature.

The countries involved in this study were selected using the following criteria:

- 1) adoption and scale of Landcare in-country – examples of both national and regional models
- 2) contrasting models of civic functions and relationships with Landcare models
- 3) agricultural and sustainable land management drivers for Landcare adoption
- 4) active partners engaged in Landcare including community groups, NGOs, industry groups, government agencies and research institutes
- 5) geographical distribution and prioritisation of ACIAR investment countries.

Field data was gathered through in-country visits and field trips. These visits were organised through personal contact with Landcare, Non-Government Organisation (NGO), university and other networks and conducted across a variety of settings including on-farm, community meeting rooms, university and NGO offices, at gatherings and conferences. Acknowledgement of in-country facilitators is outlined in Section 10.2. Five countries were visited, and field studies were taken into the regions of:

- Fiji - Suva and the Coral Coast, Vitu Luvu; Taveuni Island; Labasa and Mali Island, Vanua Levu
- Indonesia - Jogjakarta and Selo in the Central Region of Java
- Philippines - Bohol, Central Visayas
- South Africa - Gauteng, Pretoria and Western Cape
- Uganda - Kabale, Maska and Kampala regions.

A limitation to this study was that the field visit to Sri Lanka did not proceed due to safety restrictions on travel at the time of field data collection. To manage the limitations in field data collection, a desktop review and key informant interviews via skype were undertaken with those involved with initiating the Landcare approach in Sri Lanka, and agricultural extension practitioners working in Sri Lanka.

Multiple methods were used to gather data including one-on-one interview, focus group, observation, and collating text and archival material. Field observations contributed to the analysis by documenting locations in which the discussions took place, as well as associated contexts and events. The researchers practiced a reflect and review sessions after each field visit to cross check perceptions and validate observed data.

Semi structured interviews were undertaken with Landcare participants and institutional (local, regional, and national agency) staff to validate and clarify the understanding of Landcare and extension approaches used in specific country contexts (refer to Appendix 10.2). Participants included community group representatives, smallholder farmers (female and male), Indigenous People, government staff, non-government extension, academe, schools, spiritual orders and other agencies. In addition, a third cohort of interviewee came from an 'outsider' perspective. These interviewees weren't directly involved with Landcare, nevertheless they could provide an informed perspective of Landcare and land management extension approaches from within their respective country. Local in-country contacts were used to facilitate and broker data collection activities and ensure that free, informed and prior consent was provided.

Interview questions were open ended to allow responses to be freely given and to limit any potential bias from the interviewer. Interviews were transcribed and sent back to interviewees for comment and feedback. Where appropriate these documents were transcribed into local language. Interviews were conducted over the term of the study which provided an opportunity to review, reflect and validate information as the research progressed.

Two types of analysis and reporting have been used 1) a descriptive analysis and 2) discourse analysis. The descriptive analysis summarises the data to provide an understanding of the community development models operating within the six study countries and the Landcare process that has occurred. While discourse analysis provides a richer, more focussed, shared understanding (between the study participants and the researchers) by studying the written and spoken language in relation to its social context.

Landcare is not uniform but has been adapted through meaning and human agency. The interpretation of Landcare accounts for an interrelatedness of different aspects of people's lives. Consequently, the study comprehended these conditions using qualitative research that enables the researchers to try to understand the perspectives of those involved, informing and making sense out of sometimes vague and unlinked information.

Using documents, observations, text and interview transcripts enabled the study to examine multiple Landcare narratives and practice in each study country. Transcribed interviews and texts were entered onto a N-Vivo database and examined using discourse analysis methodology. This analysis was guided by the research questions and looked for assumptions, repeated patterns and/or discrepancy. The data was organized, coded and allocated into categories and resynthesized to produce a description of the curated material.

A program advisory group was established to provide input into the planning and implementation of the study. The advisory group brought together key personnel from Uganda, the Philippines and Australia with applied and theoretical expertise and experience in Landcare, research for development, community development, natural resource management and agriculture.

4.4 Data Sources

Data analysed came from interviews completed with relevant Landcare groups and stakeholders in each of the six countries in the study. Several documents were also reviewed to provide additional content for the Philippines and the broader Landcare Framework from Australia. A summary of the number of data sources across various groupings is shown in Table 1 Summary of interview/associated data sources reviewed below.

Table 1: Summary of interviews/ associated data sources reviewed

Context	Measure	Count
Country – number of interviews	Fiji	10
	Indonesia	11
	Philippines	19
	South Africa	13
	Sri Lanka	5
	Uganda	12
TOTAL		70
Gender	Female	9
	Male	29
	Mixed	22
	Not recorded	10
TOTAL		70
Interview type	Group	26
	Individual	28
	Document or other source	9
	Workshop	7
TOTAL		70
Landcare status	Landcare group	21
	Junior Landcare	3
	Landcare stakeholder	20
	Not Landcare	22
	Unassigned	4
TOTAL		70

5 Country Landcare Models

This section reports on the current agricultural extension, community development models and policy drivers in each study country, followed by a descriptive outline of the development of Landcare. Results are structured around the effectiveness of Landcare in terms of how it contributes to ACIAR's high level objectives of food security and poverty reduction; better management of natural resources and climate; gender equity and empowerment of women and girls; as well as post-disaster management and recovery, and social cohesion. The findings incorporate established lessons identified through several existing ACIAR investments encompassing a Landcare approach with their methodology to determine the extent that Landcare can contribute to development outcomes and the replicability of the approach as an extension model.

5.1 Fiji

5.1.1 Agriculture extension and community development approaches

The 5-year and 20-year National Development Plan (NDP) set out by the Ministry of Economy (2017) outlines the Republic of Fiji's two mutually inclusive and reinforcing approaches: Inclusive Socio-Economic Development and Transformational Strategic Thrusts. The former maintains a focus on inclusivity, ensuring no one is left behind regardless of circumstances. The latter fosters forward-looking policy shifts to enhance development including improving connectivity, developing human capital, embracing new technologies and promoting green growth.

The Ministry of Agriculture has national responsibility for the enhancement of food production and income security through agricultural sector growth. The Ministry consists of five implementing divisions 1. Human Resources Finance & Information; 2. Economic Planning & Statistics; 3. Crop Extension; 4. Animal Health & Production, and 5. Crop Research. Programmes reflect thematic areas including food security through the provision of Extension and Research Services; economic recovery through Demand Driven Approach Programme (DDA) and other commodity projects; poverty alleviation by building capacity of farmers to increase production and sustainable management of natural resources through sustainable land management practices.

The role of the Crop Extension Division is widespread and range from conducting and facilitating farmer training, assisting farmers to transition from subsistence to semi-commercial operations and monitoring agriculture projects. The Crop Extension Division operates via a Technology Transfer model with a goal to assist and enhance the transitioning of farmers from subsistence level to semi-commercial and commercial level and provide feedbacks from farmers to the researchers (Ministry of Agriculture 2020).

The roles of the Animal Health & Production Division include formulating specific livestock sectoral policies and developing programmes; providing advisory services; and facilitating jointly funded public/private sector market focused livestock research and development programmes.

The Fiji 2020 Agriculture Sector Policy Agenda Report sets out the strategic priorities for agriculture extension in Fiji. The Core National Agricultural Development objectives are to: Build modern agriculture in Fiji as an organised system of producing, processing, and marketing crops, livestock, and aquaculture products; Develop integrated production, processing, energy, and transport infrastructure support system for agriculture; Improve delivery of agriculture support services; Enhance capabilities to generate funding and secure investment through foreign investment, public private partnership(s), and other innovative business arrangements and Improve project implementation and policy formulation capability within the MOA and its partner institutions (Ministry of Agriculture 2014).

Fiji has also adopted the Rural Transformation Centre (RTC) model where RTC's are integrated rural development initiative facilities strategically located throughout the country to facilitate collaboration between development organisations and government agencies (regarding development services of rural communities). Informal community-based education occurs at village centres through Farmers Field Schools (FFSs), which serve as the operating units of RTCs.

Integrated research, training and extension services start at the village level with the FFSs and becomes institutionalised through feedback mechanisms from the FFSs, to the RTCs to the Ministry of Agriculture (Ministry of Agriculture, 2014). The main feedback mechanism is through extension staff (including researchers and relevant stakeholders) which are employed by the Crop Extension Division of the MOA. The extension staff visit farmers individually and host field days. A 2009 MOA Agriculture Census Report found that in a given year 34% of farmers were visited by an agricultural officer, 26% visited an FFS or RTC and 9% attended a field day (MOA, 2009).

RTCs are established and funded by a mix of government, international aid agencies, private groups and other donors. The proportion of funding contributed by each type of organisation is contextual. Depending on the context, RTCs may have facilities for information on crops, new technologies and off-farm livelihood enterprises, for selling agricultural inputs, for tools and training (e.g. GIS), for energy self-sufficiency and value-adding and for partner bank assistance desks.

5.1.2 Landcare in Fiji

The origins of the establishment of a Landcare approach in Fiji are attributed to three major programs.

Secretariat for Pacific Communities (SPC)

Landcare was introduced to Fiji after former Director of the Land Resources Division of SPC, Mr Inoke Ratukalou became aware of Landcare via the internet. Inoke wanted to connect with international agricultural initiatives and investigate ways to help his unit become more effective in working with farmers. Fijian farmers were 'adopting' as long as they had ongoing support – especially those farmers who were leaseholders (8-year leases). Inoke subsequently attended the International Landcare Conference and Landcare Master Class in Melbourne in 2006. After returning to Fiji, Inoke wrote the SPC Land Use policy that included a "Landcare approach" to land management with a strong community involvement element. More recent policies retain a community involvement focus, but Landcare has not been specifically referenced.

World Wide Fund for Nature (WWF)

WWF conducted a program throughout the early 2000's which included the establishment of Landcare groups on the northern main island, Vanua Levu, to prevent erosion and stabilise soil to prevent the downstream movement of sediment into the bays and onto coral reefs. The motivator and driver for the project was primarily to protect coral reefs.

The project established four to six Landcare groups in the Mali and Dreketi districts in Macuata province. The group activities included the establishment of a nursery, raising seedlings of indigenous tree species and restoring the natural forests through revegetation where indigenous tree populations had been in decline due to indiscriminate burning practices. Box farming practices were also promoted where farmers planted vegetables on a mixture of alluvial soil, rice husk and goat manure.

While there is evidence of a strong theoretical understanding of Landcare, observations of the project implementation raised questions of community-led development and the application of a Landcare approach. This includes a lack of confirmation as to whether the WWF intended outcomes aligned to the landholder objectives.

Taveuni Island Program

The fertile, volcanic soils of Taveuni Island grow the bulk of Fiji's staple crops including coconuts, taro, tapioca and pineapples. Taveuni also had the highest rate of deforestation in Fiji, due to the constant expansion into and clearing of forest areas for new land to grow taro. As the export price of taro increased more land has gone under the crop and the intensive production has led to exhausted and depleted soils.

Tei Tei Taveuni, was formed in 2009 after local farmers were advised by SPC and Ministry of Agriculture that Taveuni had the highest levels of de-forestation in Fiji. The farmers knew they were experiencing diminishing crop yields but were not aware of the extent of the forest loss and soil and water degradation across the island. Once formed, the group adopted a focus on three key areas 1) sustainable farming; 2) food security and 3) environmental conservation. To increase farmers' knowledge and skills, the group organised training in soils health, agronomy and crop care. Training and mentoring activities have been regularly offered since group inception. As the group matured Tei Tei managed and delivered projects with partners including Pacific Organic and Ethical Trade Community (POET-COM), Food and Agriculture Organisation (FAO), International Fund for Agricultural Development (IFAD) and the Australian Centre for International Agricultural Research (ACIAR). Working with researchers, education providers and extension officers, Tei Tei have built a track record in the research, trial and adoption of sustainable farming practice. They have produced biochar and compost and acquired services from Australian Volunteer International in mentoring 40 farm groups across the Island.

Other Landcare activities

Australians Jo and Geoff Dean worked closely with the Tei Tei farmer group from 2011-2014. With skills in agronomy and sustainable farm practice, Geoff's extension efforts with the Tei Tei farming community led to high adoption rates of farming practices such as the use of cover crops, lime and organic soil amendments. At the same time, Australian Volunteer Jo Dean assisted with the development of several Landcare influenced groups including Taveuni Empowerment Women Support Group (Tei Tei Womens Group) and a prominent school program and waste management initiative. The women's group set up revenue raising enterprises from training provided by global women's organisation, Soroptimist International. Women were involved in income generating activities including beekeeping, sewing, and cloth designing from lessons learnt during the workshops.

Another Landcare group was set up in 2014 in the Sabeto catchment in Western Fiji near Nadi. Some additional Landcare groups are understood to have been established in Sigatoka catchment, between Suva and Nadi. Both Sabeto and Singatoka are important vegetable growing areas and subject to flooding from cyclonic weather.

Australia Landcare International delivered training in partnerships with the Fiji Ministry of Agriculture (MOA) and SPC in 2015. The training included farm management under climate change, agricultural marketing, community development and Landcare skills (Crawford Fund, 2015).

Despite an observed flurry of momentum to simultaneously establish Landcare approaches across Fiji, these efforts stalled while ministries were restructured post government change in 2006. Over the ensuing years the vulnerability in land conditions and impact of outside influences has continued to change significantly. In addition to increasing evidence to the vulnerabilities of climate change in the South Pacific, Fiji has also witnessed the devastation of Cyclone Winston in 2016, increasing foreign interest in Fijian land and fishery resources as well as the highlighted vulnerability of the Fijian economy on tourism during the 2020 COVID-19 Pandemic. The combination of the previous exposure to Landcare and these recent events have highlighted the opportunity of the Landcare approach in community mobilisation in catchment scale land management.

5.1.3 Observations of approach

Agriculture is an important sector for Fiji's economic progress providing rural employment and food security. Despite this, the sector has declined over several decades, as a result of agricultural, trade and land policy, in addition to the increasing challenges attributed to climate extremes. Approximately 16 percent of the land is used for agriculture, and a further 43 percent can be used for tree cropping and grazing (FAO, 2016). A significant number of the food crops grown are substance.

