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1 Acknowledgements

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2 Executive summary

The aim of SRA was to develop a Theory of Change for inclusive agribusiness models for market-oriented value chains in the Philippines, and it was designed as a scoping to inform the design of ACIAR project AGB/2018/196 on inclusive value chains. It was also closely linked with AGB/2019/101 (Agribusiness Master Class Philippines), for which it provided useful information and material used in teaching.

SRA developed ToC, which provided the framework for the successful development of the project AGB/2018/196.

ToC defined the overall goal of the project AGB/2018/196 as:

“Inclusive value chains (IVC) are operated in the Philippines”.

IVC is characterised by:

- Specific targeting of smallholder farming systems and contributing to enhanced livelihoods within these systems;
- Being inclusive for all stakeholders, empowering them to participate in all stages of planning, implementation and evaluation of the value chains and to shape up their own business;
- Providing equitable access to inputs, facilities, markets, products, services and capabilities, to all stakeholders, for each on their own terms, allowing benefits that are shared fairly across the chain;
- Ensure food safety through the development of and compliance with the internal food safety control system
- Ensuring sustainable economic, environmental and social outcomes

ToC defined underlining principles as

- Active/participatory engagement of potential implementers at all stages
- Planning and identification of milestones and indicators for success;
- Participatory Action Research
- Participatory monitoring and evaluation as a formative tool and communication strategy at all stages
- Integrated assessment involving all aspects of sustainable production and business systems

ToC also defined four stages of the AGB/2018/196 implementation:

- Diagnostic Phase: Studies to understand stakeholder perceptions and aspirations about inclusiveness, value chains, business decision-making processes and practices
- Design Phase: Studies to compare various models for business and value chain development, mapping elements to comprise system-specific models for inclusive value chain development
- Pilot Phase: Action research to test the feasibility of the model for inclusive value chain development and assess enhancement of economic, human and social capitals

- Institutionalisation Phase: Capacity building of individuals/institutions to apply the model as a planning tool for inclusive value chain development

SRA also conducted a "landscape assessment" to investigate perspectives on "inclusive business and value chains" of key stakeholders involved in banana, cassava, coconut and vegetable industries in Luzon, Leyte and Mindanao

Findings from Mindanao revealed that while there is no exact term for "inclusiveness" or "inclusion" in Bisaya, the major local language in these two areas, the closest related phrase used is "i-apil tanan" (to include everyone). Inclusion largely depends on the existing relationships and interactions between farmers, traders/consolidators, processors, institutional buyers and support service organisations along the chain and whether these actors understand each other and share similar goals or visions.

Being "inclusive" is deliberately finding solutions/actions that would benefit all actors ("apil tanan") in the business or along the chain. Support agencies and organisations that target smallholder farmers and are conscious of issues on age, gender, power, environmental sustainability and climate change are more likely to be inclusive in their practice and engagement with farmers.

Major barriers and challenges identified were grouped into organising, accessing support and available opportunities, financing, trading and participation in markets, and other issues. Overall, enabling inclusion in business and value chains in Davao and Bukidnon points towards strengthening existing relationships and interactions among actors, finding fair solutions, including equitable policies, improving information flow, and access to and maximising opportunities by support organisations.

Findings from Leyte also showed that there is no exact equivalent of the term "inclusive" or "inclusion" in Bisaya and Waray-waray languages. Farmers were not familiar, but support service organisations were more acquainted with the term. The closest related terms/phrases mentioned were "pagka-apil" (to be included), "makisama" (to join), "kauban" (associate), "kaupod" (companion), "tanang dal-a" (everyone included), "tanang miyembro nisalmo" (all members participate or take part) and "nilihok tanang" (everyone takes action).

Being "inclusive" in agribusiness and value chains emphasises fairness, equal sharing of benefits among different players, understanding the role of each actor, mutual recognition of contributions, consistency/stability in delivering or providing what is needed (being reliable), flexible, and working together towards development. Inclusiveness also puts a premium on good relationships between actors/players across the value chain, supporting each other, especially during difficult times.

Major barriers and challenges identified were grouped into organising, accessing support and available opportunities, infrastructure, financing, trading and participation in markets, and other issues. Overall, experiences and lessons learned in Leyte point towards improving and strengthening existing support, providing what smallholder farmers actually need, enhancing ways large companies do business with farmers, reorienting current systems to adapt climate-smart agriculture and building communities' resilience.

Finally, **findings from Luzon** showed that the majority of participants are not familiar with the term "inclusive" or "inclusion", and there is no exact equivalent in the Southern Tagalog language. However, the closest related phrases were "pagsasama-sama" (to join together or integrate) and "anib" (to unite or join as a member). From the responses, being "inclusive" emphasises the ethics of doing business and the greater need to bring different value chain actors together to work towards a common vision or goal, especially for relatively young and new farmers' organisations.

Major barriers and challenges identified were grouped into organising, accessing support and available opportunities, financing, trading and participation in markets, and other issues. The quality and cohesiveness of assistance/support provided by the government, private sector and non-government organisations can make or break smallholder farmers' associations in their early stages.

While the effects of climate change are not as significant, the impact of local politics and internal conflict on the lives of farmers are worthy

3 Background

3.1 A brief overview of ACIAR involvement in vegetable AR4D in the Southern Philippines

ACIAR has been investing in vegetable research in Southern Philippines for more than a decade. A total of five projects have been completed, and there are two current projects. The first project started in 2008 and was labelled "the megaproject" HORT2007/066, "Enhancing profitability of selected vegetable value chains in the southern Philippines and Australia". It had five components, including C1-Soil, C2-Low-cost protective cultivation, C3- Hydroponic production of potato, C4-Vegetable value chains and C5 -Economic impacts of new technologies and policy constraints in the production of vegetables and fruit in the southern Philippines and Australia (component five was shared between projects HORT/2007/066 and HORT/2007/067-Fruit). At the end of the "megaproject", it was concluded that a better operational structure would be to form the Southern Philippines Horticultural Program (Hort Program), which comprised eight projects, of which four had a vegetable component: SMCN/2012/029 "Soil and nutrient management strategies for improving tropical vegetable production in Southern Philippines and Australia", HORT/2012/020 "Integrated Crop Management (ICM) to enhance vegetable profitability and food security in the Southern Philippines and Australia" (ICM project), HORT/2012/098 "Improved postharvest management of fruit and vegetables in the southern Philippines and Australia" (postharvest project) and AGB/2012/109 "Developing vegetable and fruit value chains and integrating them with community development in the southern Philippines" (VC project).

Both the "megaproject" and the Hort Program failed to facilitate a high degree of integration, or even cooperation, between components/projects. The C4-Value chain component of the megaproject produced a good report on the institutional markets (attached) and organised around 50 farmers' groups, of which only a few survived after the project was completed. The C4 component's major failure was the inability to address production problems. Other project components were supposed to provide technical (agronomical) advice, but that never happened (Beng Concepcion per.com.). So after the project team spent a lot of time facilitating participatory processes, forming farmer groups, and implementing the CRC Eight-Step Agro-Enterprise Development Process, new market opportunities could still not be capitalised on because farmers produced only a slightly increased volume of low-quality vegetables. Coordination in the subsequent Hort Program was better, but only between ICM, postharvest and VC projects. Projects had some common training activities with farmers and a few joint postharvest research activities. However, the VC project would fail again if, in the second year, the project team did not employ agronomists for each of the three sites (Leyte, Cagayan de Oro, Davao) and work with IsarAID and City Agri agronomists.

These three projects developed PhilGAP-compliant ICM production protocols for major vegetables, basic easy-to-use postharvest protocols, and conducted a large number of FFSs (implemented by East-West Seeds and LandCare). The VC project produced a comprehensive

report on the Cebu, Tacloban and Davao vegetable market distribution system, a report on supply, utilisation, price and seasonality trends of selected vegetables in the Southern Philippines, and reports on community characteristics and structure of farm businesses for three communities in Leyte and Mindanao. The project worked with only a few (6 vs over 50 groups formed in the previous project) but large and functional farmer groups and integrated them into barangay development activities and several value chains. The project formed the Technical Advisory Committees (TAC) to coordinate all the government and non-government organisations working on community levels. TAC in Ormoc (Leyte) and Pagatpat and Canitoan (Cagayan de Oro) continue their activities beyond the project.

The current five-year project HORT/2016/188 "Developing vegetable value chains to meet evolving market expectations in the Philippines" (GAP project) built on the strength of the three "vegetable projects", and it focuses on food safety, PhilGAP certification and developing VCs for "safe" certified products. The project works in two locations, Leyte and Cagayan de Oro, and it continues to work with the three strongest farmer groups from the previous VC project. The principal in-country partner is Visayas State University (VSU), with the current research team comprising teams from the previous three projects. In Cagayan de Oro, the project is implemented by LandCare, and the major commercial partner, East-West Seeds, implements the project in Bukidnon and Leyte. A second, much smaller project, AGB/2017/039 "Learning alliance approaches to scaling out vegetable value chains in the southern Philippines" (community project), implemented by VSU in the area around Ormoc, has the aim to improve community well-being from vegetable value chain development through learning alliances with the private sector, grower groups, community, government and research stakeholders. This project's main partner was Energy Development Corporation, but they discontinued their social responsibility program in vegetables, so now the project is seeking to establish cooperation with Lamac.

3.2 Justification for the current SRA

Recent ACIAR research in Leyte and Mindanao (AGB/2012/109) has demonstrated that innovative approaches to understanding markets and integrating value chain and community research, engagement and development can lead to significant improvements in the competitiveness, product quality and income of vegetable farmer groups and mango farmers.

One of the most important ingredients for success was the development of linkage between farmers, local businesses and agribusinesses (supermarkets, modern wholesalers, concessionaires and exporters) with improved information flow, understanding and trust. This linkage has been instrumental in helping farmer groups develop the necessary skills and capacity to supply higher-value markets. It has also promoted innovation into more intensive production (e.g., shade houses and irrigation) and improved varieties leading to:

- higher productivity,
- better quality and consistency,
- enhanced postharvest management, and
- more sophisticated marketing.

This has all led to significantly increased prices and incomes for farmers.

This completed body of work has shown that value chain approaches have the potential to significantly improve livelihoods, particularly through strong market orientation. The work has also unveiled potential avenues for further exploration and intervention, such as the interface between value chains and community development and the role of inclusive business practices in enhancing smallholder livelihoods.

However, the final project review identified that developing an approach that integrates value chain into community development that can be adapted and used in future projects in the Philippines would enhance project impacts. Reviewers also recommended that the project learnings be communicated to regional governments to influence planning and policies at a higher level.

Further discussions with PCAARRD have shown that market-oriented high-value commodity chains are a priority, supported by sector competitiveness, branding, food safety and provenance. There is agreement that this can be achieved through:

- inclusive business models,
- utilising technology to enhance inclusion while
- supporting the sustainable management of natural resources and competitiveness of smallholder farmers.

It was also agreed that significant benefits could be gained from enhanced private sector involvement through capacity building for researchers is required to enable this engagement.

Together, these priorities indicate a substantial agenda around developing inclusive business models for market-oriented smallholder originating value chains in the Philippines.

This SRA developed a Theory of Change that brings together inclusive business models and community development to map the different plausible pathways by which outputs of research and the use of technology will lead to outcomes and impact on the ground to improve smallholder livelihoods and develop their communities. The developed Theory of Change (ToC) will form the foundation of ACIAR project AGB/2018/196 "Inclusive agribusiness-led development for high-value fruit and vegetable value chains in the southern Philippines."

Together with SRA AGB/2019/101, this SRA will engage a large number of stakeholders from government and non-government institutions and the private sector, capacity of researchers to implement future research, including and not limited to ACIAR project AGB/2018/196.

4 Objectives

Aim:

To develop a Theory of Change for inclusive agribusiness models for market-oriented value chains in the Philippines

This project is part of a scoping exercise that will inform the design of ACIAR project AGB/2018/196 on inclusive value chains, as to maximise its effectiveness and impact and that of prior projects, including AGB/2012/109. It will closely link with AGB/2019/101 (Agribusiness Master Class Philippines) and will provide useful information for the implementation of project HORT/2016/188, Developing vegetable value chains to meet evolving market expectations in the Philippines.

Following significant prior research in the vegetable and fruit sector in the Philippines, the completion of this SRA and the associated SRA AGB/2019/101, is a deliberate step-by-step strategy to focus and influence the larger body of research, AGB/2018/196, on maximising dissemination, adoption and lasting impacts in vegetable and fruit chains in southern Philippines

Objectives:

1. Identify examples of current inclusive agribusiness initiatives, and describe the approaches applied and stakeholders involved.
2. Engage stakeholders in inclusive agribusiness initiatives in the identification of effective pathways and suitable partners for a future inclusive value chains project
3. Co-develop a theory of change for project AGB/2018/196 on inclusive value chains

5 Methodology

The methodology used for this project was centred on the premise that initiatives, such as research for development and its associated activities, can be made more beneficial if they are designed with the knowledge of how impact may take place on the ground.

Broadly, a Theory of Change (ToC) comprises of a documentation of the various pathways by which activities, outputs and outcomes take place in order to effect impact. The basic structure of a ToC is shown below.

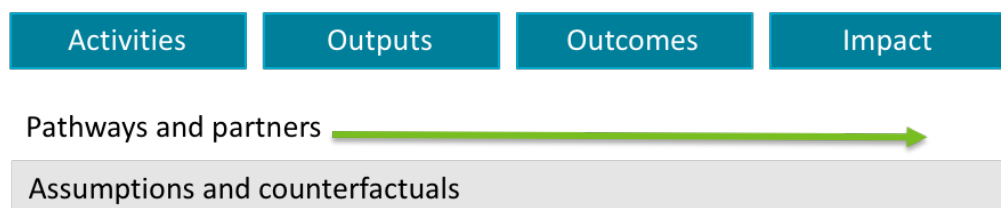


Figure 1. A basic structure for a Theory of Change

In practice, the ToC is a tool that allows context, initiatives and objectives to be documented, monitored and reflected upon. This can only be achieved if there is sufficient effort placed in co-developing the ToC. Though the diagram above is linear, the ToC encourages a reflexive and adaptive process, and it is expected to change over the course of the project, as further insights emerge and pathways are tested.

This SRA is designed to uncover and define elements of a Theory of Change for inclusive, market-oriented agribusiness value chains, as part of the design and scoping process for AGB/2018/196. The design of the project is presented below.

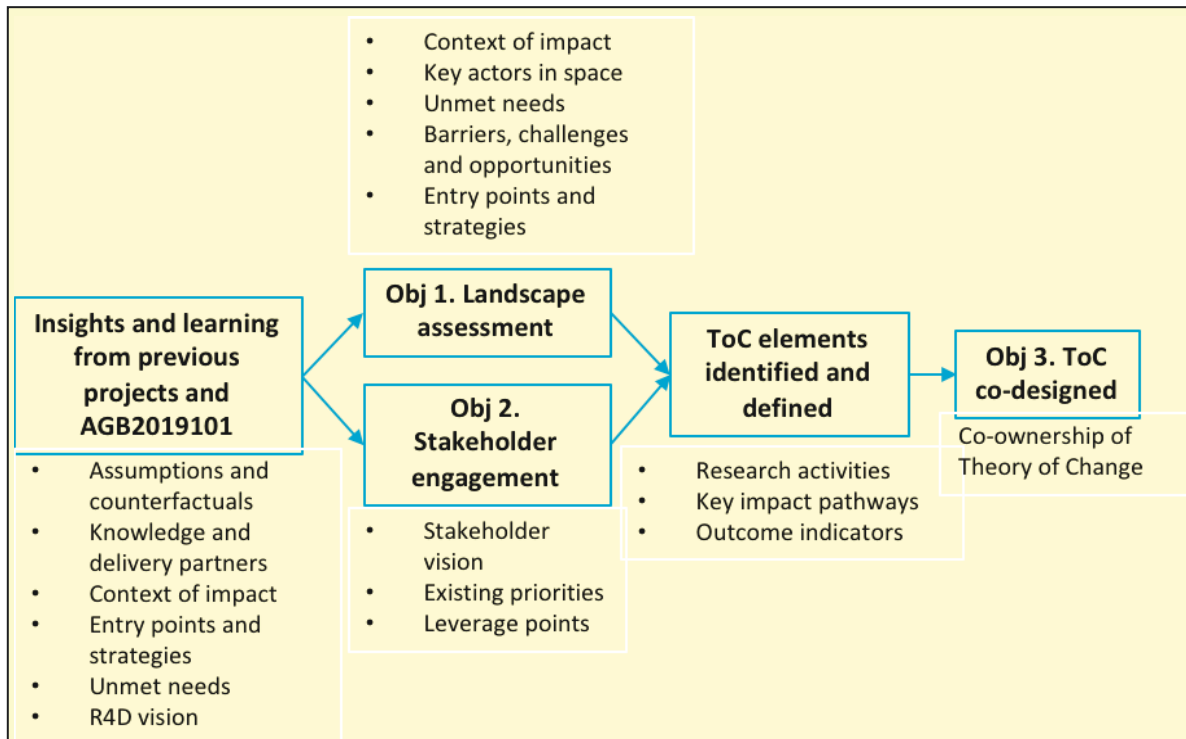


Figure 2. Project design

Project activities are shown in boxes, with outputs from these activities adjacent to them. These outputs serve as preparatory input to the ToC co-development workshop.

Landscape assessment

Utilising in-country expertise and networks, a systematic assessment of on-ground initiatives will be conducted to identify and/or understand:

- Audit / and brief description / compare & contrast analysis of key/ representative inclusive value chains and initiatives identified and identification of project / concept of champions and the range of stakeholders involved
- Drivers for inclusive value chain initiatives
- Definitions of inclusion and market-competitiveness
- Commodities of interest
- Business models utilised for inclusive value chains

- Key strategies employed
- Challenges and opportunities identified

A combination of desk-top research and interviews will be used to collect data for the assessment. Detail methodology for this activity will be developed during inception workshop in early August 2019.

Stakeholder engagement

Building on next steps suggested by reviewers of AGB/2012/109, consultations with farmer, community and regional development council stakeholders from AGB/2012/109 will be held. A majority of these stakeholders will be in Southern Philippines as a matter of ACIAR priority. In addition, potential partners identified in the linked AMC project AGB/2019/101 will also be consulted. These consultations will:

- Communicate project learnings from AGB/2012/109 and integrated value chain and community development approach developed at inception workshop as a starting point for discussion around inclusive value chains
- Identify potential project partners and pathways for impact for inclusion in the ToC for AGB/2018/196
- Uncover desired impact for smallholders and their associated value chains
- Understand priorities and operational contexts of key stakeholders to identify leverage and entry points to incorporate in ToC

In preparation for these consultations, communication material from AGB/2012/109 will be developed, as per reviewer feedback. These materials, in the form of factsheets and policy briefs, will be utilised as discussion points that can be leveraged to understand priorities and visions of the stakeholders.

Theory of Change co-design

Following the synthesis of learnings from the landscape assessment and stakeholder engagement, the ToC workshop will be held with potential partners and key stakeholders. The workshop will be facilitated by a ToC expert and will consist of:

- one day training about the principles and practice of ToC development to establish a common understanding about ToC design and use, and
- two days ToC development for an inclusive value chain initiative. Workshop will be held at location that allows field visit to include practical learning.

The output of the workshop will be a draft ToC flow chart and associated narratives illustrating the anticipated impact pathways towards inclusive, market-oriented agribusiness value chains.

More importantly, the ToC workshop initiates the process of reflection and knowledge co-generation from the onset. This will provide a joint vision and solid base for collaboration of diverse stakeholders for the major project.

6 Achievements against activities and outputs/milestones

Objective 1. (Landscape Assessment) Identify examples of current inclusive agribusiness initiatives, and describe the approaches applied and stakeholders involved

no	Activity	What should be done	What has been done
1.1	Inception workshop for research team members to discuss and agree on a common paradigm for inclusive business models, community development and their interactions, and to develop a methodology for activity 1.2.	<p>A report detailing criteria that constitute an inclusive business model and methodology to conduct landscape assessment.</p> <p>Report on integrated community development and inclusive business approaches and their interaction.</p>	<p>Completed</p> <p>Workshop held on 12-13/09/2019 in Albacan. Participants from research institutions, ACIAR, PCAARRD and GrowAsia. Agreement on approach and methodology on the development of ToC reached. The long-term goal of project AGB/2018/169 was defined, the main stakeholders identified and analysed, and the timeline for activities leading to ToC development was agreed on.</p>
1.2	Conduct a landscape assessment of inclusive agribusiness initiatives in the Philippines, identifying stakeholders, objectives and progress	Landscape assessment documented for inclusion in the final report	<p>Completed</p> <p>Assessments were conducted for the banana, cassava, coconut and vegetable value chains in Mindanao (Davao region and Bukidnon) by UPMIn, in Leyte (Tabango, Jaro and Ormoc City) by VSU and Luzon (Mauban in Quezon province) by UPLB and PCAARRD. Draft reports presented in Appendixes 2-4.</p>
1.3	Identify and review key strategies used in initiatives to achieve inclusion (for example, digital technology, microfinance, farmer cooperatives, capacity building)	Key strategies for inclusion documented for inclusion in the final report	<p>Completed</p> <p>Strategies were presented in reports from activity 1.2.</p>

no	Activity	What should be done	What has been done
1.4	Identify criteria needed to measure the performance of inclusive value chains	Outcome indicators to underpin ToC pathways identified	Completed Preliminary criteria were identified during landscape assessment studies at workshops conducted in September 2019 and January 2020. Final criteria were integrated into ToC and project AGB2018196 proposal.

Objective 2. (Stakeholder Engagement) Engage with stakeholders on inclusive agribusiness in order to identify pathways and partners for the major project

no	Activity	What has been done	What still has to be done
2.1	Building on potential partners identified in AGB/2019/101 (AMC) and known stakeholders from the completed project AGB/2012/109, conduct engagement activities to communicate insights from previous and current ACIAR value chain initiatives.	Compilation of key stakeholders Communication material developed Workshops conducted	Completed Two workshops were completed and insights from project AGB/2012/109 integrated into AMC curriculum. Major partners from project AGB/2012/109 contributed to the development of project AGB/2018/196 and are included as the partners in the new project.
2.2	Identify outcomes desired by key stakeholders in the building and sustaining inclusive value chains	Preliminary outcomes for inclusive value chains identified for inclusion in ToC development	Completed Desirable outcomes were identified and incorporated into ToC and project AGB/2018/196 proposal.
2.3	Develop terms of engagement with key stakeholders, including regional government councils (including and not necessarily limited to regions VIII, X and XI) for upcoming project ACIAR AGB/2018/196.	Summary of proposed partnership models/pathways for inclusion in ToC development	Partially completed Term of engagement with commercial partners Nestle, Lamac FMC and JolieBee foundation was developed and is part of AGB/2018/196 full proposal The terms of engagement with regional government councils were not developed due to their engagement in addressing COVID crises.

