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ENHANCING SUSTAINABLE INCOME IN THE PHILIPPINES (ESIP PROJECT)

Transition from emergency response to systemic change

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Enhancing Sustainable Income in the Philippines (ESIP)

A Case Study of the Calamansi Subsector



A market system development approach implemented to improve livelihoods of farmers

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List of Acronyms

ASU	Agricultural Start-up
BACO	Balangkayan Agricultural Cooperative
DOST	Department of Science and Technology
DTI	Department of Trade and Industry
ESIP	Enhancing Sustainable Income in the Philippines
FDA	Food and Drug Administration
IBF	Island's Best Foods
LSP	Local Service Provider
MFI	Microfinance Institution
MSD	Market System Development
PCIC	Philippine Crop Insurance Corporation

1. Background

Calamansi (Philippine lemon), a green citrus fruit also known as calamondin, is one of the principal crops cultivated at Homonhon Island in Eastern Samar. Fresh calamansi has many end uses, which include serving as an accompaniment to meals, being processed into juice or jelly, and serving as ingredients in cosmetic products. On the island, it serves as one of the most significant agricultural sources of income for more than 350 farming households to ensure and maintain their livelihood.

During the subsector assessment conducted by the project in 2017, a total of 208 farming households were identified as being engaged in calamansi production within 5 barangays¹ (Bitagan, Habag, Casuguran, Pagbabangnan and Kulasi) of Homonhon Island. Calamansi production extends to an area of 130 ha within these 5 barangays, leading to an annual harvest and sales of 227 MT of fresh fruit. Thus, the average value for annual yield and sales per cultivated hectare amounted to 1.75 MT. Because of fruit drops mainly caused by poor agricultural practices, a yearly fruit wastage of about 100 MT was observed. In addition, poor weather conditions affected the production as well as transportation from the island to the mainland negatively affected the quality of the fruits. In the assessment area, 41% of the farmers' household income could be attributed to calamansi production. The gross market value of sold fresh calamansi was PHP 10.1 million per annum, whereby 55% to 60% went to the producers, 30% to consolidators and 10% to 15% to boat operators.

One of the biggest calamansi processors in Eastern Samar is *Island's Best Food* (IBF), an agricultural start-up processing fresh calamansi into juice, concentrate, and jelly. During the subsector assessment, 18% of fresh calamansi from Homonhon farmers was found to be bought by IBF, while the remaining was sold at local markets.

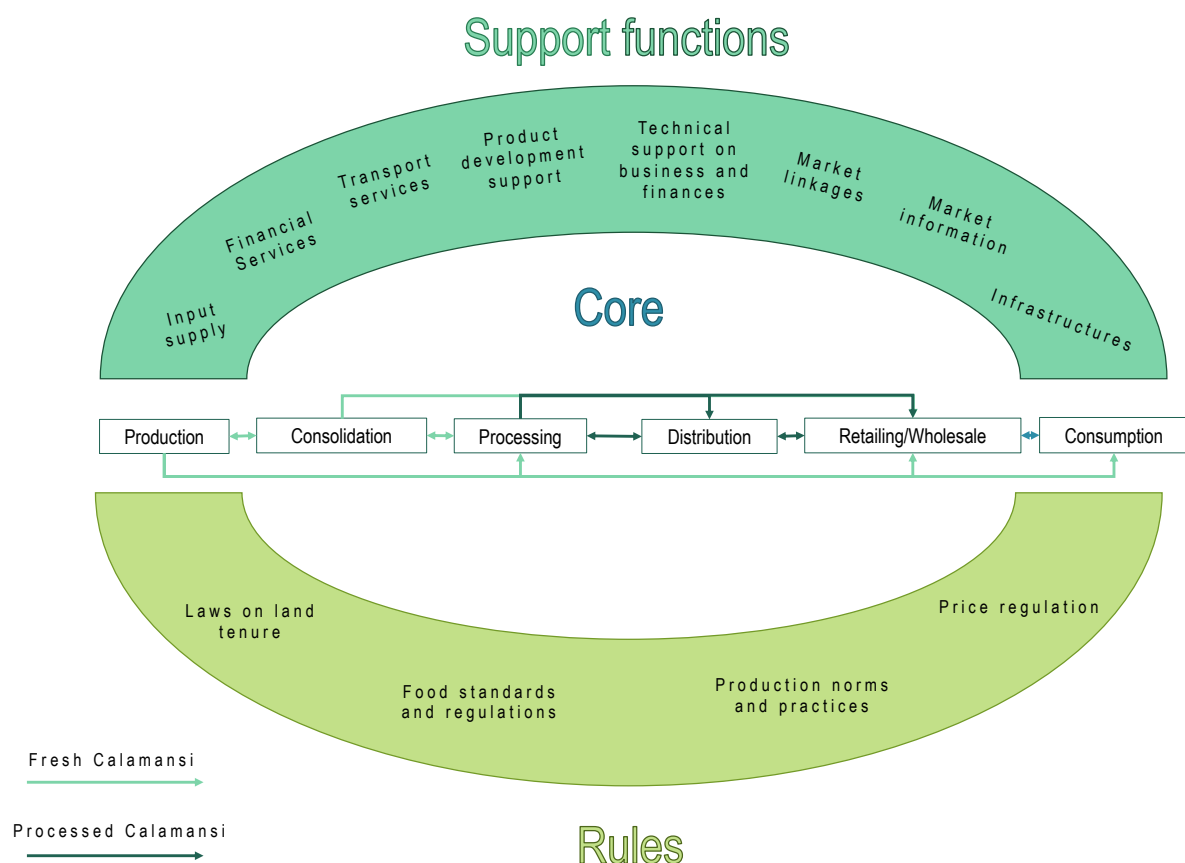
Calamansi was selected as one of the priority subsectors by the ESIP Project because of its importance in the farmers' livelihood in Homonhon and its growth potential should market barriers get eliminated.

2. Strategy

The ESIP Project applies a market system development (MSD) approach with the overall objective of increasing the income of 12,000 poor farmers in Eastern Samar and, thus, improving their resilience towards natural disasters such as typhoons. The intervention logic indicates that the farmers' income and resilience are enhanced if a) their production and productivity as well as b) their sales are increased through c) the establishment of and better access to support mechanisms. This can be achieved by influencing relevant market actors and consolidating a greater market share.

An in-depth market system analysis was conducted, to identify core transactions, support functions and rules/regulations of the calamansi market, as shown below.

¹ Barangay: A Filipino term referring to a community that consists of a number of households, wherein a number of barangays form a municipality



Based on the market analysis, the supporting functions were divided into three categories.

The first category is underperforming functions, which revealed two major shortcomings: (a) that processing capacities are at a fundamental level and (b) that financial services are inadequately designed and difficult to access. The second category is mismatching functions, which revealed that the training provided by the relevant governmental departments do not correspond to the needs of the farmers and processors. Lastly, the third category, missing functions, show two missing functions: (a) lack of production, technical inputs and support, and (b) absence of business and financial related knowledge.

Bearing in mind the findings mentioned above, the Project developed its strategy to improve the market performance and demand according to the farmers' needs to increase their livelihood resilience.

First, ESIP brought market actors engaged in the calamansi value chain together and facilitated discussions to create a shared understanding of how all involved actors can benefit from a well-performing market system. Afterward, the Project took initiatives to develop the capacities of these key market actors. Improved market mechanisms and common understanding should initiate better cooperation between producers, consolidators and processors through the development of well-tailored business models. The Project facilitated capacities building through the delivery of training, business consultancies and market linkages, and the provision of technical inputs.

A comprehensive mapping of market actors was built and served as a base to establish well-tailored business linkages amongst the different market actors. This resulted in crowding-in, a process in which non-targeted actors joined or replicated the Project's interventions. Facilitation of dialogue between private, public and civil society organisations played an essential role in creating access to relevant support mechanisms for farmers.

Positive externalities and success stories were used to attract investors and economic actors; through this, new collaboration with external actors was formed. As an example, the Project engaged co-facilitators like Business Fair Trade Consulting (bizFTC; a private consulting firm), Sentro ha Pagpauswag ha Panginabuhi, Inc. (SPPI; a non-governmental organisation), and individual consultants, which have been providing business and financial training to the farmers, agricultural start-ups, service providers' association and to microfinance institutions.

Some government agencies like the Department of Trade and Industry (DTI) and Department of Science and Technology (DOST) were also involved as co-facilitators of the Project, in terms of supporting market improvement through offering training on product development, facilitating exposure of agricultural start-ups in trade fairs and introducing them to new stakeholders and institutional buyers.

3. Intervention

The ESIP Project provided facilitative support by tackling the root causes of market shortcomings to enhance the sustainable income of the beneficiaries. The Project put its effort into overcoming existing barriers and challenges of the calamansi subsector. The barriers were weak businesses and technical knowledge of the actors, inappropriate farming practices and restricted market access, on which the project built its interventions.

First, local service providers (LSPs) were identified, and their capacities were developed. This was achieved through organising technical as well as business and financial training and exchange visits for the LSPs. With improved capacities, the LSPs were able to provide technical support, consolidation services and access to inputs to the calamansi farmers in Homonhon Island. This, in turn, has led to a general improvement of farmers' skills and knowledge in calamansi production, and better access to the market through the creation of strong market linkages.

Afterward, the Project undertook interventions to improve the capacities of IBF. The interventions supported and enabled IBF to participate in different trade fairs, apply good manufacturing practices, improve the quality of processed products as well as obtain an FDA certification, improve their financial management system, develop a business plan and reach out to institutional buyers and access industrial loans. For some interventions like a product, business plan and financial system development, etc., the Project engaged external consultants while others, e.g., participation in trade fairs, help to obtain FDA certification, access loans, etc., were facilitated by the project staff.

Furthermore, the subsector analysis helped to recognise that many farmers did not possess sufficient knowledge of the use of fertiliser. They were aware neither of the nutrient composition nor of the application doze needed for their cultivated areas. At the same time, it was observed that no suitable fertiliser company could supply to Homonhon Island. For this, the Project established a partnership with Yara Fertilizer—a Norwegian international fertiliser company—to address this issue. On their initiative, Yara Fertilizer deployed experts in Eastern Samar to share best practices, guidelines and instruction, and to conduct training modules with the farmers in Homonhon Island. In addition, because of this collaboration, farmers were able to access different fertiliser samples allowing them to choose the best option for their farms.

As part of its interventions, the Project also engaged the Philippine Crop Insurance Corporation (PCIC) and microfinance institutions (e.g., BACO) to design financial services

tailored to the needs of farmers. Major financial services included financial education, insurance services, enrolment with savings groups and production credit. PCIC identified four calamansi farmers from Homonhon Island and provided training to develop them as local underwriters for crop insurance applications. While visiting Homonhon Island, the PCIC staff provided an orientation to the calamansi farmers about insurance processes and offered guidance on insurance applications. In addition, the microfinance institution BACO provided direction to the calamansi farmers about their financial products and services, and supported the farmers in becoming members, accumulating savings and fetching production loans when possible.

The Project's intervention comprised a specific set of activities. The following are examples of activities implemented over the last two-year period, in the framework of the calamansi subsector:

- **Field-based training:** Farmers were trained by the LSPs regularly to increase their knowledge and skills in calamansi production and marketing. They also received continuous support during the following months to monitor the effective implementation of the taught techniques. The challenges in the calamansi subsector, especially those related to lack of farmers' knowledge, were tackled by organising these training and learning courses.
- **Exchange visit:** In May 2018, the ESIP Project organised an exchange visit to Oriental Mindoro. A dozen selected farmers, LSPs and agricultural start-up (ASU) representatives were invited to visit good performing farms, nurseries and processing centres. The most significant result achieved through the exchange visit was that the participants increased knowledge on how to plant, cultivate and process calamansi. The Project assisted the participants in their dissemination of this knowledge in their areas. Organising this visit significantly contributed to adopting improved techniques and technologies to make calamansi production and processing more profitable.
- **Participation in trade fairs:** The Project supported the participation of ASUs (IBF) to regional, national and international (food expositions) trade fairs. In these events, IBF demonstrated its processed products to attract national and international institutional buyers.
- **Introduction of agricultural tools:** The Project introduced pruning shears for better maintenance of calamansi trees. The pruning shears were used as training material to prove the effectiveness of pruning, which was taught as a technique during farmers' training. Furthermore, the Project introduced customised bamboo baskets for a more efficient consolidation and transportation of fresh calamansi. The Project paid to demonstrate the benefits of the tools. After seeing the benefits, the farmers and LSPs were expected to purchase the tools from the local market.
- **Harampang² on financial services:** Enabling access to financial services is considered to be a crucial part of ESIP interventions. To assess the financial needs of farmers, LSPs and ASUs, several meetings and workshops were organised. In the form of exchange/dialogue platforms, these meetings and workshops allowed the Project to assess the essential needs of the farmers such as financial literacy, insurance services, enrolment in savings groups and production loans. In addition, the Project facilitated IBF in acquiring an industrial loan from a national foundation to improve their equipment, processing, packaging and labelling facilities.