In recent decades Fiji has been particularly vulnerable to the extreme impacts of climate change including tropical cyclones, sea level rise, flooding, drought and extreme temperatures. Remediation efforts will require collective action by all levels of government, civil society and corporate sector.

Landcare was identified by three unrelated programs and the Fijian individuals and organisations interviewed as approach that would galvanise rural groups to action. Fiji has shown the value that long-standing relationships bring over time as exemplified by the connections between Jo and Geoff Dean and Taveuni farmers.

The Rural Transformation Centre (RTC) model facilitates collaboration between development organisations and government agencies regarding development services of rural communities. The Tei Tei Farmer group shows that rural communities are capable of mobilising into self-governed decision makers able to collaborate with development organisations and government agencies for mutually beneficial outcomes.

5.2 Indonesia

5.2.1 Agriculture extension and community development approaches

The Government of Indonesia's flagship national community development program is the National Program for Community Empowerment (PNPM Mandiri). The PNPM maintains a community-led participatory planning process with the goal of developing individual villages and areas and improving the economic and social welfare of the poor. The PNPM sets out to achieve these goals through community consultation, capacity building and empowerment. Key elements of the local programs include community development, community grants, strengthening local governance and partnerships, and technical assistance for program management and development (World Bank, 2014).

PNPM was initiated in 2006, to accelerate government efforts to reduce poverty and to ensure equity and inclusiveness. It builds upon the previous ten years of successful experience with the Kecamatan Development Programme (KDP) and the Urban Poverty Project (UPP). With technical and financial assistance from the International Bank for Reconstruction and Development, the PNPM is now a national programme covering all villages and cities in Indonesia.

At the local level, PNPM allocates two types of facilitators to communities, with responsibilities that include promoting participation, conducting training, and providing technical supervision and financial management. Empowerment facilitators encouraged participation in PNPM projects and build capacity through training and regular consultation. Technical facilitators have backgrounds in civil engineering, and they reviewed project design and monitored progress on public works projects. Specialists in financial management are also funded by PNPM grants.

In line with this, since 1999, agriculture extension policy implementation in Indonesia has taken a decentralised, rural agribusiness led approach. Although the priority outcome for agricultural extension in Indonesia is to support new approaches to agriculture extension (World Bank, 2005), inefficiencies in the functioning of the Ministry of Agriculture (MOA) to link research and extension have historically impeded robust research agenda setting and

dissemination of results, which has driven the evolution of a decentralised approach to agriculture extension.

In 2006, the Agriculture, Fishery and Forestry Extension System Law was passed, which provides multiple levels of government directives to build farmer capacity through informal education and farmer empowerment. This is intended to increase rural prosperity through agribusiness development. More specifically, the law provides guidelines for how extension services delivered by Local Governments and the National Government should be implemented, identifies that agricultural extension should be jointly driven between farmers and the extension officers, requires all institutional relations to be open and transparent, ensures shared financial responsibility between local and central governments, farmers and private funding for extension services, and requires local governments to coordinate agricultural extension bodies at district and provincial levels.

The Extension System Law delineates between three types of extension workers: private extension workers, farm-supporting-extension workers (i.e. volunteers and experienced farmers) and government employee extension workers. Government employee extension staff are the responsibility of the District Government however, one of two models operate at the district level, either as a unified agency for public extension or a commodity-based, fragmented public extension service. The latter is the chosen approach for about two thirds of the districts even though international donors generally prefer the former (World Bank, 2005).

The law also requires local government to participate in extension through the establishment of extension bodies at district and provincial levels. Shared funding dictated through the law has led nearly all districts and provinces to have public agricultural extension offices and officers. However, for most local governments, agriculture does not directly contribute to their revenue streams, so funding is frequently allocated to other industries (World Bank, 2005). In practice, this has tended to reflect a heavy reliance on special allocated funding from central government to support extension activities. To supplement this budget, NGOs and the private sector can either distribute funding to local governments to undertake extensions services or they are allowed to establish their own extension officers at village levels.

Generally, rural producer organisations (RPOs) (similar operational structure to Landcare groups) are not yet considered economic institutions so their ability to access capital or economic facilitation is limited. However, the current political climate is conducive to local and higher branches of government forming partnerships with RPOs, which many are in the process of developing.

5.2.2 Landcare in Indonesia

Landcare activities in Indonesia have been facilitated by the farmer group Karya manunggal "Together We Work". The group is based in Selo, a village in the area between the two volcanos Mt Merapi (active) and Mt Merbabu, Java. Selo consists of 10 sub-villages with a combined population of approximately 27,000. The group first formed in 1997 as a forum where local farmers could meet monthly to share agricultural problems, discuss ways forward and trial new practices in the spirit of gotong royong (mutual assistance) that emphasises collective support and reciprocity. The farmers also felt that by working collaboratively their capacity would increase and the group structure would provide the necessary mechanism for seeking assistance through NGO's or government programs.

Agriculture is core to the local economy and farming (primarily vegetable crops) is undertaken on steep slopes. The corridor area between Mt Merapi and Mt Merbabu National Park suffers from severe land degradation with vegetation cover lost due to agricultural conversion and clearing of forest for fuel wood to meet energy demands. This encroachment and clearing of forest reserve areas has led to a loss of native species (including the Javanese tiger and Javanese eagle) and biodiversity. The loss of forest

coverage around the peak of Mt Merbabu has directly impacted the springs that feed into the watershed (catchment) and sediments from bared soil has degraded watersheds that feed into water systems that supply Central Java. Furthermore, as tensions bare down on the farmers report experiencing increased pest attack on crops and marauding monkeys that venture out from the reserve areas seeking food.

Regional rainfall is variable and influenced by the Austral-Asia monsoon and El Niño-Southern Oscillation (ENSO). Under climate change projections the region will experience higher temperatures, longer dry seasons with more variable and lower rainfall patterns. These variations are now being experienced and cannot be accommodated by the indigenous knowledge systems of *pranata mangsa* (Javanese cultivation seasons) as practiced by farmers.

Farming is constrained by land size and land tenure. Traditionally land is handed down through families over successive generations consequently the areas to farm have reduced which places additional pressure on farmers to earn a living. Young farmers are in decline as the youth head to larger centres and cities looking for work. Farming is viewed as a risky business and a last choice of profession.

In 2008 Katya manunggal members had been working with the Institute for Forest and Environment (INFRONT) an Indonesian NGO. They had heard about the Australian Landcare program, were interested in learning more so contacted the Secretariat for International Landcare an Australian not for profit that facilitated Landcare exchange. SILC visited the Indonesian group in late 2008.

As a result of this visit a funding application was made to the Finland Embassy under their Local Cooperation Fund. This proposal entitled *Landcare in Indonesia* aimed to establish a foundation Landcare project in Indonesia that would build on the work already completed by INFRONT and establish an agro-silvo-pastoral (ASP) model within a Landcare framework to address land degradation, poverty and climate change. It was one of the first field-based climate change preparation projects in Central Java with links to local and regional planning. In mid-2009 Finland funded the proposal with INFRONT as the lead delivery organisation.

Ten months into the project and Mt Merapi erupted causing widespread devastation. Although not directly impacted, Selo was covered in a deep ash layer which destroyed crops and newly planted trees. Furthermore, in early 2011, Finland withdrew its support at the end of year one due to audit irregularities. This halted the momentum that Landcare had generated, nonetheless the Katya manunggal farmers group persevered, revised their Landcare activities, identified alternative partners and funding sources.

Four farmer groups are currently active in the Selo area: 1. Karyn Manunggal (63 members); 2. Sumber Makmur (43 members); 3. Sumber rejeki (45 members) and 4. Berdaya Women's Group (25 members). The Women's Group conduct a business enterprise that turn vegetable crops, such as carrots, into consumable products i.e. chips. The group members are interested in training and have completed courses on post-harvest handling. Profits from selling the vegetable products are deposited into a shared saving scheme. Berdaya Womens Group also have a tree nursery and grow seedlings which are distributed freely to the community. There are ten women's groups in Selo and they focus on different enterprises to avoid competition.

Landcare members link to the Head of the Village Government through local working group committees. This is a strategic link as Village Government's role is to supervise development and oversee implementation which includes conservation works.

The farmer facilitators who mentor the farmer/Landcare groups report that cross visits have inspired and encouraged the uptake of new ideas, for example the field trip to Malang and Pasuruan, East Java province. Five farmer facilitators also travelled to Australia to attend the 2012 Landcare Conference in Sydney and on returning to Java and with assistance from Professor Sambas Sabarnurdin, Faculty of Agriculture University

Gadjah Mada, they established Sahabat Lahan Indonesia (SLI), *friends of the land or land mates*. However, due to lack of securing ongoing funding, the organisation disbanded in 2016.

Another cross-country visit was undertaken by five Indonesian facilitators, including Gadjah Mada University Forestry lecturer Silvi Nur Oktalina, who visited the Philippines in 2014. This visit provided insights into Philippines Landcare which had been running for nearly two decades.

One project that has been very successful has been the establishment of biogas to households. Biogas reduces firewood harvesting and the energy costs of LPG and improves cooking conditions for women. The program has been supported by Karina Caritas and is ongoing.

5.2.3 Observations of approach

The Karya manunggal farmer group formed to provide a supportive learning environment for its members. Local knowledge systems are based on the lived experience and built through the shared stories. However, with increasing and more complex farming challenges, the farmers sought specialized knowledge from a wider range of sources including Indonesian government agencies, research organisations, universities and NGOs such as INFRONT. With a specific focus on agriculture and environment the farmers significantly widened their network and developed their capacities through connecting with Australian and Philippine Landcarers’.

Indonesia demonstrates two approaches to poverty reduction and community development. The first is state directed where the state is responsible for supporting and encouraging communities through initiatives like the National Program for Community Empowerment (PNPM). The second approach is driven by community groups acting independently of the government. Landcare does not compete with PNPM rather both models are complementary and underpinned by community-driven development (CDD).

An ongoing challenge for the Landcare group is the difficulty of securing funds for activities or projects especially those that may involve recurrent costs such as farm demonstration plots. Although the group has previously obtained funds through government and NGO programs these are not ongoing and are often linked with programs which may not necessarily align with the aims or philosophy of the group for example organic farming versus artificial fertilizer input programs.

The Selo facilitators and farmer leaders supplement their farm incomes with outside work - often located in larger centres which necessitates travel or periods of time away. This results in less time available for maintaining group needs and pursuing projects. Yet the partnership with SILC has, provided the motivation and financial resources for the Selo farmers to continue with their Landcare endeavours. Nonetheless the farmers report that it has been very challenging to sustain these activities in the longer term.

What may assist the group is to form stronger local networks that can provide tactical positioning of people and resources. There are opportunities for this to occur through engaging with the village government system, which the group pursue. Nonetheless a number of community projects compete for village government funds and successfully gaining funds can depend on the development priorities of the village head.

5.3 Philippines

5.3.1 Agriculture extension and community development approaches

The Department of Social Welfare and Development (DSWD) is a primary executive Philippine government agency with the mission to “lead in the formulation, implementation and coordination of social welfare and development policies and programs for and with

the poor, vulnerable and disadvantaged” Department of Social Welfare and Development 2020). Some of the organisational outcomes of the DSWD include improved well-being of poor families, promoted and protected rights of poor and vulnerable sectors and improved delivery of social welfare and development programs by local government units, through social welfare and development office.

In line with focussing on communities the Department of Agriculture (DA), which is the national agency for coordinating RD&E, maintains a strategic priority to “Promote the integration of research and development functions and enhance the participation of farmers, fisherfolk, the industry, and the private sector in the development of the national research, development and agenda”. (Bureau of Agriculture Research 2020b).

The Bureau of Agricultural Research (BAR), an agency within the DA is the operational coordinator and lead of national agriculture RD&E. The mission of the BAR is “to attain food security and reduce poverty through technology-based agriculture and fisheries” (Bureau of Agriculture Research 2020b). The BAR is responsible for coordinating with farmers, farmer associations and research institutions to conduct research for the Ministry, with the intention of benefiting farms and rural workers through consolidation, innovation, teamwork and networking and accountability. The BAR manages and operates several programs to achieve its goals including the National Technology Commercialisation (Technology Transfer), Climate Change and Community-Based Participatory Action Research programs.

BAR’s Community-Based Participatory Action Research program (CPAR) works with local farmers to assess the economic and technical feasibility of new technologies in specific agro-climatic environments within various provinces prior to widespread rollout. Through this approach, the BAR engages with communities first to demonstrate the value of community driven information-based decision-making process as well operating through a holistic farm management approach. The CPAR program is also implemented in conjunction with Local Government Unit’s and the DA’s Regional Integrated Agricultural Research Centres. BAR has coordinated at least 227 CPAR projects, which have covered 545 localities nationwide, affected 10,683 farmer-beneficiaries, of which about half are direct recipients of BAR’s CPAR grant funds, and benefited 4,917 other farmers who independently invested as a result of interactions with extension officers. (Bureau of Agricultural Research 2020a).

5.3.2 Landcare in the Philippines

Philippines Landcare began in the municipality of Claveria in the northern province of Misamis Oriental. It developed further in the central Bukidnon municipality of Lantapan, and the southern remote barangay of Ned in South Cotabato. Later it took root in the Visayan islands of Bohol and Leyte.

Landcare grew from efforts to promote soil conservation, for example contour hedgerows, among smallholder vegetable farmers. In the early 1990s, the International Centre for Research in Agroforestry (ICRAF) had conducted field trials on contour hedgerow systems in Claveria and encouraged the use of natural vegetative strips (NVS). Many farmers were using and adapting these conservation systems, but the agricultural extension services did not have adequate personnel or resources to scale up activities. In response, a program was developed that comprised representatives from the various government agencies, ICRAF and farmer-practitioners from the local community.