Objective 3. (Theory of Change Co-Design) Co-develop a theory of change for the major project on inclusive value chains

no	Activity	What has been done	What still has to be done
3.1	Consolidate from objectives 1 and 2, key principles, objectives and pathways to underpin the development of a Theory of Change (ToC)	The context for ToC developed in preparation for workshop 3.2	Completed Completed after the initial workshop and was used to underpin ToC development at the second workshop in January 2020.
3.2	Conduct a ToC development workshop with the project team and key stakeholders, which builds capacity to develop and use a ToC, and formulates the desired pathways, outcomes and impact for an inclusive value chain initiative.	Workshop conducted Synthesis of workshop outputs Initial ToC formulated	Completed ToC developed at the workshop conducted in Cebu from 15 to 17th January 2020. Representatives of research organisation (UPLB, UPMIn and VSU), government (PCAARRD), NGOs (GrowAsia and Food Link) and private sectors (AgriCOOPh, Lamac MPC, East West Seed, Aboitiz Foundation, Jollibee Group Foundation, Cargill Philippines and Sunlight Foods Corporation) participated at the workshop.
3.3	Document and review the co-produced ToC for inclusion in the proposal for AGB/2018/196	Draft Theory of Change for inclusion in the proposal developed and submitted as a final report	Completed Draft Theory of Change for inclusion in the proposal was developed and, after adaptation, incorporated into the AGB/2018/196 proposal
3.4	The case studied on Lamac MFC activity in Cebu and rapid assessment of coffee production in Sultan Kudarat	Input in the development of AGB/2018/196	Completed Input in the diagnostic phase of project AGB/2018/196
3.5	Conduct an in-depth study on the coffee-based farming system in Sultan Kudarat -Mindanao.	Report on the coffee-based farming system	Partly completed due to COVID-19 restrictions. The report on Coffee production in Sultan Kudarat (3.4) included a partial farming system analysis

7 Key results and discussion

Objective 1. Identify examples of current inclusive agribusiness initiatives, and describe the approaches applied and stakeholders involved (Landscape Assessment)

The goal of "landscape assessment" was to investigate perspectives on "inclusive business and value chains" of key stakeholders involved in banana, cassava, coconut and vegetable industries in Luzon, Leyte and Mindanao to inform the design and development of project AGB2018196.

Specific objectives were to:

- Explore what the term "inclusive business" means to key stakeholders across selected banana, cassava, coconut and vegetable value chains;
- Explore the context by which inclusion or inclusive practice takes place in agribusiness and agriculture;
- Identify barriers and challenges to participation in value chains.

Researchers from the University of Philippines Mindanao (UPMin) conducted six key informant interviews (KIIs) and focus group discussions (FGDs) in Mindanao (Davao City, Davao del Norte and Bukidnon) from 1st to 10th October 2019 (Appendix 1), the researchers from the Visayas State University (VSU) conducted four KIIs and FGDs in Leyte (Tabango and Jaro municipalities and Ormoc City) from 2nd to 5th December 2019 (Appendix 2), and researchers from the University of the Philippines Los Baños (UPLB) conducted four KIIs and FGDs in Luzon (Mauban municipality, Quezon) from 3rd to 6th November 2019 (Appendix 3).

Results indicate that most interviewees have an understanding that being "inclusive" means deliberately finding solutions/undertaking actions that would benefit all actors ("apil tanan") in the business or along the chain. Inclusion largely depends on the existing relationships and interactions between farmers, traders/consolidators, processors, institutional buyers and support service organisations along the chain and whether these actors understand each other and share similar goals or visions.

See Appendices 1, 2 and 3 for details.

Objective 2. Engage with stakeholders on inclusive agribusiness in order to identify pathways and partners for the major project (Stakeholder Engagement)

Two workshops were held to facilitate the engagement of key stakeholders who would potentially be involved in the new project. In the first workshop held in Alabang, from the 12th to 13th of September, participants mainly came from research organisations (UPMin, VSU, UPLB), NGOs (FoodLink) and the major government research funding and administrative body PCAARRD. Participants developed a common vision for the new project and defined the project's overall goal simply as: "Inclusive value chains are operated in the Philippines". To be inclusive, VCs have to:

- Specifically target smallholder farming systems and contribute to enhanced livelihoods within these systems;

- Be inclusive for all stakeholders, empower them to participate in all stages of planning, implementation and evaluation of the value chains, and shape up their own business;
- Provide equitable access to inputs, facilities, markets, products, services and capabilities, to all stakeholders, for each on their own terms, allowing benefits that are shared fairly across the chain;
- Ensure food safety through the development of and compliance with the internal food safety control system;
- Ensure sustainable economic, environmental and social outcomes.

The participants then identified the primary (farmers and their organisations, market actors, supply and service providers, finance institutions), secondary (research and research funding institutions, NGOs, local government units, civil and people's organisations) and external (government departments and international development organisations) stakeholders necessary to achieve this goal. Potential private sector project partners were also identified, including East West Seeds, Lamac, Cargill Philippines, Sunlight Foods Corporation, and Jollibee, Nestle and Aboitiz Foundations.

The research team introduced the concept of inclusive value chains to selected stakeholders, including AgriCOOPh, Lamac MPC, East-West Seed, Aboitiz Foundation, Jollibee Group Foundation, Philmico and Sunlight Foods Corporation and engaged them in the co-development of the Theory of Change (ToC). The ToC design was finalised at the workshop in Cebu from 15 to 17th January 2020

Objective 3. Co-develop a theory of change for the major project on inclusive value chains (Theory of Change Co-Design)

The Theory of Change (ToC) was co-designed with Filipino partners at the workshop conducted in Cebu from 15 to 17th January 2020. Representatives of research organisations (UPLB, UPMIn and VSU), government research funding and administrative organisation (PCAARRD), NGOs (GrowAsia and Food Link) and private sectors (AgriCOOPh, Lamac MPC, East-West Seed, Aboitiz Foundation, Jollibee Group Foundation, Philmico and Sunlight Foods Corporation) participated at the workshop and made major contributions to the successful design of the ToC for inclusive value chains in the Philippines. ToC was based on landscape assessment (Objective 1) and recommendations from the recently completed project AGB/2012/109, "Developing vegetable and fruit value chains and integrating them with community development in the southern Philippines", which demonstrated that the development of inclusive value chains could create a learning community that engaged and brought together all types of stakeholders: farmers, private sector, local government units and support institutions (micro-finance, training institutes, regional development councils) resulting in innovations in production and marketing. ToC defined the project's diagnostic, design, pilot, and institutionalisation phase and impact pathways.

A project proposal for AGB/2018/196 was developed based on the original ToC (Fig 1) (detailed ToC [Theory of change for inclusive value chain development in the Philippines](#)); however, a simplified version was included in the AGB/2018/196 project document (Fig 2).

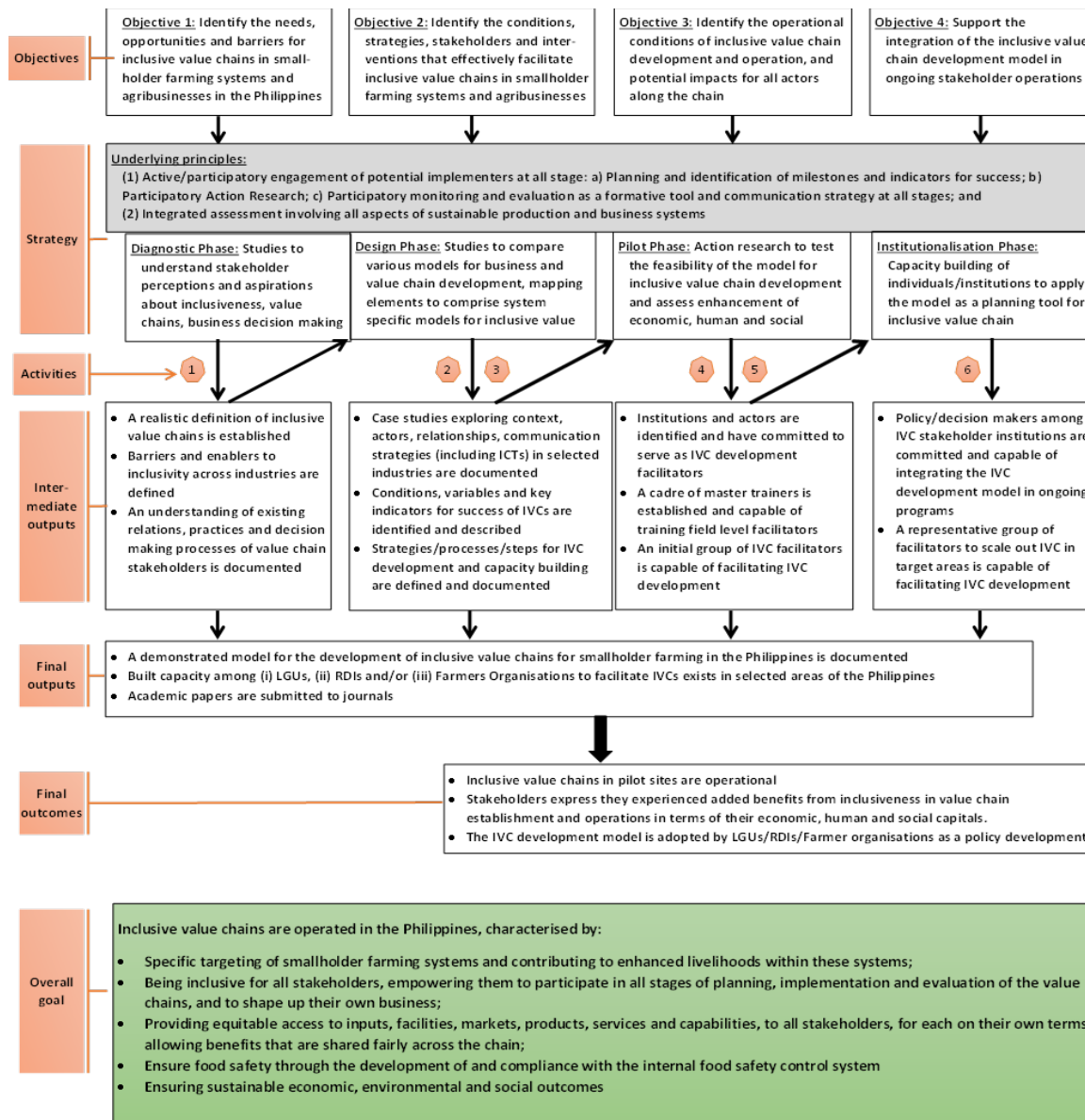


Figure 1: The original ToC for an Inclusive value chain in the Philippines co-developed with Filipino partners in Cebu in 2020

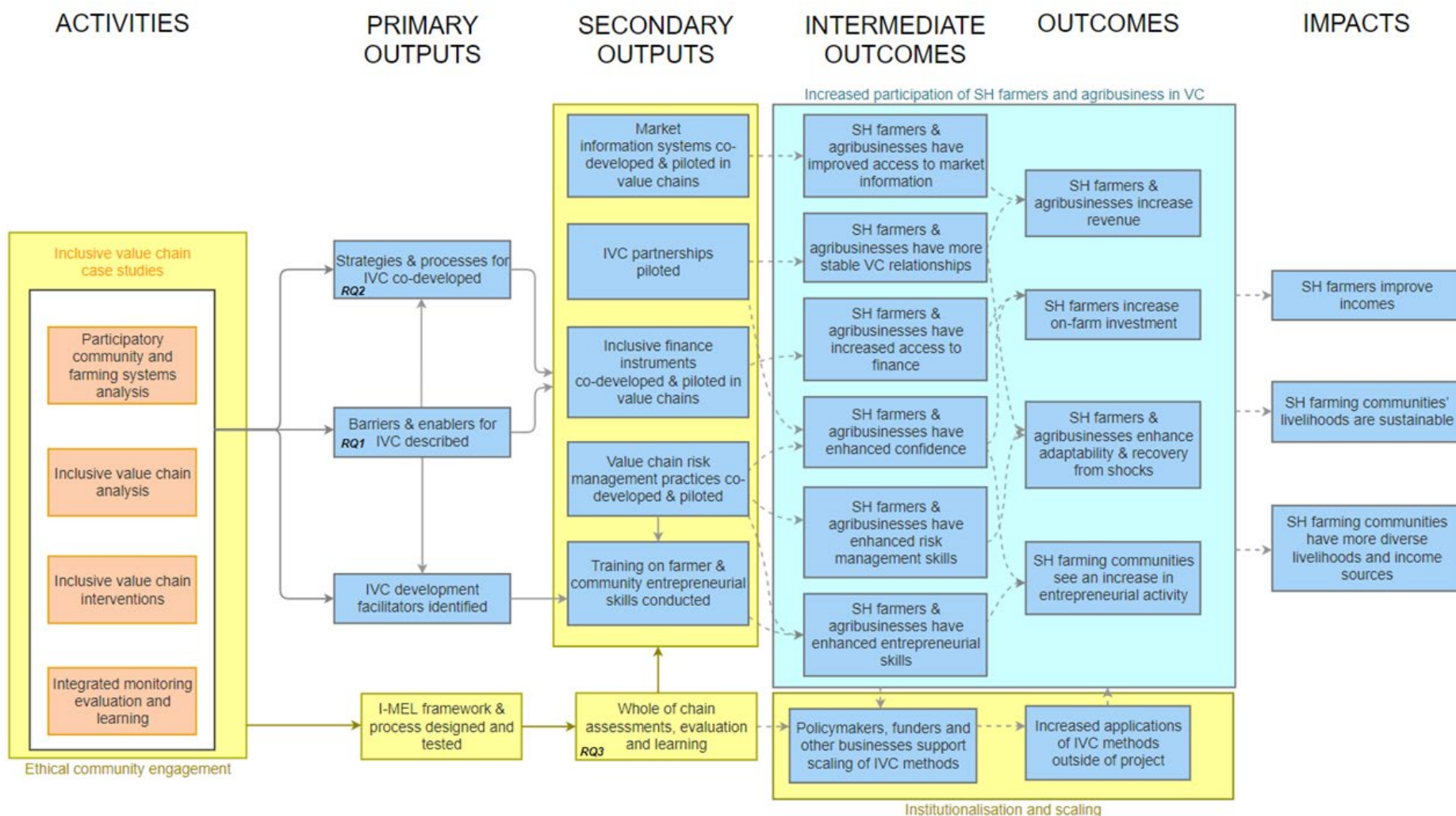


Figure 2: IVC Philippines Project Theory of Change articulates the assumed process of change and what contributions the IVC project is intended to make around this change process. (Source AGB/2018/196 project document)

8 Impacts

8.1 Scientific impacts – now and in 5 years

The SRA outputs are not suitable for a journal paper; however, ToC and results of the IVC landscape assessment reports, which were incorporated into the project AGB/2018/196 document, should lead to the journal paper being published in the early stage of AGB/2018/196 implementation.

8.2 Capacity impacts – now and in 5 years

Project built capacity of various stakeholders, including staff from research organisations (UPLB, UPMIn and VSU), government institutions (PCAARRD), NGOs (GrowAsia and Food Link) and private sectors (AgriCOOPh, Lamac MPC, East-West Seed, Aboitiz Foundation, Jollibee Group Foundation, Cargill Philippines and Sunlight Foods Corporation) to develop the Theory of change framework.

8.3 Community impacts – now and in 5 years

The SRA was designed to inform the development of the project AGB/2018/196, and there were no expectations for the impacts as the result of the implementation of this SRA, but rather through the implementation of AGB/2018/196.

8.4 Communication and dissemination activities

Learnings from landscape assessments and ToC development were incorporated into Agribusiness Master Class training (AGB/2018/101).

9 Conclusions and recommendations

The SRA team, with active participation from the Philippino researchers and representatives from the private sector and government institutions, co-developed ToC for the development of inclusive value chains in the Philippines, which became an integral part of the new ACIAR project AGB/2018/196.

During the development of the ToC, a partnership between Philippino researchers and representatives of key industry partners in the new project was established. However, due to COVID restrictions and the inability of project personnel to meet with regional councils, communication of the achievements of previous ACIAR projects and mobilisation of support for the new project could not be achieved.

The Australian research team that developed the ToC and the Australian research team delivering the new project are significantly different. Despite efforts to familiarise the new team with the ToC, because of participatory processes involved in ToC development and a lack of emersion of the new project team in the realities of the Philippino rural communities, it was impossible for the new team to fully take ownership of ToC even though they understood the

ToC conceptual framework and the activities that should be implemented. Similarly, the new project team does not fully grasp SRA research outputs related to the meaning of inclusion in different Filipino communities (Luzon, Mindanao, Visayas).

It is highly recommended that the research team for a major project that will implement ToC developed in SRA are identified before the SRA so they can be included as much as possible in the development of ToC. Unfortunately, in this SRA, the Filipino team was part of ToC development, but only one of the Australian team was part of the ToC development.

10 Appendixes

10.1 Landscape assessment on inclusive business and value chains in Mindanao

SUMMARY

This report presents the major findings and analysis of the data gathered from the fieldwork in Davao and Bukidnon 01-10 October 2019. A total of six (6) key informant interviews (KIIs) and focus group discussions (FGDs) in Davao City; Sto. Tomas, Davao del Norte; and Manolo Fortich, Bukidnon, with the most substantial data, were chosen for analysis. Findings revealed that while there is no exact term for "inclusiveness" or "inclusion" in Bisaya, the major local language in these two areas, the closest related phrase used is "*i-apil tanan*" (to include everyone). Inclusion largely depends on the existing relationships and interactions between farmers, traders/consolidators, processors, institutional buyers and support service organisations along the chain and whether these actors understand each other and share similar goals or visions. Being "inclusive" is deliberately finding solutions/actions that would benefit all actors ("*apil tanan*") in the business or along the chain. Support agencies and organisations that target smallholder farmers and are conscious of issues on age, gender, power, environmental sustainability and climate change are more likely to be inclusive in their practice and engagement with farmers.

Major barriers and challenges identified were grouped into organising, accessing support and available opportunities, financing, trading and participation in markets, and other issues. Overall, enabling inclusion in business and value chains in Davao and Bukidnon points towards strengthening existing relationships and interactions among actors, finding fair solutions, including equitable policies, improving information flow, and access to and maximising opportunities by support organisations.

I. Goal

Conduct a **preliminary assessment of perspectives of inclusive business and value chains** by key stakeholders in Mindanao, specifically from Davao and Bukidnon. The results shall be used to inform the design and development of the project AGB2018196 on inclusive value chains in the Philippines.

II. **Objectives**

1. Explore perceptions and definitions of "inclusive business" by key stakeholders across selected banana, cassava, coconut and vegetable value chains;
2. Explore the context by which inclusion or inclusive practice takes place in agribusiness and agriculture;
3. Identify barriers and challenges to participation in value chains.

III. **Methodology**

Organising value chain partners and data collection were conducted with selected researchers from the University of the Philippines (UP) Mindanao on 01-10 October 2019. Six key informant interviews (KIIs) and focus group discussions (FGDs) in Davao City; Sto. Tomas, Davao del Norte; and Manolo Fortich, Bukidnon, with the most substantial data were chosen for analysis

IV. **Mindanao: The Food Basket of the Philippines**

Mindanao is a major supplier of high-value crops, marine products and related agricultural products in the country. It produces around 40% of the food needs and contributes more than 30% to the national food trade¹.

A. **Davao**

Davao City is the regional centre of Davao Region (Region XI) while the cities of Tagum, Panabo, Digos and Mati are considered subregional centers and secondary urban growth and trade centers.² The region is comprised of five provinces namely Davao del Sur, Davao del Norte, Davao Oriental, Davao Occidental and Davao de Oro (formerly Compostela Valley). Agriculture, agro-industries, fisheries, forestry, mining, trade and tourism drive the regional economy. However, the region's recent growth (2010-2015) is attributed to the services sector at 53% output, followed by the industry sector at 34% and agriculture, hunting, forestry and fisheries sector at 13.5%.² Davao's top export earners are banana and coconut, and these crops are expected to lead the regional economic growth in the next six years.² Cacao and coffee are emerging active industries, seen as potential productive industries in the region. Davao del Norte is the biggest producer of bananas (Cavendish and Cardaba/saba varieties) for export, followed by Davao de Oro and Davao del Sur.

In the recent years, natural disasters such as typhoons and El Niño have hampered agricultural productivity. Overall poverty incidence in Davao Region has declined to 16.6% in 2015.² However, high poverty rates are still recorded in Davao del Norte (26.1%), Davao de Oro (22.0%) and Davao Oriental (21.3%), while farmers and fishermen remain to be the poorest sectors in the area.²

¹ Francisco, K. (30 May 2017). *FAST FACTS: Mindanao, the Philippines' food basket*. Retrieved from <https://www.rappler.com/newsbreak/iq/171391-fast-facts-agriculture-livelihood-mindanao>

² National Economic and Development Authority (2017). *Davao Regional Development Plan 2017-2022*. Davao City: National Economic and Development Authority Regional Office XI. Retrieved from <http://nro11.neda.gov.ph/wp-content/uploads/2018/01/Davao-Regional-Development-Plan-2017-2022.pdf>

B. Bukidnon

Northern Mindanao is being developed as the gateway in the South, and currently the major transshipment hub and industrial center.³ Cagayan de Oro City is the region's metropolitan center and Iligan City identified as a subregional growth center. The region is composed of five provinces: Bukidnon, Camiguin, Lanao del Norte, Misamis Occidental and Misamis Oriental.³

Bukidnon is considered as the food basket of Northern Mindanao (Region X)⁴. In Bukidnon, the cities of Malaybalay and Valencia are the main growth centres of the province while the town of Maramag is considered an emerging urban centre in the southern part of the area.³ Bukidnon is the main source of agricultural products and raw materials for processing plants located in Northern Mindanao. It is the top producer of root crops, especially cassava, and highland vegetables.⁴ Cassava is used for food and as raw materials for livestock feeds, starch and glue, among many others. Farmers consider cassava as a resilient crop – the root crop is able to thrive in dry season and unfertile soils. On the other hand, the cool climate and high elevation make vegetable production in Bukidnon a lucrative venture for small holder farmers.⁴ Vegetable production is mostly for the market in Cagayan de Oro City and Davao City. Nevertheless, poverty incidence is consistently high among farmers and fisherfolk in the region, at 55.1% in 2012.³ Climate change has also affected agricultural production in Bukidnon with El Niño and typhoons.