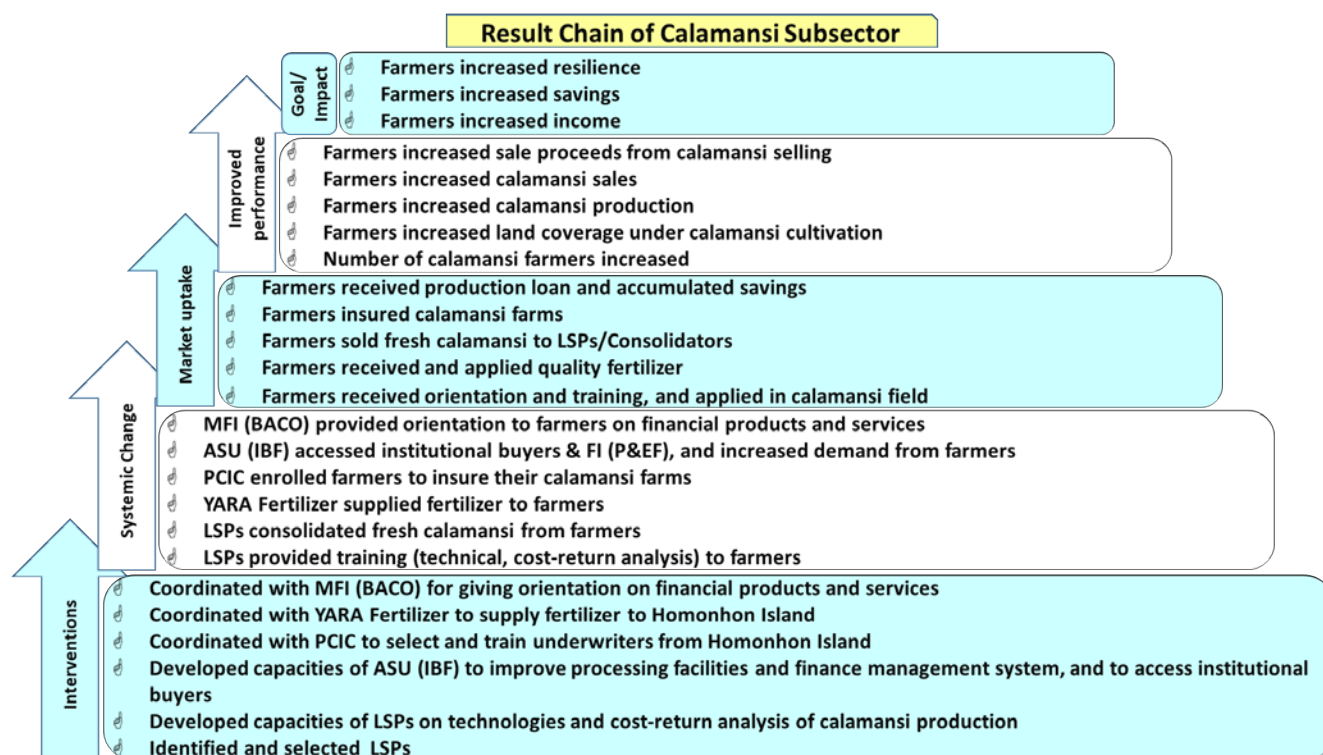
² *Harampang is a Waray (local language of Samar and part of Leyte) word that means 'friendly talk' or 'casual meeting'.*

The intervention list is not meant to be exhaustive; it is given to provide an overview of the Project's actions. As a general reference, the Results Chain for selected interventions in the calamansi subsector is given in the Annex section.

4. Impact and Changes

The ESIP Project started working in the calamansi subsector in 2017. In the last two years of implementation, major positive changes have been visible so far. Mainly referring to the impact logic, this section highlights the principal results achieved at different levels of the Result Chain of the calamansi subsector such as **interventions**, **activities**, **systemic changes**, **market uptake** and **improved performance**. The results at the level of **final goal** will only be available at the closure of the Project, i.e., in December 2019.

The overall impact logic framework of the calamansi subsector is given as follows.



Positive results could be observed at the **systemic change** level, where the market actors changed their practices and behaviours. For example, 12 LSPs consolidated fresh calamansi from the farmers with the use of the Project's introduced bamboo baskets for more efficient consolidation and transportation. After seeing the benefit, the LSPs purchased more than 30 improved bamboo baskets from the local basket market. As a result of the increased supply capacities, IBF established supply agreements with five institutional buyers. The year-end monitoring for 2018 showed that IBF increased its production of calamansi juice and concentrate, which increased sales by 40%. In addition, IBF processed and submitted an application to Peace & Equity Foundation, Small Business Corporation and DOST, and secured an industrial loan of PHP 2.8 million to expand its processing facilities. Additionally,

IBF has obtained the 'License to operate' from the FDA, while efforts to obtain the 'Certificate of Product Registration' are still ongoing. This last Certificate is particularly important, as it will allow IBF to export its products and access foreign markets.

One of the most significant results at the system level was that the LSPs were actively linking the farmers to a crop insurance corporation (PCIC), to inputs suppliers (e.g., YARA Fertilizer) and microfinance institutions (e.g., BACO), to introduce them to a broad range of services.

The **market uptake** represents a sort of transient stage that focuses on the inputs and services received by the farmers from the industry players. A total of 245 calamansi farmers (180 female and 65 male) received technical training from the LSPs and applied the taught techniques and technologies in their calamansi production. The assessment shows that as a result of technical training, the farmers adopted some improved production techniques such as (a) proper planting distance, (b) pruning, and (c) application of proper dose and improved fertiliser. A significant change at the farmers' practice level was observed as they used the introduced pruning shears and recommended dose of fertiliser for better management of calamansi trees. After seeing the benefit, the neighbouring farmers purchased pruning shears from the Guiuan market and fertiliser from the local supplier. In addition, 146 farmers (121 female and 25 male) received business training and applied the knowledge and skills in the cost-return analysis of their calamansi farms.

Enabling calamansi farmers to autonomously cultivate their land and granting them access to financial services, as well as quality inputs and advanced equipment, show how ESIP interventions contributed to the overall goal of income enhancement and resilience improvement.

Results achieved at the **improved performance** level include the changes in production and sales of calamansi at farmers' level. Data showed that the number of calamansi farmers increased by 43% in the last two years. During that period, land under calamansi production was increased by 57% in terms of hectares. As a result of the increased number of farmers and land coverage, as well as the application of quality inputs and improved technologies, the production and sale of calamansi were increased by 25%. Finally, the revenue generated from selling fresh calamansi was increased by 11%.

A recent assessment revealed that the contribution of calamansi production in farmers' household income was increased from 41% to 53% (29%).

5. Conclusion

Although it would be premature at this stage to draw conclusions about a Project that is yet to be completed, some indications can certainly be outlined.

The first key lesson is to invest in *local* service providers. This has represented the turning point of ESIP intervention on the field. By combining a solid knowledge of both the subsector and the local environment, and with a pronounced business-oriented attitude, LSPs led to significant improvements and results. The simple identification of committed LSPs, however, is not enough. Indeed, the identification of real industry players has to be accompanied by regular capacity building activities.

The next lesson relates to multi-platform exchange facilitation. The Project intervention highlights the importance of investing in exposure visits, in dialogue platforms and in all the activities leading to increased cooperation with local, regional, national and international

actors. Fostering cooperation between regional authorities and regional, national and international market players proves to be a successful strategy to develop a network and spread its impact.

In close connection with the last point, the time has come to develop a business strategy. After the first year, in which the efforts were mainly put on the capacity building of agricultural start-up, it is now of foremost importance to grant it stable access to the market and to find committed investors. In this sense, several activities are being implemented. Among them, a National Harambang took place in Manila in November 2018 and another in Cebu in September 2019, with the aim of increasing market access for the agricultural start-up and developing business linkages with medium and large enterprises.

The final impact data on the calamansi subsector will be available at the end of the Project. However, the general trend suggests that the expected outcomes will most likely be met. For a precise quantification of the changes, however, the reader is referred to the final evaluation report.

Enhancing Sustainable Income in the Philippines (ESIP)

A Case Study of the Banana Subsector



A market system development approach implemented to improve livelihoods of farmers

Alliance 2015
towards the eradication of poverty

SWISS
SOLIDARITY 

 **HELVETAS**



Guiuan, October 2019

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List of Acronyms

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DA	Department of Agriculture
DOST	Department of Science and Technology
DTI	Department of Trade and Industry
ESIP	Enhancing Sustainable Income in the Philippines
FDA	Food and Drug Administration
FGD	Focal Group Discussion
GAP	Good Agricultural Practices
IBF	Island's Best Foods
LSP	Local Service Provider
MFI	Microfinance Institution
MSD	Market System Development
PCIC	Philippine Crop Insurance Corporation
OMAS	Office of Municipal Agricultural Services

1. Background

Banana, a widely cultivated tropical fruit in the Philippines, is an important source of income for more than 2500 households within the 12 municipalities of Eastern Samar covered by the ESIP Project. According to the banana subsector assessment conducted in 2017, 2800 MT were produced annually within the eight barangays¹, whereby the income generated through sales constituted, on average, around 20% of a households' income. Furthermore, the assessment showed that only 20% of the whole production was sold. The remaining 80% were either directly consumed, used as animal feed or handed out to neighbours/friends/relatives. Another significant finding was that the banana sector experiences a notable growth in processed banana products, in particular, during the assessment year. For example, the demand for banana chips in the local markets increased from 3,000 packs per month in 2016 to more than 10,000 packs per month in 2017.

Banana was considered a suitable subsector for intervention as there is a strong demand for processed bananas, especially in relation to increasing the absorption capacity of existing processors so that more bananas can be sold.

Banana was selected as one of the priority subsectors by ESIP Project because of its importance for the farmers' livelihood and its growth potential if the market barriers are eliminated.

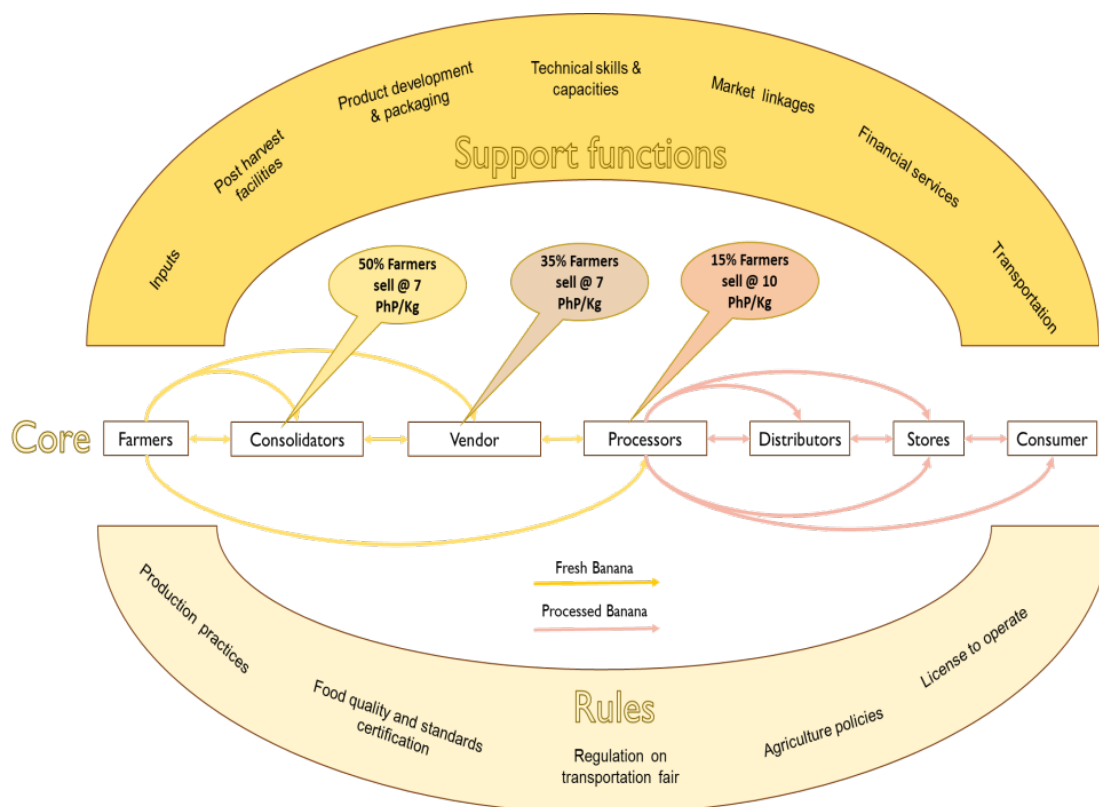
2. Strategy

The ESIP Project applies a market system development (MSD) approach with the overall objective of increasing the income of 12,000 farmers in Eastern Samar and thus, improving their resilience towards natural disasters such as typhoons. The intervention logic indicates that the farmers' income and resilience are enhanced if (a) their production and productivity and (b) their sales are increased through (c) the establishment of and better access to support mechanisms. This can be achieved by influencing relevant market actors and consolidating a greater market share.