By early 1996 farmers had organised themselves into groups to share their knowledge of using the conservation technologies. By the end of 1996 there were 24 farmer groups that met monthly; membership increased rapidly and ICRAF provided technical facilitation. The group collective became known as the Claveria Landcare Association, and within two years this farmer-led movement had approximately 200 groups in Claveria.

Landcare then spread to the municipality of Lantapan in central Mindanao. ICRAF had been taking a landscape approach to sustainability with extension programs and

encouraged the Lantapan farmers to visit and interact with the Claveria farmers. In 1999, farmer groups started forming in the Lantapan area as ICRAF grasped the importance of farmers taking the initiative and leadership. Support for the farmer groups grew as new partnerships developed with local government units and agricultural extension institutions.

Between 1999 and 2004, ACIAR became involved by commissioning a project () that evaluated the adoption of conservation farming practices at three Mindanao sites. The Australia-Philippines Landcare Program (ASEM2002051) reported significant positive impacts including the adoption of conservation measures by up to 65% of farmers, and protection of up to 25% of susceptible farmland. The project also had significant impact on social capital through membership of Landcare groups, development of farmer knowledge and skills through training provided, and re-shaping of institutional approaches (Vock 2012).

Importantly Landcare provided a forum where farmers could share and discuss common issues which went beyond conservation farming to community matters such as health, access to markets and education. Another important development was the cooperation between Landcare associations and local government. This cooperation had two outcomes 1) access to funding programs and initiatives and 2) the promotion and support of Landcare to other barangays groups that resulted in an increase the uptake of new practices such as NVS.

The Landcare Foundation of the Philippines, Inc. (LFPI) was established in 2003 as a mechanism to help promote and develop the Landcare movement in the Philippines and South East Asia. In addition, LFPI offers a wide range of services including project development, implementation management; capacity building; and technical assistance in research-based improvement of farming and marketing systems, and participatory technology development.

Landcare influenced the attitudes and practices of farmers, policymakers, local governments and communities, and has grown to involve more than 8,000 farmers and more than 60 research, government, non-government and academic agencies across more than 20 municipalities in the Philippines provinces of conflict-vulnerable Mindanao and Visayas (Campbell 2019).

From Landcare to LIFE

Previous research commissioned by the Australian Centre for International Agricultural Research (ACIAR) in Mindanao highlighted how certain types of community-based agricultural extension methods, derived predominantly from the Landcare concept, can rapidly enhance agricultural livelihoods through improving both farmer-based learning networks and community social capital (Cramb, 2007; Newby and Cramb, 2011; Vock 2012). Subsequently, in late 2013, a new ACIAR project was commissioned (ASEM 2012063), involving Australian and Filipino researchers, to develop and test this process more widely in the conflict-affected areas of western Mindanao.

The ACIAR Mindanao Agricultural Extension project (AMAEP) works with small-holder farmers to improve livelihoods and develop an improved agricultural extension model that is relevant to conflict vulnerable areas in Mindanao. With its genesis in Landcare the Livelihood Improvement through Facilitated Extension (LIFE) model has been developed, tested and re-tested at the pilot sites for nearly eight years.

LIFE has two foci 1) the farm level and 2) the institutional level. The farm level uses LIFE extension processes that improve on the technical, economic and social dimensions of farmer livelihoods. The institutional (extension agency) level explores how LIFE can be appropriately incorporated into existing and future extension programs operating in the conflict areas. Project participants are representative of their respective communities including women and men, youth and aged, Indigenous People and marginalised groups.

Asset-Based Community Development (ABCD) has been used as a methodology for the LIFE model. ABCD is based on the principle that recognises the strengths, talents and

assets of individuals and communities (Mathie & Cunningham 2003). At its core are associations or groups of community members, both formal and informal, that are a source of power and leadership, and are thus considered assets of the community (Greene 2000). By focusing on its assets, a community can build on positive aspects, such as local and Indigenous knowledge, and work on developing these assets.

Conversely many traditional forms of community development (i.e. top down technology transfer) have relied on outside experts identifying problems and offering solutions. These traditional approaches inadvertently present a one-sided view that sometimes compromise, rather than contribute to, community capacity building (Mathie & Cunningham 2003).

ABCD is also concerned with linking micro-assets to the macro environment. Attention is paid to how to position the community in relation to local institutions and the external economic environment on which its prosperity depends (Phillips & Pittman 2014).

Over the past eight years the LIFE model has been tested and adopted by local government units, education providers, NGO's, development organisations and civil organisations in the conflict vulnerable BARMM region of Mindanao. The most significant outcome has been the commencement in December 2017 of a parallel project involving a research consortium consisting of the Department of Science and Technology - Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (DOST-PCAARRD) PCAARRD, UP Mindanao and LFPI. This three-year project involves validating the LIFE model under PCAARRD's research and development processes as an extension model for conflict areas.

The University of the Philippines Mindanao is institutionalising LIFE extension through its extension and outreach programs and the Department of Agriculture - Agricultural Training Institute (DA-ATI) who have commissioned LIFE training for extension officers.

5.3.3 Observations of approach

Philippines Landcare grew from efforts to promote soil conservation and achieve rapid adoption of contour-based farming systems. Key to the success of Landcare was that the farming systems it promoted resulted in a stable platform from which a wide range of more commercially oriented production systems could be built (Vock 2012).

Vock (2012) noted that farmers and farmer groups showed significant willingness to become involved in new livelihood development strategies, and once equipped with the skills and knowledge, showed good ability to develop new farm and market opportunities with minimal outside support. The uptake of LIFE is occurring informally by word of mouth to neighbouring barangays, and formally through government programs (PCAARRD and DA-ATI) farmer associations, non-government organisations and local government units.

Although community-driven development has emerged on a large scale, the ability to empower marginalised sections of society remains in question (McCarthy et al. 2017). Empirical studies (Vock 2012, Beza, et al 2017) show that Landcare and LIFE have empowered vulnerable and marginalised groups such as women and Indigenous People. For example, the Mindanao based Landcare/LIFE group Katipunan Vegetable and Agar-agar Growers Association (KVAGA) was nominated for the 2020 Bloomberg Award for Muslim women leaders.

Working with conflict-vulnerable communities has required a greater degree of sensitivity and attention to engagement, communication, safety and security processes. It is noteworthy that Landcare and LIFE have been able to engage with local, provincial and national governance arrangements without engaging in political matters. An example of how this has been successfully managed is the on-going support for Bohol Landcare by five successive local government Mayors.

5.4 South Africa

5.4.1 Agriculture extension and community development approaches

In 2009 the South African Government Cabinet approved the Comprehensive Rural Development Programme (CRDP) which maintains a focus on “enabling rural people to take control of their lives, with support from government” (South African Government 2020). The CRDP is premised on three pillars: Land Reform, Agrarian Transformation and Rural Development.

The CRDP maintains a holistic approach to enhance socio-economic development through partnerships with a diversity of organisations, and acts as a catalyst and facilitator to ensure rural development takes place. CRDP works to address specific needs of rural communities as well as to enable people in rural communities to “take control of their destiny” (Department of Rural Development and Land Reform 2020). These outcomes have primarily been achieved through distribution of land and support for agricultural practices, including access to information services (South African Government 2020).

For agriculture extension, the Department of Agriculture, Forestry and Fisheries (DAFF) engages in the development and recommendation of approaches, frameworks and policies at a national scale to guide extension services across the provinces. In 2005, the Norm and Standards for Agricultural Extension and Advisory Services was developed to function as a national framework that guides agricultural extension and advisory services (Kock & Teblanché 2013). At a provincial level, there are deeply entrenched institutional inequalities in agricultural extension post-apartheid era. Variability in the provincial direction of extension has resulted in a level of ambiguity in the roles of provincial extension officers, including what problems extension should work to address (Adekunle 2013).

Private and semi-private sectors are becoming increasingly involved in the provision of extension services in South Africa (Koch & Teblanché 2013). Notably, the South African Society for Agricultural Extension (SASAE) is a national, member-based organisation that works “to promote the science and vocation of agricultural extension through its members” (SASAE 2020). Throughout the country the SASAE services its members by providing extension service structures from the national to local levels (SASAE, 2004). The private sector and commodity organisations (i.e. peak industry bodies) engage heavily with the SASAE to influence extension (Koch & Teblanché 2013).

Identified in The Strategic Plan for South African Agriculture (2001), the strategic priority for agriculture extension in South Africa is “Transforming agricultural research, transfer of technology, education and extension to be more responsive to markets”. To address this, DAFF has worked to develop a National Agricultural Research Systems approach to better link, coordinate and integrate research with extension services, industry and international stakeholders.

5.4.2 Landcare in South Africa

The LandCare programme in South Africa was introduced following several community and government bilateral exchanges between Australia and South Africa, and fully launched in 1997 after government recognised the poor environmental conditions and poverty in communal farming lands (Bosoga, Taylor, Mkhize, & Msomi 2009). Its main objective was to protect natural resources through sustainable agricultural and environmental management practices (Mulder & Brent 2006). As 40% of South Africans residing in rural communities are dependent on natural resources for their livelihood, it was identified as necessary for the LandCare programme to be implemented in those areas as a part of their poverty relief strategy (Bosoga et al. 2009; DAFF 2017; Mulder & Brent 2006). The inception of the Programme had been funded from the national poverty alleviation fund but since 2004, funding has been sourced from DAFF.

Current status

Significant impact and progress has been reported by the LandCare programme since its inception. The programme is identified as a key mechanism for the South African government to deliver on global commitments in land restoration, including the United Nations Convention to Combat Desertification (UNCCD). The programme is now implemented in all nine South African provinces (Mulder & Brent, 2006) varying in annual budget allocation between ~\$4 - \$10.5M AUD per year (Polity 2018).

The South Africa LandCare programme is defined as community based and led initiative, underpinned by the goals of optimising productivity and sustainable use of natural resources, and has branched into five sub-programmes, namely;

1. **SoilCare**: addresses aspects such as soil erosion, reduction of soil fertility, salinisation, soil compaction and land sealing.
2. **VeldCare**: addresses rehabilitation of and preservation of grazing or rangeland, bush encroachment, invasive and alien species, deforestation, overgrazing and increase the nutritional needs of grazing animals.
3. **WaterCare**: addresses water conservation and rehabilitation of wetlands and catchments.
4. **JuniorCare**: school activities i.e. food gardening and camps
5. **Conservation Agriculture**: advocate for minimum soil disturbance, permanent cover crop and companion planting.

LandCare principles have been adopted in all of the government's agricultural and environmental projects. Through the Department of Agriculture, implementation is achieved through the comprehensive agricultural support programme (CASP), which has a focus on smallholder farmers targeting community food garden projects and also school. A key feature of the South African LandCare Programme is the integration with the Department of Public Works (DPW) to support environmental employment opportunities and has been implementing LandCare on-ground works through the Expanded Public Works Programme (EPWP) since 2004.

5.4.3 Observations of approach

The structure, integration and resourcing of the LandCare approach in South Africa as a whole of government programme, provides a highly comparable model to Landcare in Australia. LandCare is well embedded as a national scale delivery platform and recognised as one of the key implementation tools by the South African government to deliver against their commitments under several UN conventions. At the national scale, the government hosts a Biannual LandCare Conference as a pivotal opportunity for knowledge exchange, celebrating success and providing feedback to the regions. South Africa also demonstrates leadership in the LandCare approach, having invested for a number of years in a secretariat function to support the Africa Landcare Network (ALN).

Variability exists in the capacity and engagement of the LandCare approach in each province. Provinces that have had a long history with LandCare from inception, such as Limpopo and Western Cape, have reaped the long-term investment in capacity building, including historic facilitator exchange visits to Australia. These early investments at the initiation of the LandCare programme are evident in the current form of the model, with strong structural alignment to provincial government activities that underpin the current on-ground impact of the programme. This is particularly represented in the community participation and ownership of the design of the LandCare programme activities within these provinces.

One challenge for the LandCare programme is the entrenchment in government extension and service delivery. The embedding of LandCare delivery models within government agencies and structures, as well as alignment to government implementation priorities, has driven the approach from policy, rather than from grassroots community interest level.

This has led to a lack of volunteerism or organic participation beyond formal program engagement.

Another challenge for participation in the programme is the strong alignment to the Expanded Public Works Programme. Whilst on-ground activities undertaken through the EPWP deliver significant landscape restoration work, including alien weed removal and erosion control works, the outcomes tend to be driven by opportunities for employment creation, rather than prioritisation from community or non-employment generating environmental restoration works. This association has also led to an incorrect perception of LandCare as a government employment programme, rather than a community led approach to natural resource management.

A key determinant influencing the future of LandCare in South Africa will be the outcome of contested land reforms, including proposed land redistribution mechanisms.

5.5 Sri Lanka

5.5.1 Agriculture extension and community development approaches

The provision of agriculture education, research and extension services are the principal responsibility of the Government of Sri Lanka (GoSL). The commitment of the GoSL to agricultural development is evident by the fact that agriculture education begins in secondary school. Similarly, the National Agriculture Research System (NARS), which is comprised of several universities and agriculture research institutes and departments, exists to conduct sectoral and cross-sectoral research that contributes to the development of the sector.

Public extension services in Sri Lanka generally follow a top-down model, the activities and priorities of which stem from the NARS. Agriculture extension occurs through a merged advisory service and input delivery process between provincial councils, central government and institutes or departments, however all organisations conducting research must conduct activities within the scope of the central government ministries.

Nonetheless, extension activities are primarily managed and operated by either the nine provincial departments or the DOA and Mahaweli Authority of Sri Lanka for the six Interprovincial extension areas.

Costs of extension are generally internalised through the private sector bundling advisory activities with input marketing. Similarly, several private and community group providers deliver agricultural extension services on a wide range of technical areas. Costs are also covered by NGO's that promote adoption and technology dissemination processes, generally within the context of a poverty-alleviation focus.

