

End-line impact assessment of the 2017-2021 DGD-funded programme implemented by Rikolto

Indonesia

Country Report

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List of abbreviations

ADE	Aide à la Décision Economique
BDS	Business Development Services
DGD	Directorate-general Development Cooperation and Humanitarian Aid
EQ	Evaluation Question
FGD	Focus Group Discussion
FO	Farmer Organisation
FS	Farmer Survey
FSC	Food Smart City
MSI	Multi-Stakeholder Initiative
MTR	Mid-Term Report
NGO	Non-Governmental Organization
PSM	Propensity Score Matching
SCA	Structural Change Agendas

Executive Summary

Farmer Level

Rikolto has provided the farmers with capacity building in sustainable agriculture practices/GAP. The intervention programmes have contributed to improving household livelihoods, including farmers' income, through involvement in the FOs' collective marketing activities. It induced a significant increase in farmer productivity, commercialisation, and higher purchasing price, leading to an improved profit margin from the focus crop received by the farmers. Thus, they could meet their basic household needs (i.e., food, education, and health). Rikolto's intervention in strengthening the business professionalism of the FOs to support the collective marketing played a significant role to improve the components of resilience capacities in social and economic themes.

The intervention programmes at the farmer level have succeeded in increasing farmers' resilience absorptive capacity due to the capacity building activities in environmentally sustainable production, and enhancing adaptive capacities through income diversification capacity strengthening for some commodities. The changes at the farmer level in terms of capacities, participation, and resilience have contributed to changing the cluster landscape towards a more sustainable and inclusive value chain. The application of good agricultural practices affected the improved quality of the focus crop attracted more buyers. The increase in focus on crop commercialisation induced the higher reputation of the region as a high-quality producing area.

Recommendations:

1. Farmer Survey assesses variables used as impact indicators in SCA I and SCA II. Using such indicators will give Rikolto Intervention Framework more relevant disclosures for business purposes. The 'profit margin' should also be included in the impact indicators of SCA I and SCA II. The combination of 'profit margin' and 'total rice sold' as impact indicators will be beneficial for project performance measurement purpose. To know how the dynamics of the profit margin in farmer level will give the FOs and project management further information about the farmers capacity in cultivation and assets development.
2. Work on Food Smart Cities should be associated with diversification of producer activities, both in terms of variety of crop (red, white and black rice for instance) and crop transformation. For cocoa, coffee and cinnamon, this most likely involves the development of agroforestry-based production systems. This should seek both to add value and increase resilience at producer and FO level, as well as increase food security at territorial level. Secure contracts would also help producers and transformers to secure capital to invest in improved practices and equipment and support activity diversification. The issue of healthy food should be central to such multi-stakeholder agreements.
3. Rikolto works with ageing farmers. The involvement of youth and women would be beneficial not only to the programmes but even more to the agricultural sector. Demonstration plots could be the centre of attraction for them. Rikolto should give more room to the youth and women's involvement in developing demonstration plots. Not only for the sake of knowledge but also income generation. They will learn critical practice in on-farm activities. Once the cycle is completed, they also will experience the learning curve. Incubate them with the taste of off-farm business. Then they will be ready to rely on agribusiness for their livelihood. Develop a business model for youth and women and integrate it into the cooperative strategic business activities. It requires support in capacity building such as leadership and management and technical skills on off-farm and on-farm that targets youth and women.
4. Farmers' level of opinion consideration in the organisation decreased during the period. There is an urgent need to develop activities promoting organisational skills of farmers' group leaders.

FO Level

Rikolto in Indonesia has supported the enhancement of FO professionalism to become a self-sustained and profitable business entity. Rikolto contributed to providing capacity buildings in business

administration and management, linking the cooperatives with buyers through promotional events and collaboration with platform organisations (SRP, SCOPI, CSP) and other strategic actors to support their business growth and strengthen the inclusive business relations. As a result, the cooperatives have met sustainability standards and demands in both domestic and international markets.

The market demand for quality products is one of the major driving factors in maintaining sustainable and socially inclusive production. The awareness of national and international buyers of sustainable and inclusive production continuously increases. Such a condition should be seen as an opportunity to initiate a movement to meet the increasing market demand; certification encourages farmers to organise themselves in groups and build efficient collective marketing. Organic certifications owned by the FO became an added value of the FO in front of the farmers and private sectors. Furthermore, an Internal Control System (ICS) was an essential aspect in the collective action mechanism to ensure the quality of the product and provide price transparency to the producers. It needs proper financial support to reach optimal market performance.

The increase in focus crops sales has contributed to improving farmers' income. The ability of the FO to connect with buyers and negotiate have generated an impact on the higher prices received by farmers. Moreover, farmers gained better access to services, facilities, market channels, and finance since joining collective marketing. The benefits offered by the cooperative thus increased the farmers' motivation to be more active in collective marketing activities through the FOs. It is shown by the increased volume of coffee sold through farmer organisations from 2017 to 2021. Most farmers are satisfied with the FOs because FOs contribute to farmers' income leverage.

Recommendations:

1. FOs should capitalise more clearly on the reputation of their areas as high-quality producing areas. The possibility of developing a geographical indication around a set of products should be given more attention, particularly for coffee, cocoa and rice. In particular, such systems could most likely enable to market cocoa through business models offering higher revenues as it is unlikely that cocoa used by MARS may offer as much added value as geographical origin cocoa. Business models integrating Fair trade, organic certification or associated to production models which may protect national parks (coffee or cocoa without deforestation...) are all models to be investigated more thoroughly. Rikolto could also facilitate the assessment of risk and opportunity of business models such as social enterprise, the more commercial but more inclusive business. Such work implies consolidating Internal control system (ICS).
2. Increased added value could also be sought through product diversification through improved local transformation of the various products (rice milling, cocoa fermentation...).
3. Though the motivation of the farmers to join in collective marketing with the cooperative, there is still a lack of participation of the farmers in fulfilling the membership payment and investing capital for the cooperative. FOs need to diversify and improve their offer of services as well as their financial management and business capacity, recruiting professional staff to run a profitable business. Capacity building in these issues is essential to conduct. More generally, a clear strategy in terms of BDS should be determined at the level of each FO, including orientations as to which services should be developed internally and which may be externalised (at least partially). More detailed monitoring and evaluation of the effects of collective marketing would also help developing arguments to convince farmers of the interest of FO membership.
4. Business diversification is imperative for the FOs' business development. The FOs have raised the issues during the intervention period and implemented the strategy to develop derivative businesses and services. However, it requires focus and more capacity building to make the derivative business profitable.
5. New Business Model Principal Assessment resulted in 2021 has shown the gap in inclusive business relations between FOs and buyers, including equitable access to service, inclusive innovation, and outcome measurement. Developing interventions based on these priority issues could be strategic in the future programme.

6. Based on the resilience indices assessment, there was a significant decrease in soil and water conservation, climate change, and biodiversity, which are essential in supporting the sustainability of the business and meeting the market demand for focus crops. Sustainability certification scheme based on such indicators indicate that they might not be the only factor contributing to improving an FOs' sustainability. Still, it could generate the capacity and experience for FO to run the monitoring and evaluation system on sustainability issues.

Institutional Level

Collective action in a forum or platform organization can encourage the institutionalization of recommendations through government policies effectively and efficiently. Furthermore, such an action can increase each other's knowledge and raise social capital. Therefore, platform organizations or consortiums also encourage the emergence of impactful innovations that were not previously aimed or targeted. Platform organization is proven to increase stakeholder engagement, fostering participation and social learning that emerges innovations. The diverse stakeholders (private sectors, research institutions, universities, professional associations etc.) could participate with different professionalism, encouraging potential to innovate in collaboration resulting in a win-win solution for the involved actors.

Rikolto observed that the involvement of local communities in building evidence is essential and will promote local ownership of the programme. Rikolto in Indonesia has collaborated mainly with the local partners (Gita Pertiwi, YLKI, and PIB). The scope of Rikolto's work was supporting partners for advocacy and influencing public opinion and the multi-stakeholder process. The goal was to influence the city governments and private sector of Solo, Depok and Bandung to have policies or regulations that favour sustainable production and healthy consumption. Eventually, the work leads to good result. Solo and Bandung now have Food Smart City Road Map policies, while Depok started drafting City Mayor Regulation (Perwali), which integrates the Food Smart City concept. By 2021, there were, in total, 19 public policies that favour sustainable production and consumption. Focus has been done but can be done more to reflect the direction of Rikolto International to amplify the impacts beyond the scope of the regional office by participating in Milan Pact and Food and Climate Glasgow Declaration.

Recommendation:

1. Continue developing attractive business models which can contribute to improve the image of agriculture related jobs as modern and economically rewarding, and thus develop their attractiveness. Professionalising agricultural institutions and building their links with private companies upstream and downstream of production offers a good opportunity to create a much more modern, entrepreneurial and inspiring image of rural activities. Building a more attractive vision of agricultural activities for young generations is key to scaling-up. In this spirit, Rikolto should keep the same approaches to engage societies with the support of Rikolto's reliable local partners to promote local ownership of the programme.
2. Rikolto should continue engaging local governments in the implementation of the sustainable food system. The local authorities play a crucial role in educating societies during the campaigns, e.g., children and their parents, to consume healthy food.
3. Monitoring and evaluation of the environmental effects of Rikolto promoted production system should be given more attention and involve more directly FOs, in order to understand more clearly the reasons why certain environmental indicators have had negative trends.
4. Rikolto should encourage the platform organisation to conduct more exercises in the existing demonstration plots; furthermore, expanding the plots in various selected areas.
5. Rikolto should follow, capitalise and systematise the pathways of change and logics it follows to develop new business models and achieve change. In particular, so as to promote upscaling, it is important that Rikolto elaborates clear indicators to monitor progress in this area. Business models and pathways of change should be characterised and broken down sufficiently precisely so as to be able to identify clearly which of their elements are relevant and can be integrated within a given intervention. The advantages and disadvantages of each type of business model within a given context and for various types of producers (size of production unit, geographical

location and associated agricultural calendar...) or food chain actor (producer, BDS provider, off taker...) should be clearly understood.

1. Introduction

Rikolto is an international NGO with more than 40 years of experience in partnering farmer organisations (FOs) and food chain stakeholders. This evaluation aims at measuring Rikolto's impact on i) the livelihoods of farmers, ii) the business and organizational capacities of FOs, and iii) the institutional environment.

Rikolto's mission is to enable sustainable incomes for farmers and nutritious, affordable food for everyone. Rikolto wants to reach this goal by building bridges between smallholder farmers, FOs, companies, authorities, and other actors across rural and urban areas. Building on their experience in creating **inclusive business relationships**, Rikolto works with diverse partners to strengthen selected commodity sectors and to address the wider food system challenges of cities. Rikolto puts **strong emphasis on gender and youth** and makes concerted efforts to reduce environmental damage, address **climate change** impacts, and enhance food system **sustainability and resilience** in the face of shocks and crises.

Rikolto runs programmes in 17 countries worldwide through seven regional offices, supported by a global support team. Out of these 17 countries, 13 are part of the 2017-2021 DGD-funded programme: Belgium, Burkina Faso, Congo, Ecuador, Honduras, Indonesia, Mali, Nicaragua, Peru, Senegal, Tanzania, Uganda, and Vietnam. Their global **Rice, Cocoa, Coffee and FSC programmes**, seek change in three key food system domains: **sustainable production, inclusive markets, and enabling environments**.