In 2015, Northern Mindanao's poverty incidence have decreased to 36.6%; however, high poverty still exists in Bukidnon at 53.6%, Lanao del Norte at 44.3% and Misamis Occidental at 36.9%.³

V. Results

A. Perceptions and Definitions of "Inclusive Business"

While there was no direct translation of the terms "inclusive", "inclusivity" or "inclusion" in Bisaya, the closest phrase used by respondents was "*i-apil tanan*" which translates to "including everyone". Participants, for the most part, described significant characteristics or features of inclusive business.

A corporate social responsibility (CSR) organisation⁵ supporting farmers in Davao del Norte, defines "inclusive business" as a targeted approach engaging farmers within a

³ National Economic and Development Authority (2017). *Northern Mindanao Regional Development Plan 2017-2022*. Cagayan de Oro City: National Economic and Development Authority Regional Office X. Retrieved from <https://doc-0k-0s-docs.googleusercontent.com/docs/securesc/i6k1g3b2tklso46j2vmos6p5q9765sbr/1bjoiemr0a876j91vhteurgm733r0pf9/1576224000/000/0587446519032777322/04466427584547257729/0B0MMkFvIQa37d0xITGVCaWFWeGs?e=download&authuser=0>

⁴ Dejarne-Calalang, G.M., Bock, L. & Colinet, G. (2015). *Crop production of Northern Mindanao, Philippines: Its contribution to the regional economy and food security*. *Tropicicultura* 33(2):77-90. Retrieved from <http://www.tropicicultura.org/text/v33n2/77.pdf>

⁵ DANA Foundation is the CSR arm of Nader and Ebrahim & Sons of Hassan Philippines, Inc., corporate owners of Cavendish banana plantations in the Davao region. SEGES Co-Farming Philippines is the social enterprise arm created by the organization to oversee and manage the profits coming from their partnership with smallholder farmers' associations in Davao del Norte. In Sto. Tomas, Davao del Norte, San Agustin Pantaron Women's Association (SAPWA) and Uraya High Value Crops Farmers Association (UHVCFCA) are their current partners.

locality, with a good supply (right volume and quality of production) that a business with an existing market can rely on. "Inclusive business" is also about relationships with people, where everyone understands and shares similar visions and can provide support through linkages. Institutional buyers interested in helping farmers are tapped because they share the same goal of wanting to help small farmers. Through this, farmers feel they are a significant part of the value chain: they could get a fair income, they are needed by buyers and they could deliver good quality to consumers. Basically, inclusive business is a "...mutually beneficial professional relationship that seeks win-win solutions for both parties."

For some farmer leaders in Davao and Bukidnon with the longest partnerships with institutional buyers and support organisations describe their relationships as being "friends" ("*amigohanay*") or having a "big brother-small brother". Trust is a key component of relationships and interactions, strengthened by being reliable and consistent through time.

B. Key Strategies and Interventions Used to Achieve Inclusion in Value Chains

- **Deliberate targeting of smallholder/small scale farmers by support service organisations**

At the national level, the Department of Agriculture (DA), through the current Secretary William Dar, reactivated the Registry System for the Basic Sectors in Agriculture (RSBSA) and National Coconut Farmer Registry System (NCFRS). These registry systems require farmers to enter new information or update their details to access government assistance (including insurance through the Philippine Crop Insurance Company or PCIC).

In Davao, the Department of Agriculture-Agribusiness Marketing Assistance Division (DA-AMAD) is tasked to handle fresh and processed agricultural products (value adding and packaging) and assist farmer groups and organisations in crafting business plans. In 2000, the Regional Director mandated DA-AMAD to assist in forming commodity/industry councils. At present, the Vegetable Industry Council of Southern Mindanao (VICSMIN) is the only council that has remained active since 2000.

Other government agencies providing support services to farmers are the Department of Trade and Industry (DTI) for technical assistance on processing and marketing and the Department of Science and Technology (DOST) for farm machinery and equipment. Assistance is usually coursed through their respective regional or provincial offices, unlike DA, which has further connections through the city and municipal agriculture offices.

The Davao-based CSR organisation they have a deliberate focus on engaging smallholder farmers in vegetable farming and linking them to different institutional buyers such as Jollibee, Chowking, McDonald's, supermarkets and hotels.

- **Participating in local and industry governance**

Some farmer leaders interviewed in Davao and Bukidnon were elected into local government either as barangay kagawads, barangay captains or municipal councilors. Through political representation and participation in the local government, farmer leaders could directly influence and/or change existing policies, plans, programs and services to improve the availability and access of resources and opportunities for small farmers in their respective jurisdictions. One farmer leader/entrepreneur shared that his position was crucial in helping farmers access water supply during the drought caused by El Niño in 2016. Another farmer said that winning the barangay leadership improved their cooperative's access to the use of public land, which they could now use as a nursery and eventual learning site for farmers (both members and non-members) within and outside their town.

In Davao, farmer leaders with vegetables and Cardaba banana as main crops are able to represent their sector in provincial and regional industry councils such as VICSMIN, Provincial Agriculture and Fishery Council (PAFC) and Banana Industry Development Council (BIDC).

C. Barriers and Challenges to Participation in Value Chains

- **ORGANISING**

- **The purpose of organising farmers is for political gain**

One participant in Davao mentioned that a major reason farmers do not join organisations is because of politics: "*Gamiton na pud ta*" (They might use us again). Some local politicians are notorious for promising a lot to farmers during election campaigns to get votes but then forget about their promises once elected, while some organisations are formed by politicians to secure votes during elections.

- **No time for participating in activities of the organisation**

Farmers mostly spend their time in the farm and some would rather work than attend meetings. Because of this, male farmers usually send their wives to attend meetings by their associations or local government while they work in their farms.

- **ACCESSING SUPPORT AND AVAILABLE OPPORTUNITIES**

- **Assistance is mostly given to those with frequent interactions or connections with the government**

Farmers' associations and cooperatives actively seeking help from the local government or provincial/regional staff of national government agencies (NGAs) such as DA and DTI are most likely to access various kinds of assistance. As they are easily recognised (face-to-face), they are usually prioritised by the government in projects. Some organisations actually became "successful" due to the increased frequency and different kinds of support they were able to access through their engagement/connections in the government. Individual farmers are also less likely to be assisted by the government – one farmer leader shared that the government "loses" when it helps individual farmers; thus, some of them were compelled to join

associations or cooperatives to be able to access existing support and opportunities, to be given attention.

- **Promised program, project or assistance did not materialise or was delayed**

There were instances farmers were organised, but the program, project or assistance promised did not come to reality. It also takes a long time before assistance from the government, usually DA, arrives. This often results in farmers' disappointment and erosion of trust.

- **Assistance/support provided is not tailored to farmers' needs**

While different kinds of support by DA were well-appreciated (e.g. technical assistance, provision of farm inputs, provision of farm machinery and equipment), it was still perceived as inadequate or "*kulang*". The perception of inadequacy stemmed from whether or not the assistance provided was appropriate. For technical assistance, some reasons mentioned by the vegetable group in Davao are training conducted were too general, that specific topics or concerns are not addressed and there are extension workers who are unable to provide sufficient assistance because they themselves are not equipped with the right knowledge and skills. For farm inputs, machines and equipment, farmers in Davao and Bukidnon reported that inputs, machines and equipment provided were not appropriate for the market demand or working requirements/specifications of the farmers (e.g. cultivator too bulky for use, tractor too small). Most of the time, these are still received by farmers as assistance but eventually not used because they do not fit their needs.

Furthermore, some participants mentioned the piecemeal approach to support provision also affects farmers' productivity and income by hindering efficiency and quality of produce/products.

- **Farmers do not have sufficient knowledge and skills**

Most of the information, knowledge and skills farmers get are usually from information campaigns, training, seminars or activities conducted by DA through their respective municipal, city, provincial or regional offices. However, campaigns, training and other learning activities by the government are often one-time events. Monitoring, provision of technical assistance and evaluation are seldom done. Farmers still need updating, continuous, appropriate knowledge in production, use of technology, financing, market and trade, among others.

- **FINANCING**

- **Tedious loan requirements, slow processing and release of funds by banks**

A challenge mentioned by cardaba banana farmers was financing, specifically the tedious production loan requirements, slow processing and release of funds by the Land Bank of the Philippines (LBP).

Banana farmers in Davao mentioned that there are a lot of papers to be submitted, including audited financial statements. Farmers usually go back and forth to the bank because the documents required are not communicated by the staff in one sitting. At present, the production loans require downloading through cooperatives (that meet LBP's criteria, such as financial assets).

The Agricultural Credit Policy Council (ACPC) under DA has an agriculture enhancement fund (AEF) but requires a conduit such as Land Bank or cooperatives for funds to be downloaded to farmers. AEF has no interest at the national level, but as it goes down to the farmers, the interest increases to 6%. As with production loans, AEF has a lot of requirements which also discourage farmers, compelling them to avail the easily accessible "5-6" by Indians (but with high interest) and consolidators/traders (no interest but "controls" the prices or volume of farmers' produce).

- **Forms/requirements are not translated or explained in simple local language**
Most forms were in English and not translated to the local language, or the forms' purposes were not explained by bank employees in understandable terms. These all contribute to hindering farmers' access to available financing.

- **TRADING AND PARTICIPATION IN MARKETS**

- **Pole vaulting by farmers weakens business relationships with buyers**
Consolidators, processors and institutional buyers mentioned pole vaulting as a persistent problem they faced with farmers. Even if there are existing contracts or agreements, farmers still sell their crops or products to others who can give them higher prices. Because of this, some made their transactions more flexible, allowing farmers to sell to others as long as they were able to keep their volume requirements.
- **Current economic system: Assurance of guaranteed buyers/markets, fluctuating market prices and tariff reduction for imports**
The country's economic system is primarily based on capitalism which bases production on the supply and demand of the market. Banana farmers shared that on the ground, the affluent and large companies have more accessibility to the market, but this information is not known to many. Exporters seek to buy their crops/produce to fulfil the demand of a particular market but would not share information on the market price to control the buying price. For cassava farmers, price monitoring is critical for trends and forecasts, but not all farmers have that data. Prices fluctuate, and without adequate information, farmers sell their crops/produce at a low price when they could sell them at higher prices weeks or months after if they have data on hand.

For both the banana and cassava sector, tariff reduction for imports was mentioned as a critical, continuing threat to domestic or local producers through its cheaper prices. Frequently, cheaper prices of produce are achieved in other countries due to substantial government investment and support in agriculture through

economies of scale. In contrast, Philippine agriculture chronically suffers from a low budget as well as reports of corruption and bureaucratic inefficiency, particularly DA. Traced further, the country's export-oriented economy and economic policies, which favour large capitalist corporations, were mentioned by some participants as major barriers for poor and small-scale/holder farmers

- **OTHER ISSUES**

- **Household**

- Many women farmer leaders, but the decision-making role still remains with the husband
- Existing differences in farm activities/tasks undertaken by male and female farmers (e.g. mostly males for heavy lifting, females for weeding and packing)
- Vices (e.g. alcohol, tobacco)
- Attitudes and behaviours of farmers such as "katapulan" (risk averse), "maniid" (wait and see), "one-day millionaire", wanting instant solutions/shortcuts; beliefs such as farming is only for the poor and less educated

- **Community**

- A decreasing number of available farm labourers during planting and harvesting seasons due to ongoing construction works (e.g. road widening, rehabilitation, Build Build Build projects)
- A decreasing number of young people who venture into farming and agribusiness
- Reduction of agricultural lands to give way for other development projects
- Presence of alleged investment scammers (e.g. KAPA Community Ministry International, Rigen Marketing)
- Worsening effects of climate change (e.g. El Niño instigates water supply shortages, typhoons destroy crops)

VI. Discussion

Based on the responses provided by the respondents in Davao and Bukidnon, being "inclusive" is a deliberate practice of finding solutions or actions that would benefit all actors in the business or value chain, most especially smallholder farmers. Support agencies and organisations that target smallholder farmers and are conscious of issues on age, gender, power, environmental sustainability and climate change are more likely to be inclusive in their practice and engagement with farmers.

However, much remains to be done to facilitate and sustain inclusion in existing relationships and interactions among various actors. Government support to farmers, while plenty, is still fragmented and disorganised. Alignment of plans and targets, coordination and collaboration between agencies at different levels need to be enhanced. Repeated delays and disappointments in the quality of assistance and policies have eroded the trust of farmers as well as businesses.

Farmers especially need to be equipped with the appropriate knowledge, skills and attitudes on policies, agreements, trade and markets.

In general, enabling inclusion in business and value chains in Davao and Bukidnon points toward strengthening existing relationships and interactions among actors, finding fair solutions, including equitable policies, improving information flow, as well as access to and maximising opportunities by support organisations.

Ultimately, if smallholder farmers are to significantly benefit from businesses and value chains, their social value as food producers must first be seriously recognised by all actors: "*Kung walay mangunguma, walay pagkaon ang tawo.*" (If there are no farmers, people won't have food). More than focusing on high-value crops, our country needs to focus on placing a high value on farmers who feed us and sincerely listen to their decades-long pleas.

10.2 Landscape assessment on inclusive business and value chains in Leyte

SUMMARY

This report presents the major findings and analysis of the data gathered from the fieldwork in Leyte Province last 02-05 December 2019. A total of four (4) key informant interviews (KIIs) and focus group discussions (FGDs) with significant data were analysed.

Findings showed that there is no exact equivalent of the term "inclusive" or "inclusion" in Bisaya and Waray-waray languages. Farmers were not familiar, but support service organisations were more acquainted with the term. The closest related terms/phrases mentioned were "pagka-apil" (to be included), "makisama" (to join), "kauban" (associate), "kaupod" (companion), "tanang dal-a" (everyone included), "tanang miyembro nialmota" (all members participate or take part) and "nilihok tanang" (everyone takes action). Being "inclusive" in agribusiness and value chains emphasises fairness, equal sharing of benefits among different players, understanding the role of each actor, mutual recognition of contributions, consistency/stability in delivering or providing what is needed (being reliable), flexible, and working together towards development. Inclusiveness also puts a premium on good relationships between actors/players across the value chain, supporting each other, especially during difficult times.

Major barriers and challenges identified were grouped into organising, accessing support and available opportunities, infrastructure, financing, trading and participation in markets, and other issues. Overall, experiences and lessons learned in Leyte point towards improving and strengthening existing support, providing what smallholder farmers actually need, enhancing ways large companies do business with farmers, reorienting current systems to adapt climate-smart agriculture and building communities' resilience.

I. Goal

Conduct a preliminary assessment of perspectives of inclusive business and value chains by key stakeholders in selected agricultural value chains in Leyte. The results shall be used to inform the design and development of the project AGB2018196 on inclusive value chains in the Philippines.

II. Objectives

4. Explore perceptions and definitions of "inclusive business" by key stakeholders across selected banana, cassava, coconut and vegetable value chains
5. Explore the context by which inclusion or inclusive practice takes place in agribusiness and agriculture
6. Identify barriers and challenges to participation in value chains

III. Methodology

Coordinating and organising value chain partners for data collection were conducted with assistance from researchers from Visayas State University (VSU) on 02-05 December 2019

in the municipalities of Tabango and Jaro, as well as Ormoc City. Four key informant interviews (KIIs) and focus group discussions (FGDs) were used for the analysis

IV. Eastern Visayas

The Eastern Visayas Region (Region VIII) is composed of three major islands: Samar, Leyte and Biliran. The regional centres are Metro Tacloban (Tacloban City, Babatngon, Palo and Tanauan growth corridor) and Metro Ormoc, both found on Leyte island.⁶ Subregional centres are found in the cities of Calbayog and Catbalogan, located on Samar island.¹

The main driver of growth is the industry sector, comprising an average of 41% of the total economic output in the region. The province of Leyte hosts the largest geothermal power plant in the country and the Leyte Industrial Development Estate (LIDE), an industrial complex that hosts manufacturing (Philippine Phosphate Fertilizer Corporation) and processing (Philippine Associated Smelting and Refining Corporation) plants.

The service sector contributes around 39%, while the agriculture, hunting, forestry and fishery (AHFF) sector accounts for 20% of the regional economy. The majority of the working population is found in the sectors of agriculture and fisheries (43.7%), but has the highest rates of poverty.¹ The AHFF sector is also noted for its consistently low performance, with the highest decline in 2014 due to massive destruction inflicted by Typhoon Yolanda. Poverty in the region is the third highest in the country, at 45.2% in 2012 and 38.7% in 2015.¹ The reduction was attributed to the massive rehabilitation and reconstruction activities post-Typhoon Yolanda and the revival of the business sector. However, the magnitude of poverty has been consistently high in the provinces of Leyte and Southern Leyte since most of the population resides in these areas.¹ Further, internal conflict (insurgency) remains an issue in some areas in Eastern Visayas and can disrupt local livelihoods and investments in the economy.

The region is among the most exposed and vulnerable in the country in terms of natural hazards and climate change.¹ Eastern Visayas is adjacent to the Pacific Ocean, and a frequent path of typhoons develops from these waters. Recurrent economic and natural shocks could push the most vulnerable groups – farmers and fisherfolk – further deep into poverty.

V. Results

A. Perceptions and Definitions of "Inclusive Business"

Findings showed that there is no exact equivalent of the term "inclusive" or "inclusion" in Bisaya and Waray-waray languages. Farmers were not familiar but support service organisations were more acquainted with the term. The closest related terms/phrases mentioned were "pagka-apil" (to be included), "makisama" (to join), "kauban" (associate),

⁶ National Economic and Development Authority (2017). *Eastern Visayas Regional Development Plan 2017-2022*. Palo, Leyte: National Economic and Development Authority Regional Office VIII. Retrieved from <https://docs.googleusercontent.com/docs/securesc/i6k1g3b2tklso46j2vmos6p5q9765sbr/165qas5iqrbooid9vsj67mi3ro3vuku6/1576713600/000/01612770672809438352/04466427584547257729/1ahQeQuM-vDI9dG1sLaH7RaXyTzzAhB1p?e=download&authuser=0&nonce=cfa1o8g2f5t1g&user=04466427584547257729&hash=e8ve6larbo8sunl92plj6mc3dle9si9k>

"kaupod" (companion), "tanang dal-a" (everyone included), "tanang miyembro nialmota" (all members participate or take part) and "nilihok tanang" (everyone takes action). Participants were asked to describe the ideal characteristics of farmers, traders and support organisations (what is a good or competent actor ["maayo"]).

From the responses, being "inclusive" in agribusiness and value chains emphasises fairness, equal sharing of benefits among different players, understanding the role of each actor, mutual recognition of contributions, consistency/stability in delivering or providing what is needed (being reliable), flexible, and working together towards development. Inclusiveness also puts premium on good relationships between actors/players across the value chain, supporting each other especially during difficult times.

B. Key Strategies and Interventions Used to Achieve Inclusion in Value Chains

- The deliberate targeting of smallholder/small-scale farmers by support service organisations

A number of different organisations provide support to farmers in Leyte. The Municipal, City and Provincial Agriculture Office provide farm inputs, machinery, and technical and marketing assistance. The Department of Agriculture, through the Agriculture Training Institute (DA-ATI) leads in providing various capacity-building activities to farmers. The Department of Agrarian Reform (DAR) provides assistance to agrarian reform beneficiaries (ARBs) through land tenure (members of one farmers' cooperative estimated that 70% are tenants)

The Philippine Coconut Authority (PCA) were mentioned as providing seed nuts and fertilisers. The Department of Trade and Industry (DTI) and the Department of Science and Technology provide assistance on processing, with the latter also providing farm machinery/equipment. Some farmers' associations were provided ready-to-lay chickens by the Department of Social Welfare and Development (DSWD) for egg production under the Sustainable Livelihood Program (SLP).

Particularly after Typhoon Yolanda, international development partners and non-government organisations played a significant role in providing livelihood assistance and capacity building to communities. Among those mentioned were UN agencies (International Labor Organization, Food Agriculture Organization) and Lutheran World Relief.

One farmers' cooperative had an extensive list of partners from the government, non-government (VICTO National, PhilGrassroot-ERDF⁷, Eastern Visayas Cooperative Federation, PAKISAMA⁸, ASIADHRRRA⁹) and financing institutions (Metro South Cooperative Bank, Seed Finance, Small Business Corporation, NATCCO¹⁰ Network,

⁷ formerly PhilGERFund

⁸ Pambansang Kilusan ng mga Samahang Magsasaka (National Federation of Peasant Organizations)

⁹ Asian Partnership for the Development of Human Resources for Rural Asia

¹⁰ National Confederation of Cooperatives, formerly National Association of Training Centers for Cooperatives

Oiko Credit, CARD, Land Bank of the Philippines, United Coconut Planters Bank, DA-Agriculture Credit Policy Council). Additional organisations mentioned by other farmer groups providing financing were CARD, Inc.¹¹, Ramon Aboitiz Foundation, Inc. (RAFI)-Microfinance and Perpetual Help Community Cooperative, Inc. (PHCCI).

Two farmers' organisations mentioned engaging with SC Global (desiccated coconut, fresh Cardaba saba banana), while one is also transacting with Specialty Pulp Manufacturing, Inc. (SPMI). One association shared they are also being assisted by companies manufacturing chemical fertilisers on how to treat crop/plant diseases.

C. Barriers and Challenges to Participation in Value Chains

- **ORGANISING**

- The purpose of organising farmers is for political gain
Farmers, in general, are extra careful in dealing with politicians who are conscious of the political "colours" of their project recipients/beneficiaries. One strategy mentioned by a farmers' organisation is to support whoever is in the current leadership.
- No time to participate in activities of the organisation
Participants shared that some are not able to participate regularly in their organisations because they are busy working on their farms. Some work as part-time labourers or construction workers (ongoing reconstruction post-Typhoon Yolanda), while others also work as motorcycle drivers, traders and viajedors. However, they consider farming as their main livelihood, and other jobs are taken to augment their income.
- **Demand for immediate rewards and dole outs**
Some farmer leaders shared that after Typhoon Yolanda struck their areas, the downpour of assistance from various government agencies, non-government organisations and private entities motivated other farmers to join their associations to access available support. Once these farmers signed in and received assistance, they eventually did not show up for other activities of the organisation.