The European Union (EU) funded Technical Assistance to the Modernisation of Agriculture Programme (TAMAP) focuses on the modernisation and diversification of Sri Lankan agricultural production; the promotion of agricultural exports and developing and refining planning and policy improvement. One of the main activities of TAMAP has been the development of the Draft Overarching Agriculture Policy (OAP), in line with Sri Lanka's Government Development Goals.

Key agricultural opportunities identified in the Overarching Agriculture Policy (OAP) include: increasing human resources to deliver research and advisory services; a networked national agricultural research system (NARS); funding for agriculture research; establishing Public Private Partnerships in research and development and joined up knowledge generation and knowledge dissemination between national and provincial systems (Ministry of Agriculture 2019).

OAP recognises that agriculture extension needs to be addressed in a holistic context as well as in line with national policies (Ministry of Agriculture 2019). A holistic approach includes considering that the majority of rural communities are comprised mostly of small

landholders with minimal awareness of and access to modern technologies, practices and production inputs that can improve production and productivity. These smallholders are often in debt and must pursue off-farm employment (Kularante 2009).

5.5.2 Landcare in Sri Lanka

Sri Lanka's agriculture sector is mainly plantation and non-plantation crop segments, livestock and poultry, then fisheries and aquaculture. Of the 7.0% contributed by the agricultural sector to national GDP in 2018, the crops subsector contributed 4.6%, fisheries 1.2%, animal production 0.6%, and forestry and logging 0.6%. Tea, rubber, coconut and other perennials contributed 24% of the value of agricultural GDP in 2018 with fisheries contributing 17% and cereals including rice 11% (OAP 2019).

Sri Lanka's agriculture sector has also been impacted by a continuous cycle of drought and floods in the past 10 years and is vulnerable to increasingly unpredictable weather patterns, extreme weather events and other effects of climate change.

Past demand for land and water to support intensive production has contributed to deforestation, water scarcity, soil degradation and loss of biodiversity. Climate change impacts further accentuate the pressures on the natural resources stock. This underscores the necessity to conserve natural resources by supporting less resource-intensive and more sustainable production and consumption patterns (OAP 2019).

The experimental station NeoSynthesis Research Centre (NSRC) was established in 1982 to promote and establish sustainable farm practices. Sri Lanka had to reduce the loss of top soils, protect water quality and availability, improve farmer incomes, and protect native biodiversity. The NSRC approach is to incorporate agricultural, cultural and ecological perspectives as baseline conceptual frameworks, derived from both scientific and non-scientific descriptions. NSRC integrated farmers' knowledge with contemporary agronomic, biological, and environmental science and established a co-learning culture between researchers and villagers (Melvani, K, & Moles, J, 2011).

The NSRC researchers began by documenting existing village forest gardens to provide a situational understanding of where gardens were located in catchment basins, existing crops, flora and fauna and a censuses of household members. With these understandings the concept of analog forestry was developed. Analog forestry enables villagers to mimic the ecological structure and function of forests with utility plants and trees that provide food (cash and crop), fuel, timber to meet the needs of villagers. Villagers collect indigenous seed and establish community nurseries for seedling distribution (Melvani, K, & Moles, J, 2011).

Researchers and participating villagers continued to adapt production systems, for example, annual crops were introduced for food production. Known as restoration agriculture the initiative provided both food and incomes within six months. The demonstration farms hosted visits from government, other NGOs, international aid agencies and businesses and collaborative partnerships formed between stakeholders. All activities were undertaken with the people and landscape in mind.

Facilitators were trained through on-the-ground experiences in the field coupled with training in the ecological functioning of forests, landscapes, and catchment basins. The restoration methods have increased soil organic matter, improved moisture retention and increased biodiversity and habitats for native species. Dramatic income growth, enhanced nutrition and increased food security have been recorded. Projects include the construction of toilets and a zero-waste policy composting and reusing all organic waste.

The sustainability of the programs beyond project duration is based on the mobilization of farmer led community groups that engage in savings and micro-finance based on the income from the sale of crops plus the sharing of what has been learned from experience in changing how they manage their lands. Tree planting and diversification of crops buffer climate induced variations in yields and provides stability both in livelihoods and the

environment. Subsequent surveys have shown that these forests provide habitat for a number of endangered native species.

NSRC Operating Director Kamal Melvani oversaw the programs that after a decade of collective efforts reported planting 470,531 trees (over 3,000 species) on 24,395.11 acres. Furthermore, over 5,000 farmers had converted their home gardens to forest gardens.

The decision to adopt the concept of Landcare came after the 2006 International Landcare Conference in Melbourne attended by Kamal Melvani and Dr Jerry Moles, NSRC Board member and US academic. Landcare Lanka was introduced by the NeoSynthesis Research Centre (NSRC) in 2007 to a group of selected non-governmental organizations (NGOs). After that time, all NSRC projects were included under the name of Landcare following the triple-bottom line of a better quality of life through (1) higher incomes and improved economic security, (2) improved community services meeting shared needs, (3) and a vibrant and healthy environment. While similar planning had been done in Sri Lanka, the triple bottom line was easily shared and explained to communities and project partners and the NSRC had been pursuing the same objectives.

Lanka Landcare was formally launch in June 2010 with a tour of demonstration sites by international visitors, university faculty, government agencies, elected officials, villagers, estate laborers, business and international aid organisation representatives. Regional meetings were held in Kalmunai, Siyambalanduwa, and Haputale where the governor of the Uva Province attended. In addition, Landcare was introduced to the staff of three Divisional Secretariats of the Uva Province in Haliela, Madulla, and Ella.

Since 2010 Landcare projects have included kitchen and forest gardens at Kalmunai, Moneragala and Kalpitya; bioremediation planting (Kalpitiya) around the water wells to improve drinking water quality and increase habitat for indigenous birds, butterflies, frogs and lizards. The Water Towers project to restore the Kalkanna Oya watershed in the Lipton Valley involved a collaboration between Lanka Landcare, Tea Estates, villagers, and local government. Deforestation that had occurred a century earlier resulted in soil erosion, reduced dry season stream flow, loss of biodiversity, landslides and water contamination.

In 2012, Kamal Melvani wrote the *Handbook for Regenerative Agriculture* based on cumulative experience and funded by USAID Connecting Regional Economies (CORE) Project. The CORE project introduced regenerative practice to farmers cultivating lime in Moneragala District and papaya in Ampara District and results were incorporated into the handbook.

Lanka Landcare has also delivered conference workshops and training; Junior Landcare at Wendakattuwa National School and women organized Landcare groups. Knowledge sharing and study tours have occurred between Lanka Landcare and the Secretariat for International Landcare (SILC), Australian Landcare International (ALI) and individuals including Victorian Bass Coast Network coordinator Matt Stephenson. ALI delivered training workshops in Hupatale, Kulmanai and Monaragala, and attended the inauguration Landcare tour in Sri Lanka.

The Victorian Landcare Network supported a Sri Lankan project to repair tsunami damage and promote locally managed ecotourism along the island's southern coastline. In 2006, a team of 13 Australian professionals volunteered to work in Sri Lanka. They also raised funds from Australian philanthropists to purchase materials for the work in Sri Lanka.

5.5.3 Observations of approach

The proponents of Lanka Landcare identified Landcare strategies that were useful and complementary to NSRC's existing engagement, research and collaborative learning programs. Formed in 1982 NSRC were forerunners in understanding and using people centered strategies such as integrating farmers (traditional and cultural) knowledge with

contemporary science and establishing cultures of co-learning between researchers, farmers and others.

Landcare and RSRC/Lanka Landcare share similar scales of working in natural resource management and livelihood activities that span individual action at forest garden/farm level to watershed/catchment scale planning.

As a result of interactions such as study tours between Sri Lanka and Australia Lanka Landcare adopted a triple bottom line (economic, environmental and social) as this was 'easy to explain and easily understood.' Furthermore, Lanka Landcare recognised value in Landcare badged projects. The badging supported program marketing and awareness raising under auspices of the Landcare banner.

With Sri Lanka planning reform processes and programs underway, such as the Overarching Agriculture Policy, Lanka Landcare may be able to provide a forum where local level communities can provide input into planning for the future.

5.6 Uganda

5.6.1 Agriculture extension and community development approaches

The Ministry of Gender, Labour and Social Development (MGLSD) is the leading and coordinating agency for the Social Development Sector in Uganda and is mandated to "empower communities to harness their potential through skills development, labour productivity and cultural growth" (Government of Uganda 2020). The MGLSD is responsible for the implementation of its *Social Development Strategic Investment Plan*, which maintains an overall twin-track approach (Government of Uganda 2003). This involves mainstreaming community development through policy and program design as well as services provided by civil, private and government actors, including individual ministries. Additionally, it involves direct, targeted interventions in response to the needs and interest of community groups. The agriculture extensions landscape in Uganda maintains this same approach.

From 2001-2014 agricultural extension services were provided publicly through the National Agriculture Advisory Services (NAADS) programme. NAADS was decentralised and predominately owned by farmers through the formation of farmer associations, with extension services delivered through the private sector. NAADS operated under a village-level approach, which enabled farmer mobilisation and Village Farmer Forums between farmers within village farmer groups. These groups would identify members' extension service needs and relay the needs to District Farmers Forums, followed by National Farmers Forums and then NAADS (NAADS Secretariat 2010).

In 2014, due to challenges associated with NAADS, Uganda's Ministry of Agriculture Animal Industry and Fisheries (MAAIF) implemented a new, coordinated and integrated multi-level public extension service delivery system known as the *Single Spine*. The aim of this new extension approach was to streamline the agriculture extension system and address constraints expressed by smallholder farmers regarding NAADS (Barungi et al 2016). At the national level, the *Single Spine* provided MAAIF the responsibility of coordinating research with extension service delivery in Uganda's private and public sectors.

At a local government and district level, NAADS continued to provide extension services through local government departments whom engage with Farmer Forums.

The *Single Spine* programme has been limited by resourcing challenges, and reviews have recommended an increased budget allocation to achieve full operation status and avoid a low farmer-to-extension-worker ratio (Barungi et al. 2016). Some funding is sourced through donors, whom often require indicators to remain committed, such as the

Work Bank. Donors tend to, however, provide funding direct through NGOs or private sector (Barungi et al. 2016).

5.6.2 Landcare in Uganda

Within East Africa, the Landcare approach provides a platform for smallholder farmers to engage in integrated natural resource management as a means of empowering local rural communities (Tanui 2005). Mowo et al. (2009), have described the approach in East Africa as based on local voluntary groups working collectively and in partnership with local government units to foster better land management for improved livelihoods. This adaptation of the Landcare approach has an emphasis on multi-stakeholder partnerships, with strong support from the local government to enable technological innovation and link better land management practices to livelihood and enterprise options. Through this approach, local communities are empowered to effectively manage land resources for sustainable production, income generation and food security (Tanui 2005).

Kapchorwa and District Landcare Chapter (KADLACC)

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

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

The combined effect of these challenges was nowhere more evident than in the challenges of effectively managing excessive run-off and landslides, which destroyed crops, property, infrastructure and took human life (Catacutan et al. 2015).

The Kapchorwa District Landcare Chapter (KADLACC) was formed as an indigenous platform of smallholder groups, with a shared vision for integrated natural resource management. KADLACC has been successful in bringing together stakeholders, facilitating community action in soil and water conservation and championing local level innovations to bring about Landscape scale restoration. Based on the success of the outcomes from Kapchorwa, the Landcare approach has been shared with other sites in Uganda including Masaka and Kabale and development of the Uganda Landcare Network in 2015 (Catacutan et. al. 2015).

A notable achievement of Landcare in Kapchorwa has been addressing common resource degradation through the establishment of a community developed and managed by-law (Catacutan et al., 2015). The by-law, sponsored through a collaborative partnership with the International Union for Conservation of Nature (IUCN) and local government authorities, was developed by the community to specify rules and regulations for land use in common land, including the Mount Elgon forested area. Additionally, the by-law recognizes the landscape impact of land management behaviour on private lands and has promoted the adoption of good practice such as soil conservation terracing and tree planting. The by-law also focuses on unrestricted grazing and the resulting tree destruction, farming access and grazing in riparian zones and access to the Mount Elgon forest for collecting firewood and bamboo, harvesting wild mushrooms and fruits, as well as hunting native wildlife for food. Success of the by-law has been seen in the

consolidation of community demand for policy support aimed at addressing land degradation and by the surrogate application of the community law as a management plan for farmland and fostering trust between the community and the Mount Elgon National Park Authority (Barrow et al., 2012).

An impact evaluation of the effectiveness of the Landcare approach in Kapchorwa was undertaken by Mowo et al. (2009), which concluded that the rapid adoption of landscape remediation practices by Landcare members was achieved through facilitated learning and community interest in improving livelihoods as well as their environment.

Much of the success of Landcare in Kapchorwa is attributed to the highly participatory and consultative process through the community, which includes:

- the selection and implementation of research and development activities,
- partner engagement,
- support services offered through a multi-disciplinary team,
- facilitation of farmer grassroots institutions and their linkages to district levels of governance; and
- the use of integrated approaches and holistic natural resource management.

Furthermore, the Landcare approach has built the capacity of the local community to experiment with different technologies and to share the outcomes of these interventions with their peers, facilitating the scalability of experimentation and adoption. In turn, this has improved cooperation in solving common resource issues and increased the access to information amongst smallholder farmers. The successes of these outcomes are noted amongst participating households who have reported positive changes in food availability, increased milk production and household incomes through engaging with Landcare (Mowo et al. (2009). The successful organic spread of Landcare from Kapchorwa to other districts demonstrates the void the Landcare approach has addressed in limitations with existing agricultural extension and community participation approaches within the political environment in Uganda.