Figure 1: Overview of Rikolto's programmes

There is a growing market demand for healthy and sustainably produced food in Indonesia. Rikolto in Indonesia intends to make use of this demand to trigger change in the national food system: to bring about policy and sector level changes to benefit smallholder farmers while stimulating interest in younger generations to partake in healthy food production and consumption. Rikolto in Indonesia's long-term goal is to support a new generation of farmers with the ability/capacity to feed consumers in urban areas with healthy food whilst earning a living income without damaging the environment. Two Structural Change Agendas (SCAs) are underlying Rikolto's works to achieve the ultimate goal, namely (1) Healthy food is available to meet the growing urban needs through inclusive business practices in formal and informal markets and (2) Innovative agribusiness models based on inclusive business practices to help a new generation of profitable farmers to grow in a healthy environment.

For 2017-2021 Programme, Rikolto operates in seven provinces (Figure 2) and focuses on four main commodities (i.e., rice, coffee, cocoa, and cinnamon) and two thematic initiatives (Food Smart City-FSC and Payment for Ecosystem Services-PES). Rikolto empowers smallholder farmers to take up their role in rural

poverty alleviation and to contribute to sustainably feeding a growing world population. Rikolto’s approaches are one of a kind in Indonesia as Rikolto involves all actors in the entire value chain to practice profitable business inclusivity through the implementation of innovative sustainable agriculture technology by considering gender sensitivity and youth inclusion.



Figure 2: Rikolto's working areas and its programmes.

Collaboration for impact is in Rikolto’s DNA as a nimble network organisation. Rikolto builds bridges of trust and trade, between private sectors, governments, research institutes, financial institutions, farmer organisations, and other non-governmental organisations (NGOs) sharing the same values and interest. Rikolto’s strategic partners are The Belgian Development Cooperation (DGD),¹ The Indonesia Ministry of Home Affairs, local governments at provincial, district, and village level in Indonesia, universities, research institutes, and private sectors. Furthermore, to implement our programmes at the grassroots level, Rikolto directly collaborates with local partners, consisting of 14 farmer organisations, 7 NGOs and 3 commodity platforms.

¹ Direction générale Coopération au développement et Aide humanitaire (DGD)

Rikolto's Theory of Change describes Rikolto's 2017-2021 objectives and pathways of change as explained in Figure 3 and 4.

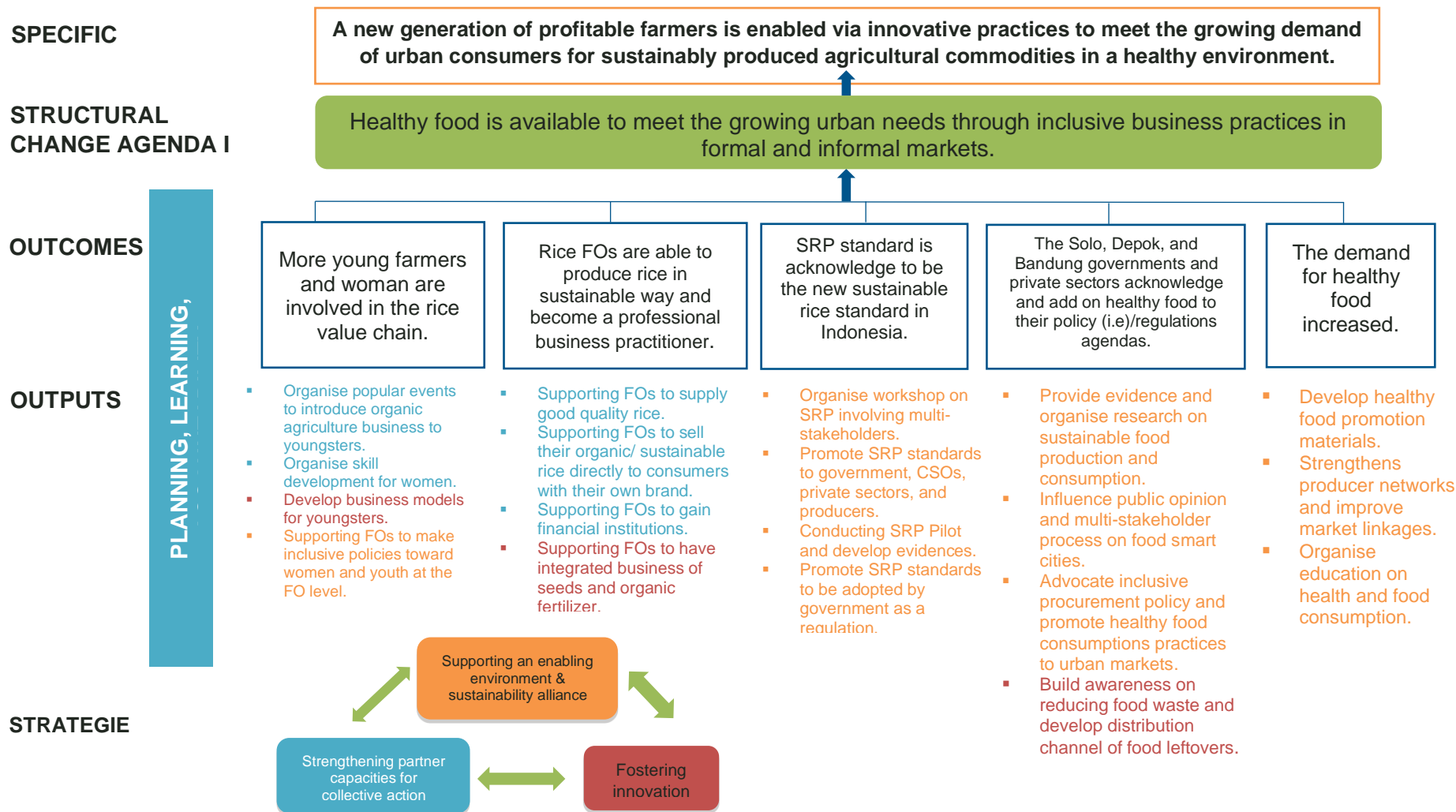


Figure 3: TOC – SCA 1

SPECIFIC OBJECTIVE

A new generation of profitable farmers is enabled via innovative practices to meet the growing demand of urban consumers for sustainably produced agricultural commodities in a healthy environment.

STRUCTURAL CHANGE AGENDA II

Innovative agribusiness models based on inclusive business practices to help a new generation of profitable farmers to grow in a healthy environment.

OUTCOMES

More youth and women are involved in the sustainable value chain.	FOs enhance their inclusive business that comply with sustainability standards and meet new market demands.	Payment Models for Ecosystem Services (PES) set up and are adopted by the private sectors and governments.	Commodity platforms ensure that smallholder farmers earn regional wage in the respective
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OUTPUTS

- | | | | |
|---|--|--|--|
| <ul style="list-style-type: none"> Organise popular events to introduce sustainable agriculture and inclusive business practices to youth and women. Document and share the learning and evidences on youth and women inclusiveness. Organise skill development for youth and women. Develop business models for youth and women. Support FOs to make inclusive policies toward women and youth at the FO level. | <ul style="list-style-type: none"> Capacity building on IMS/ ICS to ensure traceability and sustainability compliance. Capacity building on Good Agriculture Practices (GAP) and Good Processing Practices (GPP). Capacity building on business plan, market intelligence, bookkeeping systems and digitalized database. Support FOs to access capital from their members and financial and government institutions. Capacity building on marketing and business communication. Support FOs to diversify their business unit innovatively. | <ul style="list-style-type: none"> Support partners to assess and document the existing models of PES. Facilitate FOs to improve the knowledge of practices that maintain and enhance ecosystem protection. Introduce PES Models to the government and private sectors. | <ul style="list-style-type: none"> Support partners (commodity platforms) in the study to identify and assess innovative business models that are suitable and profitable for FOs. Influence international agenda on coffee and cocoa. Documenting and sharing learning and evidence to other stakeholders. |
|---|--|--|--|

STRATEGIES



PLANNING, LEARNING, ACCOUNTABILITY

MEASURE, LEARN, COMMUNICATE

Figure 4: TOC – SCA 2

2. Evaluation Methodology

Indonesia programmes encompassed four clusters: Food Smart Cities (FSC), Rice, Coffee and Cocoa, and additionally a non-clusters programme, namely Cinnamon.

Table 1: Countries and Level of Analysis

Level of analysis	FO	Inst.	Farmer	FO	Farmer	FO	FO	Inst.	F & FO	F & FO
Country/Cluster	FSC		Rice		Coffee		Cocoa		Sesame	Cinnamon
Belgium*										
Burkina Faso*										
DRC										
Ecuador										
Honduras										
Indonesia										
Mali										
Nicaragua*										
Peru*										
Senegal*										
Tanzania										
Uganda*										
Vietnam*										

*Countries with field visit

The level of analysis differed for each cluster as reported in Table 1 above. To optimize the resources available, the evaluation was composed of an external assessment conducted by ADE with the support of a Local Team (LT), and an internal assessment conducted by Rikolto Regional Team (RT), under the supervision of the LT. The external assessment focused on farmer and FO levels related to the rice program, while the internal assessment focused on the FO and institutional levels of FSC, and Cocoa programs. Coffee and Cinnamon were analysed by Rikolto team at farmer and FO levels.

2.1 Evaluation questions

Using the findings of the internal and external assessments, the objective of the country report is to give an overview of the country programmes' impact and to answer retrospective research questions as well as three Covid-19 specific questions.

Farmer Level

EQ1. Have Rikolto's interventions contributed to increased resilience and improved livelihoods of farming households?

EQ2. What are the spillover effects of Rikolto's policy work beyond their direct beneficiaries?

FO Level

EQ3a. What has been Rikolto's role in strengthening FOs and making them strong business organizations for their members?

EQ3b. What added value demonstrates the FO as a collective action mechanism for producers?

EQ4a. Has Rikolto succeeded in facilitating business relations between FOs and private sector buyers?

EQ4b. Are these business relations economically profitable, socially inclusive, and environmentally sustainable?

Institutional Level

EQ5a. Has Rikolto succeeded in setting up and/or strengthening MSI?

EQ5b. Have these MSI succeeded in promoting more sustainable food systems?

EQ6. How is the evidence generated by Rikolto's pilot interventions used to influence policy decisions?

Covid-19 Evaluation Questions

EQ1. How agile is Rikolto in responding to an external shock?

EQ2. Which impact did Covid-19 responses have on the target groups?

EQ3. To which extent has Rikolto's response to the COVID-19 outbreak left a more resilient food system in place, able to respond more swiftly to a next systemic crisis?

2.2 Quantitative evaluation

The quantitative approach used the Rikolto Farmer Survey (FS) data to construct resilience index of rice, cinnamon and coffee farmer's households, to compile summary statistics of their household characteristics and livelihood activities, and to determine the changes in outcome variables between baseline and end-line. The data has been collected by Rikolto at baseline (2017), midterm (2019) and endline (2021) and analysed by ADE. An assessment of change in outcome variables was determined based on comparison of aggregate baseline, Mid Term Review (MTR) and end line values of various indicators.

In the Farmer Survey we have a total of 2996 farmers surveyed in the different waves, and the sample is composed of farmers producing four different commodities as main crops: cinnamon, cocoa, coffee and rice.

Rice sample size: 1243 rice farmers have been surveyed. For the treatment and control groups of rice growers, while we have balanced sample sizes between groups at baseline (296 and 298 farmers), it is rather unbalanced at end-line (300 vs 200 producers).

Coffee sample size: the total sample was 900 farmers (300 farmers taken in each period of survey) spread in Ngada and Manggarai Timur district in Nusa Tenggara Timur province (Flores Island), Kerinci and Merangin district in Jambi province (Sumatera Island), and Toraja Utara and Enrekang district in South Sulawesi Province (Sulawesi Island).