- **ACCESSING SUPPORT AND AVAILABLE OPPORTUNITIES**

- **Assistance is mostly given to those with frequent interactions or connections with the government**
One farmers' association partner shared that those with connections in the government are most likely to access and benefit from programs, services or activities ("*Kung sinong malapit sa kusina, sila nakikinabang*"). Furthermore, local politics heavily influence the accessibility of opportunities and assistance for smallholder farmers. In one town, the leadership has been under the same political clan for 30 years. Mayors, governors and representatives are usually kin.

¹¹ Center for Agriculture and Rural Development

Representatives use their pork barrel (priority development assistance fund, PDAF) to fund projects of those who are "close" to these politicians.

One group shared that they were not able to access assistance from the Municipal Agriculture Office/Local Government Unit (LGU) because the general manager is known as a non-supporter of the incumbent Mayor. Another farmers' association shared that previously, they could easily access support from DA (crop insurance) because of their barangay kagawad. However, since the kagawad lost in the recent elections, they faced difficulty in getting assistance for their needs.

- **Mismatch of assistance/support from the government**

Farmers and partners recounted their experiences of delays ("*Dugay muakasyon*") and not receiving the promised assistance from LGUs and government agencies. One machine that was requested by the organisation was delivered to the wrong barangay. It took another two months for the said machine to be transferred to their barangay.

Repeated incidents like these erode farmers' trust on the government. As shared by a farmer leader, when you are already hurt and disappointed many times – it is better to rely on oneself ("*Nasaktan ka na - mas mabuting magsarili*").

A partner shared that the Registry System for the Basic Sectors in Agriculture (RSBSA) often contains wrong information. Not all those registered are actual farmers – some are actually residents close to local leaders. Thus, small farmers are not able to access government support because of the heavy influence of politics.

- **The quality of assistance/support provided is not appropriate**

One partner organisation shared that the predominant top-down system of the government usually creates problems for farmers. While assistance is plenty, appropriateness is a major issue. For example, planting materials provided by the DA through the Provincial, City and Municipal Agriculture Offices are not the right kind for the market. The specifications of the tractors distributed are not according to farmers' needs. Often, these are not used, which leads to significant wastage of public resources.

The quality of assistance provided is also insufficient because of human resource constraints. In particular, the Ormoc City Agriculture Office (CAO) admitted they are understaffed, and extension workers can be assigned to as many as 20 barangays spread across the city. With this workload, an extension worker can only visit once a month to his/her assigned farmer communities and maybe even less if the office has no existing program/project in the community. Therefore, CAO is not able to provide efficient and appropriate assistance because its staff are not able to adequately engage and immerse with farmers and their communities.

- **Farmers do not have sufficient knowledge and skills**

Most farmers said that they did not have adequate knowledge and skills on production, trading and market. On the production side, one plant disease facing farmers of cardaba banana on the northwestern side is "*batol*" or "*bugtok*", which affects 70-80% of the farm yield. This has been a long-term, repetitive concern of the farmers. Finding low-cost, effective methods to treat affected crops and prevent the spread of disease is one of their major needs. On the other hand, the improper use of pesticides by farmers, especially by mixing different kinds, is a common practice.

- **INFRASTRUCTURE**

- **Distance to the town centre or trading post**

One farmers' association mentioned that a major reason they are not able to access government assistance/support is because of distance. Their community is located interior at an upland barangay. Furthermore, other farmers mentioned transport/hauling cost

- **FINANCING**

- **Stringent requirements and unrealistic terms for farmers' associations**

Land Bank of the Philippines (LBP) requires farmers' organisations to exist for at least two years and to be formally registered (through DOLE and SEC) and accredited (by the LGU). A farmers' organisation shared that there was previously a project with DAR and LBP to finance banana farmers. However, this did not push through because the saba banana's gestation period is 18 months, while LBP's terms require payment of the productivity loan within one year.

- **Farmers unable to pay loans and other financial obligations**

One farmers' cooperative provides microfinance and loan assistance to more than 25,000 members in several municipalities in Leyte Province. Farmers engaged in planting cardaba bananas can avail of the agricultural productivity loan. Members in good standing can avail of additional loan products. However, there are still farmers who find it difficult to repay, especially those who are still dependent on traders. Some resort to "*5-6*" while others strive to find other means of income ("*paningkamot*"). Meanwhile, some vegetable farmers from another association were mentioned as having a good record of repaying loans from formal microfinancing institutions. Because of this, they are less dependent on traders, decreasing their switching costs and consequently can easily look for new trading networks.

- **TRADING AND PARTICIPATION IN MARKETS**

- **Focus on profit and lack of transparency by some institutional buyers**

SC Global was particularly mentioned by farmers' organisations and their partners as having problems in terms of engagement. One cooperative shared that SC Global cancelled its organic saba banana contract after Typhoon Yolanda without consulting/negotiating with them. The super typhoon destroyed large tracts of banana plantations in Leyte, which abruptly and significantly reduced the supply of saba. Because of the loss of their guaranteed buyer, the coop is still finding other buyers willing to buy bananas (to be processed and exported as banana chips) from their 200 farmer members (they are currently working on securing

documents to market their produce in Japan). In general, though, saba banana farmers in Leyte sell fresh saba to assemblers, traditional wholesalers and traders from Ormoc, other Leyte towns, Cebu, Quezon, Laguna and Manila.

In another organisation, SC Global was mentioned as a "bad partner" because it was not transparent about the market price for coconut products. There were instances where the organisation delivered their processed coconut to the SC Global plant situated in Caridad, Baybay City (transportation expenses is Php 6,000 from Jaro) only to be told they would be buying the product at a low price. In addition, the company usually posts late advisories when they stop buying coconuts, frustrating farmers and their support organisation. Because of this, the organisation temporarily decreased their engagement with SC Global and focused on supplying local bakeries.

- **Extreme weather conditions significantly impact production and participation in markets**

Farmers shared that for the past decade, climate change has significantly affected their production. Most of their farms are rain-fed during El Niño, water supply becomes a problem. On the other hand, typhoons frequently traverse Leyte, and Yolanda in 2014 devastated coconuts and cardaba bananas, two major crops planted by farmers in the area. As such, farmers and support organisations mentioned that securing crop insurance is vital to them. Once they have insurance in place, they feel more reassured and confident to take risks in production, trading and the market. Moreover, farmers and partners conveyed the need for climate-resilient agriculture. Currently, farmers prefer planting cardaba saba as these are easier to grow and recover compared to coconuts. Bananas became the main source of income for farmers post-Typhoon Yolanda.

- **OTHER ISSUES**

- **Household**

- Both males and females undertake farming. However, in some areas, farmer leaders noted that 70% of farming activities are done by women while their husbands work on non-farm jobs such as construction and carpentry. Women tend to do routine farm work such as weeding, taking care of farm animals and attending farmers' meetings and training conducted by the association. On the other hand, male farmers usually do land preparation, planting, harvesting and bagging

- **Community**

- The decreasing number of farmers. The majority of people prefer to find short-term, easy-paying jobs such as construction, while young people are discouraged from venturing into farming and agribusiness, sometimes by their own farmer parents. Partner organisations recommended that increased mechanisation in agriculture can motivate youth to take interest

VI. Discussion

From the responses provided by the participants in Leyte, being "inclusive" in agribusiness and value chains emphasised fairness, trustworthiness, reliability and consistency of support among actors. The impacts of climate change are particularly felt by communities; thus,

relationships and interactions between actors are not inclined towards inclusivity as each focus on their own survival, especially smallholder farmers. Often, coordination with other value chain players is based on compliance, and resources are not well utilised to strengthen and complement each other. For support service organisations, especially the government, the issue of the appropriateness of assistance and politicking was again raised. Provision of assistance must be based on what farmers actually need. Spaces for greater participation of small farmers in planning, decision-making and allocation of resources must be deliberate to enable and sustain inclusion in agribusiness and value chains. Improved support for production, financing, trading and marketing toward building resilient livelihoods and local economies – must be at the fore of the development agenda in predominantly agricultural areas.

10.3 Landscape assessment on inclusive business and value chains in Quezon (Luzon island)

SUMMARY

This report presents the major findings and analysis of the data gathered from the fieldwork in the Municipality of Mauban, Quezon last 03 and 06 November 2019. A total of four (4) key informant interviews (KIIs) and focus group discussions (FGDs) with significant data were analysed.

Findings showed that the majority of participants are not familiar with the term "inclusive" or "inclusion", and there is no exact equivalent in the Southern Tagalog language. However, the closest related phrases were "*pagsasama-sama*" (to join together or integrate) and "*anib*" (to unite or join as a member). From the responses, being "inclusive" emphasises the ethics of doing business and the greater need to bring different value chain actors together to work towards a common vision or goal, especially for relatively young and new farmers' organisations.

Major barriers and challenges identified were grouped into organising, accessing support and available opportunities, financing, trading and participation in markets, and other issues. The quality and cohesiveness of assistance/support provided by the government, private sector and non-government organisations can make or break smallholder farmers' associations in their early stages.

While the effects of climate change are not as significant, the impact of local politics and internal conflict on the lives of farmers are worthy of consideration as these could derail efforts to enable and sustain inclusion.

I. Goal

Conduct a **preliminary assessment of perspectives of inclusive business and value chains** by key stakeholders in selected agricultural value chains in Luzon, specifically the Province of Quezon. The results shall be used to inform the design and development of a project on inclusive value chains in the Philippines.

II. Objectives

7. Explore perceptions and definitions of "inclusive business" by key stakeholders across selected banana, cassava, coconut and vegetable value chains
8. Explore the context by which inclusion or inclusive practice takes place in agribusiness and agriculture
9. Identify barriers and challenges to participation in value chains

III. Methodology

Coordinating with value chain partners was conducted with assistance from researchers of DOST-PCAARRD and the University of the Philippines (UP) Los Baños. Data collection was done on 03 and 06 November 2019 in the Municipality of Mauban, Quezon. Four key informant interviews (KIIs) and focus group discussions (FGDs) were used for analysis.

IV. Calabarzon: The Industrial Powerhouse of the Philippines

The Calabarzon Region (Region IV-A) is named the industrial powerhouse of the country because of the presence of industrial estates and economic zones located in the area.¹² It is also rich in natural resources, including land and water, for agribusiness and tourism.¹ The region serves as the catch basin for Metro Manila's population and industry, especially the provinces of Cavite, Rizal and Laguna.¹³ The regional centers are the cities of Antipolo, Dasmariñas, Calamba, Batangas and Lucena. The sectors of agriculture, fisheries, and forestry contributes 6.05% to Calabarzon's gross domestic product and employs 14.32% of the total regional workforce.²

The Province of Quezon is the Philippines' leading producer of coconut and related products such as copra and oil.¹⁴ Around 49% of the agricultural land is planted with coconuts. It has two large power plants located in the municipalities of Mauban and Pagbilao, with a total power generation capacity of around 1100 MW that feeds into the Luzon grid.³ Industrial facilities are found in Lucena City, the capital, and Candelaria, a nearby first-class municipality. The province is identified as a new axis of growth in Southern Luzon.³

Calabarzon's poverty incidence consistently declined to 9.1% in 2015. However, among five provinces, Quezon's poverty rate remained high among the five provinces despite declining to 22.7% in 2015.² Poverty incidence is also highest in agricultural areas, where most farmers and fisherfolk are engaged in small-scale, traditional practices. These sectors are the most vulnerable to both economic and natural shocks.² Specifically for the crop subsector, which comprises 20.87% of the agriculture, fisheries and forestry sector, climate change has significantly affected production.² Likewise, internal conflict in several geographically isolated and disadvantaged areas (GIDA) disrupts economic and livelihood activities, which further entrenches people into poverty.

V. Results

A. Perceptions and Definitions of "Inclusive Business"

The majority of farmers are not familiar with the term "inclusive" or "inclusion". There is no exact equivalent in the Southern Tagalog language but the closest related phrases used were "*pagsasama-sama*" (to join together or integrate) and "*anib*" (to unite or join as a member). Participants were then asked to describe the ideal characteristics of farmers, traders and support organisations (what is a competent actor ["mahusay"]). From these responses, doing "inclusive business" show characteristics of fairness (a fair price for

¹² Department of Trade and Industry (2019). *Profile of Region 4A: Overview*. Retrieved from <https://www.dti.gov.ph/regions/region4a/r4a-profile-of-region#quezon>

¹³ National Economic and Development Authority (2017). *Calabarzon Regional Development Plan 2017-2022*. Calamba City: National Economic and Development Authority Regional Office IV-A. Retrieved from <http://calabarzon.neda.gov.ph/wp-content/uploads/2017/12/RDR-2016.pdf>

¹⁴ Department of Trade and Industry (2019). *Profile of Region 4A: Quezon*. Retrieved from <https://www.dti.gov.ph/regions/region4a/r4a-profile-of-region>

farmers and traders), compromise (meets halfway), honesty (upfront with prices), consistency (dependable and trustworthy), the balance between profit and compassion, openness to sharing information or knowledge, cooperativism and maintaining good relationships and interactions with other actors.

B. Key Strategies and Interventions Used to Achieve Inclusion in Value Chains

- **The deliberate targeting of smallholder/small-scale farmers by support service organisations**

The Municipal and Provincial Agriculture Office as well as the Provincial Office of Philippine Coconut Authority (PCA) were government agencies providing the most assistance to farmers in Quezon. The Department of Agriculture (DA), through the regional, provincial and municipal agriculture offices, is working on the Registry System for the Basic Sectors in Agriculture (RSBSA) and National Coconut Farmer Registry System (NCFRS). These registry systems require farmers to enter new information or update their details to access government assistance.

For PCA, aside from coconut planting and replanting, another support provided is intercropping of coffee and cacao and livestock dispersal (swine and carabao). The Department of Trade and Industry (DTI) was identified as another agency providing support for processing cardaba bananas through the provision of equipment/machines under the DTI Negosyo program. The Department of Science and Technology (DOST) was also mentioned by some participants as another agency providing equipment/machines for production and processing. In one association, several farmers were beneficiaries of the Department of Social Welfare and Development's (DSWD) Sustainable Livelihood Program (SLP)¹⁵. They were able to set up selling their vegetable produce in the market through the seed capital provided by the said program.

In addition, respondents from one farmers' organisation shared that Senator Cynthia Villar recently visited their town and promised assistance for their coco sap processing through Villar SIPAG.¹⁶ However, they are still waiting for updates on their request from the said organisation.

One of the farmer leaders shared he is affiliated with the Sentrong Pamilihan ng Produktong Agrikultura sa Quezon Foundation, Inc. (SPPAQFI) based in the Municipality of Sariaya. SPPAQFI is a non-government organisation that provides financial and technical assistance to smallholder farmers in Quezon Province.

¹⁵ SLP is an add-on, capacity building program for existing Pantawid Pamilyang Pilipino Program (4Ps) beneficiaries focused on helping poor households through micro-enterprise development and employment facilitation. The program also helps beneficiaries access to resources and partners through the following: skills training, seed capital fund, employment assistance fund, cash for building livelihood assets, additional funding/resource augmentation, technical assistance, logistics support and guaranteed employment (<https://livelihood.dswd.gov.ph/about>)

¹⁶ Villar SIPAG (Social Institute for Poverty Alleviation and Governance) is a non-government organization fueled by corporate social responsibility established by the business tycoon-politicians Manny and Cynthia Villar

- **Participating in local governance**

One farmer association has an incumbent barangay kagawad, as a member. His position is strategic for their organisation as they could easily request support from the barangay local government unit (BLGU). As the organisation is newly formed (3 months), they have no office, but the BLGU is very willing to host their meetings and activities as long as these are requested beforehand.

- **Linkage by traders and tapping corporate social responsibility of institutional buyers/processors**

One trader (also a barangay captain) applauded the actions of the whole nuts buyer-processing company based in Candelaria. The said company is implementing a "*Balik Tangkilik*" program, which intends to help coconut farmers in various ways. Incentives for organic coconuts and insurance are taken from the large profit margin of the company. Free medical and dental assistants are also provided to farmers. The trader acts as a facilitator of the said program by linking the company to the farmers.

C. Barriers and Challenges to Participation in Value Chains

- **ORGANISING**

- **The purpose of organising farmers is for political gain**

Most farmer associations in the town were organised during the election period as a way to receive dole-outs from politicians. However, one farmers' association was able to go beyond the short lifespan by finding a common vision and working together persistently towards their goals. They were able to expand their membership through word-of-mouth stories of the organisation's activities and personal recommendations, which impressed residents from other barangays.

- **The individualistic attitude of farmers**

A "*kanya-kanya*" or individualistic attitude also hampers efforts to organise farmers. Becoming a member of an association entails putting in extra time and money, which most farmers think will not benefit them ("*walang pakinabang*"). Furthermore, some participants mentioned that there are selfish farmers who are only interested in benefiting themselves and not in exchanging or sharing knowledge with other farmers.

- **Demand for immediate rewards and dole out**

Many farmers would opt to join associations only when immediate rewards or dole-outs were provided. As soon as these have been received, these farmers no longer join the more core duties and responsibilities of being part of associations. This is also true of registrations to government services and requirements—only when there is a clear and immediate incentive to do so.

- **ACCESSING SUPPORT AND AVAILABLE OPPORTUNITIES**

- **Assistance is mostly given to those with frequent interactions or connections with the government**

One farmer shared that in terms of accessing assistance in the municipal local government unit, those few with connections are able to access and benefit the

most from programs, services or activities as they are usually chosen as recipients ("*Kung sinong may kadikit sa munisipyo, nakikinabang. Sila pinipili*"). The town has been under the same political clan for 30 years. A farmer leader shared that the Mayor's office gets Php 90 million in funding while the town's 40 barangays only get a total of Php 2 million which is insufficient to cover basic services and implement programs/activities for all barangays.

- **Farmers do not see value in registering in government programs**
Both the Municipal Agriculturist and the Brgy. Captain has reported farmers not wanting to register in government programs (i.e., RSBSA) even as assistance has been offered. The municipal agriculturist mentioned that this concern was especially applicable to senior farmer leaders and described them as stubborn ("*Matigas ang ulo*").
- **Stringent requirements for farmers' associations**
According to the municipal agriculturist, accessing government assistance used to be relatively easy for farmers' associations. Now, they are already required to be registered (in the Department of Labor and Employment [DOLE]) and accredited by the LGU and DA regional office, aside from other requirements in order to gain support services/assistance.
- **Promised program, project or assistance did not materialise or was delayed**
Farmers acknowledge the efforts of some government agencies, such as PCA, in reaching out to them. However, they complained about how these agencies often provide promises that are not fulfilled. One farmer organisation was promised to be given a building and Php 1 million funds. Later on, they were informed they would no longer be awarded the building, and the cash will be reduced to Php 400,000. Afterwards, they were told that they would not receive the Php 400,000 cash but instead received support when the association upgrades or renovates existing structures. Farmers felt "used" ("*parang nagagamit lang*") by government agencies, especially when it comes to reporting accomplishments.
- **The quality of assistance/support provided is inconsistent or not appropriate**
One farmer leader said that the previous coconut development officer (CDO) (deceased) used to coordinate well with their organisation and prioritise them in accessing support and available opportunities from the government. He felt that the current CDO is not as good as the previous one.

The municipal agriculturist shared that the Provincial Agriculture Office (PAO) is the source of many inputs distributed to farmers. He mentioned that PAO used to distribute banana suckers to farmers, but these were left to rot as farmers could already propagate the suckers and their current varieties were superior to the ones provided by PAO. PAO has since listened and is now in the process of buying these farm-produced suckers for distribution to other areas.

- **Forms/requirements are not translated or explained in simple local language**
Most forms provided by government agencies to farmers were in English and not translated into the local language. Farmers still need to request or remind the government employees to translate or explain the forms so that everyone can understand the purpose, follow the instructions and fill them accordingly.
- **Farmers do not have sufficient knowledge and skills**
Almost all farmers are certain that they lack further knowledge and skills in production and processing. One farmers' association was explicit in stating their need to improve their knowledge and skills in financing, production, trading and markets. The majority of the members stated that this was their primary reason for joining the organisation.
- **FINANCING**
 - **Inadequate sources of capital**
The majority of farmers said that financing was a major problem. Most of their loans are from microfinance institutions such as ASA and CARD, with high monthly interests ranging from 10%-18%. They admit that they still lack knowledge about loans and savings, which often lead to huge losses on their incomes.
Financing coming traders are done in at least two ways: from the experience of one farming organisation, the traders would provide loans to farmers with no interest. The trader, however, will lower the buying price of the goods sold by the farmer. The second way is that the trader will provide the first loan (normally at around Php 5,000.00) to the farmer interest-free and treat this as some kind of "sign-in" bonus. Succeeding loans, however, are said to have a high interest.
- **TRADING AND PARTICIPATION IN MARKETS**
 - **Local traders connive to control farm gate prices, do questionable practices and are interested only in profit**
The majority of farmers mentioned the connivance ("*sabwatan*") of local traders in setting prices of copra and other crops. Traders are said to be doing "teamwork" by discussing a fixed buying farm gate price. Most of these traders are based in the towns of Sariaya and Lucban. Farmers in one association also shared that traders usually say their copra does not pass their quality standards, which are mostly based on moisture content (MC). Initially, MC measurement was more objective with the use of an MC meter. Lately, traders declare via ocular inspection that the farmers' copra is of low quality (i.e. high MC), which farmers felt unfair. Batches deemed low quality are discounted by 20%.
 - **The local market is small and not conducive to selling local produce**
Farmers mentioned that the local market in the town centre is small and not conducive for selling their produce. Vegetables are usually transported outside Mauban to Sariaya, where the trading centre ("*bagsakan*") is found. These are then transported back to Mauban, where prices now become higher, but the products are not as fresh as before. Residents are also not fond of eating vegetables, especially the children.

For coconut and copra, there are only two traders in town and the rest are along Lucban, Tayabas and Lucena City. Processors are also found outside the municipality, in Candelaria and Lucena City.