The ESIP Project plays a facilitative role in the improvement of the banana market system.

In line with the MSD approach, the Project mapped the dynamics of the banana value chain to identify bottlenecks and improve the existing system where even the poorest can benefit from the changes, as shown below:

¹ Barangay: A Filipino term referring to a community that consists of a number of households, wherein a number of barangays form a municipality



Based on the market analysis, the supporting functions were divided into three categories:

- Underperforming: This category included training programs delivered to the farmers by the Office of Municipal Agricultural Services (OMAS), which appeared to be inadequate. In addition, the regulation system was assessed as insufficient, as the terms for giving the poor an opportunity to participate in the existing market system for banana are more disabling than enabling.
- Mismatching: This category referred to the financial services provided by financial institutions, which did not match the farmers' needs and capacities.
- Missing: This category included production technologies required by the farmers.

Keeping in mind the abovementioned findings, the ESIP Project developed its strategy to improve the market performance and demand according to the farmers' needs to increase their livelihood resilience. The identification of the most important interconnected market systems and the prioritisation of the functions were conducted to (a) provide leverage to address the constraints and reach large scale and durable impacts and (b) stimulate sustainable changes in other functions.

To achieve these goals, the best collaborators were selected for this Project. In the banana subsector framework, the following key partners were identified:

- **Local Service Providers (LSP²)**: During the assessment, it was observed that banana farmers lacked agricultural knowledge, especially in relation to pest and disease management. Moreover, many farmers, especially those living in remote areas, did not have access to farm inputs. The LSPs were selected to overcome

² LSPs are the industry players who have been involved in the consolidation of fresh banana from the local farmers

these types of challenges. LSPs, in fact, did not only act as consolidators but also provided relevant training programs and inputs to the farmers. They were carefully selected amongst local people with an in-depth understanding of both the banana cultivation and the consolidation business of agricultural commodities. Furthermore, they were driven by the self-interest of earning incentives from consolidation and inputs business in the subsector.

- **Agricultural Start-Up³ (ASU):** ASUs are a critical partner of the Project. As they absorb a relevant part of the banana production and transform it into more valuable products like chips, jam and flour, the Project partnered with them to develop their capacities so that they can meet the demand of higher markets and increase the demand of fresh bananas from the farmers. As identified during the subsector assessment, farmers were not able to sell 80% of their products. Therefore, ASUs were considered to be the key players in increasing the demand for the farmers' products and offering a better retail market.

First, it was fundamental to invest in the **capacity building of LSPs**. As LSPs were the main actors for building farmers' capacities, they received specific training and on-the-job coaching to make them improve their performance and the quality of their services. The trained LSPs took on the crucial role of transferring knowledge and supplying inputs to the farmers. Moreover, LSPs consolidated fresh bananas from the farmers.

Second, it was important to focus on the **capacity building of the ASUs**. As the ASUs were considered to be the main actors in linking farmers with the end-users, they were trained on good manufacturing practices, packaging and labelling, documentary requirements for a licence to operate, product registration and coaching on product development, and standardization to ensure that they meet the requirements of the end market.

Third, **improvement of the access to financial services** constituted an important entry point. As the challenges regarding access to user-friendly financial services or the lack of it were considered a critical success factor for the capacity building of farmers, LSPs and ASUs, a number of initiatives (i.e., financial education) were taken to address this issue.

3. Intervention

ESIP's interventions aim to enhance the sustainable income of banana farmers through its facilitative role. To achieve this goal, it was ensured that all involved stakeholders fully accepted all interventions and that they share and understand the same core values. The stakeholders were brought together to work hand-in-hand, keeping in mind that ASUs and LSPs are responsible for the major part of sustainable change, depending on the business incentives and success they can create to increase the demand for products from the farmers.

The Project comprises a specific set of interventions along with activities and operations. The following are examples of actions taken over the last two years in the banana subsector framework, with the overall aim of enhancing the sustainable income of the beneficiaries. The list is not exhaustive, as it is given uniquely to present the breadth of the spectrum of the intervention.

- **Facilitate the participation of ASUs in trade fairs:** The Project supported the participation of ASUs to regional, national and international food expositions and trade fairs. During trade fairs, the focus was kept on both scoutings for business

³ Triple L, KIKA-GAWA and Pamela's Box

opportunities and developing business linkages with large/institutional buyers. This intervention was carried out to access new and larger markets for the ASUs and their products.

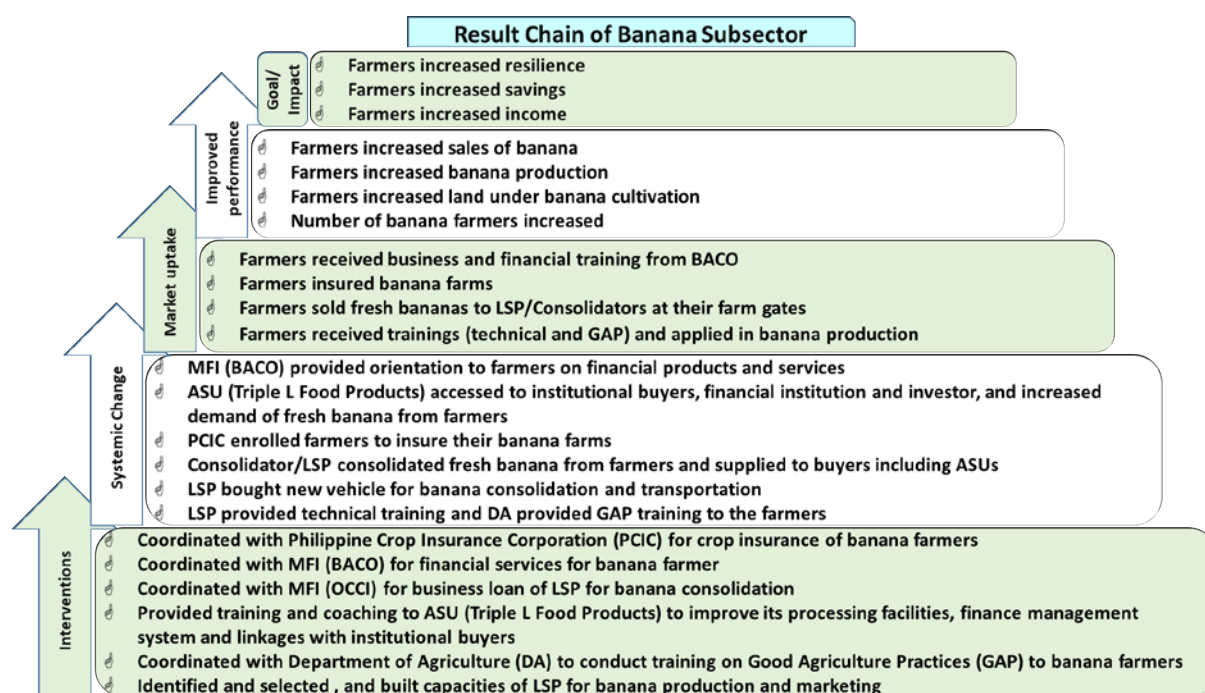
- **Harampang⁴ on financial services:** Financial services were considered to be very important for the farmers, prompting the Project to assess the financial needs of farmers. The major financial services in need that were identified were financial literacy/education, crop insurance services, savings services, production credit and equipment loans. Aiming to address the farmers' needs, the Project organised Harampangs in coordination with the Philippine Crop Insurance Corporation (PCIC) and microfinance institutions (e.g., BACO).

4. Impact and Changes

The Project intervention, which started in 2015, has entered its second phase. While the first phase focused on the capacity building of beneficiaries, the second one focused on market access and the creation of business linkages.

Important changes can be highlighted, mainly referring to the first four levels of the impact logic, in which the positive effects, originated by the Project, are particularly evident. This section highlights the principal results achieved at the **systemic change, market uptake** and **improved performance** levels, while the results achieved at the **intervention** level are described in the previous section, and the results at the **final goal** level will only be available at the closure of the Project, i.e., at the end of December 2019.

The overall impact logic framework of banana subsector is given as follows:



⁴ Harampang is a Waray (local language of Samar and part of Leyte) word that means 'friendly talk' or 'casual meeting'.

Results achieved at the **systemic change** level were that the market actors provided the farmers with knowledge, inputs, services and market linkages. First of all, one LSP provided technical training, and the Department of Agriculture (DA) provided a Good Agricultural Practices (GAP) training to farmers.

A practical example will better demonstrate the impact at the system level: An LSP was struggling with transportation costs while consolidating fresh bananas from the farmers to supply the buyers. She did not possess a vehicle and had to rely on external providers to collect and transport her products, which, of course, incurred her extra costs. As a result of the Project's intervention, she was introduced to an MFI and was able to obtain a loan. Then, she invested the money and purchased a tricycle. From then on, she was able to take care of the product transportation by herself.

Because of increased capacities, one ASU (Triple L Food Products) established supply agreements with two institutional buyers at the national market and made a deal with an export distributor to supply banana chips to international markets. The monitoring data showed that Triple L Food Products increased its production of banana chips and their sales, which increased by 42% after 1.5 years. As a result of increased processing capacity, Triple L Food Products also increased the demand for fresh bananas. The monitoring data also showed that 310 farmers increased their supply of fresh bananas to Triple L Food Products from a total of 27.3 MT to 92.1 MT per year. In addition, Triple L Food Products submitted an application and other required certificates/documents to the Peace & Equity Foundation and Northern Samar Multipurpose Credit Cooperative and secured an industrial loan of PHP 1.8 million to expand its processing facilities. Moreover, they obtained the 'Licence to Operate' from the Food and Drug Administration (FDA), while efforts to obtain the 'Certificate of Product Registration' are still ongoing. This last certificate is particularly important as it will allow the ASU to export its products and access foreign markets.

As a result of collaboration with PCIC, LSPs were recruited and trained as underwriters to enrol the farmers and insured their banana farms with PCIC. In addition, the MFI BACO provided an orientation to the farmers and enrolled them in its savings and credit programmes.

One of the most significant results at the system level was that the LSPs were actively linking the farmers to PCIC, inputs suppliers and microfinance institutions, introducing them to a broad range of crucial services.

The results at the **market uptake** level represent the inputs and services received by the farmers from the industry players. A total of 420 banana farmers (274 female and 146 male) received technical training from the LSPs and applied the newly learned techniques and technologies to their banana production. The assessment shows that as a result of the technical training, the farmers adopted some improved production techniques, such as (a) proper planting distance, (b) farm maintenance and sanitation and (c) the application of proper dose and improved fertilizer. A significant change at the farmers' practice level was observed as they received GAP training for better management of banana farms. In addition, 210 farmers (109 females and 101 males) received business and financial training and applied the knowledge and skills in the cost-return analysis of their banana farms. The farmers' access to improved technologies, quality inputs and tailored financial services contributed to the improvement of their performance.

Results achieved at the **improved performance** level include the changes in production and sales of banana at the farmers' level. Data showed that the number of banana farmers increased by 14% in the last two years. Moreover, the land under banana production

increased by 7% during that period. As a result of increasing the number of farmers and land coverage as well as the application of quality inputs and improved technologies, the production of banana increased by 14%. Accordingly, the sold volume of fresh banana increased by 442%.