Cinnamon sample size: 150 cinnamon farmers have been surveyed (50 farmers taken in each period of survey).

Limitation of data analysis: For most of the indicators, the results report a correlation and not a causality. Moreover, high attrition rates might bias the results. Therefore, qualitative information collected by the LT will be useful estimate the impact of Rikolto's program.

Further, it is very likely that COVID-19 affected livelihood indicators. For example, a decrease in production does not necessarily mean that Rikolto's intervention had a negative impact, as the situation could have been worse without the intervention. Further, some questions of the survey have been changed, added, and deleted across waves. This limits the capacity to consider those variables over the observed period.

Rice: Three livelihood indicators (income of the focus crop, productivity of the focus crop and total profit derived from the focus crop) have been selected to perform a **Difference-in-Differences (DID) analysis over the 2017-2021 period**. Using the data of farmers who participated to Rikolto's program (treatment group) and of similar farmers that did not participate (control group), **we may be able to identify the impact of Rikolto's intervention on the above-mentioned outcomes of interest, while abstracting from other factors outside of the scope of the analysis**. As mentioned above, small sample sizes and high attrition rates might still bias the results.

The attrition rate is high as only a relatively small sample of farmer participated in both the baseline and endline surveys. While Rikolto selected new producers in 2019 and 2021 with similar characteristics to the 2017 producers (e.g., age, gender, education, etc.) to limit attrition bias, this limitation should be taken into account when interpreting the results.

Cinnamon: the results of the Farmer Survey on Cinnamon should be interpreted *with caution given the data limitations*. For examples, only two out of 50 interviewed cinnamon farmers in 2021 reported to have produced any cinnamon at all in the past year. As such the averages of 2 people counted of course for the whole section on production and commercialisation.

The rest of this methodology section provides insights on the additional qualitative data collection conducted in Indonesia.

2.3 Qualitative evaluation

Secondary qualitative data were collected through participatory approaches, notably Focus Group Discussions (FGDs), and review of project documents listed in Table 1. This allowed for triangulation of information gathered and ensured impartiality. The qualitative component facilitated concrete, contextual and in-depth understanding of the contribution of Rikolto's interventions to improve household resilience, livelihood outcomes and strengthen FOs, as well as spillover effects and impact of Covid-19 on the programme.

Secondary data sources: This evaluation is extensively **based on available information** provided by Rikolto (Table 2).

Table 2: Available Documentation and Data

<p>Intervention Framework – at country-cluster level</p> <ul style="list-style-type: none"> • The Intervention Framework describes Rikolto's ToC and includes an overview of the interventions and related outcomes, as well as annual monitoring data for a country-cluster combination • Additionally, there are Annual Reports to DGD that are written based on the Intervention Framework. They include a "Performance Scoring Card" assessing Rikolto's performance along seven criteria and a related Lessons Learnt document and can be used as additional data source where the Intervention Framework provides only scarce information²
<p>Midterm Review (MTR) – at country level</p> <ul style="list-style-type: none"> • The MTR assesses the 2017-2021 DGD-programme up to 2019 at country level based on available monitoring and FS data
<p>Farmer Survey (FS) data – at farmer level</p> <ul style="list-style-type: none"> • The FS has been elaborated by Rikolto to collect data at farmer level at baseline (2017), mid-term (2019) and end-line (2021) • The data has been collected from a sample of beneficiaries and additionally from a control group (CG) for 8 country-cluster combinations (Rice-DRC, Rice-Mali, Rice-Indonesia, Coffee-DRC, Coffee-Peru, FSC-Vietnam, FSC-Tanzania, Cocoa-Honduras) • FS data descriptive results are provided to the LT by the CT when available³
<p>SCOPEInsight Assessments & Methodology – at the FO level</p> <ul style="list-style-type: none"> • <i>SCOPEInsight</i> assessments are being carried out every 18-24 months to measure FOs' business and organisational capacities • SCOPE Basic reports are designed for nascent and/or emerging organizations and the SCOPE Pro for more advanced and matured ones • The <i>SCOPEInsight Methodology</i> and <i>Score Interpretation Guideline</i> are provided to the LT for additional guidance
<p>Efficiency Analysis – at the country level</p> <ul style="list-style-type: none"> • The Efficiency Analysis attribute a monetary value to the benefits and costs that arise due to Rikolto's interventions to measure Rikolto's Social Return On Investment (SROI)

² The Annual Reports to DGD are especially relevant for Tanzania and Uganda.

³ The CT is responsible for performing the FS data analysis for each country-cluster combination of interest, as well as providing the descriptive results and detailed guidance to the LT to facilitate interpretation.

- They have been prepared by *I&S Consulting* for Rikolto and are currently only available for Belgium, Burkina Faso, Congo, Indonesia, and Nicaragua

Rikolto's general framework for BDS – at the global level

- This document provides Rikolto's objectives, principles, and guidelines on how to facilitate change in food systems
- It aims to prevent Rikolto's interventions from undermining the local Business Development Services (BDS) sector and to ensure sustainable interventions with a scalable impact

LINK Assessments & Methodology – at the business relationship level

- The LINK assessments make use of the "New Business Model Principles" to assess the level of inclusiveness of business relationships
- An *Assessment Guide* is provided to the LT to facilitate interpretation
- The baseline data is only available in Latin American countries, endline data will be available in all countries

COVID-19 documentation – at the country level

- The COVID-19 documentation comprises a summary of Rikolto's COVID-19 response activities, as well as monitoring data that captures the implementation progress and results

3. Programme Overview - Indonesia

3.1 Rice

APOB (Asosiasi Petani Organik Boyolali) Cooperative is an organic rice producer in Boyolali District, Central Java Province. In 2016, the APOB Cooperative ventured to lease an old rice mill unit to process and sell organic rice. APOB tried to create more produce by renting rice mill units until 2018. In March 2019, APOB succeeded in getting government assistance in the form of a rice mill unit, where APOB had to buy the land to place the rice mill unit. The new rice mill unit's existence has helped APOB develop further. In addition to selling organic rice, the rice mill unit is also used to process healthy rice purchased from members already involved in the Internal Control System (ICS) of the organisation but not organic certified.

APOB organised some capacity-building activities to farmers, such as farmer field schools, to improve organic cultivation; therefore, APOB manages to increase the number of organic farmers every year. The market development of organic rice has been done by identifying and looking for buyers from big cities and smaller cities. The new rice mill unit considerably contributes to expanding the marketing opportunities of APOB.

APOB has held organic youth camp activities for three years; this activity aims to increase participation in rice farming and business activities. Many young people prefer to work in factories than on-farm. Consequently, the agriculture sector dominates by the ageing generation. Through the camp, APOB introduced organic farming from cultivation to the market to young people. APOB also provided training in marketing to enable young people to sell organic rice and healthy rice to the local markets.

The APPOLI (Aliansi Petani Padi Organik Boyolali) Cooperative (so-called KOPAPPOLI) in Boyolali District, Central Java Province, underwent an organisational change from previously called the APPOLI Association due to internal management issues. The organisational transformation aimed to improve administrative management and strengthen the involvement of members of the organisation. The APPOLI Cooperative has a broad domestic organic rice market. In addition to that, APPOLI once exported rice to Australia in 2018 through direct sales to Australian buyers. Due to a solid ICS of the APPOLI, the Boyolali District government asked for the support of APPOLI in the preparation of organic certification for ginger and vegetable farmers in Boyolali District. Furthermore, KEHATI, a national NGO in Jakarta, contracted APPOLI to establish a farmer organisation and develop certification for farmers in Sangihe Talaud, North Sulawesi Province, close to the Philippines.

The field of APPOLI farmers is mostly in semi-irrigated areas where the farmers can only plant rice twice a year. The farmers also grow other products as alternative incomes, such as Chrystal corn, soybean, mug bean and ground peanut. Youth are an essential group in APPOLI, and they receive extensive training from organic cultivation to marketing. At the same time, APPOLI developed a business unit for women farmers groups to process rice crackers made from broken rice, sorted rice that the FO will be marketed to buyers. Some buyers build a good relationship with APPOLI because the cooperative commits to producing good quality rice and timely delivery. In addition, APPOLI is a member of the Farmers Economy Institution formed by the Agriculture Agency of the Boyolali District.

In 2018, Rikolto in Indonesia started a pilot on applying the Sustainable Rice Platform (SRP) standard (further referred to as SRP) with 560 farmers in Boyolali District (Central Java) and Tasikmalaya District (West Java). SRP becomes mandatory for all Rikolto offices members of the Rikolto International Rice Cluster. Cooperation to apply SRP is done by mutual learning among regions. It is agreed that SRP becomes an essential part of Rikolto's rice programme.

Two Rikolto partner cooperatives and farmer members run the SRP pilot, and in 2019 they started the SRP initiative. Rikolto partnered with the national farmer organisation Indonesia Farmer Alliance so-called API (Aliansi Petani Indonesia), in the first year of 2019. The partnership aimed to influence the government at the national level and the private sectors to get to know SRP better and apply it to farmers supplying rice. The policy approach undertaken by the API directed towards Indonesia will adopt SRP standards. Soon, an Indonesian National Chapter of SRP will be formed to involve more stakeholders in developing and implementing SRP in Indonesia.

Rikolto encourages cooperatives to be more advanced in doing business, both the organic rice business and its derivative products. Thus, the cooperative can absorb farmer members' products to the fullest. This activity can automatically attract non-member farmers to get involved in cooperatives. Also, production needs to have continuity in the supply of agricultural input at affordable prices. Cooperatives need to find a market to sell their products, and cooperatives need to be assisted in running cash co-financing for their farmer members who produce organic rice.

All cooperatives have also been relatively stable as organic rice supplier organisations among buyers at the national level. Therefore, it is time for cooperatives to expand the market by relying on existing buyers and being able to sell their brands directly to consumers or other marketing channels with creative marketing methods.

3.2 Food Smart City

For 2017-2021 Programme, Food Smart City Rikolto Indonesia operated in four cities, namely Depok, Solo, Bandung and Denpasar.



[Figure 5: Area of intervention FSC Programme in Indonesia](#)

Collaboration for impact is in Rikolto's DNA as a nimble network organisation. Rikolto builds bridges of trust and trade, between private sectors, governments, research institutes, financial institutions, farmer organisations, and other non-governmental organisations (NGOs) sharing the same values and interest. Rikolto's strategic partners are The Belgian Development Cooperation (DGD), The Indonesia Ministry of Home Affairs, national government, governments at provincial, district, and city levels in Indonesia, universities, research institutions, and private sectors. Furthermore, to implement our programmes at the city level, Rikolto directly collaborates with direct partners, incubator and food innovator.

In 2018, Rikolto organized a group of key stakeholders who met regularly with the city governments in a structured manner, though the participation of relevant stakeholders was still inconsistent. In 2019, an initiative to develop healthy canteen standards at schools with local government agencies in Solo (Agencies of Education, -Health, -Environment, and -Women Empowerment and Child Protection) started. Rikolto's partners also monitored the Pangan Jajan Anak Sekolah (School Canteen) programme of which our partners gained recognition from the National Agency of Drug and Food Control. In 2019, multi-stakeholder meetings were carried out in Solo and Depok regarding healthy food consumption, food waste management and healthy school canteen programmes. In Bandung, Rikolto worked together with Parahyangan University (Unpar) to conduct advocacy work. After finishing the study on food consumption habits and how Bandung's people address food waste in 2018, Unpar with the support of Rikolto conducted multi-stakeholder meeting in 2019 and public awareness as a follow-up of the study.

Solo, Bandung and Depok Government showed their commitment to the involvement of multi-stakeholder in the decision-making process. The government acted as both organisers and guests in the activities with the following topics.