- **OTHER ISSUES**

- **Household**

- There are few women farmer leaders. Most farmers are male, but women assist in other farming activities or become farmers when their family's income is not adequate for their food needs or when their husband/partner does not have a job. The traditional view of the household as a woman's place is still being accepted ("*Mga lalake sa bukid, mga babae sa bahay*").
- Existing differences in farm activities/tasks undertaken by male and female farmers (e.g. mostly males for heavy lifting, females for weeding and packing)
- Other attitudes and behaviours of farmers such as dependency (i.e. penchant for dole outs especially from the government), "*matigas ang ulo*" (stubbornness), "*hindi nakikinig*" (not listening), and not wanting to try new ways, especially for older farmers.
- According to the Brgy. Captain/Trader, farmers often find themselves in a vicious financial cycle of loaning and going deeper in debt because many farmers tend to live beyond their means. He mentioned that farmers should learn to save their money.

- **Community**

- The decreasing number of farmers. The majority of people prefer to find short-term, easy-paying jobs such as construction, while young people are discouraged from venturing into farming and agribusiness, sometimes by their own farmer parents. Partner organisations recommended that increased mechanisation in agriculture can motivate youth to take interest

VI. Discussion

From the responses provided by the participants in Quezon, being "inclusive" brings ethical practices to the forefront of doing business and the greater need to bring different value chain actors together to work towards a common vision or goal. Farmers strongly feel that they do not have enough knowledge and skills to participate effectively in the market, and local traders are generally perceived as unscrupulous in their dealings. It is worth noting that the two farmers' organisations engaged by the team were relatively young – one was six years (established in 2013), and the other was only three months (established in August 2019 but actually a federation of associations from different barangays). Support services for farmers are critical at this point in time. The quality and cohesiveness of assistance/support provided by the government, private sector and non-government organisations can make or break smallholder farmers' associations in this crucial period. While the effects of climate change are not as significant with other areas, the impact of local politics and internal conflict on the lives of farmers are worth looking into, as these could significantly derail efforts to enable and sustain inclusion.

10.4 Community profile of Pinamungajan, Cebu and Lamac MPC activities in the community

10.4.1 Community Profile based on the secondary data

Introduction

This report presents a community profile of the municipality of Pinamungajan, Cebu. A community profile can be described as a “comprehensive description of the needs of a population that is defined as a community, and the resources that exist within that community carried out with the active involvement of the community.” (Hawtin, Hughes, and Percy-Smith, 1994: 5). Community profile tells the demographic story of places to understand the characteristics of the people who live there, how they are changing and how they compare to other areas (Allan, 2017). This report presents a community profiling in Pinamungajan, Cebu.

The information in this report is presented in two sections. The first section presents the secondary data results, including the socio-demographic profile of the community. On the other hand, the second section presents the Focus Group Discussion (FGD) results of the community members. Together, these resources provide the basis for making evidence-based decisions of the community’s interventions as it changes.

Socio-demographic profile of Pinamungajan municipality

In this section, a secondary data report was prepared to understand the unique socio-demographic characteristics of the municipality of Pinamungajan, Cebu. This report looks at several demographic variables in the municipality of Pinamungajan. Most of the information provided in this report is based primarily on NSO census data and municipal profiles from the official website of the Local Government Unit of Pinamungajan.

The report begins with a brief overview of the municipality’s history, geophysical, and demographic characteristics. The geophysical characteristics part focused on land and soil characteristics and the municipality’s agro-climatic conditions, while the socio-economic part presented brief discussions on population and its distribution. Essentially, the overview section of the report provides a macro perspective on the situation of the Pinamungajan.

Brief History

Pinamungajan, also known as Pinamungahan, came after a Visayan word “*Pinamuhuan*,” which means a worker share after his diligent work and effort during farm

harvest. The Spanish colonial government established the municipality in the country in 1815.

Vision and Mission Statement

Local Government Unit of Pinamungajan envisions its municipality to “A better quality of life for the people of Pinamungajan through a sustainable and environment-friendly development, and the transformation of the municipality into an “eco-agro industrial center” in mid-west Cebu.” While its mission statement is “To attain sustainable socio-economic well-being for the people of Pinamungajan, through the effective and efficient implementation of a development plan that is crafted by dedicated public servants and formulated with an active participation of the community.

Geographical Location

The municipality of Pinamungajan is located in southwestern Cebu. It is part of Cebu’s third legislative district. It shares boundaries by the north with the City of Toledo, to the west is the Tañon Strait, to the east is the city of Naga and the town of San Fernando, and to the south is the town of Aloguinsan (Figure 2). Taking the Naga-Uling road takes 64 km from Cebu City while 72 km away through the Carcar-Barili route. It is about a two-hour ride from the metropolis. The municipality can be accessed via Public Utility Bus and Van at the Cebu South Bus Terminal.

Land topography is usually hilly and sloppy, and some are plain. The average distance from the farm to the main roads is approximately 7 km.

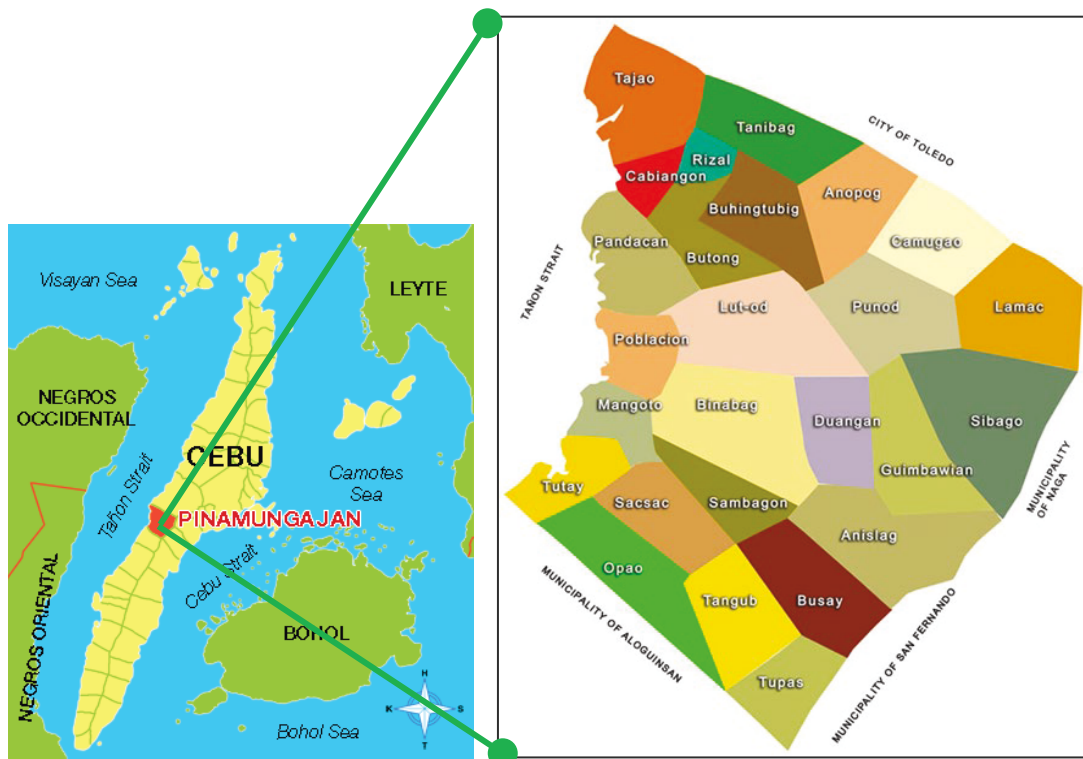


Figure 1. Defined Map of the Municipality of Pinamungajan showing its barangays

Land Area

A coastal highway serves the Municipality of Pinamungajan. Its economy is primarily farming, fishing, livestock/poultry production, and several minor trades and industries. Moreover, it is also Cebu's primary source of the labour force, particularly in masonry and carpentry. Pinamungajan has a total land area of 11,725.27 hectares, with 26 (rural and urban) barangays. It constitutes 2.21% of Cebu's total area. Municipality land was generally dominated by agriculture use (35.59%), followed by timberland and forest areas. The municipality has four (4) rivers- Cabiangon, Mangoto, Kadlom, and Tajao (Gracisa, 2015). The following are the land classification (in hectares):

Table 1. Land Use of Pinamungajan Municipality according to the hectarage and percentage

Land Use	Area (hectare)/ Percentage
Agricultural	: 3,939.00 hectares - 33.59%
Timberland	: 3,242.77 hectares - 27.66%
Protection Forest	: 3,200.00 hectares - 27.29%
Built-up Area/Commercial	: 365.00 hectares - 3.12%
Industrial	: 431.00 hectares - 3.68%
Tourism	: 20.00 hectares - .17%
Mangroves	: 150.00 hectares - 1.28%

Source: www.pinamungajan.gov.ph

Weather/Climate

This municipality has a tropical rainforest climate, just like the rest of Cebu. It belongs to a zone covered by Type III Climate based on the Modified Classification of Climate in the Philippines. It has wet and dry seasons, with rains mostly occurring from May to October. During the last quarter of the year, the humidity is uniformly high with colder nights, especially at higher altitudes and areas above 500 meters. January is the coolest month of the year, with a mean temperature of 26.9oC, while the warmest month is April, at 29.3oC. Combined with higher precipitation, the area's climate allows farmers to grow a range of vegetable crops.

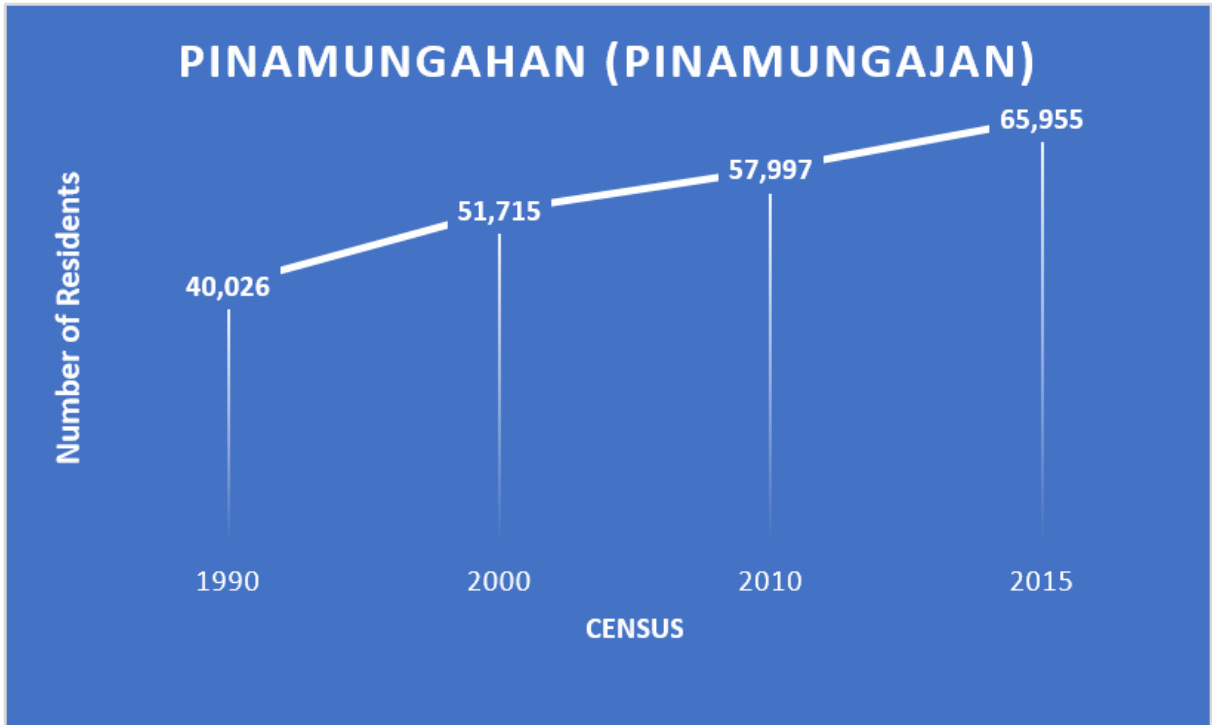
Soil type

A larger portion of the municipality's soils are of the clay group. Clay soils are fine-textured; hence, they can retain a high amount of water and store plant nutrients at the surface. Soils of this type are suited to agriculture. However, one disadvantage is that clay soils become very hard when dry and sticky when wet. Tillage is, therefore difficult at extremely low and high levels of moisture.

Demographic Profile

As of 2015, Pinamungajan has a total population of 65,955, which represents 2.24% of the total population of Cebu province or 0.89% of the Central Visayas' overall population. The population denoted a positive growth rate of 2.48% and registered an increase of 7,958 from the previous population of 57,997 in 2010 (Fig. 3).

Meanwhile, the household population of Pinamungajan totalled 57,978 persons in 2015. The majority of 88% of the total population of Pinamungajan in 2015 are household population. The remaining 12% or 7,915 persons comprised the institutional population, which gave an average household size of five persons, recorded in 2015.



**Figure 2. Population Growth of the Municipality of Pinamungajan
Based on 1990-2015 NSO Census**

Pinamungajan has 26 barangays, only 6 of which are coastal. Barangay Tajao registered the biggest population, with 6,915 persons in 2015 or 10.50 per cent of the municipality’s total population. The remaining barangays which completed the top 10 barangays in terms of the population were Poblacion (6,754), Lamac (5,953), Pandacan (5,890), Anopog (3,797), Lut-od (3,112), Mangoto (2,602), Tutay (2,461), Rizal (2,418) and Sibago (2,261). Meanwhile, Barangay Opao recorded the smallest population in 2015, with 503 persons, which accounted for 0.80 per cent of the total population of Pinamungajan (Table 2).

Table 2. Total Population of Pinamungajan Municipality per Barangay

Barangay	Population			±% p.a.	
	2015	2010			
Anislag	2.40%	1,597	1,434	▲	2.07%
Anopog	5.80%	3,797	3,116	▲	3.84%
Binabag	3.20%	2,142	2,032	▲	1.01%
Buhingtubig	2.70%	1,763	1,691	▲	0.80%
Busay	1.70%	1,117	1,128	▼	-0.19%
Butong	3.10%	2,035	1,848	▲	1.85%
Cabiangon	1.50%	1,000	891	▲	2.22%
Camugao	3.10%	2,048	2,007	▲	0.39%
Duangan	2.10%	1,400	1,264	▲	1.96%
Guimbawian	2.90%	1,894	1,698	▲	2.10%
Lamac	9.00%	5,953	4,470	▲	5.61%
Lut-od	4.70%	3,112	2,213	▲	6.71%
Mangoto	3.90%	2,602	2,172	▲	3.50%
Opao	0.80%	503	511	▼	-0.30%
Pandacan	8.90%	5,890	5,291	▲	2.06%
Poblacion	10.20%	6,754	5,925	▲	2.52%
Punod	2.70%	1,781	1,870	▼	-0.92%
Rizal	3.70%	2,418	2,341	▲	0.62%
Sacsac	2.30%	1,533	1,415	▲	1.54%

Barangay	Population			±% p.a.
	2015	2010		
Sambagon	1.90%	1,233	1,074	▲ 2.66%
Sibago	3.40%	2,261	1,830	▲ 4.11%
Tajao	10.50%	6,915	5,648	▲ 3.93%
Tangub	1.30%	880	1,000	▼ -2.40%
Tanibag	3.00%	2,002	1,686	▲ 3.32%
Tupas	1.30%	864	817	▲ 1.07%
Tutay	3.70%	2,461	2,625	▼ -1.22%
TOTAL		65,955	57,997	▲ 2.48%

Source: Census of Population (2015), PSA. Retrieved June 20, 2016.

Of the 65,955-total population in 2015, males accounted for 51.0 percent, while females comprised 49.0 per cent. These figures resulted in a sex ratio of 98 males for every 100 females, higher than the sex ratio of 97 males per 100 females recorded in 2010 (Fig. 4). More than half (59.2 per cent) of the population of Pinamungajan belonged to the economically active population aged 15 to 64 years. About 35.7 per cent were aged 0 to 14 years (young dependents), while 5.2 per cent were aged 64 years and above (old dependents). The overall dependency ratio in 2015 was 69.05; this meant that for every 100 persons aged 15 to 64 years, there were about 69 dependents. The age group with the highest population in Pinamungajan is 5 to 9, with 15,999 individuals. Conversely, the age group with the lowest population is 80 and over, with 590 individuals (Fig 4).

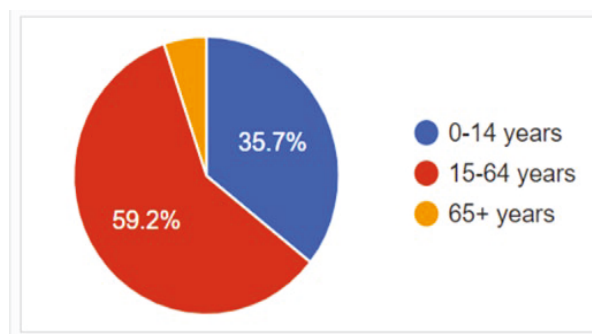
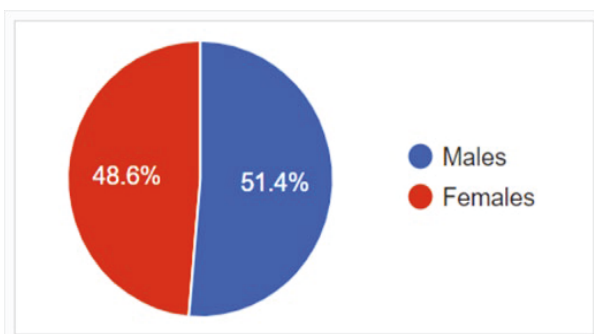


Figure 3. Population Structure of the Municipality of Pinamungajan according to Gender and Age, 2015 NSO Census data

Poverty Incidence

Among the fifty-three cities/municipalities of Cebu, Pinamungajan registered as thirty-first ranked in poverty incidence, pegged at 28.54% per cent in 2015. Mandaue registered the lowest poverty incidence among families at 5.5 per cent, while San Francisco registered the highest poverty incidence at 49.3 per cent.

Education

As of 2020, the entire municipality has 27 public elementary schools and six public secondary schools providing education services in Pinamungajan municipality.

References:

Municipality of Pinamungajan Official Web Portal (2018). (retrieved on October 7, 2020, <http://pinamungajan.gov.ph/>)

Philippine Statistics Authority (2012). Poverty Incidence of Central Visayas. (<http://rso07.psa.gov.ph/poverty>)

Allan, George (2017). How to profile your local community like a pro. (.id.the population experts). <https://blog.id.com.au/2017/how-to/how-to-profile-your-local-community-like-a-pro/>

10.4.2 Characteristics of vegetable production and role of Lamac MFC

Methodology:

Focus group discussions (FGDs) and observations were conducted to identify specific community characteristics of vegetable production. Both qualitative methods were used since they had the advantage of engaging collective participants to discuss a well-developed topic in their community. The method generated a rich understanding of participants' perceptions of the community (Krueger & Casey, 2000).

Two FGDs with members and non-farmers of Lamac Multi-Purpose Cooperative (LMPC) were conducted. LMPC is a multi-purpose agricultural cooperative duly

registered with CDA, located at Barangay Lamac Pinamungajan, Cebu. LMPC was formerly called “Lamac Samahang Nayon,” organized by 70 farmers and had an initial capital of only 3,500 pesos in 1973. LMPC operates in Cebu, Leyte, Southern Leyte, Bohol, and Negros Occidental, with 42 branch offices and two satellite offices. In terms of support, LMPC provides inputs, credit assistance, and technical support and facilitates production clustering and market linkages to vegetable producers in the community.

Respondents were purposefully selected based on two criteria: (1) willingness to participate in the activity and (2) occupation as a vegetable farmer. The two FGDs were conducted separately to understand if there existed any difference in the community’s perception concerning joining cooperatives. Each FGD was represented by both males and females, with a total number of 14 respondents interviewed. The farmer’s respondents’ selection was validated by Lamac Agricultural office and LMPC to ensure the representation of commercial vegetable growers and members. The two FGDs were conducted at Barangay Lamac, Pinamungajan Cebu, last October 17, 2020.

The FGDs were conducted in the local language. The moderator, a facilitator of FGD, briefed the purpose of conducting FGDs to the participants, and their willingness to participate in the discussion was confirmed by signing the attendance sheet form. Participants also expressed their willingness to record the discussion using a voice recorder.

Table 3. FGD Respondents Profile

DATA	Non- Member of LMPC		Member of LMPC	
	Male	Female	Male	Female
Total Number of Respondents:	2	4	5	8
Age of Respondents (Average)	24 y/o	45 y/o	54y/o	43y/o
Common vegetables planted	kangkong, eggplant, pepper sword, and squash.		eggplant, pepper sword and squash, rice field.	

Results:

Description of vegetable farming operation and activities

On both FGDs, the majority stated that farming is dependable and serves as their main livelihood source. Common vegetables planted in the area include eggplant, pepper sword, and squash. Members of LMPC respondents stated that individual farmers planting farm areas ranges from 1,000 sq.m to 2,500 sq.m. While non-members mentioned that while other farmers have their land (acquired from their ancestors), many others are also tenants.

Respondents, both members and non-members of LMPC, stated that their vegetable operations were affected by the COVID-19 pandemic. The pandemic greatly affected their vegetable marketing operations and access to production inputs. Market access was being challenged due to the strict implementation of entry points from the market's production area. This generally resulted in the unmarketability of their produce and loss of income.

Description of the vegetable farming enterprise

Vegetable enterprises are similar to both members and non-members. Engaging in farming is a great remunerative to farmers, especially if they fetch a higher market price. Vegetables being highly perishable is also a challenge to farmers, especially bringing their produce to the local market, due to the high transport costs and unstable market prices. The respondents pointed out that transportation cost plays a high cost for farmers in the case of marketing their vegetable produce. This problem is also coupled with an unstable price in the market. Other challenges are adverse weather conditions, shortage of yields, poor quality, and pests and diseases.

The respondent's livelihood greatly depends on farming; however, mechanisms in the enterprise differ. LMPC members mentioned that the LMPC influences them in deciding what, where, and when to plant especially vegetables. In comparison, non-members are free to plant any vegetables at their convenience.

Problems and opportunities in the vegetable farming enterprise

The LMPC members perceived poor agricultural management to be the major constraint in their vegetable enterprise. They mentioned that they lack knowledge and information on advanced farming practices, including pest control management. The second was the unfavourable weather conditions, such as heavy or constant rains and drought, which severely damaged their crops. In terms of marketing challenges, most of the respondents mentioned that the unstable price and insecure market are also one of their main problems.