Lastly, the total amount of revenue generated from selling fresh bananas increased by 750%. A recent focal group discussion (FGD) showed that during the last two years, the selling price of fresh bananas at the farm gate level to market vendors increased by 28.5% and by 20% to processors. The FGD also revealed that the contribution of banana production in farmers' household income increased by 16% (from 19% to 22%).

5. Conclusion

The first lesson learnt is to focus the intervention on LSPs, which are the main actors of empowerment to improve the overall sustainability of the market system. As already mentioned before, they proved to be a source of considerable expertise in the Project's daily work and successfully provided farmers with all requested services, training programs and inputs. Because of their good reputation and excellent commitment, they achieved personal results that will continue to propel them forward in the future as well as guarantee that the market system will not fall to pieces when the ESIP Project concludes.

The second lesson, to enhance the sustainable income of the beneficiaries, is to make every effort to ensure that they are linked to financial institutions. More importantly, they need to possess the necessary knowledge to fully understand what the different finance services can offer. The Project identified, selected and cooperated with such institutions and, on the same level, made every effort to ensure that farmers were able to understand the proposed services through financial education training.

Lastly, it has become clear that a concrete push to expand ASUs' businesses is beneficial. The ESIP Project invested a lot of effort on this aspect, fostering relationships between ASUs and the relevant public departments (e.g., Department of Trade and Industry, FDA), medium and large enterprises/buyers (e.g., Global Wellness Corporation and Metro Gaisano) and financial institutions (e.g., Peace and Equity Foundation). With awareness of its importance, the Project fully commits to facilitate the relationships between the ASUs and all kinds of interested stakeholders, both at the public and private levels, with the overall aim of entering new markets and expanding its sphere of influence.

Enhancing Sustainable Income in the Philippines (ESIP)

A Case Study of the Cassava Subsector



A market system development approach implemented to improve livelihoods of farmers

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MFI	Microfinance Institution
MSD	Market System Development
PCIC	Philippine Crop Insurance Corporation
FEA	Farmer's Entrepreneur Association
ASAPKAPA Gahoy	Alyansang Samahan Para sa Kaunlaran at Pangkabuhayan ng Barangay

1. Background

Cassava is one of the most important staple crops in Eastern Samar due to its comparative advantages. It requires less workload per unit of output, it has high resistance to pest, disease and drought, making it relatively easy to maintain. It can also achieve high yields in low fertile soils. Therefore, it is considered as one of the most crucial crops when addressing food insecurity.

According to the cassava subsector assessment conducted by the ESIP Project in 2017, a total of 845 farmers were involved in cassava production within the seven surveyed barangays¹ (Gahoy, Mayan, Iberan, Napaaran, Tugop, Pingan and Caisawan) in four different municipalities, yielding an average of 14.30 MT of fresh tubers per hectare. This corresponds to 60% of the national average yield of 25 MT per hectare. The cultivated area was 48 hectares, which led to a total production of 687 MT per year. The sale of cassava contributed to 19% of the average income of households engaging in its production.

Nearly 50% of all produced cassava was sold to local consolidators, who then supplied it to the local markets with an added value. Public market vendors then usually sold fresh tubers to native pastry makers or to end-consumers at an extra cost. Only 30% of the overall production was sold directly to the local market. Another 5% was absorbed by cassava processors (chips makers). The most common value-added and processed products were cassava grates, flour and chips. The remaining 15% were absorbed by the Balangkayan Agricultural Cooperative (BACO), which bought fresh tubers directly from farmers through a weekly pick-up service, and the dried variety from local consolidators. These are then sold to the feed manufacturer, San Miguel Corporation.

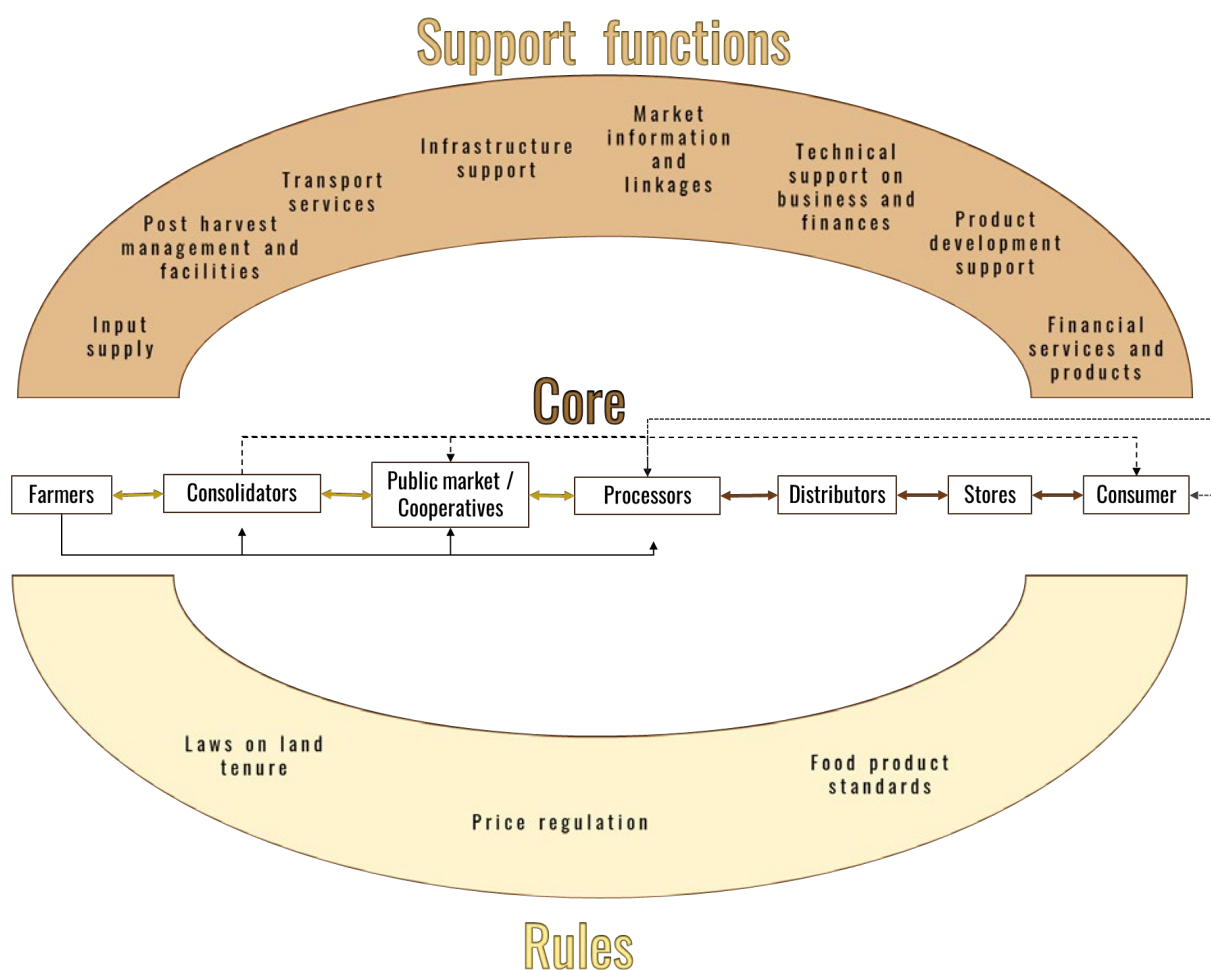
Cassava was chosen as one of the priority subsectors for the ESIP Project because of its richness in carbohydrates, its demographical and traditional popularity as a staple food, its straightforward cultivation and low upkeep costs, and its clearly identifiable shortcomings in terms of market performance as an entry point for intervention.

2. Strategy

The ESIP Project applies a market system development (MSD) approach with the overall objective of increasing the income of 12,000 poor farmers in Eastern Samar and, thus, improving their resilience towards natural disasters such as typhoons. The intervention logic indicates that the farmers' income and resilience are enhanced if a) their production and productivity as well as b) their sales are increased through c) the establishment of and better access to support mechanisms. This can be achieved by influencing relevant market actors and consolidating a greater market share, bearing in mind the basic principles of the approach, i.e., cost-benefit of interventions, inclusivity, sustainability and scalability, as well as independency of beneficiaries from project funds. Sustainability, in this case, means that beneficiaries are able to derive economic benefits beyond the period of ESIP intervention. This presupposes, however, that LSPs, ASUs and MFIs continue to provide their services and that they have sufficient incentives to do so.

An analysis of the market system of the cassava subsector is shown below:

¹ Barangay: A Filipino term referring to a community that consists of a number of households, wherein a number of barangays form a municipality



Within this core market system of cassava, three major shortcomings were identified: 1) farmers' production was very low in comparison with the national average; 2) the quality of processed products was insufficient and did not meet the requirements of larger buyers; and 3) transportation costs for cassava from farm to market were high.

These symptoms were attributed to the following underperforming market functions, as well as pinpointed to a specific actor:

1. The farmers: a) the difficulty to access production capital for purchasing agricultural inputs and hiring labourers; and b) the remoteness of farms that make it difficult to sell products at a competitive price due to high transportation costs on the one hand, and the accessibility of fertilisers and seeds on the other.
2. The processors (ASUs): a) the very limited absorptive capacities of basic production facilities due to inadequate investment capital; and b) their processed products lack FDA certification, which is required to access the bigger markets or buyers.
3. The buyers and consolidators: a) there are weak transport facilities between farms and markets; and b) there is no coordination and cooperation within the production area, which leads to missing collection centres.

Furthermore, the consolidation of cassava is extremely impeded since there are no storage facilities available, which affects all three main market actors. This can be described as a missing market function that especially enhances the abovementioned high transportation costs of cassava.

Lastly, mismatching market functions were identified. First is the inadequate communication of market information, which contributes to an imbalance between the production and demand of unprocessed cassava. This means that farmers produce too much although there is no suitable buyer, or vice versa. Second, the Office of the Municipal Agricultural Services (OMAS) provides training on high-value crops but has no expertise in cassava production.

The ESIP Project tackled the root causes of current market shortcomings to enhance the sustainable income of the beneficiaries. The Project placed its effort on overcoming existing barriers and challenges of the cassava subsector, which hindered farmers from accessing crucial financial services and products as well as market functions. The identified barriers were foremost, weak business and technical knowledge of all actors; remoteness of cassava producing farmers and missing infrastructure; insufficient coordination between stakeholders; and underperforming governmental and financial services.

Within this approach in the framework of cassava interventions, the ESIP Project identified these partners and implemented the following strategies:

- The first was to **make financial products and services available** for farmers and ASUs. Availability meant making these accessible, useful and affordable. The term 'financial service' refers to the service provision, like financial literacy training of financial intermediaries, such as credit institutions, insurance providers or savings banks; while the term 'financial products' refers to savings, production loans, etc. To make those financial services and products available, the existing providers were assessed against the services they offer, how they match the farmers' and ASUs' needs as well as the condition of financial products. Suitable financial service providers were selected, acquainted with the existing problems in the cassava subsector, and linked with the potential service users.
- The second was to make other products and services (e.g., agricultural inputs and training, the consolidation of products, reliable market information, etc.) available to cassava farmers so that they can increase their production and income from agricultural sales. Since these products and services were inexistent or underperforming, the **capacity of the LSPs was developed**. The goal was to establish a mutually beneficial partnership between farmers and LSPs, whereby the latter provided its products and services to the former and vice versa, as part of their business. Existing LSPs were assessed and selected against the same criteria as the financial service providers. Coaching and capacity building events were conducted and financed by the ESIP Project. One of their most important functions was the consolidation of fresh and dried cassava from the farmers to ensure a reliable market outlet for the latter.
- The third and main strategy was to **build up the capacity of ASUs in terms of entrepreneurship**. Coaching on financial management, product development, Current Good Manufacturing Practices (CGMP), and processing facility and product standard compliance with the FDA were provided to ASUs to enable them to reach a broader outlet and increase production, therefore improving the absorption capacity of cassava. The development of business plans was also supported by the Project.

3. Intervention

As a first step, ESIP interventions brought market actors engaging in the cassava value chain together and facilitated discussions to create a common understanding of how all involved actors can benefit from a well-performing market system. The Project facilitated triparty agreements among the farmers, LSPs and the processor for supplying dried cassava from the farmers to the pre-processor (through LSPs or consolidators). The Project facilitated open dialogues and business deals among the parties to draw a detailed and synchronised production and consolidation schedule to supply bulk volume of dried cassava from the farmers to the processor.

As a second step, the Project took initiatives to develop the capacities of these key market actors. Improved capacity and common understanding initiated better cooperation between producers, consolidators and processors and the development of well-tailored business models. The Project facilitated access to market through the delivery of training courses, business consultancies and market linkages, and the provision of technical input.