- Solo (3) – (i) The development of healthy canteen standards, (ii) food waste management through gender responsive village programme and (iii) the development of food sharing standard operating procedures. The contributing government stakeholders are Health Agency; Environment Agency; Education Agency; Women, Children, and Community Empowerment Protection Agency (P3APM); Agriculture and Food Security Agency'; and Food and Drug Inspector Office of Surakarta. The non-government stakeholders were Food Expert Association (IKABOGA); Carefood; Kala Canda, Kusuma Berbagi, Surakarta Child Forum; Legal Journal Managers Association; Surakarta Healthy Food Consumer Group; Research Institute and Community Service (LPPM) of Slamet Riyadi University; LPPM of Sebelas Maret University; LPPM of Islam Batik University; and KOMPAK.
- Bandung (1) – Awareness is raising on food waste. The contributing stakeholders were Bandung City Government (Agriculture and Food Security Agency, Environment and Hygiene Agency, Communication and Information Agency, and Education Agency), Santika Hotel, The Cipaku Garden Hotel, Sushi No Mori Restaurant and Parahyangan University (Social and Political Sciences).
- Depok (3) – (i) Food waste management, (ii) food sharing, and (iii) more inclusive city food council. The contributing stakeholders were Food Security, Agriculture, and Fisheries Agency, City Government Secretariat, Indonesian Food Service Association (APJI), D'Mall Management Office, Chef Association, Madame Elly Farida (the wife of Depok Mayor), and Pembangunan Jaya University.

3.3 Coffee and Payment Ecosystem Services

In the last 10 years, there has been a positive uptake of certified commodities worldwide. Producers may apply for more than one certificate when dealing with different buyers that favour different certificates. However, in recent years, there has seen a shift towards sustainability beyond certification. Some buyers start to develop their own (internal) standards, for example, CAFÉ PRACTICES developed by Starbuck or AAA programme by Nespresso.

Furthermore, in Indonesia, Rikolto also have tried to build and applied the Payment for Ecosystem Service (**PES**) model. PES model was brought by the fact that many farmers add value through their sustainable practices without receiving any incentives or payments for the ecosystem services they help to provide. For example, a farmer who maintains an intact agroforestry system on a hilly location reduces the risk of landslides and erosion without additional reward. Through the identification of private or public partners who are willing to pay for these ecosystem services, a positive effect on the landscape which provides these services can be achieved, benefiting the farmers and the environment.

Through its programmes in the period of 2017-2021, Rikolto have tried to achieve its goal of supporting and contributing on building and developing *Innovative agribusiness models based on inclusive business practices help a new generation of profitable farmers to grow in a healthy environment*". There were three collective strategies applied to achieve this goal, illustrated by Figure 6.

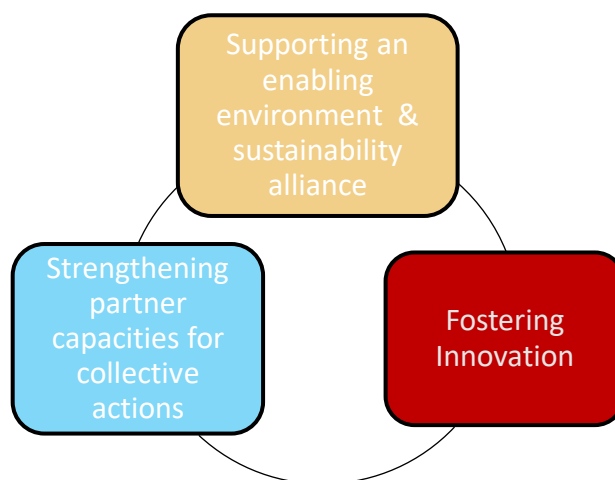


Figure 6: The three main strategies of Rikolto in 2017-2021 period

The strategies above were then formulated into four intervention themes, which have become guidelines for the types of activities in the Rikolto Coffee Programme, as follows:

1. Enabling environment in the coffee sector including gender sensitiveness and youth inclusiveness of the value chain.
2. Enabling Coffee Farmer organisations (FOs) to enhance their business capacities that comply with sustainability standards and market demands for the welfare of FOs' members.
3. Promoting models of payment for ecosystem services (PES) by working with existing partners that focus on green economies in protected forest landscapes while establishing complementary partnership(s) with private sector/institutions.
4. Supporting national commodity platforms and international clusters to facilitate/mediate all commodity stakeholders to develop innovative, inclusive, and profitable business models and sustainable agriculture practices.

There are several expected outcomes from the main intervention strategies mentioned above, such as: 1) More **youth and women are involved** in the sustainable value chain; 2) Farmer Organisations (FOs) enhance their **inclusive business** that comply with **sustainability standards and meet new market demands**; 3) Commodity platforms ensure that smallholder farmers earn regional wage in the respective chains and **Payment Models for Ecosystem Services (PES)** set up and are **adopted by the private sectors and governments**.

In the period of 2017-2021, Rikolto's coffee programme has committed to support six coffee cooperatives and organisation in three provinces of central coffee production in Indonesia as follows:

1. In Sumatra as the most important coffee-producing island in Indonesia, Rikolto collaborated with the Koerintji Barokah Bersama Cooperative (KKBB) in the Arabica coffee producing area of Kerinci and with a local NGO called Lembaga 3 Beradik (LTB), which initiated the formation of the Cahaya Puncak Cooperative. Merangin (CPM), as a Robusta coffee farmer cooperative in Merangin.
2. In East Nusa Tenggara (NTT) Province, the Rikolto coffee programme collaborated with 2 cooperatives, namely the Manggarai Coffee Farmer Association (ASNIKOM) and the Bajawa Flores Arabica Cooperative – (MPIG AFB Secondary Cooperative).

3. Furthermore, the last two partners of Rikolto's coffee programme are in South Sulawesi, specifically from the Toraja and Enrekang highlands. In North Toraja, the coffee programme collaborated with the Toraja Coffee farmer Association (PPKT), while in Enrekang Regency, it collaborated with Benteng Alla Cooperative (KBA).

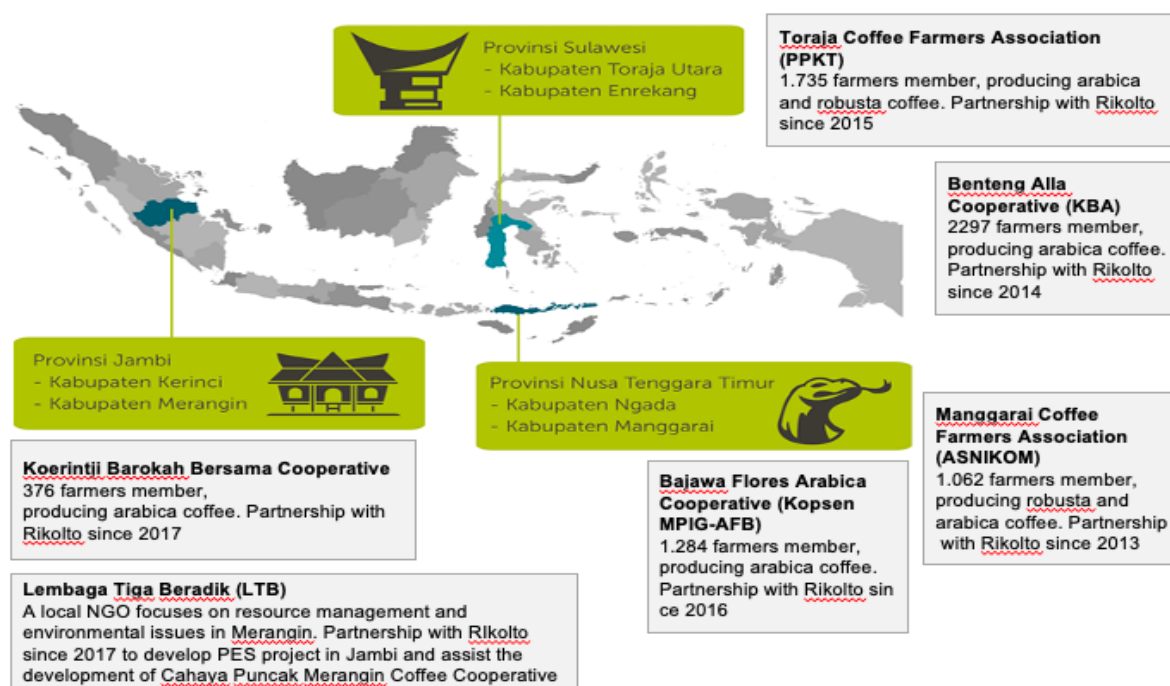


Figure 7: The distribution map of coffee programme partners in Indonesia (2017-2021)

3.4 Cocoa

In the last five years, cocoa production in Indonesia has been decreasing dramatically due to the cocoa fruit borer attack. This pest infested cocoa plantation of farmers with limited knowledge of good cocoa cultivation practices, as well as the declining productivity on aging trees. Many efforts have been made to eradicate cocoa pests and diseases in Indonesia, both from government programmes (GERNAS) and other parties such as INGO and private sectors. The interventions resulted on cocoa production increase. However, although the productivity was increased, the farmers had to face another challenge of meeting the markets' demand as there was still a need to increase the quality of the cocoa. The low quality of cocoa produced by the farmers was resulted by the lack of access to information on post-harvest processing and handling such as fermentation and drying techniques. These were also the problems Rikolto found on the cocoa programme intervention areas of Sulawesi and Flores. The major problems generally found in cocoa value chain in Indonesia were:

1. Low productivity compared to both national standards and international standards. This is caused by the farmers' lack of knowledge related to the modern and good agricultural practices, access and knowledge of relevant technologies to cope with pests and diseases, the decrease production in the older cocoa bearing trees, and the decline in soil health.
2. Low supply of good quality agricultural inputs that are standards and not in accordance with processing technology.
3. Low added value as most products were sold without going through post-harvest that suits the needs of the market.
4. Lagging infrastructure (roads, communications) and long distances to get to large buyers.
5. Lack of access to information.

Due to the low production prior of 2017, the 2017-2021 Rikolto's programs in Indonesia on the cocoa commodity focuses on issue of seed quality and market inclusivity. For this phase, the cocoa programmes focus on three main intervention regions of South Sulawesi, West Sulawesi, and Flores regions through partnership with Mitra Agri Cooperative (West Sulawesi, Polewali Mandar district), Masagena Cooperative (South Sulawesi, North Luwu district), Cahaya Sehati Cooperative (South Sulawesi, East Luwu district), and SIKAP Cooperative (Flores, Ende district) to implement the programs.

FOs encourage participation of youth and women by carrying out various attractive activities. In Sulawesi, the integration of livestock and cocoa gardens enticed young people to involve in cocoa agriculture value chain. In addition, the participation of private sector in providing capacity building, i.e., Cacao Doctor, convinced the local young farmers that cocoa business is promising. Meanwhile, East Nusa Tenggara, Rikolto engaged millennials in agriculture through Youth Entrepreneurship Lab (YEL), which was collaboratively organised by Rikolto and millennial organiser, Remaja Mandiri Community (RMC) Detusoko. YEL is an open platform for millennials who are young and passionate about the agricultural value chain and are willing to contribute to improving the cocoa sector. The participation of women in value chain is also crucial. Rikolto and partners support women participation in FOs daily operation and decision-making. Mostly, women contributed to managerial and production tasks in the value chain.