As vegetable cluster members, LMPC members sell their produce to the cooperative. However, they mentioned that high reliance on the cooperative has been disadvantageous to them, especially during the community lockdowns caused by the COVID-19 pandemic. Before, the cooperative could accommodate all their vegetable produce, but volumes absorbed by the cooperative were greatly reduced during the community lockdowns. Some of the cluster members resorted to feeding their harvested vegetables to the pigs because they could not market them. They said that aside from the difficulty of bringing their produce to the market, the price also is very low and unstable, especially if they sell their products to market traders.

One of the respondents said that many of the community farmers employed direct selling and house-to-house delivery to gain a better price margin. The opportunity to expand vegetable cultivation and diversify agricultural products is feasible in the area.

“No stable Market and very dependent to LMPC.” (Member-LMPC)

Relationship with vegetable enterprise partners

Results show that farmers have different business partners. Both farmer groups mentioned LMPC, LGU, and local market vendors. Participants also shared that their relationship with LMPC helped them in their vegetable enterprise was generally good.

In what ways did you sustain your linkage or partnership with them?

LMPC organized vegetable production clustering among vegetable growers in the community. Members of the vegetable cluster and LMPC maintains engaged networks where farmers provide their insights, share perspectives, and recommendations to influence decisions, investments, and even policies. LMPC organize and train farmers and invest in implementing new practices and technologies. At the same time, farmers valued access to new technologies, information, production inputs, and markets. Citations from FGD responses are presented below.

“LMPC act as a farm consolidator and serves as the marketing arm of our products to gain a better price.” Member, LMPC

Motivation to sustain the relationship with other partners organizations

Responses from LMPC members mentioned that the cooperative has helped them distribute and market their produce, especially during the lockdown. Members mentioned that LMPC provided financial and technical assistance to the members. Likewise, non-members of LMPC mentioned similar reasons. Furthermore, both LMPC and non-LMPC members seem to highlight the function of LMPC as a consolidator or marketing as the main reason for sustaining their relationship with the organization.

Despite hearing some good feedback from LMPC, others also shared hesitation. Responses from non-members mentioned that some are afraid to participate or become members of the association due to the clustering approach. They are afraid to be tied to a specific production, finance, and marketing arrangement. Some farmers prefer traditional farming methods and opted not to adopt the new technology introduced in the clustering approach. They are also afraid to be tied with loans and limitedly sell their produce to LMPC. However, when asked why they did not register as members of LMPC, they shared that they were unaware of the clustering approach's benefits.

Problem comparison

Problems in the vegetable enterprise were asked and ranked in both FGDs. This reveals the level of significance farmers experienced in their enterprise (Table 4). However, with a small sample size, this cannot fully represent becoming a member but can somehow reveal an apparent comparison in both settings.

Production-related problems ranked the 1st for LMPC members while it ranked 4th for non-members. On the other hand, marketing problems are the most pressing constraint experienced by non-members while ranked 3rd for LMPC members. This is understandable since LMPC assists members in marketing their produce. Surprisingly, access to finance (generally for start-up capital for the production cycle) was the least constraining problem for LMPC members, while it is the 2nd most limiting problem for non-LMPC members.

Table 4. Comparison of severity of problems experienced between LMPC members and non-LMPC members.

Constraining problems rank	LMPC members	Non-LMPC members
1 st	Pest Management (lack of knowledge to correct amount of pesticides to be used)	Problem on marketing (price is always fluctuating, do not have permanent buyers)

2 nd	Weather Condition (rainy season-more pest)	Financing: Capital for farm inputs, tools and equipment, and pesticides
3 rd	Price Fluctuation (prices vary every time)	Lack of irrigation system: technology to bring the water from source to farmland.
4 th	No stable Market (dependent on LMPC)	Lack of knowledge of Cultural Management, specifically on Spent management.
5 th	Financial: Start-up capital for farm inputs, tools, equipment, and pesticides	Weather conditions as affected by climate change (need crop insurance).

Highlights

- Farming plays a significant role in their livelihoods (members and non-members)
- LMPC is mostly associated with its clustering approach and technical assistance.
- Despite having shown the clustering approach's benefits, some farmers are still hesitant in joining the approach. Reasons cited were mostly being afraid to be tied with certain production, finance, and marketing arrangements.
- Similar problems encountered by LMPC-farmers and non-LMPC farmers are experienced at different magnitudes. This is probably due to the level of assistance offered by LMPC.

10.4.3 Annexe 1: FGD responses

Question	Responses (Member of LMPC)	Responses (Non- member of LMPC)
<ul style="list-style-type: none"> ● Can you tell us more about your farming activities/operations? (history, type of vegetables planted, assets, profits & earnings, topography/sites, farm holdings, etc.) 	<ul style="list-style-type: none"> ▪ During the pandemic, the operation was greatly affected. Their local produce does not reach to local market. As a result, kangkong (cluster commodity) was fed to their swine to minimize the losses. ▪ Limited stocks of pesticides. ▪ Aside from kangkong, they are also planting various vegetables such as eggplant, pepper sword, and squash. ▪ Farm area being planted by individual farmers ranges from 1,000 sq.m to 2,500 sq.m. ▪ Other farmers had their land (acquire from their ancestors) while the other is tenants. ▪ Land topography is usually hilly, sloppy, and some are plain. ▪ The type of soil is commonly clay-loam. ▪ For them, farming is dependable, and they could earn profits. 	<ul style="list-style-type: none"> ▪ The pandemic greatly affects their operation in terms of marketing due to the stringent implementation of entry points from farm to local market. ▪ Purchasing of farm inputs like fertilizers and pesticides are hard to acquire due to limited stocks and availability in the local area. ▪ Common vegetables planted on their farms are eggplant, pepper sword and squash, other has rice field. ▪ Other farmers have their land (acquire from their ancestors) while the rest are tenants. ▪ Most of their farmlands are plain and sandy- loam type of soil. ▪ In terms of profits and earnings, farming is the main source of their income; it helped them gain money, especially when the prices are good. ▪ The distance from farm to main roads is approximately 7 km, and the individual land area size is approximately 0.25 ha.

<p>How is your vegetable farming enterprise in general?</p> <p>What is the good and encouraging part of it?</p>	<ul style="list-style-type: none"> ▪ Based on their experience, farming gave them extra income and a good source for their daily needs. ▪ They have realized the importance of farming during the time of the pandemic. Vegetable farmers have earned an advantage over those involved in off-farm labor. Food is readily available and even helped them to gain money, especially when the price is good. 	<ul style="list-style-type: none"> ▪ Based on their experience, farming gave them extra income and provided their daily basic needs.
<p>What is the “not so good” or challenging part of it??</p>	<ul style="list-style-type: none"> ▪ Too risky, especially when there is an adverse effect of weather conditions. ▪ Prices are not stable; sometimes it is low. ▪ High cost in transportation, availability of inputs, and stable market. 	<ul style="list-style-type: none"> ▪ There’s a risk in farming because of the situation. Farmers need more knowledge/training in cultural management. ▪ Prices are not stable (sometimes is very low) affected by oversupply due to pandemic. ▪ Limited access to the transportation of commodities due to strict entry points from farm to market and market availability.
<p>What made you sustain your relationship with your vegetable farming enterprise partners?</p>	<ul style="list-style-type: none"> ▪ LMPC helped them in the distribution/marketing of their produce during the lockdown. ▪ If there are problems, LMPC provides financial assistance (loan) and technical assistance like training. 	<ul style="list-style-type: none"> ▪ A clustering approach to non-members facilitated by LMPC t to attain the desired volume of commodities to be delivered to institutional buyers and minimize postharvest losses/damages. ▪ LMPC provides training and technical assistance to small farmer groups.

<p>In what ways did you sustain your linkage or partnership with them?</p>	<ul style="list-style-type: none"> ▪ LMPC acts as a farm consolidator and serves as a marketing arm of its products to a better price. 	<ul style="list-style-type: none"> ▪ LMPC serves as the consolidator and delivers the vegetables to the local market to obtain a desirable price. ▪ LMPC will dispose of farmers' produce to the local market; the assigned person collects the volume committed by the farmer in a designated area.
<p>From your experience, what other business partners have you considered engaging? What are the reasons for your engagement or non-engagement?</p>	<ul style="list-style-type: none"> ▪ None, only LMPC. They have a plan to engage in swine production. 	<ul style="list-style-type: none"> ▪ Jollibee Foundation (not yet realize)
<p>Question</p>	<p>Responses (Member of LAMACMPC)</p>	<p>Responses (Non- member of LMPC)</p>
<p>In your opinion, are there people/organizations/concerns excluded in your vegetable enterprise/ sector but can benefit a lot from participating/integrating into your enterprise/sector?</p> <p>Why are they excluded? How are they excluded from participating/integrating?</p>	<ul style="list-style-type: none"> ▪ Yes, if they were hard-working and had the patience to participate in the farm business, they could earn additional income. ▪ There are no barriers/hindrances if they are not indolent and willing to participate with the Coop. 	<ul style="list-style-type: none"> ▪ Yes, but they are afraid to participate and adapt to the clustering approach. ▪ Laggard type of farmers; observing the cluster operation and waiting for a better result. ▪ Lack of knowledge in terms of farming technology, do not adopt the new technology and prefer for traditional farming method. ▪ Capital: Worried to be tied with a large total of loans; depended only on personal income/savings; as a result, there are only small area planted

<p>What barriers and challenges hinder their participation/ integration into your business/sector?</p>		
<p>FOR NON-LAMAC Members] In the case of LAMAC MPC, why are you not a member? Are you interested in becoming a member? Why?</p>		<ul style="list-style-type: none"> ▪ They are not aware of the benefits of cluster farming ▪ Clustering is not yet introduced to them. Farmers (They) need somebody to lead and acknowledge the system.
<p>Why Not?</p>		<ul style="list-style-type: none"> ▪ They are now interested in being a member of LMPC; they prefer individual farming rather than a clustering approach.
<p>What is the five most constraining problem in your current vegetable farming enterprise? Why is that a problem/constraint?? Please RANK the top 3 out of 5!</p>	<ul style="list-style-type: none"> ▪ 1st – Pest Management (lack of knowledge to correct amount of pesticides to be used) ▪ 2nd – Weather Condition (rainy season-more pest) ▪ 3rd – Price Fluctuation (prices vary every time) ▪ 4th – No stable Market (dependent on LMPC) 	<ul style="list-style-type: none"> ▪ 1st – Problem on marketing (price is always fluctuating, do not have permanent buyers) ▪ 2nd – Financing: Capital for farm inputs, tools and equipment, and pesticides ▪ 3rd – Lack of irrigation system: technology to bring the water from source to farmland. ▪ 4th – Lack of knowledge of Cultural Management, specifically on Spent management.

	<ul style="list-style-type: none"> ▪ 5th – Financial: Start-up capital for farm inputs, tools, equipment, and pesticides 	<ul style="list-style-type: none"> ▪ 5th – Weather conditions as affected by climate change (need crop insurance).
<p>Is there still a future for vegetable farming in your area? Why? Or Why not?</p>	<ul style="list-style-type: none"> ▪ Yes, aside from that farming can sustain their daily needs, there's a great opportunity to be successful in farming. ▪ Possible thru producing highland vegetables (lettuce, spring onion, tomato) and farm integration such as engaging in swine production. 	<ul style="list-style-type: none"> ▪ Yes, farming should be a business. Farmers must have knowledge and skills in Agri-entrepreneurship. ▪ Also, through venturing to high-value vegetables such as lettuce, onions, etc. ▪ Possible also with the continuous support from the government and other agencies

Current Business Partners (Members of LMPC)

FARMING ACTIVITIES	NAME OF PARTNER ORGANIZATION, INSTITUTION	ROLE OF PARTNERS TO YOU	HOW LONG HAVE BEEN ENGAGED WITH THEM
Source of technical information for your farming enterprise	LMPC	Training on Financial Aspects (costing)	Eight months
	LGU Pinamungajan (DA)	Technical Assistance: Cultural Management	Eight months
Input procurement (labor, capital, etc.)	LGU Pinamungajan	Farm Inputs (seeds, fertilizers)	Eight months
	LMPC	Seeds/Seedlings	Eight months
	LMPC	Capital (thru loans)	
Marketing of produce	LMPC	Products consolidator	
	Local market (direct to market vendor/ retailer)	Direct selling of some commodities that were not absorbed by LMPC	

Other services:	Market consolidator	contact for hauling	
Hauling	LMPC	Hauling	Eight months
Land Preparation	Personal expense		

Current Business Partners (Non-Members of LMPC)

FARMING ACTIVITIES	NAME OF PARTNER ORGANIZATION, INSTITUTION	ROLE OF PARTNERS TO YOU	HOW LONG HAVE BEEN ENGAGED WITH THEM
Source of technical information for your farming enterprise	Lamac MPC	Training on Financial Aspects (costing)	Two months
	LGU Pinamungajan	Technical Assistance	
Input procurement (labor, capital, etc.)	LGU Pinamungajan	Farm Inputs (seeds, fertilizers)	Two months
	Lamac MPC	Item (in kinds)	Two months
	City Agriculture Office, Cebu City	Seeds	
	DA Region	Provide seeds (input)	
Marketing of produce	Local Market	Direct to market vendors/retailers	
Other services: Hauling	Market consolidator	Contact for hauling	
	LMPC (if a member)	Hauling	
Land Preparation	personal expense		

10.5 Community profile of Pinamungajan, Cebu and Lamac MPC activities in the community

10.5.1 Methodology

Desktop Review

Data collected from the Philippine Statistics Authority and the Department of Agriculture have been the primary sources for desktop review.

Farm Survey

A farm survey has been conducted purposely in the four top coffee-producing municipalities in the province of Sultan Kudarat, namely, Bagumbayan, Kalamansig, Lebak and Senator Ninoy Aquino.

The farmers were identified based on the following criteria: a) coffee intercrop with at least 2 crops, b) commercial viability of the crops, c) farmers implementing intercropping for at least 2-3 years, and d) intercrop farm of at least one hectare.

Prior to the start of the actual data collection, the research team coordinated with the Province and Municipal Local Government Units (LGUs) through the Provincial and Municipal Agriculturists (MA), informing them of the research and its purpose. The team also coordinated with the Barangay LGUs upon entry to a specific community where the farmers resided.

The research was done during the COVID-19 pandemic; thus, mobility was limited, and LGUs were strictly implementing the health and safety protocols for their constituents. Foodlink Advocacy Cooperative (FAC) hired enumerators from the locality to do the data collection. Preventive measures were also implemented, such as social distancing during interviews, wearing of PPEs like face masks, face shields for both the enumerators and respondents and use of alcohol/hand sanitisers for frequent hand hygiene. The enumerators were also not allowed to shake hands with the respondents before and after the interview, which is the usual practice as a sign of greetings and gratitude.

Key Informant Interview (KII)

Key informant interviews have been conducted to various stakeholders and value chain key players to know their programs and initiatives as well as get their insights and recommendations in identifying pathways for future inclusive value chain interventions. Interviews were done virtually except for those respondents that needed to be interviewed face to face due to connectivity limitations. The same safety measures for farmers' interviews were implemented during the KII face-to-face interview.

Agencies	Number
Government	2
Social Enterprise	1
Non-Government Organizations	4
Farmer Organizations	5
Financing Institution	1

Limitation to the Research

The validation of data was not conducted with respect to the various executive orders issued by different LGUs on border restrictions and face-to-face (F2F) gatherings. The PLGU of Sultan Kudarat has also issued Executive Order No. 17, “an order extending the implementation of General Community Quarantine in the Province of Sultan Kudarat until June 30, 2021”. There was also a limitation to conducting virtual consultation due to poor connectivity to the locations of some target stakeholders.

Ethical Considerations

In this research, respondents under 18 years of age were not included based on the Philippine labor code provisions on minimum employable age.

The research participation was on the basis of informed consent. The respondents participated voluntarily and were given the freedom to stop participating at any time by notifying the research team. In all the stages of the research, the team has been guided and exerted its efforts to minimize possible harm or risk to respondents, especially during this time of the pandemic.

In line with the ethical considerations, all names, workplaces or any personal information, unless agreed upon, are removed in the report and data are presented in aggregate wherever possible. The report is fully anonymized to protect the confidentiality of the respondents.

Challenges

The provincial and municipal agriculture offices have no list of farmers implementing coffee intercrop in the area. The available list is for farmers planted coffee only thus it took sometime to identify the farmers with coffee intercrop. The agriculture technicians, farmer organizations and barangay LGUs have helped the team in the identification.

There was also a delay in the conduct of actual interviews due to unavailability and/or conflict of schedule of the respondents hence, enumerators have to visit the respondents or arrange the interviews twice or more which affect the schedule.

Since farmers were not used to keep records on costing and expenses, it was a challenge for them to answer questions particularly those data needed for the cash flow.

10.5.2 Coffee Industry in Sultan Kudarat (based on secondary data)

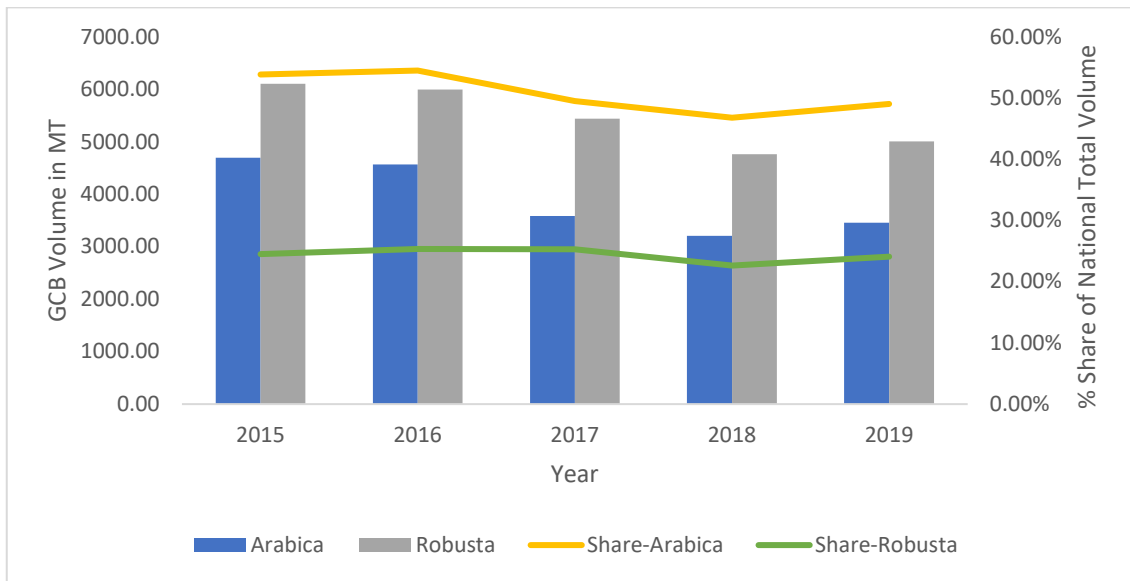


Figure 4 Green Coffee Bean (GCB) volume production in MT of Sultan Kudarat province and percentage share compared to total national volume.

Sultan Kudarat is a major production area of coffee for both the Robusta and the Arabica varieties, taking 24.36% and 50.72% share in total national production, respectively, from 2015 to 2019. Figure 1 shows that production volumes for both Robusta and Arabica have both been declining at an average rate of 8.66% per year. In Arabica, there was a steep decline between 2016 and 2017 at 21.49%, while with Robusta, there was an observed decline from 9.25% between 2016 and 2017 and 10.55% between 2017 and 2018. While the national volume production of both Arabica and Robusta is declining, Sultan Kudarat's volume production is noticeably declining faster, especially from 2016 to 2018. Excelsa varieties are also documented but are nowhere near commercial volumes at an average of 3.75MT per year for the entire province.

In Sultan Kudarat, Robusta coffee land area covered an average of 85,924.37 Has from 2015 to 2019, while Arabica covered only 6,495.20 Has in the same period, taking averages of 35% and 15.49% share of the total national area harvested for coffee, respectively. The area harvested numbers appear to be stable from 2015 to 2019.

According to the DA Registry System for Basic Sectors in Agriculture (RSBSA) database for Region 12, as of 2019, Sultan Kudarat had a total of 9,301.26 hectares registered. This only cover 10.06% of the combined land areas for Robusta and Arabica, as stated by PSA. With an average of 1.8 has (median = 2.0 ha) across 5,165 individual farmers registered to the RSBSA, there could be an estimated 51,344 coffee farm owners.