5.6.3 Observations of approach

A unique advantage of the interpretation of the Landcare approach in Uganda is the strength of the regional Landcare Chapters. The Chapters, predominately facilitated through local government structures and small grant projects, provide a strong and networked institutional arrangement to drive a regionally tailored Landcare approach. This includes strong governance arrangements, featuring a skilled and networked board, often with strong alignment to local government positions. A Chapter coordinator is also imperative to the effectiveness of the platform function and is often a well networked individual with experience in agricultural extension, demonstrating knowledge of both content and process. The coordinators are suitably skilled to network with both local and national government agencies, NGOs and industry partners, whilst still maintaining effective engagement with individual Landcare groups within their community.

There is no structured organisation of Landcare groups within a Chapter, rather groups are self-organised and structured to reflect their relevant interest, capacity and partnership opportunities. Whilst the lack of formal organisation of a structure can present challenges with engagement, there is considerable operational strength and self-determination at a group level to ensure member groups are able to access services from the group arrangements. These services are variable for each group and network within each Chapter, and reflect the biophysical characteristics of the group location, such as marketable crops produced and natural resource challenges; the existing social networks of the group, including political or business connections; and the economic capacity of the group including financial savings, product value addition opportunities and access to market.

The organisation of the Landcare groups into different focus areas of interest, and supported through the facilitation of the platform Chapter coordinator, positions them well to partner with other service providers and programs. The Landcare framework that exists at a regional level facilitates a degree of group sustainability to endure in the absence of formalised programs. The formalisation of the group model through social capital bonds helps provides a framework of connectedness and resource sharing at the household level beyond family ties. Equally, the established nature of groups facilitates a higher level of interaction from government and partner programs, including local government and Ministry agencies such as the National Agriculture Research Organisation (NARO).

The maturing of the national scale platform level, through the Uganda Landcare Network, has seen significant benefit in recent years and a growth in capacity to engage directly with external donors to influence program design, rather than as a passive grant recipient. The national network has set a clear strategic direction, maintains active and influential relationships with government agencies and has entered a stage of celebrating their successes, including the November 2019, inaugural Uganda National Landcare Conference. The national network has challenges of continuity and reliability of funding sources, however, remains focussed on strengthening the grassroots support of Landcare at the group level and facilitating the spread of the model to other regions.

One particular highlight feature to the Landcare model in Uganda is the prominence of Junior Landcare. Junior Landcare as a program addresses a number of gaps within the education system, including nutrition programs, agriculture training, environmental awareness, art and drama, physical recreation and school spirit. The training delivered to students through the Junior Landcare program has been observed as a powerful and novel agricultural extension tool, particularly given a vast number of students within the regions represent the next generation of smallholder farmers in Uganda. The impact of the Junior Landcare program, now prominent in several districts across the country, has attracted the interest of a number of donors, including philanthropic, and the program continues to expand into other regions. Establishment of Junior Landcare activities has also proven to be a successful model in introducing the Landcare approach to new districts.

6 Findings

An assessment of the data was made against the Australian Landcare Framework, to establish how different elements of the Landcare Framework are embodied in each country context. The following outlines the key findings identified through the study in relation to the Landcare ethic, movement and model.

6.1 Landcare Philosophy

The Landcare philosophy is described in Australia as *the way people live and work in the landscape while caring for the land and natural resources*. A philosophical and often spiritual connection between people and place was observed in various forms within the cultural norms of the countries under study, for example the *Vanua* in Fiji. The Landcare philosophy simply reflects what already exists.

Where a set of underlying values or motivation could be identified this was usually related to improving or maintaining a productive, healthy and sustainable landscape, for the purpose of improving the livelihoods for the group members and broader community, now and in the future. While in line with the Australian Landcare ethic of caring for the land and natural resources, the importance of also making a productive living from this landscape for livelihood improvements was more strongly emphasised. The philosophy of working with nature for mutual benefits of environmental conservation as well as community development and livelihood improvements came through strongly.

In Mali Island, Fiji WWF and the associated groups demonstrated a Landcare ethic in their work through *“community drivers around sustaining the island, keeping the cool climate on the island (liveability), water source and alternative income sources (chestnut, sandalwood, pandanus) and the bigger picture objectives ... in relation to improved marine resources through reduced run-off”*. Similarly, in Indonesia the Karya Manunggal Farmer Group were noted to *“practice sustainability and conservation”*.

In South Africa, the values the Simonsberg Conservancy were also related to environmental protection and sustainably improving livelihoods, but also emphasised the need to work at a landscape scale more strongly than was expressed in the other countries. For example, *“The area has a unique vegetation type and the community has a vision of a reforested catchment”*. The motivation for this conservation outcome was not just environmentally focused however, the community were also motivated by perceived economic outcomes of the work *“Focus of the work is for catchment health and biodiversity outcomes - this is largely driven for protection of water resources, but also to assist in the marketability of wine produced within the area”*.

Evidence of a Landcare philosophy was not just held by the farmer or community groups. Importantly, facilitators who supported these groups also demonstrated similar values. For example, in Indonesia a facilitator working with Relung described his personal motivation as *“I love working with community, I love work with forest, making something better in village.”* Another facilitator involved with the Selo Womens Group described having *‘a mission to empower people through conservation and agriculture.’* (Selo Womens Group, Indonesia).

The Landcare philosophy was also shared by Landcare coordinator, John Bosco, with the Ikamiro Community Landcare Group in Uganda, who formed out of the tragedy of landslides. *“I have observed significant change in the community since 2017. Before, the group members were doing very little activities and interaction with each other prior to the landslide, but now there is significant action and activities through volunteerism”*. When asked about the future of the group, John commented that he is *“confident that group member activities will be sustained as they are driven from the heart”*.

At a governmental level the Landcare Program in South Africa is defined by the values the underpin the program as being again about sustainable production: “*Community based and led initiative underpinned by the goals of optimising productivity and sustainable use of natural resources*”. The six principles of Landcare in South Africa also demonstrate the dual motivations of both “*Integrated Sustainable Natural Resource Management*” (Principle 1) as well as the “*development of sustainable livelihoods*” (Principle 3).

It should also be noted that values held by some stakeholders of non-Landcare groups were also similar in some ways such as a concern about the future “*want to take care of the land for future generations*” (Tei Tei Taveuni, Fiji), but other cases were broader in scope e.g. personal growth. “*The biggest journey of students is the personal growth. When someone loves themselves, they open themselves up to new things.*” (TuTu Training Center, Fiji).

Based on this evidence, it is not surprising that the Landcare philosophy is present and strong in Landcare movements in other countries, but its link to improving community livelihoods is more strongly emphasised than in Australia. Given the context of high rates of poverty and social and economic developmental challenges faced by the communities in question, this is essential. Valuing production and natural resource use initiatives that work ‘with’ nature, not against it is perhaps how the Landcare philosophy is most strongly characterised in this context.

When reflecting on Landcare in Sri Lanka one respondent noted that they had “*empowered people across Sri Lanka to discover and implement natural resource management that realizes the triple bottom line of Landcare as practiced in Australia and other nations*”. In aiming for a better quality of life through enhanced economic security, improved community services that met shared needs and a vibrant and healthy environment “*we’ve partnered with people from many walks of life to interpreted local assets and devised means relevant to local capacities and conditions*”.

This link to livelihood improvement appears to be a valued aspect of Landcare internationally and may explain or enhance the strong link observed between successful/sustainable groups and value chain/markets/economic development initiatives being undertaken by the same groups, as discussed further.

6.2 Landcare Movement

In all countries, there were clear examples of a Landcare groups that could be described as “*local community action founded on stewardship and volunteerism*”.

Where there was evidence of a Landcare movement, groups worked together (collective action) to build capacity and/or social capital. Groups were formed and functioned in different ways and had various ways of resourcing and sustaining themselves. However, partnerships were very common with a range of different stakeholder groups including government, non-government, researchers and private sector partners. There was generally fairly limited evidence of much monitoring, evaluation, learning or experimentation and research at a group level. A summary of how the main characteristics of each of these aspects of a Landcare Movement are expressed follows:

6.2.1 Group formation & function

Group formation was most often instigated by an external stakeholder, such as a government or non-government organisation providing training or resources to groups, or a specific endeavour to create groups to undertake Landcare type activities. The Ministry of Agriculture in Fiji confirmed the process of group formation and establishment “*Group formation takes places from request from landholders via the Locality Officers for trainings on Sustainable Land Management. This referral is provided to the Ministry of Agriculture.... Local officers mobilise farmers, provide information and limited resources*”.

In South Africa, the government Landcare program began in West Limpopo as a way of establishing a feedback mechanism from farmers following the introduction of the idea from Australia *“A team visited Australia as part of the country reconstruction process - this was aligned closely to the philosophy and values established by Nelson Mandela. Since this time, the Landcare Program has been established across South Africa as a fully funded program for the past 22 years”*. This same purpose of establishing groups to gain access to feedback from farmers, is used in Indonesia *“In Selo they have meetings every one or two months about the state of farming in the area. They assess the state of the area back to the government or extension officers. They also invite the extension officers to join these meetings”* (Bimastra Office of Community Development). This suggests that there is value in supporting the development and establishment of groups with approaches like Landcare to government operations.

There were only a few examples where groups formed solely driven by the farmers/members alone. An example of this, Tei Tei Taveuni in Fiji, which was reported to be an informal network of farmers initially set up by the members in response to land, soil and water degradation issues. Another is the Karya manunggal group, Indonesia who explained *“beforehand we were working individually... then we thought that as a group we can work better and share with one another - ideas, skills...we started with a monthly meeting talking about the agricultural problems we were facing”*.

Another example was the Ikamiro Community Landcare Group in Uganda, who *“formed following a landslide that resulted in 17 fatalities. The group heard the local Landcare facilitator talking on the radio and invited them to their community to support their training in bund construction to prevent future erosion, and the development of bye-laws to protect the works”*.

Despite the process of formation often being driven by an external stakeholder, **a set of common interests were needed to allow the group to function**, whether it be an interest in working together, learning more, or even just accessing funds and resources. An example from Indonesia:

“This group started through a government project in 1960. At that time the government gave out a lot of trees here, but then afterwards the group didn't have any activity, so it stopped. It was then reborn again in 1989 because of an extension officer who ask them to re-establish to plant other species of multi-purpose trees. After that, again the group had no activity and stopped. In 2004, they recognised that if they register a group they will again get government support such allows access to cheaper fertilizer, and funding. They are still active because they now have plenty of activity” (Ngudi Makmurn Farmer group, Indonesia)

From South Africa:

“Origins are from when members were approached to start a group - had different interests, but came together with similar interests” (Lethare Farms, South Africa)

There were several examples of where an **existing group or structure may become a vehicle for Landcare**. In South Africa, Water User Associations, Conservation Committees and Nature Conservancys were some of the existing social structures that have adopted Landcare (primarily through receiving funding for Landcare projects) *“Central Karoo areas came together using established structure of existing conservation committees”*. In Mali Island, Fiji, the Mali Development Committee has a guiding strategic plan, in which Landcare is embedded and implemented.

Some groups in Fiji, South Africa and Uganda had **an extension officer assist in building the capacity to operate as a group**. *“Group empowerment through strong facilitation by Ministry extension staff to make decisions is important”* (MoA, Fiji). This facilitation appears to have been helpful in getting groups going as in the case of Siberia Landcare *“The group is autonomous and could continue without the ongoing assistance of the Ministry - individuals now have the capacity to implement themselves”* (Fiji). The

Landcare facilitators in South Africa and Uganda are another example of this role. NGO's such as World Wide Fund (WWF) and International Centre for Research in Agroforestry (ICRAF) in the Philippines also play this support role for groups. This will be discussed further in the Landcare Model.

Group operations generally involve **regular meetings** (monthly to 3 monthly) that allow for: knowledge exchange: *“Opportunity to share information - knowledge exchange - between farmers - exchange between the larger farmers (who sell in the market everyday) and smaller farmers”* (Qalewqa Uatundova Landcare Group, Fiji) and **decision making processes at a community level**: *“Oversight and decision making within existing community hierarchy is important for ownership and action”* (WWF on Mali Is, Fiji). In South Africa, groups generally had **well developed plans** for their work, in area or catchment management plans. Government Landcare facilitators and funding requirements may be the driver for this. Some capacity building or empowerment/facilitation support around group functioning and operations, in addition to technical practises may also be valuable.

The **use of technology** was mentioned only a few times, where Whatsapp was used to connect group members in South Africa, online marketing platforms were being explored in Indonesia, and the internet was being used as an information source to solve group queries (Indonesia).

6.2.2 Collective action & social capital

Examples of collective action undertaken through Landcare groups include:

- Bringing people together based around a common interest or problem
- Information sharing and learning between farmer members
- Organising and participating in training activities
- Fundraising for group activities and members needs
- Development of community agreements such as local fire laws
- Marketing cooperatives for buying and selling inputs and produce collectively for better prices
- Group farming activities
- Value addition and group business development such as shops, vegetable production and sales, nurseries etc.

In the Philippines, there were *“increasing numbers of farmers involved in the market clusters, exemplified by the Katuaan cluster which increased from an original base of 15 members to more than 60. This improved the bonding social capital within the communities through the common focus provided by the cluster marketing. Importantly, more women became actively involved in cluster activities such as consolidation, quality control, financial planning and record management”* (Vock, 2015).

In Uganda, *“initially number of challenges, coffee farmers had limited cash flow and decided to come together. When group started, they were trained and facilitated to start doing activities to help support themselves Members support each other through a reciprocal labour model. Able to sell coffee as a group to earn more money, with bulk supply enable the group to access larger markets, including export to Europe (Mikomago Coffee Farmers Group, Masaka)”*

In Indonesia (biogas projects) and South Africa in particular, group members were required to **contribute financially** to project activities, particularly as a condition of project funding arrangements. Often this was described as an initial barrier to participation, however appeared to increase commitment to the collective action in the long run. For example, *“They have challenges. Especially when they started as the community knows it is complicated to start and requires a financial investment. They found a solution - a success story from the area which they shared.”* (Korena, Indonesia). The communal buy in that is achieved through such personal contributions was highly valued: *“There is a*

German project trying to reduce the use of firewood. We are suggesting the use of biogas stoves as one solution. But this is a big jump. There is no subsidy for the farmers. And the project takes a small profit. In our opinion this will not work as there is no strings attached. No communal buy in and commitment. They need a co-operative” (HIVOS, Indonesia)

Interestingly, where examples of collective action from Non-Landcare groups were described, these were similar to those observed in Landcare.