Inclusive Business approach was utilized to develop the cocoa sector in a comprehensive manner, starting from the farm to the market access, allowing cocoa farmers to further maximize their income. One of the most apparent outcomes of the programme is an increase of cocoa productivity of the intervened farmers, with an average of about 1.41 kg per tree. There is also an improvement of product marketability through the specialty market that provide better price at the farmer level. During this program period, Rikolto had managed to join cocoa multi stakeholder institution (MSI) of Cocoa Sustainability Platform (CSP) and participate in national level programmes. Through the platform, Rikolto contribute in giving a national level recommendation through governmental stakeholder.

3.5 Cinnamon

In 2017-2021 programme, Rikolto has empowered cinnamon farmers in the villages of Talang Kemuning, Tanjung Syam, and Bintang Marak, Jambi Province in developing sustainable supply chain of cinnamon. Based on Rikolto's Theory of Changes, the programme aimed to achieve the objective of a new generation of profitable farmers that is enabled via innovative practices to meet the growing demand of urban consumers for sustainably produced agricultural commodities in a healthy environment (Figure 8). The programme promoted a cinnamon farming system that meets the standards of sustainable agricultural practices, encourages intercropping methods and facilitates farmers to enter the organic market to get better prices through organic certification and quality assurance.

Along the programme, Rikolto introduced Payment for Ecosystem Services (PES) concept (Figure 8). In principle, a PES system allows the farmers to provide ecosystem services in their economic activities through farming (for instance, by applying sustainable agricultural practices) and document it. The beneficiaries of ecosystem services, which can be individuals, communities, businesses or the government, make payments to farmers who deliver the services and contribute to the ecosystem restoration of the farm and the park. They benefit from quality, sustainably produced goods, and a well-preserved Park. This payment can take both a financial or non-financial form, for on-farm or off-farm purposes, and can be given directly to farmers or to the community at large through, for instance, improving farm and non-farm infrastructure projects that support sustainable agricultural practices and the protection of wildlife corridors for endangered species. Rikolto teamed up with direct and strategic partners, namely TAKTIK, buyers/processors, local traders, Kerinci Agricultural and Plantation Office, Kerinci Cooperative Service

Office, Village-owned enterprise (BUMDES) Talang Kemuning, Spices National Platform (SSI), and certified body.

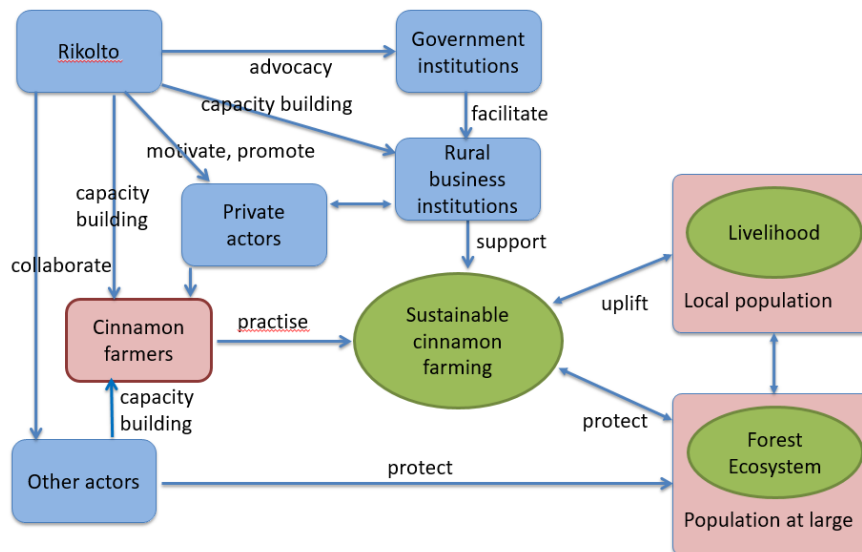


Figure 8: The scheme of Payment for Ecosystem Services

Rikolto has been working with TAKTIK (Tani Sakti Alam Kerinci) – a cinnamon farmer association- and empowered 148 certified farmers (M: 100, F: 48, Y: 31)⁴. Cinnamon is not harvested seasonally like coffee and others. Therefore, TAKTIK has applied a selective harvest with a thinning system on young cinnamon trees aged around 5-7 years, whose skin is not too thick and can roll up when dried. In the harvest season, production capacity is about 15-20 tons of cinnamon per month. On average it takes 1 month to prepare cinnamon with such a capacity. Rikolto in collaboration with TAKTIK facilitated training and workshops (field schools) for farmers. Moreover, Rikolto covered gender and youth inclusion issues by supporting capacity building in processing and marketing for youth and women.

In 2019, TAKTIK successfully held organic certifications (European Union and USDA) and signed an agreement with its buyer, Tripper. In addition to the commercial relationship, Tripper agreed to make Payment for Ecosystem Services (PES) to the members of TAKTIK to implement an intercropping project in their garden to ensure sustainable cinnamon production and improve farmer’s livelihood. Furthermore, in the same year, TAKTIK received the award on the celebration of Plantation Day from the Ministry of Agriculture as a recognition and appreciation towards farmers and groups shifting to value-addition activities and product upgrading, particularly in their downstream activities.

⁴ Partner Report 2021

4. Farmer Level

4.1 EQ1. Have Rikolto's interventions contributed to increased resilience and improved livelihoods of farming households?

Sample characteristics

Table 3: Sample Characteristics

RICE	COFFEE	CINNAMON
Education (<u>primary school</u>) 0.45 (2017), 0.62 (2019), 0.38 (2021)	Education (<u>primary school</u>) 0.41 (2017), 0.41 (2019), 0.43 (2021)	Education (<u>senior high school</u>) 0.36 (2017), 0.38 (2019), 0.44 (2021)
Household size Na (2017), 2.95 (2019), 3.33 (2021)	Household size Na (2017), 4.70 (2019), 4.55 (2021)	Household size Na (2017), 4.36 (2019), 3.48 (2021)
Age (<u>younger than 35</u>) 0.01 (2017), 0.01 (2019), 0.02 (2021)	Age (<u>younger than 35</u>) 0.16 (2017), 0.07 (2019), 0.12 (2021)	Age (<u>younger than 35</u>) 0.18 (2017), 0.10 (2019), 0.32 (2021)
Land owned (<u>hectare</u>) 0.30 (2017), 0.21 (2019), 0.24 (2021)	Land owned (<u>hectare</u>) 1.60 (2017), 1.62 (2019), 1.48 (2021)	Land owned (<u>hectare</u>) 1.39 (2017), 2.43 (2019), 1.33 (2021)

Source: Rikolto's Farmer Survey 2017-2021 for Rice, Coffee, and Cinnamon.

The sample characters shown by the three focus crops represent the characteristics of the sample of Indonesian farmers in general: low education, relatively old age, small family (due to the success of the family planning program), and small land tenure. What is slightly different from the sample above is the sample of Cinnamon farmers, whose education is Senior High School. However, given the limited sample size that responds to Cinnamon, these educational characteristics cannot be considered representative of the characteristics of Cinnamon farmers in general.

When the evaluator visited the field before the endline evaluation was carried out, the rice farmers and FO management said that one of the threats to the sustainability of their business was the age of the farmers who were mostly old. They are also worried that no young generation will continue farming in their village, because farming is not considered to provide a decent income for the youth, especially for those whose higher educational level.

The same concerns were actually conveyed by stakeholders from various sub-sectors in agriculture. This has been a classical problem with no solution yet.

Define and build a resilience index

The definition of resilience used in this report is the one provided by the RM-TWG (Constas, 2014) following which resilience is the “Capacity that ensures **stressors and shocks** do not have long-lasting adverse development consequences”. This definition considers resilience as a set of capacities at different scales (households, communities, and systems), that emerges as a reaction to specific disturbances (shocks and stressors) that undermine the stability of a system, increasing its vulnerability. It considers resilience not as an end, but rather as an instrument to achieve the ultimate goal of limiting vulnerability and promoting long-term sustainability and improved well-being.

In the operationalization of the definition, the resilience indicators are re-grouped into absorptive, adaptive and transformative capacities, following Bené et al. 2015 and the main resilience literature (RM-TWG

2014). Absorptive capacity is a household’s ability to absorb the impacts of shocks in the short-run. Adaptive capacity reflects the ability to respond to long-term social, economic, and environmental impacts of shocks through specific adaptation strategies. Transformative capacity refers to structural changes in the structure and function of the system caused when the adaptive capacities of the household, community, or ecosystem are overwhelmed by the magnitude of the shocks.

To estimate resilience, ADE first estimated each resilience latent (i.e. unobserved) capacity by following a latent variable approach (Alinovi *et al.*, 2009) through factor analysis. Once the capacities have been estimated, ADE builds the resilience index through a factor analysis of the estimated capacities. In general, the indicators considered into the absorptive capacity are all indicators related to mitigation and preparedness strategies.

In this sense, ADE chooses indicators associated to good agricultural practices (soil and water management, and inputs use) as proxies for the degree of preparedness; and indicators such as access to safety nets and coping abilities for mitigation capacities. For the adaptive capacity, ADE considers indicators associated with ability to use technology and innovation skills to overcome the shock as long-term responses once the absorptive tools are exceeded by the shock. In this sense, we consider indicators, such as education and training together with diversification of livelihood, access to credit and land size as proxies of farmers’ ability to adapt to a multi-hazard environment. For the transformative capacity, ADE considers all indicators that enhance governance and enable conditions for resilience and transformation, as access to services, infrastructures and social inclusion. Unfortunately since only one indicator was available and we did not report information on transformative capacity.

Relevant livelihood outcomes and related indicators

Livelihood outcomes described as the achievement of livelihood strategies implemented by the household members. The livelihood outcomes could be the level of food security, improved income, health and well-being, asset accumulation, and improved social status. In reverse, ineffective outcomes could be in the form of income insecurity, food insecurity, and higher vulnerability to shocks, loss of resources and assets, and impoverishment. A livelihood covers assets, capabilities, and activities needed at individual and household levels to survive and afford basic life necessities. There are some ways of improving the livelihood of farming households, for instance, by maintaining and enhancing the capabilities and assets and coping with and recovering from shocks and stress, e.g., Covid-19 Pandemic. Rikolto conducted Farmer Survey from 2017 to 2021 to gain more insights into the farmer's livelihood.

Rikolto’s impact on farmers’ livelihood and resilience

Farmers’livelihood

Table 4: Farmer Livelihood

RICE	COFFEE	CINNAMON
<p>Livelihood</p> <ul style="list-style-type: none"> ➤ Focus crop’s income increased from USD 1291.56 (2017), USD 906.92 (2019) to USD 1525.25 (2021) ➤ Share of income derived from focus crop: 57.95% (2017), NA (2019), 58% (2021) ➤ Household Expenses (2021): Basic consumption, healthcare, savings 	<p>Livelihood</p> <ul style="list-style-type: none"> ➤ Focus crop’s income increased from USD 792.23 (2017), USD 911.32 (2019) to USD 1132.33 (2021) ➤ Share of income derived from focus crop: 59.93% (2017), 62.48% (2019), 68.74% (2021) ➤ Household Expenses (2021): Basic consumption, healthcare, education 	<p>Livelihood</p> <ul style="list-style-type: none"> ➤ Focus crop’s income increased from USD 6467.92 (2017), USD 4026.18 (2019) to USD 10213.57 (if N=2 – FS 2021) or USD 3384 (if N=16 - Partner Report 2021) ➤ Share of income derived from focus crop: 63% (2017), 33.2% (2019), 38.3% (2021) ➤ Household Expenses (2021): Basic consumption, education, healthcare

Source: Rikolto's Farmer Survey 2017-2021 for Rice, Coffee, and Cinnamon.