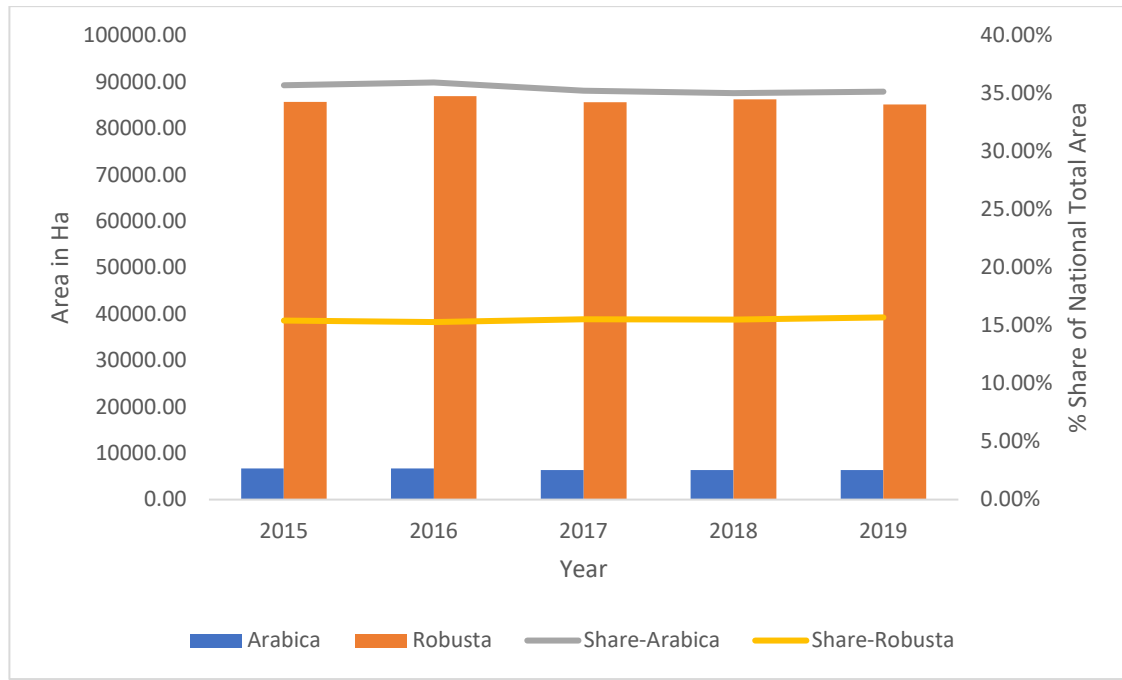


Figure 5 Coffee harvested areas in hectares in Sultan Kudarat province and percentage share compared to national total area harvested for coffee

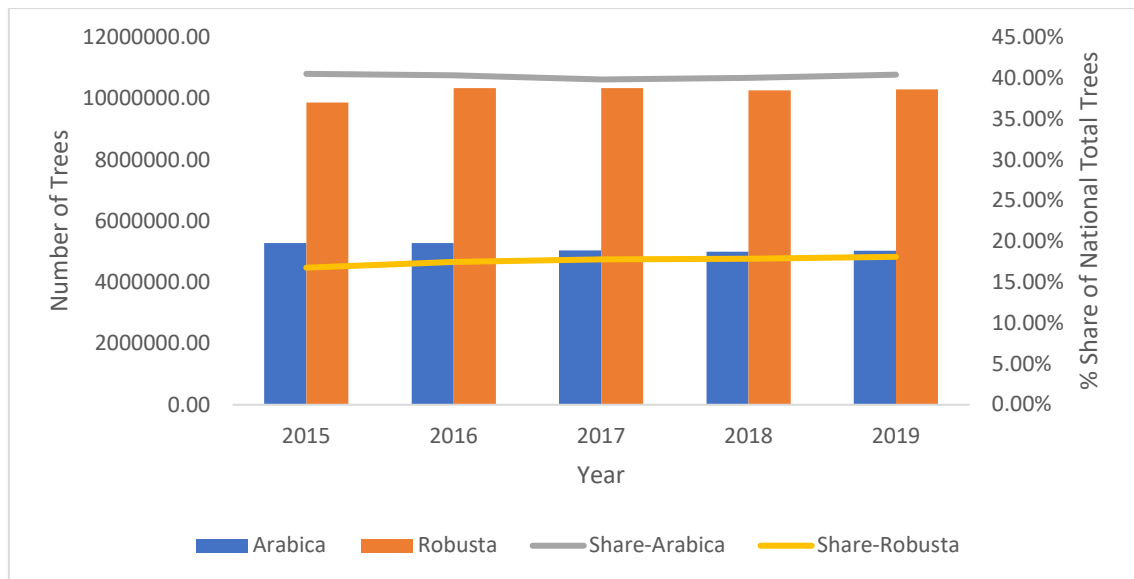


Figure 6 Number of Coffee Trees in Sultan Kudarat Province and percentage share to national total coffee trees

The population of coffee trees within the Sultan Kudarat province appear stable across 5 years from 2015 to 2019, with Robusta and Arabica varieties having an average of 10.22

million and 5.13 million trees, respectively. The province takes 17.62% of the total Robusta tree population and 40.24% of the total Arabica tree population.

Figure 7 Productivity per hectare (MT/Ha) and per Tree (Kg/Tree) in Sultan Kudarat province

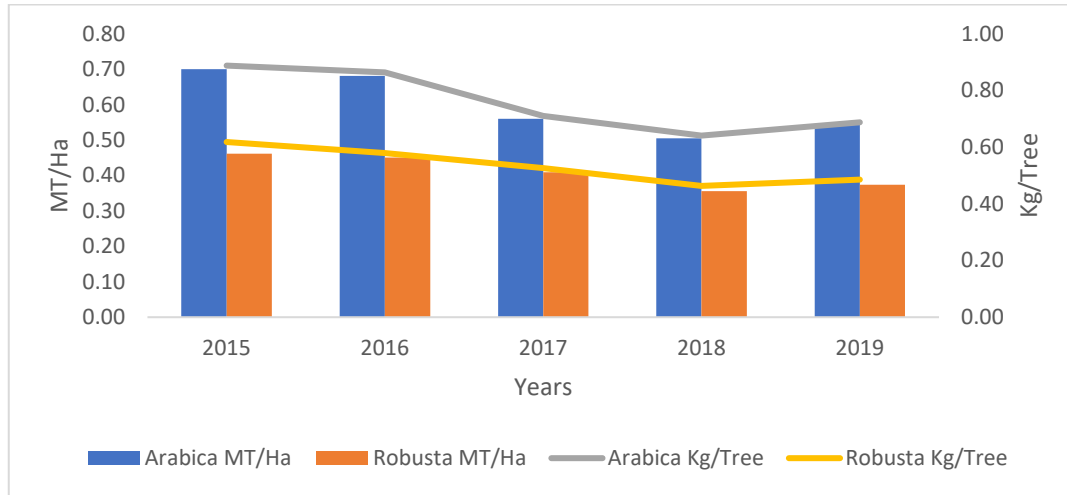
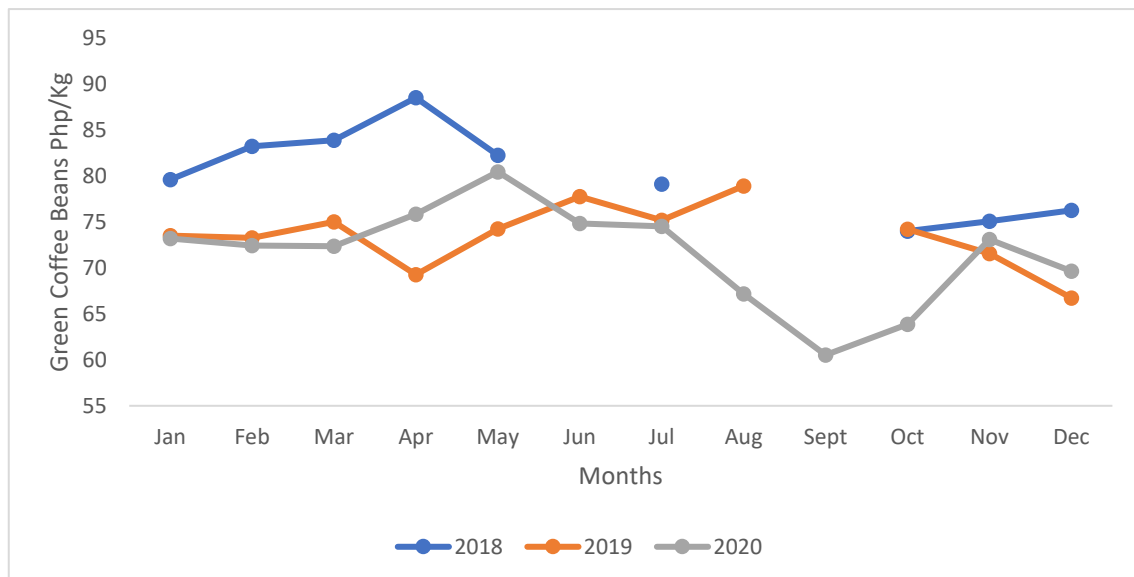


Figure 4 shows the productivity per hectare and per tree within Sultan Kudarat province. From 2015 to 2019, Arabica varieties have seen an average productivity decline of 5.60% per hectare and 4.86% per tree, while Robusta has seen an average productivity decline of 5.72% per hectare and 5.65% per tree. The period between 2016 to 2017 shows a 17.71% decline in productivity for Arabica varieties.

Figure 8 Farmgate prices of Robusta in Sultan Kudarat province from 2018 to 2020



Note: Philippine Statistics Authority presents farm gate price data as “dried beans”. This is an erroneous labeling—the prices presented more represents Green Coffee Beans and, for purposes of this report, shall be stated as such.

Going through the price data of the Philippine Statistics Authority for farm gate prices, it should be noted that despite the significant share of Arabica volume and tree population in Sultan Kudarat, they have not been able to provide price data for Arabica. As for Robusta, the price per kilogram of GCBs is declining at with average prices of Php 80.24/kg in 2018, Php73.63/kg in 2019, and Php71.51/kg in 2020. There is no observable pricing seasonality pattern despite a rather regular harvest schedule for January and September. Price volatility is also high across the months at Standard Deviation=4.71 for 2018, SD=3.49 for 2019, and SD=5.46 for 2020.

Coffee Industry Summary

Sultan Kudarat province is a major production site for both Arabica and Robusta coffee varieties. However, despite this status, the productivity of trees in the province are declining, affecting the total performance of the province in general and while this is true for the country in general, the province seems to be experiencing this at a more accelerated rate. There is also a noticeable sharp decline from 2016 to 2018 and it seems to reflect the period where the country experienced the La Nina phenomenon—survey respondent data however seem to point to 2015's El Nino drought as having a heavy impact to their productivity. Despite the declining supply production in the area, there is also a decline in the buying prices of green coffee beans for Robusta at the farm gate level. The combination of declining productivity and the declining prices will lead to an accelerated decline in income per farm.

It is estimated that only 10% of the total farm areas of Sultan Kudarat are registered under the RSBSA. RSBSA is used as the primary basis for the provision of the government-provided crop insurance (pegged at the assessed production cost per crop commodity) as well as for most other government support for farms. According to key informants, the RSBSA is also a requirement for accessing financing from rural banks.

10.5.3 Coffee Farmer Survey

Description of Respondents

Demographics

For the study conducted, N=41 farmers were surveyed with 11 females and 30 males. Thirty-three of the respondents identified themselves as heads of their respective families, with 5 of them being female. The age range of the respondents was from 38 to 83 years old, with an average age of 52.675 medians of 49. More than half of the respondents have gone through or completed higher-level education.

Table 5 Education attainment of respondents

Level	Completed	Not completed
Elementary	2	4
Secondary	7	6
College	9	11
Technical/Vocation	2	0

Most of the respondents identified themselves as settlers (non-indigenous people), while 4 were from indigenous peoples' communities, and 3 identified themselves as Maguindanao Moro. One respondent did not specify his/her ethnicity.

Table 6 Ethnicity of respondents

Group	N	Notes
Tboli	1	Indigenous People
Teduray	3	Indigenous People
Maguindanaon Moro	3	
Ilonggo	18	
Cebuano	8	
Bisaya	1	
Antiqueña	1	
Ilocano	5	
Did not specify	1	

Farming Experience and Income

Respondents' farming experience in general ranged from 16 to 61, at an average of 30.05 years. For coffee farming specifically, their experience ranged from 6 to 50 years, at an average of 24.95 years.

Table 7 Household income and percentage share of income from farming

Household Income	2019	2020	2020 %-income from farming						
			31%- 40%	41%- 50%	51% - 60%	61% - 70%	71% - 80%	81% - 90%	91% - 100%
Between Php 40,000 to 59,999	1	1				2			
Between Php 60,000 to 99,999	7	9		1	1	1	1	2	1
Between Php 100,000 to 249,000	21	19	1	3	2	3	4	4	2
Between Php 250,000 to 999,999	6	4				1	3	2	
did not respond	6	8							

More than half of the respondents reported having household incomes from Php 100,000 and above—Of the 34 who responded to the questions regarding the share of income from farming, 29 mentioned that more than 50% of their household income came from farming in 2020.

37 of the respondents reported learning coffee farming through their family members. 4 respondents mentioned learning coffee farming from trainings provided by DA, DENR and Nestle, as well as an unidentified organization.

Farm Description

Table 8 Respondents' land tenure instruments

	Stewardship	Titled	Tax Dec	CLOA	No Response
Bagumbayan	9	1	0	0	0
Kalamansig	7	3	0	0	0
Lebak	1	6	1	0	3
Senator Ninoy Aquino	1	3	0	6	0

Farm sizes of respondents range from 1 Ha to 20 Has, with an average of 4.73 Has. 19 respondents reported using stewardship arrangements, 19 farm their own lands with 13 being titled in their name or their parents and 6 through Certificates of Land Ownership Award (CLOA) granted by the Department of Agrarian Reform. 1 respondent reported using a Tax Declaration—these are prima facie proofs of ownership or possession of properties but are not substitutes of actual land titles or CLOAs.

While the average sizes of the farms do not significantly differ from instrument to instrument (except for the sole tax declaration), stewardship arrangements among the respondents reached up to 20 has, double the highest for both CLOA and Titled. What is interesting is that titled and CLOA lands, according to RA 9700, limited to 3 has for irrigated lands and 5 has for unirrigated lands yet we see instances where these maximum areas have been breached.

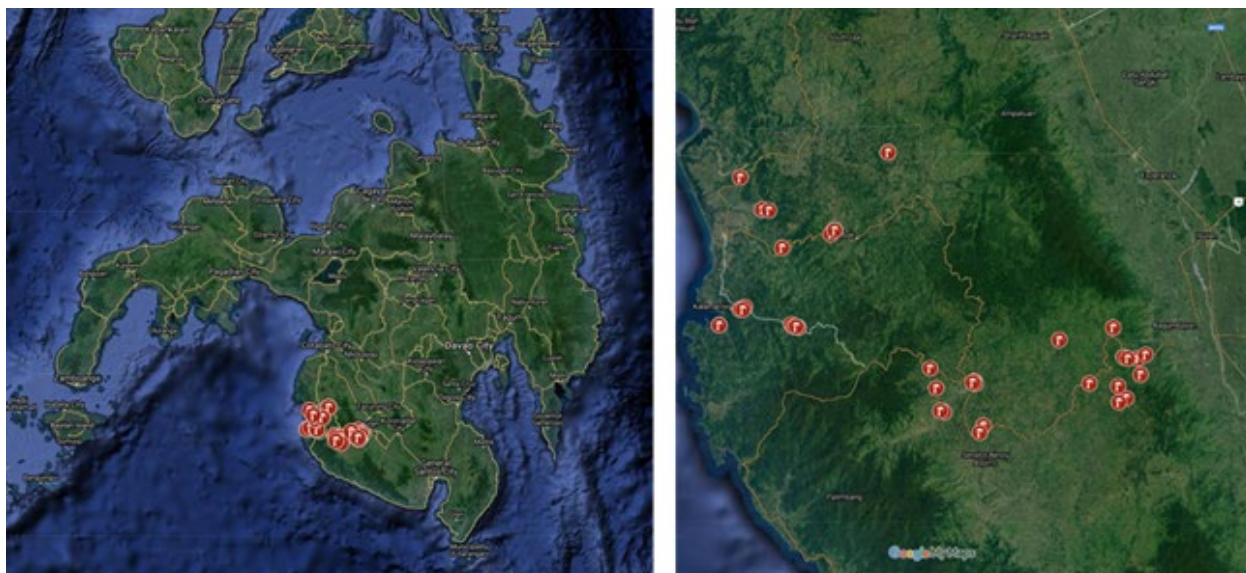
Table 9 Farm areas per land tenurial instrument

Instrument	Average	Min Ha	Max Ha
CLOA	4.46	1.75	10
Stewardship	5.54	1.5	20
Tax Dec	1.8		
Titled	4.18	1	10

26 respondents reported their farms were located near or beside their house, 12 have farms within the barangays they reside in and 3 mentioned their farms were outside their barangays. Based on approximate locations of the coffee farms of the respondents, many

of these farms are located near or beside major roads—it must be noted that most of coffee farms in Sultan Kudarat are not immediately accessible via these major roads.

Figure 9 Approximate locations of coffee farms of respondents



Left: Mindanao Island ; Right: Western side of Sultan Kudarat Province (Using Google MyMaps)

Half of the respondents reported having rolling terrain within their farms, while a third mentioned having sloping terrain. GAP-Coffee mentions that coffee farms with sloping terrain are recommended to implement measures to ensure the prevention of erosion, especially during heavy rainfall.

Table 10 Topography and soil typology of respondents' farms

Municipality	Topography			Soil Type			
	Sloping	Rolling	Flat	Clay	Clay-Loam	Sandy-Loam	Loam
Bagumbayan	5	5	0	5	5		
Kalamansig	3	5	3		8		1
Lebak	4	6	2		6	2	3
Senator Ninoy Aquino	1	6	3	2	5	3	

1 Kalamansig respondent = both sloping and rolling; 1 Lebak respondent = both flat and rolling

NESCAFE Plan Toolkit Guide for Growing Coffee mentions that coffee plants perform best in well-draining soil. More than half of the respondents reported having clay-loam soil

within their farms—this may pose a problem for water drainage, especially after heavy rainfall.

Judging the fertility of their soil, 11 respondents mentioned that the soil in their farms were very fertile, while the rest of the 30 mentioned that their soil was moderately fertile.

Table 11 Respondents' observation on the fertility stability of soil within their farms

Municipality	Fertility Stability	
	Stable	Declining
Bagumbayan	9	
Kalamansig	7	2
Lebak	4	5
Senator Ninoy Aquino	8	2

Twenty-eight respondents reported that the fertility of their soil was stable, while 9 reported that the fertility of their soil was declining. Of note is that most of the reports on declining fertility seem to be associated with the municipality of Lebak.

Table 12 Water sources and rainfall distribution experienced within respondents' farms

Municipality	Water Source				Rainfall Distribution		
	Spring	Rainfed	River	Pumped	Evenly	Distinct	Irregular
Bagumbayan	10				8	1	1
Kalamansig		10			9		
Lebak	3	9			4		5
Senator Ninoy Aquino	7		2	3	1	9	

Twenty respondents reported having springs as their water source, 19 mentioned that their farms were rainfed, while 2 reported using a river source and 3 using pumps. With a significant number of them relying on rain for irrigation, it is good that 22 reported experiencing even rainfall distribution within their farms. With Senator Ninoy Aquino's respondents experiencing distinct rainfall distribution, having other sources on hand helps with having a continuous water supply.

Seedling Source

Of the 38 that responded to the question on the source of their seedlings, only 2 respondents reported having procured their coffee seedlings from a nursery, while 4 reported receiving their seedlings from some program subsidy. Nine respondents mentioned that they got their seedlings from their own farms, while 23—the majority—reported that their seedlings were wildlings. GAP-Coffee standards recommend that the seedlings used for the farms be procured from Bureau of Plant Industry-certified nurseries. With BPI authorized suggested retail price for coffee robusta set at Php 41 per seedling, the cost goes up considerably.

Table 13 Seedling sources

	Own	Wildlings	Nursery	Subsidized
Municipality				
Bagumbayan	3	5		4
Kalamansig	5	5		
Lebak	1	7		
Senator Ninoy Aquino		6	2	

Coffee Planting Arrangements

While the NESCAFE Plan toolkit recommends coffee trees be arranged at 2m x 3m spaces for a total of 1,667 trees per hectare, this arrangement is more often associated with monocropping farms. What is interesting is that of the 41 respondents, 7 respondents reported using the 2m x 3m spacing and still implementing intercropping arrangements. The most popular arrangement, however, is 3m x 3m, which is implemented by 21 respondents and would typically hold 1,111 trees. Based on estimates from respondent data, the average number of trees per hectare implemented is 1,191 coffee trees.

Coffee Materials and Inputs Usage

Of the 41 respondents, 31 mentioned using fertilizers on their farms in the past two years, while 10 either did not respond or explicitly mentioned not applying any. Application of fertilizers of the various required fertilizers, their dosages, as well as the frequency of application, vary from respondent to respondent. 7 respondents explicitly mentioned acquiring inputs from DA and Nestle for free. 12 respondents bought inputs from existing stores within the province, while 3 mentioned getting their inputs from traders. Based on responses, Complete (14-14-14) and Urea (46-0-0) seem to be the more popular fertilizers applied. Interestingly, the GAP Code for Coffee does not recommend the use of Complete (14-14-14), but instead emphasizes on a combination of Diammonium phosphate (DAP 18-46-0), Urea (46-0-0) and Muriate of Potash (0-0-60) with target combinations of 120-120-60 for non- fruit-bearing trees and 120-60-120 for fruit-bearing trees.

According to key informants, in instances when fertilizer subsidies are provided, these subsidies completely cover the requirements of the coffee trees within the farms of recipients. Underdosed application of fertilizers happens when farmers allocate a portion of these subsidized fertilizers to other crops within the farms (most notably corn plants). Labourers stealing fertilizers are also reported but do not seem to be rampant. In reaction to this, some subsidy providers actually supervise the application of these fertilizers as soon as they are given—such methods, while very effective, tend to be inefficient due to the large manpower demand. Organic fertilizers are set at no less than 1 kg per tree.

Arrangements regarding labour vary from respondent to respondent as well: some would report using an *arawan* (per-day payment) basis, some using the *pakyaw* (agreements to perform a number of activities within a given period), while some would opt to perform labour themselves. *Pakyaw* arrangements seem to be appropriate in situations where

lands are more than 1 hectare and where there are multiple activities to be done within a short span of time.

Reported Income

Based on the reported income of 15 respondents, the average reported income generated for 1 hectare is Php30,949.34 per year (median Php 33,333.33). This approximately fits the profile of the popular 3m x 3m arrangement with 1,111 coffee trees producing an equivalent of 466.62 Kg of GCBs per year sold at approximately Php 68/kg. It must be noted that “income” here should be understood as Gross Revenue and that the net profit from this engagement would be significantly lower.

RSBSA uses production cost assessments as the basis for the insurance coverage per registered farm. From the Sultan Kudarat data for 2019, the average coverage for 1 hectare is Php 56,269.66, exceeding the respondent's reported gross revenue by Php 25,347.66. The assumption for RSBSA is that the total production costs covered is most likely following the prescriptions of the GAP code for coffee. In very ideal conditions, therefore, a one-hectare coffee farm should have 1,111 kg of green coffee beans (based 1 kg per coffee tree as aimed at by the 2017-2022 Philippine coffee industry roadmap) and would generate Php 75,548 gross revenue per year (at Php 68/kg GCB) and result in net incomes of Php 19,278.34 per hectare per year.

Intercrops

Table 14 crops within respondents' farms and average number of trees per farm

Crops	farms planted with crops	*average number of trees per farm
Coconut	35	220
Cacao	14	259
Banana	6	106
Citrus	5	12
Lanzones	20	47
Durian	27	54
Rambotan	15	19
Avocado	7	12
Marang	4	14
Guyabano	4	15
Jackfruit	7	11
Mangosteen	6	12
Pomelo	4	23
Kalamansi	1	30
Mango	3	13

*Note: *figure does not reflect the average number of trees per hectare*

In terms of planted crops, the topmost planted crops are durian, coconut, lanzones, cacao, and rambutan. However, when looked at from a tree count within the farms, the topmost would be cacao, coconut, and banana, followed by durian and lanzones, albeit being significantly less in number.