Cultural/ethnic diversity within a community was mentioned several times in both Indonesia and the Philippines as a challenge for collective action.

There was evidence that the Landcare approach both contributed to, and utilised **social capital** in several ways:

Bonding ties: within a group and community: building relationships between group members as they share experiences and undertake problems solving together. Some groups had systems for supporting group members through adversity, such as providing funds when problems arise. For example: *“Share and discuss between the farmer in group. If they can’t find the solution from the group, they invited extension officers to the group”* (Karya Manunggal Farmer Group, Indonesia)

Bridging ties: to others in the community and beyond such as access to Landcare officers or government/ non-government extension staff who work with the group (as in Fiji, Philippines and South Africa). *Enhanced social capital, particularly bridging social capital, linking farmers and their communities with ‘outside’ sources of assistance;* (Vock, 2015, Philippines)

Key individuals: Key individuals either familiar with Landcare, or influential within the community were valuable for facilitating group formation and cohesion for effective collective action. Though it is not a Landcare group, this was eloquently described in the Korena biogas project in Indonesia. *“You have to find a key person in every community. The right person can inspire and encourage more participation.”* Landcare leaders also noted to be able to build their skills and empowerment (Philippines, CSIRO, 2019)

Trust/established networks: The trust that exists in long term relationships is valuable to support the introduction of new ideas such as Landcare in the case of Relung, in Indonesia. Two key actors in the Landcare facilitation are past university colleagues, and this contributed to the successful collaboration and sharing of ideas about Landcare. This trust was also recognised as being valuable in how they worked with landholders: *“Especially for building trust and communication. Without regular communication things will not get done”* (Relung, Indonesia). This trust was also useful in reverse, as Landcare, and the trust between groups and their Landcare Officer provided an avenue to access farmer feedback in South Africa.

Established/respected local and cultural institutions: Institutions such village councils and chief systems are also valuable for supporting Landcare activities and enforcing local agreements, such as fire bans (Mali Is, Fiji). Cultural practices such as *“Solesolevaki”* in Fijian culture is a system to support each other following natural disaster e.g. cyclone. The Ministry of Agriculture observed that *“This would happen naturally in other villagers but strengthened through Landcare”*.

6.2.3 Capacity Building

The main activity of all Landcare efforts was generally capacity building in all countries except South Africa (here it appeared to be a mix of capacity building and on ground works). In the Philippines, the ACIAR funded Landcare project has conducted 162 major training, capacity building and networking activities across the five sites during the three-year period, reaching more than 5,000 farming households, and facilitated eight major cross-visits to landcare sites in Claveria, Lantapan and Boho.

Capacity building activities were generally training and information provision in different forms, with the expectation of practice change as a result. In cases where infrastructure such as Biogas was provided without complimentary training, the technology was not used. Emphasis from government has moved to training rather than infrastructure in Fiji (cChange, Fiji). In all countries a range of training methods were used including face to face training, field trips/exchange visits, off farm training courses etc. A focus on training youth in particular was mentioned several times in Fiji.

In Fiji and Indonesia, Landcare groups provide the linking means for government extension staff to provide training to community members on various practices they would like to see implemented, such as soil conservation planning for hillslopes with Siberia Landcare. Siberia Landcare explain *“The group is autonomous and could continue without the ongoing assistance of the Ministry - individuals now have the capacity to implement themselves, they have been trained”*. In South Africa, capacity building through Landcare has demonstrated a change from linear technology transfer to an iterative approach, including vision mapping and trainee led learning. Issues of power dynamics influencing the success of training were noted.

Capacity building may start with a topic of immediate concern interest, but then move onto other topics as new issues arise, or interests expand. For example, *“The farmers are asking for more innovations to continue to change and improve and diversify their systems. The coffee has acted as a catalyst for farmers thirst for learning. Farmers now want to know more on honey and sugar processing.”* (Relung, Indonesia).

Capacity building activities were primarily focussed on skills and technologies to improve agricultural production, natural resource management or product marketing and sales. Some capacity building for soft skills and group dynamics was available from the MoA in Fiji and Landcare officers in South Africa. For example: *“The locality officers provide support for the group, including coaching to aid conflict resolution...”* (MoA, Fiji).

The importance of place-based learning was also observed across the study sites. Place-based learning builds on experience. It is not the transfer of knowledge and skills by the expert to the learner, rather it is an exchange of knowledge that respects local knowledge, cultural and societal norms. It is relational in practice and pursues equitable ways of engagement and connectivity. Learning is viewed from the needs of the individuals and communities which requires individuals and communities to be involved as full partners in the design, delivery and evaluation of learning. One interviewee observed *farmers want to ‘test and tweak’ introduced practice*.

The Landcare farmers also participated in information exchange that encouraged dialogue and exchange of ideas. These exchanges included cross visits to other farms within country and study visits across countries such as Landcare Masterclasses held at different times Uganda, Malawi, Zambia and Australia. An extension officer describes these visits as *‘seeing is believing’*.

The internet enables rapid global access to knowledge and importantly links like-minded people. Interviewees from Fiji and Indonesia describe using the internet not only to search for research findings and farm facts but also to search for farmer groups, organisations and agencies. The search was about connecting into networks that may provide mutual support but potentially resources.

6.2.4 Group resourcing and sustainability

Most groups received **funds from government (or in a few cases NGOs) to support particular project related activities**. Very few groups were 100% self-funded or received funding to support generic group functioning.

Groups such as Siberia Landcare in Fiji, felt that as a result of the training and facilitation support they received from the Ministry of Agriculture, that *“The group is autonomous and could continue without the ongoing assistance of the Ministry - individuals now have the*

capacity to implement themselves, they have been trained.... Landcare is different as offers long term benefit and protection of environment - not short term focussed."

While government funding was appreciated, challenges such as a lack of continuity, timing, and terms and conditions for how funding is to be used were identified. For example, in the Simonsberg Conservancy: *"The ideal time to undertake works in the landscape is March - May prior to the arrival of the rains - can't carry funds over with budget needing to be spent by the end of March and delay in being able to receive funds. December and January are out due to the Fire season"*

Where groups were self-funded, benefits included, a stronger commitment to the work and also greater flexibility in how they are able to implement activities (eg Simonsberg Conservancy).

Where the community or group members could see **positive outcomes as a result of the Landcare groups activities, commitment to continue was high**. For example, in Mali Island, Fiji: *"The community is committed to continue the project for the future as the benefits are being observed and it is good for the community.... Observation by the community that the landscape has changed significantly - "it's a lot more green - this is a good thing"."* This resulted in the work being maintained despite a break in support from WWF.

6.2.5 Monitoring and Evaluation at a Group Level

Monitoring and evaluation at group level is used in the Philippines as a core component for group and project management. Monitoring and evaluation is used by the groups to determine group health including the effectiveness of governance processes and the cohesiveness of members; to review progress toward agreed goals and milestones in community and project plans; and to identify any constraints or opportunities.

A section on Monitoring and Evaluation is included in the ACIAR AUSAid Philippines Australia Landcare Project (ASEM2002051) funded publication 2009 *Landcare in the Philippines A practical guide to getting started and keeping it going*.

Monitoring and evaluation activities observed at a group level include record keeping by Qalewqa Uatundova Landcare Group in Fiji, and updating of the Mali Island Development Plan, also in Fiji. In Uganda, on-ground successes, learnings and observations are celebrated through dramatizations and story-telling to support message reinforcement, scaling and adoption within other communities.

Traditional methods of monitoring and evaluation will need to be revised as sustainable development interventions result in multiple outcomes and impacts. Furthermore, as impacts are likely to be defined, valued, and experienced differently by people more inclusive approaches to monitoring and evaluation are required to ensure equitable and sustainable outcomes.

Local decision-making is critical to operationalising local plans. Accordingly, a place-based process such as the Ugandan storytelling provides a mechanism for the required analysis of social, cultural, economic, and environmental conditions. The likelihood of achieving desired local outcomes increases by continually asking the question what have we learnt?

6.2.6 Partnerships

Partnerships are a key aspect of many of the Landcare groups interviewed. In South Africa, being involved with Landcare was useful for engaging partners, *"it's opened the doors for us, got the scientists involved, got everyone involved and have a role, can't do this without Landcare"* (Koup Karoo Project). The reputation of the Landcare 'brand' contributes to engaging partners (Water Users Association, South Africa).

Partnerships in South Africa appeared to be well developed and included formal research partnerships with universities as well as formalised Network Platforms, with regular meetings and collaborations with both NGO, civil society and private sector representatives in addition to government agencies. In other countries, partnerships were less developed and more likely to include only government agencies or perhaps an NGO such as WWF.

One of the key components of the Landcare/LIFE model is forming partnerships with various institutions. Memorandums of Agreement have been signed with five institutions including barangay local government units (BLGU); Department of Trade and Industry; Philippine Coconut Authority; and the Bureau of Fisheries and Aquatic Resources. These partnerships have translated into funding that has supported purchases including fibre boat, solar dryer and seedlings from DOST (Department of Science and Technology); collapsible solar dryer and materials to farmers; native chicken enterprises (Department of Agriculture) and tilapia fingerlings to farmers, (Bureau of Fisheries and Aquatic Resources). Importantly partners have assisted farmers to register their crops with the Philippine Crop Insurance Commission. These farmers have received financial assistance as the drought persisted and crops were lost.

6.3 Landcare Model

The model for supporting Landcare groups received less attention in the interviews than group processes, but factors such as external recognition of group achievements, facilitators, networks and policy were identified.

6.3.1 Celebrating group achievements

In both Fiji and South Africa, Landcare groups have been given awards to recognise their achievements in terms of natural resource management, and also 'Best Junior Landcare' (Simonsberg Conservancy). In Fiji, Siberia Landcare were successful award recipients that included a sponsored study to Thailand.

While not reportedly recipients of a formal award, the members of the Water User Association in RSA are described as being "proud of the change". Members of the Qalewqa Uatundova Landcare group in Fiji also reported raising funds to go to celebrating their own achievements at the end of the year. This self-pride is also valuable in recognising success.

In the Philippines the Bohol Landcare groups have 189 Barangay Farmer Technicians (BAFtechs) who work together to mentor and help households implement the various components of their programs. Each year the BAFtechs meet for their Annual Congress and Landcare Awards Program. This is supported by the local government.

The Uganda Landcare Network had matured as a platform and were in preparation to celebrate their successes as a whole of country program through the first inaugural Uganda Landcare Network conference in November 2019.

7 Discussion

Five Landcare preconditions have emerged that were common across the study sites and lead to the establishment of Landcare. Where these preconditions are all present and actioned Landcare has been sustained over a longer period of time.

1. Clear Purpose

In many instances' farmer groups were already formed or forming. In some examples, this was due to **seeking information** to help support situation improvement. In the case of Fiji, a ministry staffer was looking to connect with agricultural groups and increase the skills of extension staff working with farmers. The advent of the internet and a wide range of technological innovative platforms has enabled farmers, government organisations and NGO's to connect with others, irrespective of time and location. Indonesian and Fijian respondents described how through web browsing they searched for information on matters that impacted their livelihoods such as soil loss and nutrient deficiency, land and water degradation, crop and livestock husbandry and drought. Contact was made with Australian Landcare entities, such as SILC and ALI through these internet searches. The purpose for outreach was knowledge exchange and linking with like-minded people for affiliation and support. Subsequently, these networking activities have expanded between countries and resulted in knowledge exchange events, for example a study tour between Indonesia and the Philippines.

Evident examples include where groups started to form for shared and mutual benefit, driven by models of peer to peer learning. Group formation is also a key feature of many government and development programs, where groups are formed for efficiencies in extension and support. This was evident particularly in Indonesia and South Africa, where existing groups were organised in some instances and supported through a Landcare approach.

Strong networks are also established within many of the communities, through existing **social capital** and societal bonds, driven by existing civic function. These existing networks have established trust and norms between group members and provide an ideal conduit to introduce capacity building and visioning activities to support a Landcare approach. This approach was particularly evident in all the study countries, except South Africa. South Africa exhibited examples where individual landholders had not previously interacted prior to Landcare. Once they had come together for a specific project however, such as weed control, the conversation emerged to a great level of environmental awareness and altruistic values such as biodiversity and catchment scale hydrology.

A purpose for coming together where there is a **current gap** in the system is a critical component of Landcare, beyond other co-benefits that can be obtained such as social interaction and a sense of belonging. For groups in the Philippines, Landcare provided a purpose to improve agriculture extension for addressing productivity yield decline and erosion. Whereas for groups in Uganda, Landcare addressed catchment scale natural resource threats that were impacting on human health and quality of life. For Indonesia, Landcare was of interest as it offered the prospect of new information sources, networking connections and resources or external support which motivated the farmer group to become involved.

A **livelihood framework** has also been observed in several country contexts, recognising the importance of Landcare delivering positive livelihood outcomes for participating communities. There is recognition that the ability to adopt an environmental consciousness is limited unless households are able to meet household level food security and education needs. Recognition of the importance of these livelihood measures, has seen the inclusion of market access and value addition in the evolution of many Landcare programs.

Subsequently, the purpose of group formation and continuity, remains a critical component for the success of Landcare groups. This includes the function of social interaction and bonding, coupled with joint problem identification and environmental consciousness at a catchment scale.

2. Leaders, champions and facilitators

A significant, and often undervalued, component of the role of Landcare are the individuals or Landcare champions who drive the networks. The important acknowledgement of this role is inclusive of the individual farmers, Landcare coordinators and government agent actors who continue to promote and support the value of Landcare. Consistency in the enthusiasm, passion and drive of individual Landcare champions was observed across all study sites. This included the networked individuals who are engaged in various programs and multi-stakeholder platforms yet continue to be drawn to the Landcare approach as the linking denominator between their programs.