Based on the interview with farmers, it was mentioned that there is a positive trend of income increase at the farmer level. According to Farmer Survey 2021, the average annual total income increased from USD 2,345 in 2017 to USD 2,878 in 2021 (not available for 2019) for rice farmer households, USD 1,429 in 2017, USD 1,390 in 2019, and USD 2,512 in 2021 for coffee farmer household and USD 10,301 in 2017, USD 12,793 in 2019 and USD 21,237 in 2021 for cinnamon farmer household. The average total income from focus crops also increased as described in Table 2 above. Regarding Cinnamon, there was a problem with the data collected in 2021 since only two farmers responded to the survey, and in turn, the sample size was not representative.

There are also increases in focus crops prices that contribute to the increase in the average total income from focus crops. For Rice USD 293 (2019) to USD 314 (2021) per ton, USD 486 (2019) to USD 515 (2021) per ton for Coffee, and USD 3044 (2019) to USD 3743 per ton for Cinnamon. Focus crops income for Rice increased from USD 1,292 (2017) to USD 1,525 (2021) and for Coffee USD 792 (2017) to USD 1,132 (2021).

The increase was expected not only from the product's price, but also from the productivity and the quality. The interventions, especially on farmer field school and improving the farmer organization capacities on business management, have influenced the productivity and quality produced by farmers, hence influencing their livelihood outcomes. The increases of the focus crops are 12.33 (2017) to 14.43 (2021) ton per hectare for Rice and 2.25 (2017) to 3.32 (2021) ton per hectare for Coffee (productivity for Cinnamon could not be presented due to problem in sample size). Meanwhile, the share of income derived from focus crop remains the same for Rice (58% for 2017 and 2021) increased for Coffee (60% in 2017 to 69% in 2021), but for Cinnamon, there is no conclusion could be drawn. And those focus crops are still the primary support for farmer household expenses (household expenses 2021 in Table 4 are the top three household expenses for each focus crop).

Resilience

Regarding farmers' resilience, Rikolto interventions affected the resilience capacities, including absorptive, and adaptive capacities. An accurate analysis of indicators embedded in the absorptive and adaptive capacities have been run.

Coffee: It emerged that intervened farmers improved absorptive capacities in a significant way such as water conservation practices and soil erosion, but the soil conservation is still low. Improved absorptive capacities might be affected by the interventions provided by Rikolto from 2017-to 2021. Rikolto intervention focused indeed on good agricultural practices through farmer field school, climate field school, and agroforestry training for farmers. Meanwhile, adaptive capacity refers to adjusting in response to changes. There is an improvement in education (social) and household access to economic components analysed from the farmer survey in 2021. In this regard, Rikolto's intervention in strengthening the business professionalism of FOs to support collective marketing played a significant role to improve the components of resilience capacities in social and economic themes.

Rice: Considering the sample of beneficiary households (i.e. treatment), on average, farmers's adaptive capacity increased in a significant way between baseline (0.08) and endline (0.31), Table 2. The increase in the adaptive capacity is mainly due to a significant increase in income diversification from 0.71 in 2017 to 0.75 in 2021.⁵ The increase in income diversification might be linked to the Rikolto's intervention. Absorptive capacity decreased over time in a significant way. The decrease in the absorptive capacity determines the decrease in the resilience index. This result can be biased by the fact that the sample changed between the different survey waves.

⁵ This percentage refers to percentage of farmers who rely on focus crop for less than 70% of their income.

Cinnamon: On average, farmers's adaptive capacity remained constant between baseline and endline (0.20), Table 2. Absorptive capacity decreased over time in a significant way. The decrease in the absorptive capacity determines the decrease in the resilience index. This result can be biased by the fact that the sample changed between the different survey waves.

Heterogeneous effects

For Cinnamon, there is no information about heterogeneous effect either in the Farmer Survey or in the internal assessment document. Meanwhile, there are some significant differences across sex groups, at the advantage of male producers, and especially at baseline and endline for Rice. Significant differences can be seen at endline in terms of income, production, commercialization, total profit and production sold via the FO. The income gap between men and women almost tripled between 2017 and 2021; focus crop income gap almost doubled, notably because of more sales and because of men produce more than women (production gap almost doubles). Men earn a higher total profit and sell more through the FO (25% more than women in 2021, compared with 12% in 2017)⁶.

Between 2017 and 2021, total direct beneficiaries of Rikolto intervention on Coffee and Payment Model for Ecosystem Services are 7,000 farmers each year in which 30% are female farmers and 19% are youth. In general, Coffee and PES programme activities in 6 areas aim to improve sustainable practices (Good Agricultural Practices), productivity, and post-harvest management in coffee production to meet market demand and sustainability standards, strengthening farmer organisation (cooperative) management in doing profitable business, improve access to market and market inclusion, and increase youth and woman inclusiveness through capacity buildings and participations. However, the effects of intervention may vary in different regions depending on specific beneficiaries (gender), socio-cultural, geographies, and economic conditions.

Improvements in post-harvest management and product quality of coffee in 6 areas of intervention have affected the increase additional income for woman in the coffee sector. Improved coffee quality and processing in the cooperative members have influenced the coffee selling form from cherry or hard skin to green bean. The changes have increased the involvement of women in sorting and quality control processes of coffee.

Frequent exposure of programmes facilitated in the last 5 years have improved not only hard skill of the beneficiaries, but also their soft skill in leadership and public speaking. For example, through various Rikolto's programme in Bajawa, women farmer group leader claimed their improved capacity in leadership and public speaking. Hence, they could posit and improve their bargaining position in the community, particularly in promoting sustainable coffee production practices.

⁶ Table 29 Impact on livelihood indicators - Rice growers in the treatment group - gender comparison (T-tests), Rice Data Analysis 2022

4.2 EQ2. What are the spillover effects of Rikolto’s policy work beyond their direct beneficiaries?

Table 5: Spillover Effects

RICE	COFFEE	CINNAMON												
<ul style="list-style-type: none"> ➤ There was <u>no evident that indirect beneficiaries of farmers</u> were affected by changes in public policies through the commodity platform (i.e., Indonesian Farmer Association) ➤ <u>While</u>, 3035 farmers were directly affected by changes in private policies. ➤ 9105 members of household farmers were indirectly affected by changes in private policies 	<ul style="list-style-type: none"> ➤ Rikolto took part in developing National Sustainability Curriculum for Arabica and Robusta coffee. The curriculum is promoted to all SCOPI member in Indonesia and used by master trainer coffee to train coffee farmers in applying sustainable coffee production. <table border="1"> <thead> <tr> <th>Year</th> <th>2017</th> <th>2019</th> <th>2021</th> </tr> </thead> <tbody> <tr> <td>Number of indirect end beneficiaries: farmers affected by changes in public/private policies through commodity platforms</td> <td>38.100</td> <td>78.450</td> <td>909.280</td> </tr> <tr> <td>Number of indirect end beneficiaries: members of household farmers affected by changes in public/private policies</td> <td>137.703</td> <td>254.526</td> <td>2.769.498</td> </tr> </tbody> </table>	Year	2017	2019	2021	Number of indirect end beneficiaries: farmers affected by changes in public/private policies through commodity platforms	38.100	78.450	909.280	Number of indirect end beneficiaries: members of household farmers affected by changes in public/private policies	137.703	254.526	2.769.498	<ul style="list-style-type: none"> ➤ Since 2019, TAKTIK developed and implemented the business plan in collaboration with BUMDes Talang Sakti. Furthermore, BUMDes Talang Sakti has allocated budget for empowering cinnamon farmers in production and processing. The collaboration between the FO and the local institution may be beneficial for the surrounding local communities, particularly for 1700 people living in Talang Kemuning Village.
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Source: Intervention Framework for Rice, Coffee, and Cinnamon.

Rice: Rikolto interventions on policy work included participation in the **Sustainable Rice Platform**, with the aim of achieving the adoption of SRP by key stakeholders, both public and private. Rikolto and other global actors elaborated an SRP standard. For Rice, there was no evidence that indirect beneficiaries of farmers were affected by changes in public policy. Rice is a strategic commodity and most regulated by the central government. Understandably, there was no public policy affected by the project. SRP could be considered ‘just begun’, and the field evidence from SRP was still not mature enough to be used as advocacy material to influence public policy.

Basically, until the end of the project, ‘rice’ refers to ‘organic rice’, which did good business to farmers. It effectively dealt with the organic market and buyers. Private policies played a significant part to influence members of farmer households as the indirect beneficiaries of the project.

Coffee: Potential spillover effects of coffee and PES programme intervention in Indonesia have been identified. In the earlier phase of the programme, Rikolto facilitated farmer representatives from six partners, namely Asnikom, MPIG Bajawa, PPKT, KBA, KKBB and LTB, to attend ICCRI (Indonesian Coffee and Cocoa Research Institute) training on the good agricultural practice of coffee production. The trainees then became the facilitator of farmer field school on GAP for the cooperative member in their respective regions. In Ngada and Manggarai Timur Districts in Flores, the trained farmers of the joint were involved in the local government programme of the Agriculture Department, such as the rejuvenation programme. They took a role as facilitators in a farmer field school to train other coffee farmers included in the programme (not the cooperative members).

The development of origin certification in the region where Rikolto’s coffee programme partners are located, and improved GAP, sustainability and the quality of coffee produced by the cooperative have attracted more buyers and increased demand for speciality coffee. It has affected the reputation of the coffee from the region and improved the selling price at the farmer level.

From 2017-to 2021, the indirect beneficiaries in the six regions of Rikolto intervention areas are 21.060 farmers on average. While the national level, Rikolto has been actively engaged with Sustainable Coffee Platform Indonesia (SCOPI) and Specialty Coffee Association Indonesia (SCAI) to promote sustainable coffee sector development in Indonesia. SCOPI consist of 50 organisations, of which 25% are private sectors, 12% are farmer cooperatives, and 38% are civil societies. SCAI consists of individual and

organisation members and concerns on improving the quality of Indonesian coffee, farmer livelihood, and education in the coffee value chain. Rikolto took part in developing National Sustainability Curriculum for Arabica and Robusta coffee. The curriculum is promoted to all SCOPI members in Indonesia and used by master trainer coffee to train coffee farmers in sustainable coffee production. In collaboration with SCAI, Rikolto supported the national training, speciality coffee auction, and speciality coffee competition to promote high-quality Indonesian coffee at the local and international levels. It indirectly benefited the demand for speciality coffee from Indonesia.

Cinnamon: Kerinci Seblat National Park (KSNP) is the second-largest national park in Indonesia. By integrating conservation measures with promoting sustainable cinnamon farming and the value chain in the outer corridor of the KSNP, local communities secure their livelihood whilst protecting the environment. Cinnamon farmers could provide services to conserve the KSNP and, in return, should be entitled to get incentives. The concept was the Payment for Ecosystem Services (PES) that Rikolto has promoted. Rikolto is actively involved in a multi-stakeholder forum for conservation in that area with the local government, environment-focusing NGOs, local communities, and private sectors. Rikolto realised that interventions should be embedded within local institutions and endorsed by the (local) government in the long run to ensure sustainability and institutional change.

Due to Rikolto's efforts in lobby and advocacy, private sectors have been aware of the PES concept. The pilot project between Rikolto and Tripper has supported 1504 non-member farmers by establishing multi-cropping demo plots. Tripper focused on the purchase of Cinnamon KF and KS grades. Furthermore, Rikolto and TAKTIK worked together with the Village-owned Enterprise (BUMDEs) of Talang Sakti to empower cinnamon farmers in Talang Kemuning village, Bukit Kerman Sub-District. BUMDEs engaged in business meetings, provided regular and updated information and feedback, provided technical assistance, bought commodities at a fair price, promoted sustainable production and supported PES. Since 2019, TAKTIK has developed and implemented the business plan collaborating with BUMDEs Talang Sakti. Furthermore, BUMDEs Talang Sakti has allocated a budget for empowering cinnamon farmers in production and processing. The partnership between the FO and the local institution may be beneficial for the surrounding local communities, particularly for 1700 people living in Talang Kemuning Village.