Table 15 Average farm gate prices of fruits

Fruits	2018	2019	2020
Lakatan	19.37	24.27	28.59
Lantundan	7.93	7.97	10.29
Calamansi	14.20	11.89	11.38

Note: There are no available PSA Sultan Kudarat farm gate data on avocado, durian, jackfruit, lanzones, mango, mangosteen, marang, pomelo, rambutan

Taking samples of farms that are exclusively planted with coffee, coconut, and cacao trees, it can be seen that farmers have to decide whether to emphasize coffee trees or cacao trees. The planting conditions of Robusta coffee and cacao are quite similar, so it is possible that factors like access to markets for either coffee or cacao and good pricing for each would ultimately influence farmers to take one over the other.

Table 16 Samples of Coffee, coconut, cacao farm practices and estimated revenues

Farm Size	Coffee		Coconut		Cacao	
	Trees	Revenue	Trees	Revenue	Trees	Revenue
5	2000	59,640.00	100	13,639.00	200	5,197.50
2	750	22,365.00	50	6,819.50	40	1,039.50
1.4	300	8,946.00	110	15,002.90	400	10,395.00

Table 17 Gross revenues and revenues shares per crop for coffee, coconut, cacao farms

Farm Size	Gross Revenue	Revenue Shares		
		Coffee	Coconut	Cacao
5	78,476.50	0.76	0.17	0.07
2	30,224.00	0.74	0.23	0.03
1.4	34,343.90	0.26	0.44	0.30

Farmer Trainings

Table 18 Trainings attended by Respondents

Topic	Training Provider									
	DA	Nestle	MAO	NGP	PCA	DENR	DTI	DOLE	SUCs	CSOs
Integrated Soil and Nutrient	16	15	1	1	7	1	2	1		3
Integrated Pest and Disease Management	15	17	4	1	6	1	2	1	1	4
Pruning and Rejuvenation	10	20	4	1	3	1	1	1		1
Costing and Pricing	9	13	1	0	3	1	3	1		2
Basic Recording	7	19	1	1	2	0	3	1		3
Negotiating with Buyers	3	0	0	0	0	0	0	0		1
Advocacy and Networking	3	0	0	0	0	0	0	0		

The farmer-respondents have attended several training activities which are mostly related to farming operations and maintenance. Despite the much training that was provided, this was not translated in improving farm practices and productivity, as shown on the yield average of .4kg/tree as compared to the ideal 1 kg/tree. Moreover, the respondents identified more farm production training as being needed.

Table 19 Trainings sought by respondents

Topics	N
Pest and Disease Management	2
Production, Soil, and Farm Management	19
Coffee Roasting	3
Entrepreneurship	1

It appears that the farmers have not adopted the proper care and maintenance of their coffee trees resulting in poor yield and quality. As perceived, the non-adoption was due to:

Training participants

Inconsistency of participants' attendance especially if training is more than two days or during on-site follow up training or meeting sessions. Most often, farmers cannot attend the whole duration of the training or meetings thus representatives/replacements (eg. wife, children) attend on their behalf that resulted in non-implementation or improper application of the learning on actual farm activities since they are not the direct user or tiller of the coffee farm.

In addition, it was observed that there were incidents that the farmer organizations' leaders were the one attending the trainings and there were no appropriate methods of cascading the inputs of the technical training sessions to their farmer members.

Training Modules and Methodologies

Training assessments were conducted by the service providers. In the case of Municipal Agriculture Office, the DA-ATI curriculum/module is being used. Other service providers (ie NGOs) developed their

own training modules based on the result of the needs assessment. Nestle is conducting their Farmers Business School (FBS) every year.

The methodologies/approaches used in the trainings vary depending on the kind of trainings. It could be lecture type or a combination with hands-on or field demonstration. Local language is also being used during the training sessions.

Some organizations initiated the farmer-to-farmer approach where select farmers are trained to become coffee mentors. ACDI VOCA assisted and hand-held their coffee mentors to play a role in the community adoption of GAP and the market development approaches espoused by the project (PhilCAFE). Nestle is also developed and trained farmers as coffee ambassadors who are coffee farming champions.

The training modules are considered to be relevant to the farmers. However, the challenge is how the farmers regarded the training particularly if they know that these trainings are just part of the requirements to receive a certain assistance. Farmers sometimes attend the training without giving their full attention and not eager to learn. They attend for the sake of compliance in order to receive the assistance from the sponsor organization. A good example of this was the provision of fertilizers for their coffee farms. Farmers were trained on the importance of fertilization, the correct dosages and proper frequency of applications. The problem starts when the farmers returned to their respective farms, the fertilizers were used or applied to corn instead of coffee. It was observed that the coffee is now the second priority compared to corn in terms of fertilizer applications.

Other observations for Trainings

1. It seems that the coffee farmers level of acceptance for change to adopt the sustainable farming practices is still low as indicated by farmers persistently disregarding to apply their knowledge on coffee farming. It is said that they have acquired the knowledge because they can articulate and identify the proper care and maintenance of their coffee farms. Unfortunately, they are not executing it properly or did not translate to the actual farm practices. Inputs like fertilizers were provided, however, they diverted it to other crops instead to coffee which is the main purpose of the assistance. They did not do the pruning when they know that it is a critical factor for good coffee production. It was observed that the farmers did not see the profitability in coffee.
2. It appears that farmers did not gave much importance or have different understanding about savings in production cost. Farmers do not buy inputs like fertilizers with the notion that they could have more savings, without considering that applying fertilizers could provide better output or yield to their coffee trees.
3. Farmers treated coffee trees as one of their fruit bearing trees or coconut trees that do not need regular care and maintenance but in the long run would provide them with the yield that they are expecting. This attitude was primarily based on their generational hand me down knowledge which existed and practiced within the family members over a decade now. Knowledge gathered from the traditional classroom sessions might be difficult to internalize given their pre-existing decades of family inherited farm practices and perceptions.

A. Recommendations for Farmer Training

- Shorten the training sessions to half or one day with interval depending on the training design and the need of farmers. Reinforce the training with technical support and strengthen the monitoring to ensure that farmers are applying their knowledge and skills in their farms. Nestle has started doing the close monitoring to the farmers by deploying and ensuring that technical staff are present during fertilizer application to ensure that the farmers follow what is prescribed. It was also observed that the local technicians frequently visit to farmers who are implementing good agricultural practices. It is suggested to prioritize farmers who need most technical support to motivate them to adopt GAP.

- Training service providers should review/revisit their selection process of their training participants. Selection of appropriate training participants is very critical in terms of who should be the target audience of the technical trainings and follow-up sessions. Requiring farmer organizations to submit names and profiles of their recommended farmer participants must be strictly observed by the training service providers. The sponsor organization or the training service provider has the right to reject any enrollees if the profile does not match with the eligibility requirements based on the training design and objectives.
- Close monitoring and a good feedback mechanism should be in-place and observed by the project stakeholders to ensure continuity of the learnings from the classroom to the actual field application of knowledge and skills. A regular feedback must be provided to farmers on their level of skills and see to it that corrective actions will be taken immediately if there are mistakes observed during the actual farm activities. In this case, farmers will be aware that they are being monitored not only on their performance but mostly on the attitudinal aspect as well.
- Assess effectiveness of the farmer-to-farmer approach and develop a good incentive package to motivate farmers to mentor co-farmers.
- All stakeholders should coordinate and harmonize all the trainings for coffee farmers. Revisit/review the training contents and methodologies to include field demos. Stakeholders should also conduct post-training evaluations to assess effectiveness of training sessions, follow-up meetings and techno-demo approaches.
- Formulate capacity development plans for coffee farmers to be able to have a concrete basis on the levels of improvement in terms of their knowledge, attitude and skills. A personalized capacity development plan would provide a better understanding of the challenges and concerns facing the farmers in their adoption of these new technologies. These could also support the feedback mechanism strategy to be established.

Coffee Cashflow Estimates (Current Practices)

The following cashflow estimates are based on the current practices of the survey respondents. Furthermore, assumptions on yields are based on average 2019 PSA data for green coffee bean yields and farm gate prices are from 2020 PSA average for 1 kilogram of GCBs.

The farm model depicted here is a one (1) hectare farm with 1,192 coffee robusta trees. Farmer assumes most of the labor cost, uses only the more popularly used fertilizers with application practices not in line with good agricultural practices, and uses seedlings composed of wildlings and own-grown. Coffee trees are assumed to be at least 11 years old. All in all, the farm model depicts a scenario where the farm will not qualify for certification for Good Agricultural Practices for Coffee.

	Year 1				
	Unit	requirement grams per tree	per ha	50kg- bags per ha	Cost/unit
Cost					

Fertilizers						
Fertilizer - Complete (14-14-14)	g		0.00	3.57	1000	3573
Fertilizer - urea (46-0-0)	g		0.00	3.57	1050	3751.65
Foliar	L		0.5		300	150
Insecticide	L		1		800	800
Herbicide	L		2		312.5	625
Empty Sacks	pc	20			10	200
Jute Sacks	pc	10			50	
Polyhermetic Bags (60kg)	pc					9,099.65
TOTAL MATERIALS						
Labor		person-days	frequency		cost/person-day	
Slashing		2	2		250	1000
Herbicide Spraying		1	2		250	500
Pruning (Desuckering)		1	2		250	500
Hauling of Fertilizer on site		1	3		250	750
Fertilizer Application		1	3		250	750
Pest & Disease Control						
Fresh Cherries yield	0.84					
					cost/unit	
Harvesting (cherries/kg * rate/kg)	cherries (kg)	0.84	1001.28		5	5006.4
Drying			12		250	3000
Dehulling	dried cherries	0.63	750.96		3	2252.88
Trucking	GCBs	0.42	500.64		3	1501.92
TOTAL LABOR						15,261.20

TOTAL PRODUCTION COST						24,360.85
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Farm Gate average 2020	71.51
Yield per hectare, GCB	500.64
GROSS REVENUE	35,800.77
Less: Production Cost	24,360.85
NET INCOME	11,439.92

Using current practices, robusta coffee farmers in Sultan Kudarat area earning Php 11,439.92 per year for farming 1 hectare with 1,192 coffee trees. Based on PSA 2018 data for poverty, the net income falls below the Poverty Threshold for families set at Php 11,554.90 but exceeds the subsistence threshold by Php 3,375.92. Under COVID-19 pandemic contexts, however, these poverty and subsistence threshold values may have increased.

Table 20 Poverty and Subsistence Thresholds for Sultan Kudarat (PSA 2018)

Threshold	Threshold Value	Poverty Incidence among Families (%)
Poverty	11,554.90	32.43
Subsistence	8,064	17.7

If the following the RSBSA average and median of 1.8 Has and 2.0 Has, respectively, for coffee farmers in Sultan Kudarat, it can be said that most coffee farmers in Sultan Kudarat exceed the poverty threshold with net incomes ranging from estimated Php 11,439.92 to Php 22,879.84.

Table 21 Trends Analysis assumptions

Year	Robusta Kg/Tree	Average Prices
1	0.42	68.89
2	0.38	65.45
3	0.34	62.01
4	0.31	58.57
5	0.27	55.13

Note: robusta yield per tree is generated from trends analysis for years 2015-2019; average prices generated from trends analysis for years 2016-2020.

Table 22 Projected Cashflows, 5 years

Year	production cost	Yield/Ha	Projected Prices/kg	Gross Revenue	Net Income (financial discount rate 5%)
1	24,360.85	500.44	68.89	34,474.19	10,113.34
2	23,520.30	455.03	65.45	29,781.62	5,963.16
3	21,007.30	409.62	62.01	25,401.29	3,985.48
4	20,381.50	364.21	58.57	21,333.22	822.13
5	19,547.10	318.81	55.13	17,577.39	(1,620.49)

The combination of decreasing yields per coffee tree and the farmgate prices as shown by trends analysis suggests that at year 5 (presumably 2026) the coffee farms will begin to see negative incomes assuming the status quo. This decrease in income is softened by the fact that labour cost also decreases with the decrease in yields.

Coffee Cashflow Estimates (GAP)

The following projections are based on the requirements of the Good Agricultural Practices for Coffee in the Philippines. Note that not all costs on materials and labor have been captured in doing these projections. Table 18 shows the summary of information across the 5 year projection (for annual cashflows, see Appendix A)

Table 23 Projected Cashflows (GAP-compliant), 5 years

Year	production cost	Yield/Ha	Projected Prices/kg	Gross Revenue	Net Income (financial discount rate 5%)
1	49,417.43	500.64	68.89	34,488.13	(14,929.30)
2	52,397.43	619.84	65.45	40,568.41	(11,829.03)
3	58,655.43	872.69	62.01	54,116.74	(4,538.70)
4	66,701.43	1,192.00	58.57	69,819.29	3,117.85
5	66,701.43	1,192.00	55.13	65,720.85	(980.58)

Table 18 shows that when practices as stipulated by GAP for Coffee is applied to the Sultan Kudarat farms, the financial outlook of the farms become worse off than maintaining status quo (Table 17). The sudden increase in production cost is significantly higher compared to status quo especially with materials like organic fertilizer taking 36% of the entire production cost. This sudden increase in production cost defeats gains from increases in yield per hectare.

Informants from the regional office of the Department of Trade and Industry have mentioned, however, that new coffee players have started to purchase at prices significantly above the prevailing prices (Grade 1 coffee at Php 85/kg). When used, and assuming that the prices are kept constant across five years, the first three years will require external financing in order to carry the burden of the increased production cost, but breakeven is achieved between the third and fourth year.

Table 24 Projected Cashflows (GAP-compliant), Grade 1, 5 years

Year	production cost	Yield/Ha	Projected Prices/kg	Gross Revenue	Net Income
1	49,417.43	500.64	85.00	42,554.40	(6,863.03)
2	52,397.43	619.84	85.00	52,686.40	275.21
3	58,655.43	872.69	85.00	74,178.52	14,079.90
4	66,701.43	1,192.00	85.00	101,320.00	29,904.82
5	66,701.43	1,192.00	85.00	101,320.00	28,480.78

The issue with coffee players with higher-than-prevailing-market buying prices is that they tend to require small volumes and can engage with only a few farmers. In comparison, Nestle, which moves around prevailing market prices, has an “unlimited” volume requirement relative to the volume production capacities of the entire province.

Shifting from current practices to GAP-coffee standards may need to be done gradually so as not to create a surge in production cost per hectare. While the yield increases may not be as big as projected by the 2017-2022 Coffee roadmap, it is hoped that such increases may offset both the decreasing buying prices and the increasing production cost. With sorting being performed, higher grade coffee can be sold to smaller coffee enterprises with the aim of leveraging higher buying prices for a portion of the entire harvest. All other harvests will then be sold to coffee enterprises that need larger volumes but peg their buying prices at the prevailing market prices.

10.5.4 APPENDIX A: Production Cost year on year – GAP compliant

Year 1

	Unit	requirement grams per tree	per ha	50kg- bags per ha	Cost/unit	
Cost						
Fertilizers						
Fertilizer - DAP (18-46-0)	g	92	109.66	2.19	1050	2302.944
Fertilizer - urea (46-0-0)	g	119	141.85	2.84	1000	2836.96
Fertilizer - muriate of potash (0-0-60)	g	119	141.85	2.84	1800	5106.528
Organic	g	3000	3576.00	71.52	250	17880
Foliar	L		0.5		300	150
Insecticide	L		1		800	800
Herbicide	L		2		312.5	625
Empty Sacks	pc	20			10	200
Jute Sacks	pc	10			50	500
Polyhermetic Bags (60kg)	pc					30,401.43
TOTAL MATERIALS						
Labor		person- days	frequency		cost/person- day	
Slashing		2	2		250	1000
Herbicide Spraying		1	2		250	500
Pruning (Desuckering)		1	2		250	500

Hauling of Fertilizer on site		1	3		250	750
Fertilizer Application		1	3		250	750
Pest & Disease Control						
Fresh Cherries yield	0.84					
					cost/unit	
Harvesting (cherries/kg * rate/kg)	cherries (kg)	0.84	1001.28		5	5006.4
Drying			12		250	3000
Dehulling	dried cherries	0.63	750.96		3	2252.88
Sorting	dried cherries	0.63	750.96		5	3754.8
Trucking	GCBs	0.42	500.64		3	1501.92
TOTAL LABOR						19,016.00
TOTAL PRODUCTION COST						49,417.43

Year 2

	Unit	requirement grams per tree	per ha	50kg- bags per ha	Cost/unit	
Cost						
Fertilizers						
Fertilizer - DAP (18-46-0)	g	92	109.66	2.19	1050	2302.944
Fertilizer - urea (46-0-0)	g	119	141.85	2.84	1000	2836.96
Fertilizer - muriate of potash (0-0-60)	g	119	141.85	2.84	1800	5106.528
Organic	g	3000	3576.00	71.52	250	17880
Foliar	L		0.5		300	150
Insecticide	L		1		800	800
Herbicide	L		2		312.5	625
Empty Sacks	pc	20			10	200
Jute Sacks	pc	10			50	500
Polyhermetic Bags (60kg)	pc					30,401.43
TOTAL MATERIALS						
Labor		person- days	frequency		cost/person- day	
Slashing		2	2		250	1000
Herbicide Spraying		1	2		250	500
Pruning (Desuckering)		1	2		250	500
Hauling of Fertilizer on site		1	3		250	750
Fertilizer Application		1	3		250	750
Pest & Disease Control						
Fresh Cherries yield	1.04					
					cost/unit	

Harvesting (cherries/kg * rate/kg)	cherries (kg)	1.04	1239.68		5	6198.4
Drying			12		250	3000
Dehulling	dried cherries	0.78	929.76		3	2789.28
Sorting	dried cherries	0.78	929.76		5	4648.8
Trucking	GCBs	0.52	619.84		3	1859.52
TOTAL LABOR						21,996.00
TOTAL PRODUCTION COST						52,397.43

Year 3

	Unit	requirement grams per tree	per ha	50kg- bags per ha	Cost/unit	
Cost						
Fertilizers						
Fertilizer - DAP (18-46-0)	g	92	109.66	2.19	1050	2302.944
Fertilizer - urea (46-0-0)	g	119	141.85	2.84	1000	2836.96
Fertilizer - muriate of potash (0-0-60)	g	119	141.85	2.84	1800	5106.528
Organic	g	3000	3576.00	71.52	250	17880
Foliar	L		0.5		300	150
Insecticide	L		1		800	800
Herbicide	L		2		312.5	625
Empty Sacks	pc	20			10	200
Jute Sacks	pc	10			50	500
Polyhermetic Bags (60kg)	pc					30,401.43
TOTAL MATERIALS						
Labor		person- days	frequency		cost/person- day	
Slashing		2	2		250	1000
Herbicide Spraying		1	2		250	500
Pruning (Desuckering)		1	2		250	500
Hauling of Fertilizer on site		1	3		250	750
Fertilizer Application		1	3		250	750
Pest & Disease Control						
Fresh Cherries yield	1.46					
					cost/unit	

Harvesting (cherries/kg * rate/kg)	cherries (kg)	1.46	1740.32		5	8701.6
Drying			12		250	3000
Dehulling	dried cherries	1.095	1305.24		3	3915.72
Sorting	dried cherries	1.095	1305.24		5	6526.2
Trucking	GCBs	0.73	870.16		3	2610.48
TOTAL LABOR						28,254.00
TOTAL PRODUCTION COST						58,655.43

Year 4

	Year 4					
	Unit	requirement grams per tree	per ha	50kg- bags per ha	Cost/unit	
Cost						
Fertilizers						
Fertilizer - DAP (18-46-0)	g	92	109.66	2.19	1050	2302.944
Fertilizer - urea (46-0-0)	g	119	141.85	2.84	1000	2836.96
Fertilizer - muriate of potash (0-0-60)	g	119	141.85	2.84	1800	5106.528
Organic	g	3000	3576.00	71.52	250	17880
Foliar	L		0.5		300	150
Insecticide	L		1		800	800
Herbicide	L		2		312.5	625
Empty Sacks	pc	20			10	200
Jute Sacks	pc	10			50	500
Polyhermetic Bags (60kg)	pc					30,401.43
TOTAL MATERIALS						
Labor		person- days	frequency		cost/person- day	
Slashing		2	2		250	1000
Herbicide Spraying		1	2		250	500
Pruning (Desuckering)		1	2		250	500
Hauling of Fertilizer on site		1	3		250	750
Fertilizer Application		1	3		250	750
Pest & Disease Control						
Fresh Cherries yield	2					

					cost/unit	
Harvesting (cherries/kg * rate/kg)	cherries (kg)	2	2384		5	11920
Drying			12		250	3000
Dehulling	dried cherries	1.5	1788		3	5364
Sorting	dried cherries	1.5	1788		5	8940
Trucking	GCBs	1	1192		3	3576
TOTAL LABOR						36,300.00
TOTAL PRODUCTION COST						66,701.43

	Year 5					
	Unit	requirement grams per tree	per ha	50kg- bags per ha	Cost/unit	
Cost						
Fertilizers						
Fertilizer - DAP (18-46-0)	g	92	109.66	2.19	1050	2302.944
Fertilizer - urea (46-0-0)	g	119	141.85	2.84	1000	2836.96
Fertilizer - muriate of potash (0-0-60)	g	119	141.85	2.84	1800	5106.528
Organic	g	3000	3576.00	71.52	250	17880
Foliar	L		0.5		300	150
Insecticide	L		1		800	800
Herbicide	L		2		312.5	625
Empty Sacks	pc	20			10	200
Jute Sacks	pc	10			50	500
Polyhermetic Bags (60kg)	pc					30,401.43
TOTAL MATERIALS						

Labor		person-days	frequency		cost/person-day	
Slashing		2	2		250	1000
Herbicide Spraying		1	2		250	500
Pruning (Desuckering)		1	2		250	500
Hauling of Fertilizer on site		1	3		250	750
Fertilizer Application		1	3		250	750
Pest & Disease Control						
Fresh Cherries yield	2					
					cost/unit	
Harvesting (cherries/kg * rate/kg)	cherries (kg)	2	2384		5	11920
Drying			12		250	3000
Dehulling	dried cherries	1.5	1788		3	5364
Sorting	dried cherries	1.5	1788		5	8940
Trucking	GCBs	1	1192		3	3576
TOTAL LABOR						36,300.00
TOTAL PRODUCTION COST						66,701.43