Furthermore, Landcare expanded in the study countries where experienced facilitators worked closely with Landcare champions, for example in Uganda the relationship between Chapter Coordinators and community champions. The facilitator role supported groups to build long-term capacity i.e. group structure and processes, create and/or strengthen strategic partnerships and expand their networks. This is exemplified in the Philippines where Bohol Landcare created Barangay Farmer Technicians (BAFtechs) to service over 189 barangay Landcare groups.

3. Strategic Partners

Evidence of a number of formal partnerships between community and established institutions, such as local government, administrative offices and local NGOs is universal within the Landcare approach. The degree and strength of these relationships is formed over time and representative of the level of activity between partners. Such examples highlight the formation of significant trust and mutual beneficial outcomes between Landcare groups and their partners. The maturity in relationships is evident in Landcare programs in the Philippines and Uganda, where true partnership models exist through both informal and formal agreements, including joint funding applications and planning activities.

Based in Barangay (village) Assumption, Koronadal City, Mindanao the farmer group known as Olo-clofe B'laan Landcare Association (OBLA) has made a significant contribution to the Barangay Assumption Development Council planning process by collaborating with council on the development and resolution of ordinances and policies. By forming an alliance, the OBLA farmer group, Development Council and municipal government have gained mutual benefits through the alignment of community needs and local government policy and program's and ongoing commitment for program activities. Importantly, by embedding local aims into government processes, the OBLA group is assured that regardless of changes in leadership within the Barangay Council and Local Government their programs will continue.

The cultural drivers that support people to **work collaboratively** are embedded in all the study communities. In the Philippines and Uganda, Landcare went beyond the mutual assistance at the village level and encouraged engagement with other stakeholders across the supply chain and foster those affiliations for mutual benefit. This approach transcends clanship societal reciprocity demands/norms to a more formalised structure of how groups function and work for a purpose. This approach can include livelihood and environmental outcomes through a focus on engaging and collaborating to get good outcomes for all actors involved.

A strength of the Landcare approach is the **complementary** it provides. Landcare is **non-threatening**, it aligns well to existing initiatives and does not disrupt existing cultural norms. The flexibility of the approach is evident in the diversity of country contexts and

geo-political structures where Landcare has presence. This is evident in contexts with strong government engagement in the program, such as in South Africa. Even where national government engagement is limited, such as in Indonesia, Landcare can provide a platform where negotiation for collaboration and cooperation can take place at the local community level.

The Landcare premise of partnership recognises you have a better chance if you **work collectively**, rather than independently. In most of the country contexts, power imbalances and a lack of service provision limit the ability of land holders to access the support and information to protect and manage the resources they are trying to manage.

An additional scale of partnership that was observed through the study, was the **connectedness** between countries and creation of touchpoints. This was reflected in not just a country looking to employ a Landcare solution, such as Fiji researching and learning about the Australian program, but other Landcare countries recognising that they can assist, such as study tours from Sri Lanka to Australia to observe opportunities and pre-conditions for scale.

4. Resources

The importance of resource support for Landcare is strongly integrated with sustaining partnership delivery. This can create a real challenge for Landcare, where partnerships become **dependent on sustained resourcing**. An example is the well-resourced Landcare model in South Africa, where internal criticism or complaint about the program is directed to lack of resources for continuity of action. Conversely, evidence of practice change being sustained by a Landcare approach in the absence of any sustained external resourcing was observed on Mali Island in Fiji. In this situation, the community had received initial financial support in implementing their vision of community fire management and sustained these practices beyond the life of the program.

The practice of groups forming to accept funding and disbanding after funding has finished is referred to in the Philippines as 'dole-out'. To prevent this from happening Mindanao Landcare facilitators work closely with their participating farmer groups during project inception to jointly work through the terms of the project. The critical difference is where **community is invested** in Landcare through leading the design of the intervention and forming strategic relationships with mutual benefits. Furthermore, the ability of the community to continue with their activities without a fixed funding source, creates opportunities to attract additional partners and knowledge to continue to progress the group vision. This approach is very evident in Uganda, with initial grants to support group formation, including capacity building and vision planning, that has led to a diversity of stakeholders engaging on an ad hoc basis with Landcare platforms to support their activities.

5. Collaborative Learning

Education and learning processes are central concerns of community development and the function of a collaborative learning community is working together for common goals, partnership, shared leadership, co-evolving and co-learning. This form of learning is particularly well suited to groups as learning takes place through the sharing and discussion of ideas and finding solutions to problems. Learning does not have to be formal and can take many forms for example the Ugandan storytelling and message re-enforcing; and RSRC Sri Lanka combining local/traditional practice with contemporary sciences that lead to a shared process of learning and discovery.

The rationale for community participation has been to empower local people with the most relevant knowledge and skills to tackle increasingly complex challenges such as the impacts of climate change on food production and sustainable resource management. Landcarer's across the study countries all noted the importance of improving their skills and knowledge and that of their communities.

The current globalised environment has enabled rapid access to information sources which can be a valuable resource for smallholder farmers to make informed decisions regarding their farming activities. Effective public access based on farmers needs and with farmers' rural and socio-economic constraints is bridging the knowledge and information divide.

The value of investing in learning is evidenced by Philippines facilitators who are now working with former Landcare facilitators now based in higher level positions of local government and agency units. Another example from Uganda is former Kapchorwa Mayor Sam Cheptoris, who is the current National Cabinet Minister of Water and Environment. The investment into Landcarer's who are now in positions of authority and influence is of huge benefit.

Learning is not a one-way or top-down process but a dynamic and reciprocal one, as place-based realities influence outcomes for individuals and communities. Food and water security, conservation of natural assets and the impacts of climate change are not just technical problems, but ones with moral and political dimensions, that are contextualised and adapted, within place.

8 Conclusions and recommendations

8.1 Conclusions

It is important to be measured and recognise that Landcare is not a 'silver bullet'. There are a number of examples where Landcare has been incredibly successful, but success has been attributed to the purpose, individuals, partners and resourcing, this does not make Landcare universal and replicable. If the Landcare relationship is built on dependency, it can become fraught and not sustainable at risk of limited resources, time and energy to maintain the relationship component of the approach.

The expression of Landcare in different international contexts demonstrates the opportunity for Landcare, as assessed against the Australian Landcare Framework, to be facilitated to strengthen the impact and adoption of agricultural extension programs. This is illustrative of:

The **Landcare movement** as successful in linking farmers to government in a way that no other extension (or development model) observed does. Landcare highlights the successes of government programming, and the collective organisation of groups provide a concrete demonstration example of government working effectively with community.

The **Landcare model** acts as a broker and facilitates multi-stakeholder partnerships. Multiple examples of the fusing role of Landcare as a magnet in seeking out and initiating working partnerships with government, NGOs, academe and the private sector are observed.

The **Landcare philosophy** as a common purpose and brand with opportunities to explore the psychosocial elements, including the individual and collective commitment, identity with people and place, cultural capital, and bridging and bonding social capital. While bio-physical results are a focus (e.g. soil erosion/fertility, a wetland restored) the common denominators are the social interactions through collective action to progress a common goal.

Mainstreaming Landcare

For Fiji, Indonesia and Sri Lanka, Landcare is not yet mainstreamed into country programs nor through the global agencies that advance sustainable development. Landcare in these countries would be greatly enhanced if the approach was endorsed by relevant levels of government and with major international organisations. Achieving that recognition and support is a key challenge for the long-term adoption of Landcare approaches in these contexts.

Conversely, critical lessons can be learnt from countries like the Philippines, South Africa and Uganda, where the evolution of Landcare has taken a different journey and has scaled up and out to varying degrees.

8.2 Recommendations

The functionality of Landcare should be promoted as an important tool in agricultural extension and community development, at the intersection of natural resource protection. This is particularly pertinent at a time of increasing pressure on natural resources and external pressures, including climatic extremes. Specific levels of recommendation include:

Local level

Supporting local Landcare development through networking, technical support, research, communications and resource mobilisation. Cross-country support for Landcare has been limited.

Mainstreaming Landcare into existing and emerging development initiatives

Based on volunteerism principles, Landcare is observed to complement existing cultural norms, for example Fiji's Vanua, Indonesian gotong royong (working together) and banahayan in the Philippines. This exemplifies the complementarity of Landcare and provides a common platform and agenda for organisations to more effectively and comprehensively address land management challenges in synchrony and in partnership.

The Landcare groups in the countries through the study were coping with increasing economic, environmental and climate change stress with an overall impact on health and wellbeing. The land managers sought ways to improve their livelihoods, new enterprises, value-adding products, looked for ways to increase their livelihoods.

The lessons from the adoption of Landcare within these country contexts provide a significant opportunity to further grow and develop agriculture and community development extension models with foundations in Landcare, including the **LIFE model** that has evolved from Landcare in the Philippines.

Transfer of Landcare/LIFE model

The work of the Landcare/LIFE model in the Philippines has highlighted how certain types of community-based extension principles can rapidly enhance agricultural livelihoods by improving both farmer-based learning networks and community social capital. The extension model known as Livelihood Improvement through Facilitated Extension (LIFE) has been developed from this work and is in a second year of evaluation by the Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (PCAARRD), providing evidence of extension scalability at local, regional and national level within the Philippines.

A research gap exists in testing whether a Landcare approach can be formally transferred, using the LIFE model of improved extension, from one country to another. The hypothesis is that a Landcare LIFE combination is transferable between nations.

Based on the observed findings from this study, and government level interest in facilitating a whole of country Landcare approach, Fiji has been identified as a highly suitable case site to test the hypothesis.

The Philippines and Fiji are highly compatible for cross country activity as there are mutually intelligible cultural and social values, farming practices, land and water challenges and climate change impacts.

The test case for this hypothesis is Philippines to Fiji adaption and adoption of Landcare and LIFE.

9 References

9.1 References cited in this report

- Australian Landcare Council 2011, *Australian framework for Landcare 2010–2020: community call for action*, viewed 27 April 2018, <<https://alci.com.au/landcare-around-the-world/>>
- Barungi, M, Guloba, M & Adong, A 2016, *Uganda's agricultural extension systems: how appropriate is the single spine structure?* Economic Policy Research Centre, Kampala
- Beza, BB, Johnson, M, & Fuentes, ASY 2017, 'Women and their roles in peace building in conflict-vulnerable areas of Mindanao, Philippines', in G Marsh, I Ahmed, M Mulligan, J Donovan, & S Barton (eds) *Community Engagement in Post-Disaster Recovery*, Routledge, London, pp. 153-166
- Bureau of Agriculture Research, Philippines 2020, *Community-based Participatory Action Research?* Viewed 22 March 2020, from <<https://www.bar.gov.ph/index.php/programs/major-programs/community-based-participatory-action-research>>
- Campbell A 2009, Foreword in Catacutan D, Neely C, Johnson M, Poussard H & Youl R 2009, *Landcare: Local action – global progress*, World Agroforestry Centre, Nairobi, Kenya
- Campbell A 2019, *The essence of Landcare – flourishing in the Philippines*, viewed 10 January 2020 <<https://reachout.aciar.gov.au/the-essence-of-landcareflourishing-in-the-philippines>>
- Catacutan, D, Cramb, R, & Culasero-Arellano, Z 2006, 'The dynamics of Landcare groups in the Philippines: a social capital perspective', International Landcare Conference, Melbourne, Australia (pp. 9-11).
- Catacutan, D, Neely, C, Johnson, M, Poussard, H, & Youl, R 2009, *Landcare: local action–global progress*, World Agroforestry Centre, Nairobi, Kenya.
- Catacutan, D, Muller, C, Johnson, M, & Garrity, D 2015, 'Landcare-a landscape approach at scale' in P Minang, M van Noordwijk, O Freeman, CM Bow, J de Leeuw & D Catacutan (eds.), *Climate-Smart Landscapes: Multifunctionality in Practice*, World Agroforestry Centre (ICRAF), Nairobi, Kenya, p.151.
- Crawford Fund 2015, *Landcare Training for Climate Change in Fiji, December 2015*, viewed 10 January 2020 <<https://www.crawfordfund.org/news-technical-and-landcare-training-for-climate-change-in-fiji-december-2015/>>
- Curtis, A, & De Lacy, T 1995, 'Examining the assumptions underlying Landcare', *Rural Society*, 5(2-3), pp. 44-55.
- Curtis, A, & De Lacy, T 1996 'Landcare in Australia: does it make a difference?', *Journal of Environmental Management*, vol. 46, no. 2, pp. 119-137.
- Dasgupta, A, and V, Beard 2007, 'Community-driven development, collective action and elite capture in Indonesia' *Development and Change* vol. 38 no. 20, pp. 220-249.
- Department of Agriculture, South Africa 2001, *The strategic plan for South African agriculture* viewed 21 March 2020 <<https://www.nda.agric.za/docs/sectorplan/sectorplanE.htm>>
- Department of Rural Development and Land Reform, South Africa 2020, *Fact sheet Comprehensive Rural Development Programme*, viewed 9 April 2020 <<http://www.ruraldevelopment.gov.za/phocadownload/Documents/crdp-factsheet.pdf>>

Department of Social Welfare and Development, Philippines 2020, *About Us* viewed 9 April 2020 <<https://www.dswd.gov.ph/about-us/>>

Food and Agriculture Organisation of the United Nations, 2019 *Country Statistics*, viewed 24 May 2020, <<http://www.fao.org/countryprofiles/index/en/?iso3=FJ>>

Government of Uganda 2003, *The Social Development Sector Strategic Investment Plan (SDIP)*. Government of Uganda.