To overcome these challenges, four main interventions were implemented by the ESIP Project in the last two-year period.

First, the Project **identified a crucial service provider** for the cassava subsector: The 'Balangkayan Agriculture Cooperative' (BACO). The basic idea was to promote **BACO's capacity** in such a way that it served both as a processor and as a buyer/consolidator of cassava. At the same time, they offered farmers training to improve their production and product quality. Furthermore, BACO taught the farmers simple forms of pre-processing (drying of cassava) to further increase the value of their products. The cooperative enabled farmers to access tailored financial services and products, as well as provided fertilisers and seeds of high-value crops to their members.

To support BACO, two membership development assistants were hired to conduct financial and business orientations to farmers, focusing on introducing the financial products that the cooperative has to offer. There were also two loan assistants who helped them with institutional development, strategic performance review/planning, agricultural loan procedures and documentation. Moreover, a handbook for their systemic operation, policies, and procedures was developed. They also received support for bookkeeping and for strengthening communication on the internet with potential buyers.

The Philippine Crop Insurance Corporation (PCIC) was also identified as another crucial service provider. As a governmental organisation, they offer crop insurances—an important financial product that helped farmers increase their resilience after crop damage brought by natural disasters, like heavy storms and drought. The main strategy was to motivate PCIC to train underwriters in the different barangays so that farmers can seek their help to enrol into crop insurance.

For its second major intervention, the ESIP Project facilitated **discussions on financial services** with MFIs (CARD, ASA, CCT, DUNGGANON, BACO, PCIC, OCCCI) **and LSPs**. The aim was to introduce LSPs to available financial products offered by the MFIs, so they could inform the farmers to access financial services, if needed, to increase their production.

As a third major intervention, the ESIP Project **facilitated dialogues between local cassava consolidators (LSPs) and farmers**. The logic behind this intervention is that supply and demand for cassava were there, but transport from the field to the buyer or intermediary was still absent, or at least poorly coordinated. The aim of this dialogue was to organise a smooth transport between farmers, LSPs and processors.

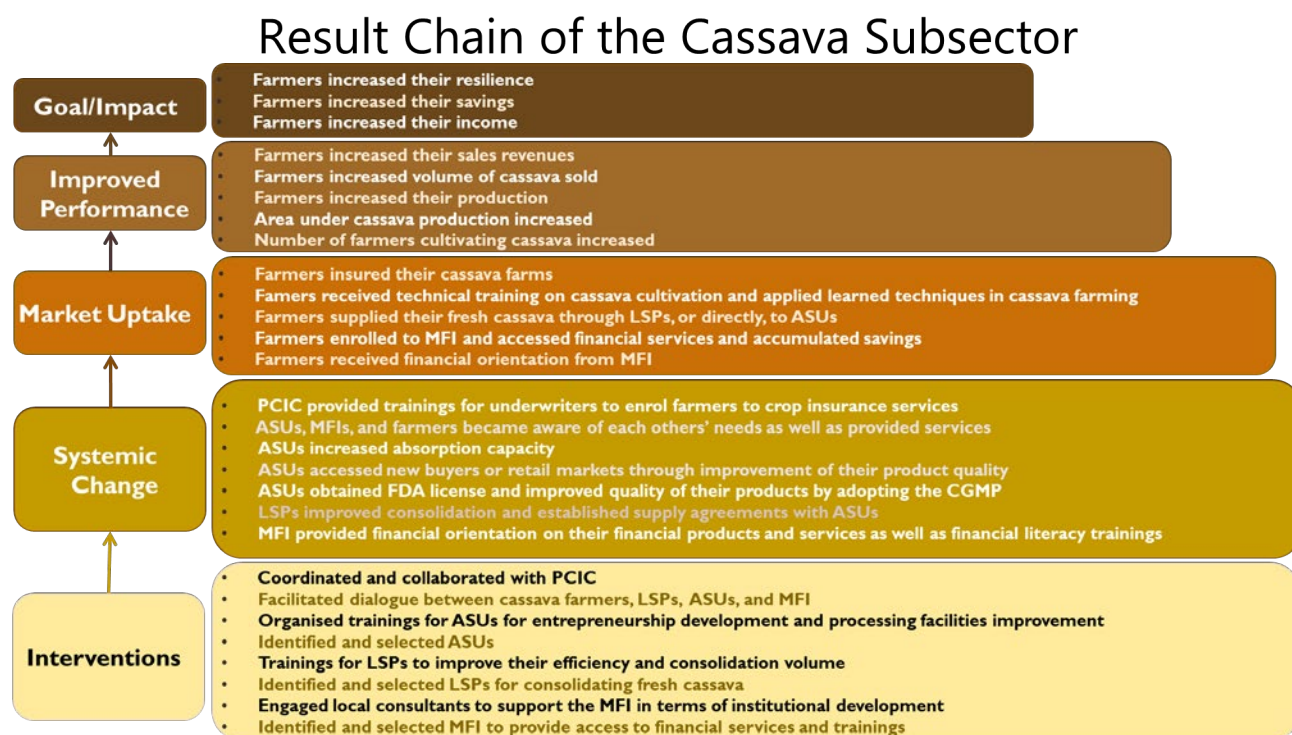
Lastly, the ESIP Project **facilitated the participation of two ASUs**, ASAPKAPA and FEA, to the training on CGMP offered by the Philippine Trade Training Centre. To further develop their capacities, the Project facilitated their participation in training programs on financial management, business planning and enterprise management; and trade fairs. Finally, the ESIP Project engaged consultants in coaching ASAPKAPA on financial management and product development. This capacity development helped ASUs reach new outlets and become more visible through good marketing—therefore creating a bigger demand for fresh cassava in the region.

The Project introduced agricultural tools to the farmers so that they can apply the techniques they learned from the LSPs and BACO. The Project provided drying nets to 80 farmers using the pay-it-forward scheme. This means that eventually, the farmers would be able to give the money back. Simultaneously, the farmers serve as role models for other farmers and demonstrate the advantages of such nets, as well as increase the demand for it. As of June 2019, 19 out of 80 farmers have already been able to pay back for their nets.

4. Impact and Changes

The ESIP Project started working in the cassava subsector in 2017. By referring to the impact logic, this section highlights the principal results achieved at the different levels of the formulated result chain for the cassava subsector, starting with **systemic changes**, which lead to **market uptake** and, finally, to the **improved performance** of the farmers.

The result chain of the cassava subsector is given below:



Positive results were first observed at the level of **systemic change**, where the existing market actors changed their practices and behaviours. The cooperative BACO provided 32 business and financial training sessions as well as 21 technical training sessions on cassava production to a total of 794 farmers. BACO engaged further with six local consolidators

(LSPs) to collect cassava from the local farmers as a part of their supply agreement, and were capacitated through technical, business, and financial training facilitated by the Project.

As a result, these LSPs nearly doubled the amount of cassava bought from farmers and sold to BACO from 18.2 MT in 2017 up to 32.9 MT in 2018. Furthermore, BACO became aware of the farmers' demand for financial products and services, and they offered loans to the farmers in need.

FEA and ASAPKAPA increased their absorption capacity by 40%, which demonstrates that they are on the right track, and that there is an increasing demand for their products.

BACO increased its absorbed quantity by 586% from 14 MT to 96 MT. This significant increase can be accredited to the purchase order of 120 MT from San Miguel Corporation.

One of the most significant results was the increased cooperation between farmers, LSPs, and BACO, as well as the many training farmers received from BACO. This clearly shows how seriously BACO took its role, thanks to the Project's effort and energy invested in empowering local farmers. LSPs also consolidated a higher amount of cassava from the farmers to the local market with an increase of 328%.

The **market uptake** represents a transition stage between systemic change and improved performance, and focuses on the services received by the farmers from market actors. The farmers also received an orientation from BACO about financial services and were made aware of the financial possibilities that BACO can offer. By accessing their financial services, farmers started saving their money in BACO. If back in 2017, no farmer within this area was insured, now, 56 farmers finally applied for insurance with the PCIC for their cassava farms.

Results achieved at the **improved performance** level includes the changes in production and sales of cassava at the farmers' level. Although the number of farmers producing cassava in the four assessed barangays increased only by 2%, overall production increased by 37%, which can most likely be attributed to the techniques learned and applied by the farmers. Meanwhile, the quantity of cassava sold increased by 345%. This boost is due to the increased access to markets, where much more cassava were sold. In terms of revenue, 314 farmers were able to increase their total sales by 612%. The amount of money earned from selling cassava increased more than the quantity sold, because the average price for cassava increased from PHP 5 to PHP 8 per kilogram.

5. Conclusion

As a first good practice within the cassava subsector, the material support for and capacity building of BACO as the processor can be acknowledged. Not only were they able to supply for a big institutional buyer of dried cassava for animal feed, but they also organised the whole consolidation for the latter. By contracting LSPs as their consolidators, they were able to create a consolidation network for the remote areas, which was previously non-existent. Because the remote areas lack storage facilities, they were urged to dry their cassava to increase storage durability. BACO was able to increase its absorption capacity by almost six times, so these remote farmers who did not have access to a buyer are now able to sell their dried cassava to a reliable and stable customer. Although most of the initiative came from BACO, they were identified by the Project as a suitable partner, and were supported in their plans. In summary, it can be said that it was very efficient to invest in highly motivated and skilled market players to make the market work for farmers, in this case, the remote ones. As a recommendation for future MSD projects, one should assess the motivation and skills of market players within a sector, and try to invest in the highly motivated and highly skilled.

In addition, BACO offers financial services in the form of loans, and even a possibility to save. It should be noted that BACO is a cooperative that consists of farmers. This is why many farmers have faith in it and entrust them with their savings. As a good practice to link existing MFIs with farmers, it can be said that it is much easier to establish a partnership between these two when the beneficiaries already trust the MFI. This is also why more farmers were able to accumulate their savings.

Enhancing Sustainable Income in the Philippines (ESIP)

A Case Study of the Pineapple Subsector

A market system development approach implemented to improve livelihoods of farmers

Alliance 2015
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Guiuan, October 2019

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List of Acronyms

ASU	Agricultural Start-up
BACO	Balangkayan Agricultural Cooperative
DAR	Department of Agrarian Reform
DOST	Department of Science and Technology
DTI	Department of Trade and Industry
ESIP	Enhancing Sustainable Income in the Philippines
FDA	Food and Drug Administration
FGD	Focus Group Discussion
LSP	Local Service Provider
MARPPA	Maydolong Agrarian Reform Producers and Processors Association
MFI	Microfinance Institution
MSD	Market System Development
OCCI	Metro Ormoc Credit Cooperative
PCIC	Philippine Crop Insurance Corporation
PhilFIDA	Philippine Fiber Industry Development Authority

1. Background

Pineapple is one of the most important cash crops in the municipality of Maydolong, Eastern Samar. According to the pineapple subsector assessment conducted by the Project in 2017, selling pineapples contributed to 21% of the total household income of cultivating farmers. Around 355 poor farmers within the 4 assessed barangays were engaged in pineapple farming, which covered a production area of 201 ha, and around 365 MT were produced, which exceeded the absorption capacity of the local market by 209 MT. This oversupply was especially visible during the peak season, May–September, when the markets were oversaturated with fresh pineapples. This phenomenon can be traced back to the harvest practices of the farmers. It was observed that most of them harvest their crops simultaneously. This oversupply also led to a drastic decrease in price from PHP 10/kg down to only PHP 4/kg.