5. FO level

5.1 EQ3a. What has been Rikolto's role in strengthening FOs and making them strong business organizations for their members?

Rikolto significantly strengthened the FOs through capacity building providing an effective operational system to FOs and their members. FOs management mentioned that Rikolto strengthen them with important components. Those components were: ICS, business management skills and tools, business networking, product development skills, good agricultural practices (GAP), good processing practices (GPP), Payment for Ecosystem Services (PES), and self-assessment tools (SCOPE Insight Assessment).

Internal Control system (ICS): The FOs are required to meet sustainability and traceability standards and international market demands, such as organic, fair trade, etc. Therefore, Rikolto has assisted FOs to improve the capacity of the Internal Control System (ICS) team to comply with the sustainability standard to reach the market. The internal control system ensures that the farmer members apply sustainable practices, including Good Agricultural Practices (GAP). All the FOs have received ICS and have an active ICS team.

Geographical Indication for Coffee (IG): Currently, 5 out of 6 coffee-growing areas of Rikolto's partners have Geographical Indication certificates. In 2021, Rikolto with its partner (Lembaga Tiga Beradik) in Merangin are promoting the IG certification process for Merangin coffee. The IG certifications have significantly improved access to the market (especially the international market) for speciality coffee produced by FOs. In 2019, TAKTIK successfully obtained its organic certification from European Union and USDA; therefore, the FO could buy the raw materials from the farmers at a better price. Considering the high-quality standards of organic products, TAKTIK has employed an Internal Control System (ICS), which ensures the quality of products supplied by the farmers and provides price transparency to the farmer when purchasing the raw materials.

Cash payment system: A cash payment system was a service provided to the farmer members where the FOs will pay for the quality food collectively sold by the member farmers with cash.

Capacity building and technical assistance: Furthermore, TAKTIK has provided capacity building and technical assistance in intercropping methods by providing non-cinnamon seedlings and demonstration plots as a means for learning and practising. At the same time, APOB and APPOLI must deal with organic rice markets developed with stringent buyers' requirements. APOB and APPOLI would not be recognized as reputable sources of organic rice without strict ICS implementation.

SCOPE Insight Assessment: To become a profitable and self-sustained business, the FOs need to evaluate and reflect on themselves and develop more professional strategies. To assess the level of professionalism of the cooperative, Rikolto employed SCOPEInsight assessment tools. Rikolto conducted a SCOPE Insight assessment to rate the business performance of organizational capacities of the FOs. SCOPEInsight score was utilized to compare how each FO progressed before and after the interventions. The SCOPE Insight score covers supply base, their ability to manage external risk, operational skill, internal capacity, financial management, sustainability, enabling environmental situation, and sustainability of the FO. Unfortunately, most of the SCOPEInsight scores of the FOs are decreasing (Figure 9 below shows the example of decreasing overall score for TAKTIK: 4.1 in 2016 to 2.6 in 2021; all the components are increasing from 2016 to 2021)⁷. Some critical information, such as financial performance, may not be available due to limited data during the assessment.

⁷ SCOPE Insight scores for other FOs are better than TAKTIK's. Most of them decreased, but better than TAKTIK's (e.g. APOB score increased from 2.9 in 2016 to 4.1 in 2021, but some critical informations are missing). But due to the paging limitation, the discussion on SCOPE Insight for other FOs could not be presented in this country report. SCOPE Insight reports for all FOs are available to discuss.

There are two factors that cause the decreased scores. The example of cocoa could represent this problem. Since early 2020 covid has been giving significant impact to the FOs operation. Semi-lockdown regulation limited the cocoa beans' displacement. Collected beans could not be sent right away to the buyers. The delay affected the beans quality and the delivery. In return, it affected collective marketing at farmers' level. Business was disturbed as well as the SCOPEInsight scores.

The other factor is the unpredictable weather. It could cause the shifting of the harvesting season and the quantity & quality of the beans. It used to be the month of July as the peak of the harvest. March was the end of the rainy season. But in the last 4 years, April or May rains drop the cocoa flower. The harvesting time was postponed and the contract could not be fulfilled.

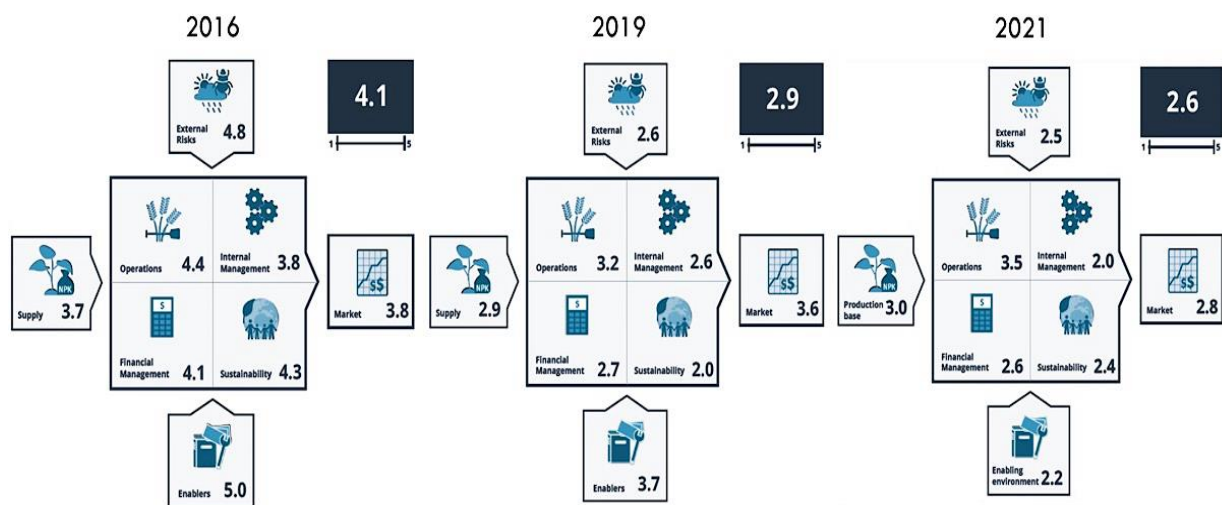


Figure 9: The SCOPE Insight's Score Example

Business Development Services: Rikolto also considers BDS as the source of the FOs' capacity building. In 2018, Rikolto's BDS working group conducted diagnostic studies, resulted in critical services and its central challenges, and defined possible strategies to address them. The services comprise market access, input supply, training and technical assistance, financial mechanism, technology and product development, infrastructure, and advocacy and lobbying.

Rikolto played a significant role in identifying the demand and connecting the FOs to the relevant BDS, linking them to other organisations and governments. In Rikolto's experiences, most of the BDS was located outside the farmer organisations' region (outside province). The quality of offered services varies. In general, the cost required to provide the services and the urgency of the services is the factors. For example, the lack of BDS (capacity building) availability for specific topics in Flores caused the farmer organisation to invite an expert from Jakarta or another province. It increased the cost of capacity building.

However, a partnership between Rikolto, the FOs, and BDS has helped increase the capacity of FOs' members, the peer-to-peer transfer of knowledge, cross-learning through various visits to other farms and production facilities, and the establishment of multiple facilities through collaborative action⁸.

⁸ However, the Rice FOs stated that they did not use BDS for their capacity building. Cinnamon and Cocoa do not provide meaningful information regarding the relationship with BDS. Only Coffee explicitly stated cooperation with BDS for capacity building but did not mention in detail the name and number of the BDS. There are also no informations on accredited BDS providers and no data on the increase of BDS between 2017 – 2021.

5.2 EQ3b. What added value demonstrates the FO as a collective action mechanism for producers?

Based on the farmer's survey result, there was a significant variation among the farmers' sales through the FO: some farmers did not sell to FO and others sold the whole production through the FO. On average, the absolute amount sold through the FO increased significantly from 2017 to 2021. The share of total produce sold is high but did not increase significantly from 2017 to 2021 (Rice 49.7% to 49.3%, Cocoa 65% to 71%, Coffee 55% to 40%). The results signify that the FOs gave their members attractive added value due to the significant share sold via FO.

The survey results show an increase in commercialised produce through FO. The FOs played a significant role in connecting the farmers to the buyers, acting as a collective marketing strategy. Other than that, there were also some initiations in creating derivative products within the FOs.

However, there were several challenges the FOs must tackle, such as limited human resources with leadership skills at the farmer's group level and inconsistencies in farmers' commitment to programmes that can interfere with the sustainability of collective marketing activities. Also, the farmers are still dependent on merchant loans; and the limited funds available for FOs to collect the produce of their members.

Farmer Survey 2021 shows that most respondents were satisfied with the price they received (Rice 86%, Coffee 59%, Cocoa neutral 56% and satisfied 32%, Cinnamon 100%). Respondent claimed that the access to services at least not gotten worse compared to 2016. Based on the focused group discussion with farmer representative and cooperative management team in Rikolto's intervention areas, overall, participants highlighted several service-related improvements, including:

1. **Prices offer.** The purchasing price received by members/farmers are competitive (even higher on some occasions) and are relatively stable throughout the year/harvesting seasons.
2. **Capacity building and mentoring.** By becoming FO members, farmers receive capacity building programmes – through field schools or other activities related to good agricultural practices and post-harvesting training (i.e., sortation, processing, and cupping).
3. **Collective Marketing.** Farmers benefit from the marketing channels that the FOs have, so they need to sell to the FO without selling it by themselves.
4. **Facilities.** Becoming a member of the FO provides an immense opportunity to get facilities or benefit from other external programmes (i.e., training on agroforestry, seedling assistance, etc.)
5. **Dividend sharing.** The availability of dividend sharing is one of the reasons to join the FO. However, based on the SCOPEInsight assessment, all the cooperatives struggled to persuade their members to pay the membership fee.

5.3 EQ4a. Has Rikolto succeeded in facilitating business relations between FOs and private sector buyers?

Table 6: The Success of Rikolto Business Relation Facilitation

RICE	COFFEE	COCOA	CINNAMON
<ul style="list-style-type: none"> ➤ Long-term relationship with buyers (3-4 years) ➤ Buyers were supportive to capacity building ➤ Transparent communication e.g., price setting, quality, term of payment 	<ul style="list-style-type: none"> ➤ Buyers gave incentive to the farmers e.g., seedlings of shades trees and intercrops ➤ The FOs received > 50% down-payment for their products ➤ The FOs were able to export to the US, Europe, and some Asia countries 	<ul style="list-style-type: none"> ➤ Still limited access to product certification as the certification owned by buyers ➤ Single-origin mapping ➤ The FO (MAM) collaborated with BUMDes Inayah in developing processing facilities and producing and marketing cocoa-waste products e.g., feed, organic fertiliser 	<ul style="list-style-type: none"> ➤ Tripper agreed to make Payment for Ecosystem Services (PES) to the members of TAKTIK to implement an intercropping project in their garden to ensure sustainable cinnamon production and improve farmer's livelihood. Moreover, Tripper provided 12,000 cinnamon seeds to grow in the harvested garden

Rikolto has contributed to providing capacity building in production and cooperative business management and connecting the FOs to buyers or other potential business partners. FOs took many benefits from the strategic relations with buyers or potential business partners, as described in Table 4. The ties with buyers are not only based on pure business, but buyers are also supportive of FOs capacity building, giving them flexibility in terms of payment (including significant amount of down payment), supporting product development such as single-origin mapping for cocoa or geographical indication for coffee, and even making payment for ecosystem services for cinnamon.