Government of Uganda 2020, *Ministry of Gender Labour and Social Development*, viewed 9 April 2020, <<https://www.gou.go.ug/ministry/ministry-gender-labour-and-social-development>>

Greene, M 2000, *The power of associations: not mapping but organizing*, (unpublished paper), ABCD Neighborhood Circle Initiative, ABCD Institute, Evanston, Ill

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

Johnson, M, Poussard, H, & Youl, R 2009, 'Landcare in Australia' in D Catacutan, C Neely, M Johnson, H Poussard & R Youl (eds.) *Landcare: Local action – Global progress*, World Agroforestry Centre, Nairobi, Kenya

Koch, B & Terblanché, S 2013, 'An overview of agricultural extension in South Africa', *South African Journal of Agricultural Extension*, Vol. 21, pp. 101-117.

Kularante, WG 2009, 'Community development in Sri Lanka', *Sri Lankan Journal of Librarianship and Information Management* vol. 2, No. 1, pp. 1-4.

Lewis S and Maslin M 2015, 'Defining the Anthropocene', *Nature*, vol. 519, pp. 171-180.

Lockwood, ACM 2000, 'Landcare and catchment management in Australia: lessons for state-sponsored community participation', *Society & Natural Resources*, vol 13, no. 1, pp. 61-73.

Mathie, A, & Cunningham, G 2003, 'From clients to citizens: asset-based community development as a strategy for community-driven development', *Development in Practice*, vol 13, no. 5, pp. 474-486.

McCarthy, J, Steenbergen, D, Warren, C, Acciaioli, G, Baker, G, Lucas, A & Rambe, V 2017, 'Community driven development and structural disadvantage: interrogating the social turn in development programming in Indonesia', *The Journal of Development Studies*, vol. 53, no. 12, pp. 1988-2004.

Melvani, K, & Moles, J, 2011, 'Community Based restoration of the Kalkanna Oya Sub Basin of the Walawe River Watershed in the Lipton's Valley in Sri Lanka-a Landcare Project', *Proceedings of Conference of the 17th IFOAM OWC, Organic is life, Republic of Korea*, vol 1, pp. 106-114.

Ministry of Agriculture, Fiji 2009, *Fiji livestock sector strategy final report*, Ministry of Agriculture, Suva

Ministry of Agriculture, Fiji 2014, *Fiji 2020 Agriculture Sector Policy Agenda - Modernizing Agriculture*, Ministry of Agriculture, Suva

Ministry of Agriculture, Fiji 2020, *Ministry Divisions*, viewed 9 April 2020, <<http://www.agriculture.gov.fj/divisions.php>>

Ministry of Economy, Fiji 2017, *5-Year & 20-Year National Development Plan*, Ministry of Economy, Suva

Mowo J, Tanui J, Masuki K, Nyangas S and Chemangei A 2009, 'The Landcare approach to sustainable land management in the highlands of eastern Africa: the case of

Kapchorwa, Uganda, 4th Biannual Landcare Conference, 12-16 July, Limpopo, South Africa

National Agricultural Advisory Services Secretariat Uganda 2010, *NAADS implementation guidelines: farmer selection and support for progression from subsistence to commercialisation*. Ministry of Agriculture, Animal Industry, and Fisheries, Entebbe, Uganda

Phillips, R & Pittman, R 2014, *An introduction to community development*, 2nd edn, Routledge, London UK

Prager, K, & Vanclay, F 2010, '*Landcare in Australia and Germany: comparing structures and policies for community engagement in natural resource management*', *Ecological Management & Restoration*, vol. 11, no. 3, pp. 187-193.

Prior J and Holt R 2006, '*Tools for international Landcare – lessons learnt from South Africa and Australia*', *Landscapes, Lifestyles, Livelihoods*, International Landcare Conference, 8-11 October 2006, Melbourne, Australia

Prior J and Johnson M 2009, '*The rise and rise of international Landcare: what trajectory could be possible?*' National Landcare Conference, 2009, Sydney, Australia

Sachs J 2012, '*From Millennium Development Goals to Sustainable Development Goals*', *Lancet*, vol. 370, pp. 2206-11

South African Government 2020, *Comprehensive Rural Development Programme (CRDP)*, viewed 9 April 2020, <<https://www.gov.za/about-government/government-programmes/comprehensive-rural-development-programme-crdp>>

South African Society for Agricultural Extension 2004, *Constitution*, SASAE Secretariat. Pretoria.

South African Society for Agricultural Extension 2020, *Introduction*, viewed 21 March 2020, <<https://sasae.co.za/about-us/introduction/>>

United Nations General Assembly 2014, *Report of the Open Working Group of the General Assembly on Sustainable Development Goals*, Document Number A/68/970, Sixty-eighth session, Agenda items 14, 19 (a) and 118

Vock, N 2012, *Sustaining and growing Landcare systems in the Philippines and Australia*, Impact Assessment of ACIAR project ASEM/2002/051

Vock, N & Carusos, E 2018, '*Retooling agricultural extension for conflict-affected areas of the southern Philippines*', *Rural Extension and Innovation Systems Journal*, vol. 14, no. 2, pp. 1-11.

World Bank 2005, *Priority issues for Indonesian agriculture*, World Bank, Washington DC

World Bank 2007, *World Development Report 2008: agriculture for development*, World Bank, Washington DC

World Bank, 2008, *World Development Report*, World Bank, Washington DC

World Bank 2014, *Community Driven Development in Indonesia*, viewed 9 April 2020, <<https://www.worldbank.org/en/country/indonesia/brief/community-driven-development-in-indonesia>>

World Wildlife Fund 2011, *Launching of Fiji's first district level land care groups*, viewed 9 April 2020, <<http://www.wwf-pacific.org/?uNewsID=202307>>

9.2 List of publications produced by project

- 1 x Journal article (in draft) outlining the study key findings including the modalities of Landcare pre-adoption and contribution to resource management outcomes established, and recommendations defining the circumstances in which the Landcare approach may be replicated.

10 Appendixes

10.1 Appendix 1: Study activity outputs and deliverables

Outputs

Outputs produced through the project highlighting the key findings and recommendations of the study included:

- 1 x Journal article (in draft) outlining the study key findings including the modalities of Landcare pre-adoption and contribution to resource management outcomes established, and recommendations defining the circumstances in which the Landcare approach may be replicated.
- 2 x conference presentations 1) 2018 National Landcare Conference, Landcare – Building a Better Tomorrow, Brisbane and 2) the Asia Pacific Extension Network (APEN) Conference, Extending horizons: Extension’s role in climate, rural industries, and community challenges, Darwin, September 2019. A journal article is being written for the APEN proceedings.
- Facilitated the attendance to present at the National Landcare Conference in Brisbane for Mrs Joy Tukahirwa (Uganda) and Mr Nikki Cordero (Philippines). Pre and post study tours were coordinated and hosted in Queensland by Noel Vock and in Victoria by Belinda Brennan, West Gippsland Catchment Management Authority. The tours visited Landcare individuals, groups and networks, Catchment Management Authorities’ and Indigenous Organisations. The visit culminated in Melbourne with a presentation by Mrs Tukahirwa and Mr Cordero to Australia Landcare International members. The presentations were live streamed and available on the ALI website.
- Presentations were also made to the Jean Monnet Sustainable Development Goals Network. This network brings together researchers, policy think tanks and non-government organisations who share a primary interest in enhancing the effective contribution of the European Union to the implementation of the Sustainable Development Goals (SDGs) in the Asia Pacific. Specifically, presentations were made at 1) RMIT’s Jean Monnet Sustainable Development Goals Network Seminar Series, SDG 2 Zero Hunger, Melbourne, 26 February 2019 and 2) Jean Monnet Sustainable Development Goals Network Roundtable convened in Singapore for the network’s second Research Roundtable and first Policy Dialogue, June 10-12, 2019.
- 1 x blog post discussing the opportunities for Landcare internationally based on the findings of the study, particularly the replicability of the modalities for Landcare to enable resource management outcomes
- 1 x fact sheet was submitted to ACIAR that describes the study and Landcare process based on the key summary findings of the study
- 1 x bibliography developed as a reading list to supplement the references included in the Final Report. The bibliography includes a number of studies that evidence Landcare’s contribution to international community development, natural resource management and livelihood improvement.

A summary of the project milestones is presented in Table 2: Project research plan and milestone activity.

Table 2: Project research plan and milestone activity

Milestone	Activity	
1.1	Complete and sign project contract documents with commissioned organisation	The study commenced in June 2018 with contract documents signed by ACIAR and RMIT. A Service Agreement between RMIT and RM Consulting Group Pty Ltd (RMCG) for the provision of research services was signed in September 2018.
1.2	Form project Advisory Group. Present project to Advisory Group and develop an effective ongoing communication arrangement.	The Project Advisory Group (PAG) was formed in September to provide advice and support to the researchers. Members were invited from a pool of practitioners and academics with Landcare experience. Meetings were held with Jayne Curnow, ACIAR Research Program Manager, Social Sciences and Bec Cotton, ACIAR Graduate Research Officer in attendance. In the initial meeting PAG members confirmed the terms of reference, discussed the project context and sought feedback and discussion on the project. A total of three meetings were held over the duration of the study. Advisory members were individually consulted throughout the study.
	Engage key country stakeholders	Stakeholders were engaged by using direct contact through existing networks. A snow ball technique was also used where contacts were made via one interviewee to suggesting another.
1.3	Develop and submit RMIT Ethics Application to guide research integrity	RMIT ethics was submitted and approved. Regular progress reports and a final report has been submitted
1.4	Commence a desktop literature review of existing international Landcare approaches. Create a bibliography that lists these approaches and their key characteristics.	A desktop literature review was completed of both academic and grey literature. The bibliography has been created.
	Prepare research framework - draw on Literature review findings, objectives, research questions and Advisory Group	The Australian Landcare Framework was used as a basis for analysing the modalities of Landcare in each of the study countries. This framework has three key elements: 1) Philosophy(values); 2) Movement (actions) and 3) Model (process)
	Reflect on findings and review progress	The research team regularly met to review and reflect on findings. Review and reflect sessions were also held at the end of each day during the in-country visits. This enabled a double check of the data gathered, information provided and interpretation of meaning. Notes were taken during these sessions and used as data source during the analysis.

Milestone	Activity	
1.5	Data collection phase. Commence visits to five study country sites, interview key actors and ground truth assumptions.	The first country visited was Fiji. Bec Cotton, ACIAR joined the research team. This visit was also used to test the research questions and approach to data gathering. Clinton and Jayne Curnow, ACIAR visited Uganda and South Africa. Mary and Bec visited Indonesia accompanied by Victoria Mack, the Australian contact working with the Indonesian Landcare group. Mary coordinated the Philippines data collection over several visits that coincided with other work in the Philippines. Sri Lanka did not proceed due to safety restrictions on travel at the time of field data collection. To manage the limitations in field data collection, a desktop review and key informant interviews were undertaken with those involved with initiating the Landcare approach in Sri Lanka, and agricultural extension practitioners working in Sri Lanka.
	Transcribe interviews	Interviews were transcribed into word documents. Each interviewee received a copy of the transcript to enable any changes to be made and to validate the content of the interviews. Transcripts were translated into Javanese for the Indonesian interviewees.
	Reflect on findings and review progress	The research team met to review findings and review progress. This was also done through email and video conferencing.
1.6	Data analysis and write up of first draft	The data was analysed using two methods. 1) descriptive analysis and 2) discourse analysis. The discourse analysis was undertaken by social science researcher Alice Muller.
	Reflect on findings and review progress	The research team regularly met to review and reflect on findings.
1.7	Complete FINAL REPORT including draft journal article, blog post and fact sheet	The Final Report, fact sheet and blog have been completed. A draft journal article is forming based on the Landcare study presentation Clinton made to the Asia Pacific Extension Network (APEN) Conference in Darwin in 2019.
	Presentation of findings. ACIAR, Advisory Group and Country Stakeholders	Both Mary and Clinton attended the ACIAR Social Sciences 2020 Workshop on the 4-6 February 2020. The Landcare Study was presented by Clinton Muller and the Livelihood Improvement through Facilitated Extension (LIFE) model was presented by Mary Johnson. The workshop was attended by over 40 participants. Copies of the final Report will be sent to the Advisory Group and Country stakeholders.

10.2 Appendix 2: Semi-structured interview questions

1. LANDCARE PRACTITIONERS-AGENTS

Background

1. What do you understand Landcare to be in the work you do in your community?
2. Please describe your role/work and connection with Landcare

Landcare

3. How did you learn about Landcare?
4. Describe the types of Landcare activities you've been or are involved in.
5. Why did you/your institution get involved with Landcare?
6. Who are the communities/agencies/organisations that you 've worked with in Landcare?
7. Do you work with/target particular communities (i.e. farmers, women, IP, etc.)?
8. In your experience do you think that Landcare has brought particular benefits. What do these look like? Who has benefited?
9. In contrast, what constraints have you encountered with a Landcare? How did you deal with these?
10. On reflection what have you learned about Landcare as an extension approach?

Other extension models

11. What other extension programs/approaches do you work with or conduct? Can you give examples of what they look like? Who did/do you work/partner with?
12. How do these extension programs differ from Landcare?
13. Are there recommendations you can make on how to improve the delivery of extension services in your communities (staffing, resources, policies, incentives/funding, etc.)

2. NON-LANDCARE COHORT

1. Please describe your role/work.
2. What do you/your organisation focus on in regard to working with communities?
3. How would you describe Landcare extension? Can you provide an example?
4. In your experience do you think that Landcare has brought particular benefits. What do these look like? Who has benefited?
5. In contrast, what constraints do you see with a Landcare approach? How would you deal with these?
6. Are there recommendations you can make on how to improve the delivery of extension services in your communities (staffing, resources, policies, incentives/funding, etc.)

3. FOCUS GROUP

Background

1. Describe how your group formed and why?
2. What is the vision/purpose for your group?

Landcare / Community Development Models

3. Describe the types of activities your group undertakes.
4. What are the benefits to members of these activities?
5. Who are the partners/agencies/organisations that you worked with? How do you work with these partners?
6. What challenges have you encountered as a group? How did you deal with these?
7. How do you describe your group? What other types of groups do you see in your community? How is your group different to other group approaches?
8. What support does your group need to realise your vision?