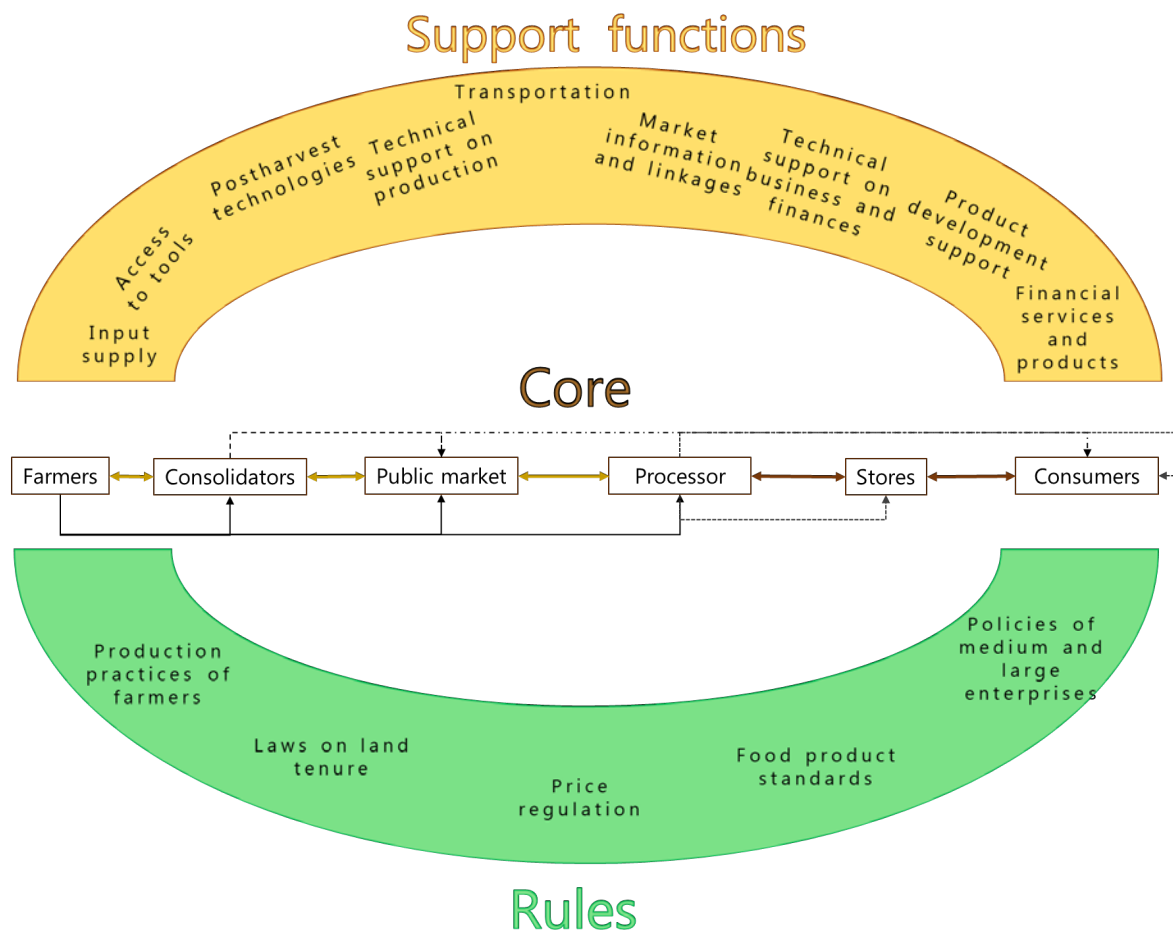
Although the Maydolong Agrarian Reform Producers and Processors Association (MARPPA) acts as an association that processes fresh pineapples to vinegar, it has not been able to absorb the oversupply. Observed reasons were that their production facility is not yet in compliance with the Food and Drug Administration (FDA), the processing chain is not optimised and there is no stable supply of fresh pineapples throughout the whole year, which hinder them from addressing the abovementioned shortcomings. At the moment, only 0.5% of produced pineapples are absorbed by the association for a price of PHP 3/kg during peak season. The processed vinegar is available to local consumers at PHP 116/kg. According to the pineapple subsector assessment, 14% of produced pineapples were sold to consolidators at PHP 3/kg, whereby it was resold at PHP 5/kg to local retailers. Around 30% of the produced volume was sold directly from farmers to the local retailers at PHP 4/kg. The end consumers get their pineapples directly from the local retailers at a price of PHP 10/kg.

Because of its worldwide popularity and foreign demand as an export crop as well as its highly unused potential and clearly identifiable shortcomings in terms of market performance, the pineapple was considered to be a suitable crop and was chosen as one of the main subsectors tackled in the ESIP Project.

2. Strategy

The ESIP Project applies a market system development (MSD) approach with the overall objective of increasing the income of 12,000 poor farmers in Eastern Samar and, thus, improving their resilience towards natural disasters such as typhoons. The intervention logic indicates that the farmers' income and resilience are enhanced if a) their production and productivity as well as b) their sales are increased through c) the establishment of and better access to support mechanisms. This can be achieved by influencing relevant market actors and consolidating a greater market share.

To do so, the market system of the pineapple subsector was analysed as follows.



Within the pineapple subsector, four major shortcomings were identified: 1) there was an overproduction of pineapples during peak seasons and a shortage during lean seasons; 2) processors lacked access to knowledge, finances and the motivation to adopt new practices that build the trust and confidence of new buyers in the quality and safety standard of vinegar; 3) farmers were exposed to high price fluctuation owing to seasonality; and 4) the average pineapple production (1.8 MT/ha) was very low compared to the national average (8.9 MT/ha). This small-scale production was one reason that bigger market players could not be attracted to these areas, which, at the same time, undermined the farmers' incentives to invest in and improve their agricultural practices. In general, farmers were not aware of what a good end market is or what an adequate retail price is.

These symptoms were attributed to the following underperforming market functions and pointed to a specific actor:

1. The farmers a) have limited skills in terms of technical knowledge in pineapple production and b) lack access to financial resources that could expand their opportunities to access inputs, technology and human resources.
2. The processor, MARPPA, a) has very limited absorptive capacities owing to its basic production facilities because it lacks investment capital and a steady supply, and b) lacks an FDA certification for its processed products, which is required to access bigger markets or buyers.
3. The buyers and consolidators have no communication and cooperation between them as well as with farmers.

Lastly, missing market functions were identified. It was observed that there is an absence of input suppliers and institutions that can deliver technical support as well as non-existent knowledge on fertilizer doses and application.

The ESIP Project provided facilitative support by tackling the root causes of those market shortcomings to enhance the sustainable income of the beneficiaries. It exerted efforts in overcoming the existing barriers and challenges of the pineapple subsector, which hindered farmers from properly accessing crucial financial services and products as well as market functions. The foremost identified barriers were the weak business and technical knowledge of all actors, insufficient pineapple production to attract institutional buyers, missing pineapple supply during lean seasons, insufficient coordination among stakeholders and the restricted market access of farmers.

Within this analysis, in the framework of pineapple interventions, the ESIP Project identified the following partners and implemented the following strategies:

- The **first strategy was to make financial products and services available to the farmers**. In this case, the availability of financial products and services meant that they were, first, accessible; second, useful; and third, affordable. This was chosen as an important entry point based on the finding that the farmers lack the means to obtain the money needed for agricultural production investments, for example, inputs and tools. Existing financial service providers were assessed based on the financial services they offered, their match with the identified needs of the farmers and the conditions underlying the financial products they offered.
- To address the identified shortcomings, local service providers (LSPs), locally respected personalities with the necessary motivation, basic capacities and involvement in pineapple production and marketing, were selected as an entry point. As their motivation was given, the **second main strategy was to improve their capacity** with the aim of creating a beneficial partnership between the actors involved in the pineapple subsector. Thus, the role of the LSPs was to be an active link between buyers of fresh pineapple and producers and to receive intensive training in improved cultivation methods including off-season pineapple production. The LSPs, for their part, passed on their production-related technical knowledge to the farmers to increase the production of the latter. Another important function of the LSPs was to consolidate fresh pineapples from the farmers and deliver them to the processors, wholesalers and retailers of Eastern Samar, thereby filling a gap in the pineapple value chain.
- Based on the abovementioned strategies, the third **strategy was to increase the capacity of agricultural start-ups (ASUs)**. MARPPA was trained in the areas of financial management, product development and standardisation, good manufacturing practices (GMP) and compliance with FDA guidelines for production facilities. This, in turn, led to an improvement in the quality of processed products and an increase in the absorption capacity of raw materials because a larger market could be tapped. Thus, in synergy with the previous strategies, a balance between the supply and demand of fresh pineapples was established.

3. Intervention

In its first step, ESIP interventions brought together the market players involved in the pineapple value chain, facilitating discussion to create a common understanding of how all stakeholders can benefit from a well-functioning market system. In its second step, the Project took initiatives to develop the capacities of key stakeholders. The improved

capacities and common understanding initiated better cooperation between producers, consolidators and processors.

Over the last two-year period, six main interventions were implemented by the Project.

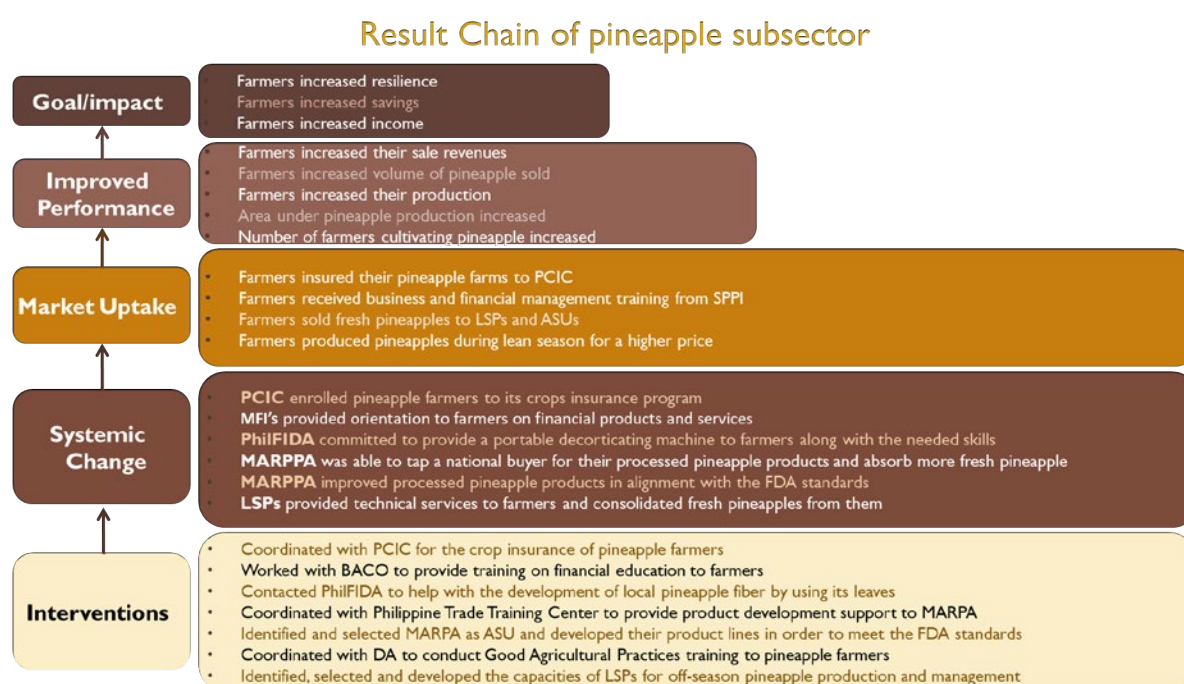
- Based on the findings from the assessment of the financial needs of the farmers (financial education, insurance services, savings, production credit, equipment loan, consolidation capital and consumer credit), three financial institutions were selected to work with—Balangkayan Agricultural Cooperative (BACO), Metro Ormoc Credit Cooperative (OCCI) and Peace and Equity Foundation—based on their capacity to provide these crucial services to the farmers, LSPs and ASUs.
- To tackle the oversupply during peak season and the undersupply during the lean season, the Project identified and selected four LSPs in remote barangays¹ and offered them coaching in terms of off-season pineapple production. In collaboration with the Department of Agriculture, these two LSPs passed on their newly acquired knowledge to the farmers through onsite training sessions.
- The Project has been in contact with the Philippine Fiber Industry Development Authority (PhilFIDA) and LABO Multipurpose Cooperative and developed a local pineapple fibre industry by using unused pineapple leaves. PhilFIDA committed to providing a portable decorticating machine to the pineapple farmers alongside the necessary skills to operate and maintain the machine, where LABO guaranteed to function as a buyer of the manufactured pineapple fibre.
- Several supports were provided to MARPPA to attract institutional buyers by enhancing the quality and quantity of their processed pineapple products. The following interventions were the most important:
 - o The Project hired a food technologist from Manila, who improved the formula for the composition of pineapple jam, pineapple tidbits and pineapple vinegar. The quality and, especially, the shelf life of the processed products were enhanced.
 - o MARPPA received further support and coaching from the Department of Trade and Industry (DTI) and the Department of Agrarian Reform (DAR) in terms of product labelling and pricing.
 - o Tools to better regulate and control the manufacturing process were handed out to MARPPA. This included a digital thermometer, digital timer, digital weighing scale and refractometer to measure the concentration of a substance.
 - o Lastly, the Project enabled MARPPA to participate in the Current Good Manufacturing Practices Training conducted by the Philippine Trade Training Center. They were able to learn the basics of food safety as well as the requirements for their processing facility to follow FDA standards.
- As the fifth main intervention, pineapple farmers in Lapgap, an upland barangay, were supported in acquiring their own processing facility. To do so, the Project coordinated with the Municipal Government of Maydolong and the Office of the Undersecretary of the Department of Agriculture.
- The Philippine Crop Insurance Corporation (PCIC) was identified as another crucial service provider. As a governmental organisation, they offer crop insurances and, therefore, an important financial product that helps the farmers increase their resilience after crop damage resulting from natural disasters like drought or heavy storms. To achieve this, the main intervention was to take PCIC to train underwriters in different barangays so that farmers can seek their help in enrolling in crop insurance.

¹ *Barangay: A Filipino term referring to a community that consists of a number of households, wherein a number of barangays form a municipality*

4. Impact and Changes

The ESIP Project started working in the pineapple subsector in 2017. By referring to the impact logic, this section highlights the principal results achieved at the different levels of the formulated result chain for the pineapple subsector, starting with **systemic changes**, which lead to **market uptake** and, finally, to **improved performance**. The results for the **impact** will be available at the end of the Project in December. One should note that the Project is still ongoing and that certain systemic changes and market uptakes are still in progress and are not finished/achieved yet.

The result chain of the pineapple subsector is given as follows:



First, positive results were observed at the **systemic change** level, where the existing market actors changed their practices and behaviours. Four LSPs provided technical training to and consolidated fresh pineapples from the farmers. BACO, one of the selected MFI, provided orientation to the farmers about their financial services and products as well as their requirements. PCIC enrolled pineapple farmers to its crop insurance programme. MARPPA, the pineapple processor, improved processed pineapple products in alignment with FDA standards. It tapped a national buyer, RITUAL, to supply their processed pineapple products and absorbed more fresh pineapples from the farmers.

Market uptake represents the transition stage between systemic change and improved performance and focuses on the services received by the farmers from market actors. As previously mentioned, 151 farmers received technical training on off-season production including the disaster and risk mitigation measures of pineapple. Furthermore, around 60 farmers received an orientation from BACO about the financial services and products that BACO can offer. A total of 76 farmers insured their pineapple farms to PCIC, covering around 57.75 ha of pineapple production. Lastly, a total of 47 farmers sold fresh pineapples to LSPs/MARPPA.

Results achieved at the **improved performance** level include changes in the production and sales of pineapples at the farmers' level. Focus Group Discussion (FGD) findings revealed

that the number of farmers producing pineapples in the four assessed barangays increased only by 4%, the land area planted with pineapples increased by 7% and the total volume produced increased from 365 to 702 MT (92%). This means that the overall production increased by 80% per hectare, which can most likely be attributed to the techniques learned and applied by the farmers, particularly in off-season pineapple production. The sold quantity of pineapples increased from 209 to 398 MT (90%) owing to the increased access to off-season markets. In terms of revenue, the farmers increased their total sales from PHP 783,750 to PHP 3,582,000 (357%). The amount of money earned from selling pineapples increased to more than the quantity sold because the average price for pineapple increased from PHP 3.75 to PHP 9 (140%) because of the high price in the off-season market.

5. Conclusion

Although it would be premature at this stage to draw conclusions about a project that is yet to be completed, some indications can certainly be outlined.

The first key lesson is to invest in *local* service providers. This has represented the turning point of the ESIP intervention on the field. By combining a solid knowledge of both the subsector and the local environment, and with a pronounced business-oriented attitude, LSPs led to significant improvements and results. The simple identification of committed LSPs, however, is not enough. Indeed, the identification of real industry players has to be accompanied by regular capacity-building activities.

The second lesson is to invest in the off-season production of pineapples because this has significantly increased the production and, more so, the sales of pineapple. By selling fresh pineapples in off-season markets, the farmers obtained a higher price of pineapples and earned more income from pineapple production.

As a first good practice within the pineapple subsector, the support for capacity building of MARPPA as the processor can also be mentioned. As a result, MARPPA, which did not have access to a buyer before, was able to increase its processing capacity as well as sell its processed product to a reliable and stable buyer. It was very efficient to invest in highly motivated and skilled market players to make the market work for the farmers.

Manufacturing pineapple fibre by using pineapple leaves is an eye-opener for the pineapple farmers' association. With this, they will be exploring the opportunity of developing this enterprise in collaboration with PhilFIDA.

Enhancing Sustainable Income in the Philippines (ESIP)

A Case Study of the Seaweed Subsector



A market system development approach implemented to improve livelihoods of farmers

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List of Acronyms

ASU	Agricultural Start-up
BACO	Balangkayan Agricultural Cooperative
BFAR	Bureau of Fisheries and Aquatic Resources
ESIP	Enhancing Sustainable Income in the Philippines
LGU	Local Government Unit
LSP	Local Service Provider
MFI	Microfinance Institution
MSD	Market System Development
PCIC	Philippine Crop Insurance Corporation
SPPI	Sentro ha Pagpauswag ha Pakinabuhì International

1. Background

Seaweed is considered not only as healthy but also as a crop with a positive environmental impact. Compared to other crops, it does not need fertilizer, weeding or watering, and is less vulnerable towards pests or diseases. Simply put, seaweed gets all the inputs it needs from its environment, and only requires investments for monolines¹, seedlings for planting and boat for harvesting. It can grow almost 15 cm per day under optimal conditions. However, one has to determine first which species is suitable for which area/environment. Another comparative advantage of seaweed is that it does not need landmass for production, and, at the same time, its growing environment (water temperature and salinity) can be less controlled by farmers.

Unsurprisingly, seaweed is the most cultivated aquatic crop in terms of quantity, with a total annual production of 21,000 MT in Eastern Samar. Thanks to the Bureau of Fishery and Aquatic Resources (BFAR), which encouraged seaweed production in the last 10 years by providing seaweed farmers with free inputs, such as seedlings, monolines, soft ties and boats, the number of households engaging in seaweed farming increased.

As learned from the seaweed subsector assessment conducted in 2017, seaweed contributed to 50% of the total income of the 171 households engaged in seaweed farming within the 5 assessed barangays². During the assessment, the seaweed produced within a total area of 42 ha amounted to 64 MT per year. Only a portion of 15% was sold as fresh seaweed to a seaweed processors association at a price of PHP 10/kg. Such seaweed was then pickled and sold to various end consumers at a price of PHP 80/kg. The remaining 85% of the annually produced seaweed was dried and sold either to consolidators (60%) for PHP 37/kg and then resold to private companies, such as Marine Colloids Philippines Incorporated (MCPI) in Cebu or Tan Bun King (TBK) in Tacloban, at PHP 46/kg or directly from the farmers to TBK (25%) at the same price.

Although all produced seaweed could be sold, some shortcomings on the production side were identified during the assessment. Observed symptoms were that a) the demand for seaweed seedlings was higher than the supply, b) seaweed was stolen on a regular basis from production sites, c) production was negatively affected by diseases and d) the transportation costs of seaweed were high, which translate into a lower farm gate price and, hence, lower-income farmers receive from selling their products.

Seaweed was chosen as an intervention subsector because of its increasing popularity as a crop, its high proportion of household income and its great potential as a cash crop to further boost household income.

2. Strategy

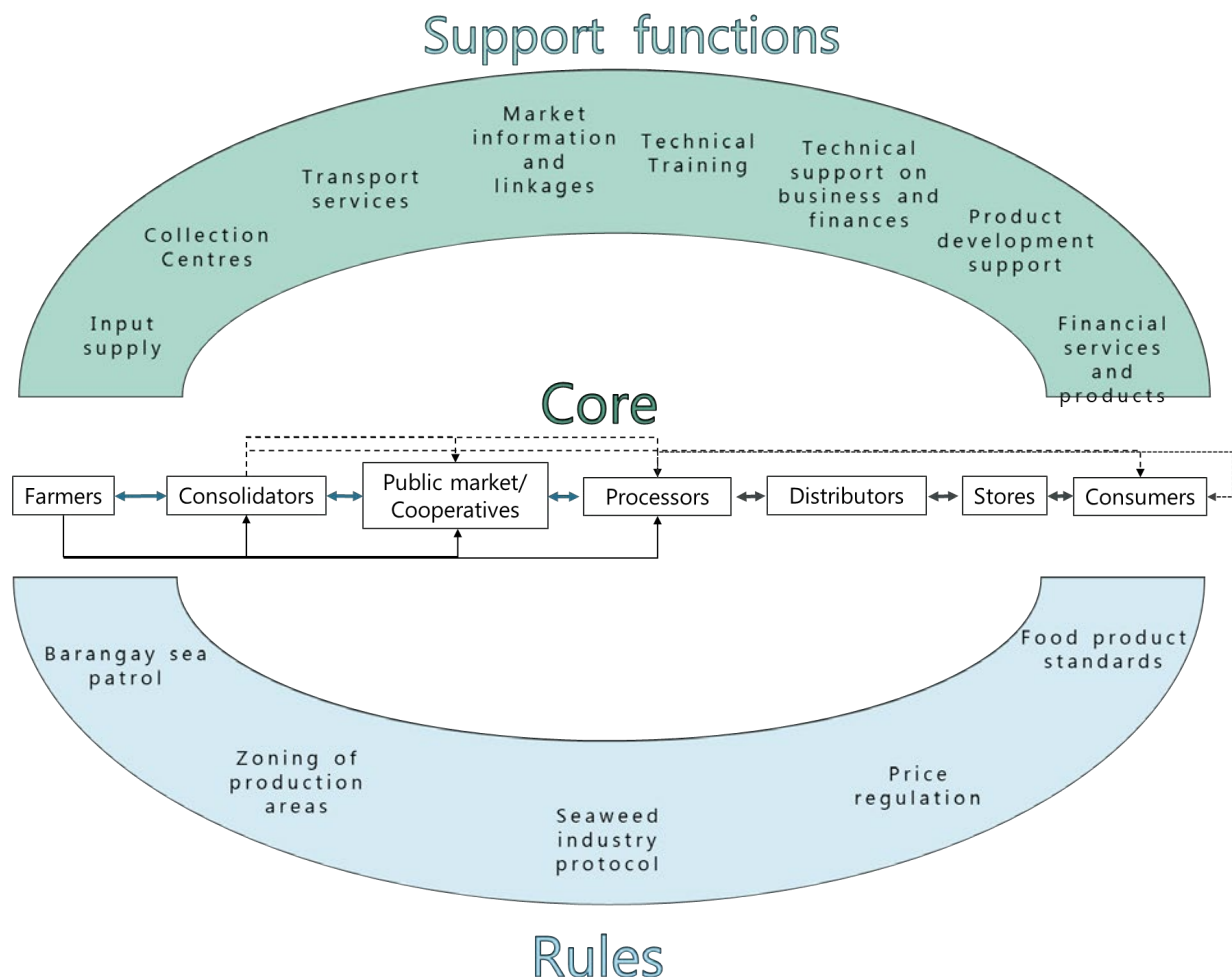
The ESIP Project adopts a market system development (MSD) approach with the overall goal of increasing the income of 12,000 poor farmers in Eastern Samar and, thus, improving their resilience to natural disasters such as typhoons. According to the intervention logic, the farmers' income and resilience will be improved if a) their production and productivity and b) their turnover are increased through c) the creation of and better access to support

¹ An approximately 100 m-long nylon string stretched between two poles to tie seaweed seedlings

² Barangay: A Filipino term referring to a community that consists of a number of households, wherein a number of barangays form a municipality

mechanisms. This can be achieved by influencing relevant market players and consolidating a larger market share.

Aligned with the market system development approach, the Project mapped the dynamics of the seaweed value chain to identify bottlenecks and improve the existing system in such a way that the poorest can benefit from the changes, as shown in the following:



The following underperforming functions were identified when determining the market-based root causes of these symptoms:

1. The state body, BFAR, which was the main access of farmers to seaweed seedlings, was identified as being the main cause of the insufficient supply of seedlings. This was due to their strong subsidised interventions to promote the seaweed sector, which, on the one hand, created a dependency relationship of farmers towards BFAR and, on the other hand, never gave room for a private input actor to establish itself in this sector. Now, BFAR is no longer in a position to meet the growing demand for seedlings.
2. The persons entrusted by the barangays with the monitoring of the seaweed production areas did not have sufficient incentives to do so. This led to the regular theft of monolines or seaweed and, thus, to production loss for the farmers.

The high transport costs was due to a missing function of lack of transport facilities coordination between actors. As there was no collection centre for dried seaweed, the price for the collection of the products, as well as the transaction costs between a farmer and a buyer, were driven up. Another missing function was the lack of capacity of the local government unit (LGU) with regard to its knowledge of seaweed production. It failed to adequately support farmers and help them monitor their seaweed on a regular basis, which is the main reason behind production losses caused by disease.

As seaweed is less common than other agricultural crops, it has been more difficult for farmers to gain access to crop insurance and production credits. Although there were microfinance institutions (MFIs), they neither specialise in seaweed production nor meet the farmers' needs. This was described as a mismatched market function.

Based on the abovementioned findings, the Project adopted the following four main strategies and selected partners:

1. As the access to seaweed seedlings was not granted and BFAR's motivation was limited to tackling this issue on its own initiative, the first main strategy was to establish nurseries for the seaweed seedlings managed by the farmers. On the one hand, the farmers became less dependent on BFAR's inputs and, on the other hand, were able to increase their income by selling these seedlings to other farmers in their region after the second harvest. For the first crop, the strategy followed a pay-it-forward approach, that is, only a few farmers received seedlings directly from the Project and paid their 'deed' back to other farmers in the form of seedlings from their first yield to the Project instead. The farmers who received seedlings from the initial beneficiaries were motivated to use the same procedure. As the farmers were classified as actors with a rather low capacity, intensive training was offered on the establishment and management of seaweed nurseries.
2. To reduce vulnerability to pests and diseases, the Project decided to work with local service providers (LSPs). This decision was based on the LGU's lack of motivation and performance in disseminating seaweed production technologies. They were unable to support farmers in the cultivation and monitoring of seaweed, as well as the application of pesticides. Therefore, the LSPs received on-the-job coaching on the pest and disease management of seaweed as the second entry point. The idea behind this was that the LSPs could pass on their knowledge to the farmers to be able to perform the function of the LGU because the LGU was unable to fulfil its task. The aim was to establish a mutually beneficial partnership between the farmers and the LSPs, with the latter providing their products and services to the former as part of their business and vice versa.
3. The problem of high transport costs and inefficient consolidation processes was addressed by setting up a collection centre for dried seaweed with the joint contribution of local-level consolidators/pre-processors (farmers' associations), higher-level consolidators/distributors (e.g., Sentro ha Pagpauswag ha Pakinabuhì International [SPPI]) and large buyers (e.g., MCPI). To further develop the mechanism for the consolidation of seaweed and, ultimately, increase prices for farmers, local-level consolidators were supported and given training.
4. As a final key strategy, access to financial services for farmers, local consolidators and service providers should be mentioned. The availability of financial products and services in this context means that they are accessible, useful and affordable. To provide these financial services and products, existing financial service providers have been assessed and selected according to the financial products they offer; their responsiveness to the needs of LSPs and agricultural start-ups (ASUs); and, in particular, their offers and adaptability to seaweed farmers.

3. Intervention

As a first step, ESIP interventions brought together the main market actors involved in the seaweed value chain by facilitating discussions to create a common understanding of how all stakeholders can benefit from a well-functioning market system and be aware of each other's needs and expectations. As a second step, the Project identified a) access to seaweed seedlings, b) the capacity building of LSPs in terms of disease and pest control, c) the establishment of a better consolidation system to reduce transport costs and d) access to tailor-made financial services for farmers as key entry points.

The ESIP Project provided facilitative support by addressing the causes of current market failures to improve the sustainable income of the beneficiaries. The Project aimed to overcome the barriers and challenges in the seaweed subsector, which made it difficult for farmers to properly access key market functions. The main barriers identified were the weak motivation and/or capacity of government actors, lack of consolidation centres and insufficient supply of seedlings. To overcome these barriers, the Project has implemented four major interventions over the last two years.

- A dialogue between the seaweed farmers, SPPI (higher level consolidator/distributor for MCPI / a large buyer) and BFAR was organised to conclude a supply agreement for dried seaweed, with eight farmers' associations acting as local consolidators for SPPI (higher level consolidator/distributor). The latter provided consolidation capital to the local-level consolidators and agreed on a better purchase price to increase the price at the farm-gate level. In addition, MCPI agreed to bear the cost of a purchase station or collection point for dried seaweed if a monthly delivery of 20 T can be reached.
- The Project selected 67 farmers who were part of the pay-it-forward seedling scheme, with the criteria of maintaining at least 2 monolines for seaweed production. Four farmers received free seedlings from the Project but distributed the same volume of seedlings to other farmers after the first successful harvest of new seaweed seedlings. These farmers, in turn, gave other farmers the same volume of seedlings until all seaweed farmers were supplied with free seedlings by other farmers. Four LSPs were trained and educated through exchange visits to successful seaweed growers in Northern Samar and through on-site training to provide the local seaweed growers with technical training on the establishment and management of nursery facilities. This was done because the supply of raw materials was insufficient to establish an independent and self-sufficient seedling production as there was a lack of production, establishment and maintenance knowledge.
- Four LSPs have been trained as underwriters for the inclusion of farmers into the Philippine Crop Insurance Corporation (PCIC), a government organisation that provides crop insurance to help farmers increase their resilience after crop failures caused by natural disasters, and pests and diseases.
- The Project worked with MFIs (e.g., Balangkayan Agricultural Cooperative [BACO]) with the objective of creating the seaweed farmers' awareness about and access to the financial services and products available with the MFIs.

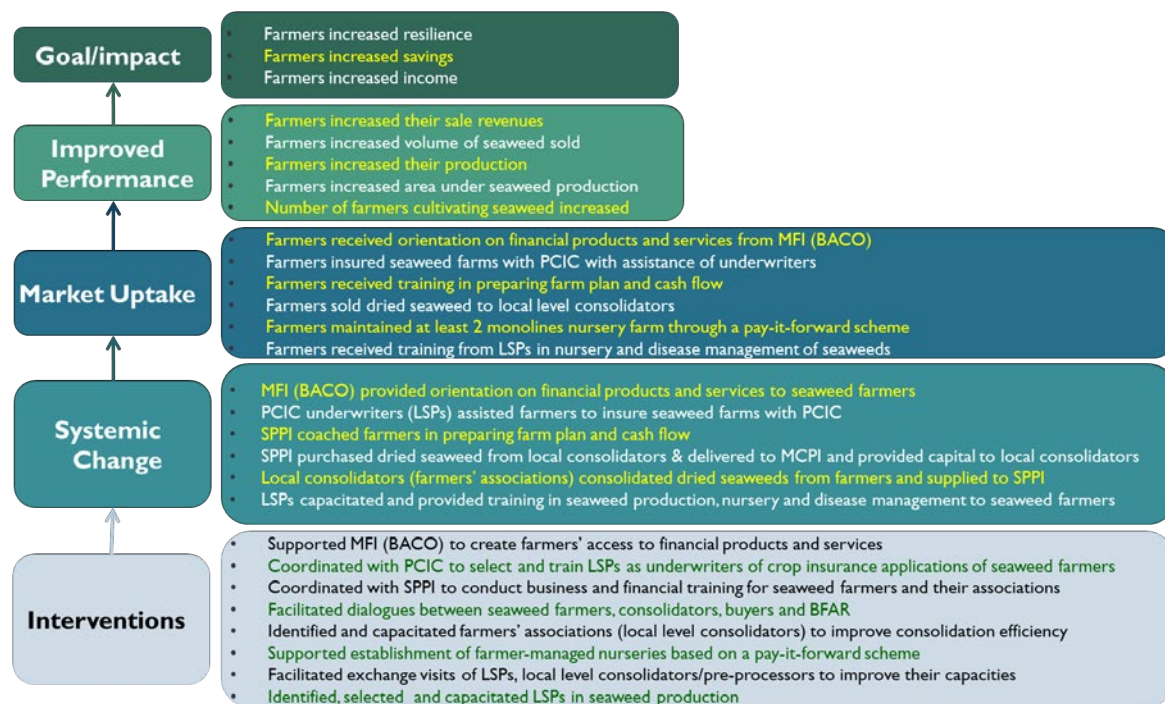
4. Impact and Changes

The ESIP Project started working in the seaweed subsector in 2017. By referring to the impact logic, this section highlights the principal results achieved at the different levels of the formulated result chain for the seaweed subsector, starting with **systemic changes**, which lead to **market uptake** and, finally, to the **improved performance** of the farmers. The

results at the **impact** level will be available at the end of the Project in December. One should note that the Project is still ongoing and that certain systemic changes and market uptakes are still in progress and are not finished/achieved yet.

The result chain of the seaweed subsector is given as follows:

Result Chain of Seaweed Subsector



First, positive results were observed at the **systemic change** level, where the existing market actors changed their practices and behaviours. Four LSPs provided technical training to the farmers. An MFI provided orientation to the farmers about the available financial services and products as well as the eligibility to and procedure for getting access to those financial services and products. PCIC developed the capacities of LSPs as the underwriters and enrolled seaweed farmers to its crop insurance programmes. Local-level consolidators (farmers' associations) combined dried seaweed from the farmers and supplied them to the higher-level consolidator/distributor (SPPI), which, in turn, supplied dried seaweed to the large buyer (MCPI). SPPI purchased dried seaweed from local consolidators and delivered such to MCPI. SPPI provided consolidation capital to local consolidators, and coached the seaweed farmers in preparing farm plan and cash flow.

Market uptake represents the transition stage between systemic change and improved performance and focuses on the services received by the farmers from market actors. As previously mentioned, 162 farmers received technical training on seaweed production, including the disaster and risk mitigation measures of seaweed. Furthermore, around 76 farmers received an orientation from an MFI about its financial services and products. A total of 122 farmers insured their seaweed farms to PCIC, covering around 37 ha of seaweed production. At last, a total of 210 farmers sold fresh seaweed to local-level consolidators.

Results achieved at the **improved performance** level include changes in the production and sales of seaweed at the farmers' level. FGD findings revealed that the number of farmers producing seaweed in the 5 assessed barangays increased from 171 to 181 (6%), the land area planted with seaweed increased from 42 to 55 ha (31%) and the total volume produced

increased from 64 to 317.5 MT (396%). This means that the production per hectare increased by 280%, which can most likely be attributed to the techniques learned and applied by the farmers and, particularly, to the availability of seaweed seedlings at the farmers' level. The sold quantity of seaweed increased from 64 to 302 MT (372%), thanks to the farmers' increased access to a higher level consolidator (SPPI) and a large buyer (MCPI). In terms of revenue, the farmers increased their total sales from PHP 297,280 to PHP 2,085,462 (602%). The increased amount of money earned from selling seaweed was more than the increased quantity of seaweed sold because the average price of each kilogram of fresh seaweed increased from PHP 10 to PHP 12 (20%) and that of dried seaweed increased from PHP 37 to PHP 47 (27%) because of the higher price of seaweed given by the higher level consolidator. As a result, the farmers' household income coming from the seaweed subsector increased from 16% to 19% (19%).

5. Conclusion

Some lessons learned from the seaweed subsector are outlined as follows.

The first key lesson is to invest in *local* service providers. This has represented the turning point of the ESIP intervention on the field. By combining a solid knowledge of both the subsector and the local environment, and with a pronounced business-oriented attitude, LSPs led to significant improvements and results. The simple identification of committed LSPs, however, is not enough. Indeed, the identification of real industry players has to be accompanied by regular capacity-building activities. If this happens, LSPs would not depend on the monthly remuneration of the Project. They can earn incentives from consolidation, pre-processing (drying) and trading activities. Their performance without the monthly remuneration of the Project is far better than the performance of LSPs who are getting monthly remuneration from the Project.

The second lesson is to establish a seedlings nursery at the farmers' level. The pay-it-forward scheme worked well. Four farmers received free seedlings from the Project but distributed the same volume of seedlings to other farmers after the first successful harvest of new seaweed seedlings. These farmers, in turn, gave the same volume of seedlings to other farmers until all seaweed farmers had seedlings nurseries. Until mid-September 2019, a total of 67 farmers have their own seaweed nurseries. This made them independent from BFAR for seaweed seedlings, and they were able to do year-round seaweed production.

Another lesson is increasing the efficiency of the consolidation process of dried seaweed. It was done by setting up collection centres with the joint contribution of local-level consolidators, distributors and buyers. A higher level consolidator/distributor (SPPI) provided consolidation capital to the local-level consolidators (farmers' associations) for efficiently doing consolidation. This increased farmers' access to large buyers and increased the price of seaweed at the farmers' level.



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