Compared to the initial state, to date, the FOs or cooperatives can carry out business relationships with more buyers, in which there are transparent trading activities with buyers. They already have the capacity (technical and administrative) to meet the demand for high quality and sustainably produced both for domestic and international markets. The FOs could negotiate and urge the presence of a formal contract or agreement regarding the inconsiderable number of transactions with the buyers, although it still needs to be improved. The FOs continuously received pre-financing schemes, premium and fair price schemes, capacity building programmes, and long-term buying contracts from its buyers and strategic partners both from national and international institutions.

Based on the FO level evaluation, there are several identified fostering and hindering factors in business relation facilitation between FO and other stakeholders. The reported hindering factors are:

1. Ability to produce a quality product. Outstanding quality leads to premium prices and ease of negotiation.
2. Collaboration and mentoring or peer learning. Willingness and ability to collaborate with stakeholders' strategic program will give FOs more resources and time to grow together with the business partners.
3. Rikolto's collaboration with national platforms, supporting exhibition and competition activities, and sending product samples from partners opens business partnership opportunities.
4. The partners and farmers have obtained facilities for production and post-harvesting from different stakeholders that helped them produce a quality product.
5. The FOs' commitment to transparency and services improvement to buyers and members will put the FOs' accountability to the peak.

However, there are also some challenges that are currently hindering the growth of FO as a business, which are:

1. The FOs financial limitation to absorb more produce from members.
2. Lack of negotiation skills of the cooperative management team.
3. Uncertainties in the climate, weather, disaster, pandemic, and policy could impact FOs directly.

5.4 EQ4b. Are these business relations economically profitable, socially inclusive, and environmentally sustainable?

There are some difficulties in assessing whether the FOs' business relations were economically profitable. SCOPEInsight 2021 did not provide complete time-series data on **financial performance**, even though SCOPEInsight was appointed as the formal resource of the FO performance in this end-line evaluation. Two more documents could be used as the source of financial performance of the FO: Intervention Framework and Partner Report. However, the Intervention Framework did not mention FOs' net profit as the impact or outcome indicator. While the Partner Report for all FOs did not provide the information on time for this assessment. However, based on the long relationship with the buyers, the existing business relation gave FOs a profit rate that enabled them to continue their activities with the current capacity. Another way to estimate the profitability is by observing the **FOs' assets development**, but, due to the logistic associated to the evaluation, such observation was not possible to be implemented. In order to answer to the EQ4b we mainly looked at the profit margins, the premium prices. The profit margin received by the FO was also benefitted by farmers directly in the form of higher premium prices and indirectly through the services offered by FOs, one of which was FO's ability to pay fair prices consistently.

For example, Masagena defines the price they pay to the farmers based on the competitor's price, the lowest market price, and world price of cocoa. KCS and MAM set a higher price for farmers who comply with specific standards such as Rainforest Alliance Certification.

In 2021, the average purchasing price for arabica coffee bean was 5.5 USD/kg and its average selling price was 6 USD/kg. As for Robusta coffee, the product purchasing price was 2.2 USD/kg which is considered as a competitive price for competitors in the area, and farmer organisation was able to sell at an average price of 2.8 USD/kg green bean. The standard fees from the buyers influenced the given prices. It is influenced by the quality of the coffee demanded by the business partners. Most of the coffee sold by the cooperative are speciality or premium-based prices, which are higher than the market price.

TAKTIK brings added organic certification and environmental protection values, adhering to its business processes. Due to ecosystem services carried out by TAKTIK, the private sector compensated the farmers with cinnamon seeds based on the number of sales made by TAKTIK. For instance, in 2019, TAKTIK sold 46 tons of cinnamon within three months, and Tripper provided 12,000 cinnamon seeds to grow in the harvested garden. Tripper has committed to maintaining environmental and raw material sustainability.

The organically produced product brings a positive impact both environmentally and socially. In terms of socially inclusive production, buyers pay acceptable prices to maintain the farmers' motivation to sell their produce via FOs. There has been a significant rise in the products sold via FO for all commodities (Table 5). Some premiums were benefitted by FO and farmers through environmentally sustainable practices, as there were buyers that set specific standards on how to cultivate the commodity. The buyers also benefit from the quality and standardized products. Currently, these premiums can only be accessed by certified farmers.

Several identified fostering factors for Rikolto and FO to successfully facilitate economically profitable, socially inclusive, and environmentally sustainable business relations between FO and other stakeholders. The major fostering factors are the internal ability of the FOs to support the processes (i.e., consistent farmers' production, networking ability, board member capacity and capability, and transparency/integrity of the FO) and external support (i.e., the buyer awareness and demand on sustainable and socially inclusive products, governmental supports, and certification). Some hindering

factors, such as farmer regeneration and lack of collaboration between FO as seller and buyer, should be considered.

Table 7: Profitability, Inclusivity and Sustainability

RICE	COFFEE	COCOA	CINNAMON
<p>➤ Net profit trend:</p> <p>APOB net profit: USD 11,367 (2018), USD 12,617 (2019), NA (2021)</p> <p>APPOLI net profit: USD 2,923 (2018).</p> <p>➤ Socially inclusive production: <i>There has been a significant rise in the production sold via FO, increasing from 2 tons in 2017 to 3.35 tons in 2021. However, in terms of share of the production sold through the FO, farmers saw about half of their production commercialized through the FO both in 2017 and 2021</i></p> <p>➤ Sustainability indexes: All scores decreased.</p>	<p>➤ Net profit trend: lack of data</p> <p>E.g., PPKT net profit: USD 8093 (2018), USD 6,389 (2019), USD 2,879 (2020) – to be checked with the partners</p> <p>➤ Socially inclusive production: <i>The long-term business relation have created responses from other stakeholders to provide supports for the cooperative business development. Result of the SCOPE Insight Basic and Pro assessment in 2021 showed that government is the dominant enabler for all the coffee cooperatives followed by sector organisation and NGO (or capacity builder).</i></p> <p>➤ Sustainability indexes: <i>Farmer survey (2021) shows between 2017 and 2021 sustainability indices have experienced decrease, sustainable resource management and sustainable landscape management are exceptional – they slightly increased.</i></p>	<p>➤ Net profit trend: lack of data</p> <p>➤ Socially inclusive production: <i>KCS reported sales of 626,472.68 tonnes of wet beans by RA certified member farmers in 2017, where sales were facilitated by FO. Entering 2018 the sales of wet seeds by farmers assisted by the cooperative were 446,161.52 tons, 317,349.60 tons in 2019, and 225,375 tons in 2020.</i></p> <p>➤ Sustainability indexes: All scores decreased</p>	<p>➤ Net profit trend: lack of data</p> <p>➤ Socially inclusive production: <i>The difference between purchases at the farm level and then processed by TAKTIK was around IDR 5,000 – 10,000 per kg. In 2019, TAKTIK sold 58 tons of organic cinnamon to the private sectors. In 2020, there were no sales due to the COVID-19 pandemic, which caused slow progress in the business.</i></p> <p>➤ Sustainability indexes: <i>Only the sustainable water management and landscape management index scores significantly improved in 2021.</i></p>

6. Institutional level

6.1 EQ5a. Has Rikolto succeeded in setting up and/or strengthening MSI?

Table 8: Rikolto Strengthening MSI

COCOA	FSC
<p>➤ Rikolto had contributed to the development of the National Cocoa Curriculum in collaboration with CSP.</p> <p>➤ Rikolto and CSP has succeeded to influence the national government through Indonesian Ministry of Agriculture to allocate subsidiary budget for the distribution of NPK specific formula fertiliser for cocoa.</p>	<p>➤ Rikolto initiated a healthy canteen initiative in Solo by involving some stakeholders such as Surakarta Department of Education, Regional secretariat, Regional Development Agency, Department of Religion, Provincial Department of Education, schools, parents, and school canteen vendors.</p> <p>➤ Rikolto collaborated with Gita Pertiwi and Carefood (youth-led CSO) to carry out a food donation/food sharing initiative in Solo. Meanwhile, Rikolto teamed up with PIB and APJI (Food Service Provider Association) as well as BADAMI Foundation and the Bandung City Government in Bandung City for the same initiative.</p> <p>➤ Rikolto put efforts in an urban farming initiatives in Solo, Depok, and Bandung by engaging local governments, communities, and CSOs.</p>

Cocoa Sustainability Platform (CSP): Rikolto was currently included as a board member of the national Cocoa Sustainability Platform, a national level cocoa MSI. The platform comprises cocoa forums and initiatives, relevant governmental bodies, universities, research institutes, and NGOs (non-government organisations). Several farmers received indirect beneficiaries through Rikolto's collaboration with the national Cocoa Sustainability Platform (CSP), reaching up to 202,155 indirect beneficiaries other than Rikolto registered cacao farmers. One of the most significant leaps of Rikolto was to participate in the establishment of a national cocoa learning module for the farmers and give technical recommendations on the national level for cocoa cultivation.

CSP aims at professionalising farmers and creating an enabling environment. Rikolto had contributed to professionalising cocoa farmers in 2020 indirectly and helped farmers adopt GAP professionally through the platform. The platform also helped farmers and youth-run cocoa businesses access finance.

After conducting a couple of research in 2018 about canteens' profile in Solo and students' nutrition in 2019, Rikolto initiated a healthy canteen initiative in Solo by involving some governmental stakeholders. The beneficial canteen standard is designed according to Solo's goal as a child-friendly city. These multi-stakeholders were developing standard operating procedures for Solo's healthy canteen. By the end of 2021, the mayor of Solo circulated a letter on the healthy canteen procedure for schools in Solo. In 2020, Bandung and Solo became one of the signatory cities of the Milan Pact. Since the signing, Rikolto, in partnership with the local organisation (Gita Pertiwi and the University of Parahyangan), have been actively communicating with the local governments to form MSIs. In Bandung, for instance, the government created a committee of Food Smart City by issuing a decision letter signed by the mayor. The committee consists of local government from different divisions, communities represented by women's groups and academics (University of Parahyangan). In Depok, since 2018, a collaboration between our partner, PIB and the government to set up MSI (environmental and hygiene department, social department, department of industry and commerce, education department, association of catering business in Indonesia) to discuss the various issue on food such as food waste, synergy on food security, etc.

6.2 EQ5b. Have these MSI succeeded in promoting more sustainable food systems?

Rikolto refers to CIAT (2019)'s sustainable food system framework⁹ with the definition: Sustainable Food Systems are those food systems that aim at achieving food and nutrition security and healthy diets while limiting negative environmental impacts and improving socio-economic welfare. Therefore, sustainable food systems are protective and respectful of biodiversity and ecosystems and human well-being and social equity. As such, they provide culturally acceptable, economically fair, affordable, nutritionally adequate, safe and healthy foods in a way that balances agro-ecosystem integrity and social welfare.

Table 9: MSI Promoting Sustainable Food System

COCOA	FSC
<ul style="list-style-type: none"> ➤ National Cocoa Curriculum adopted by the Ministry of Agriculture. ➤ Some districts of Sulawesi including North <u>Luwu</u> (<u>Masarena</u>) and East <u>Luwu</u> District (KCS) where <u>Rikolto</u> operates, become one of targeted areas for the trial stage of the subsidiary fertilizer's implementation and distribution. 	<ul style="list-style-type: none"> ➤ <u>Warung Suka-Suka</u> has successfully connect vendors at the <u>Cisalak Market</u> in Depok to donate their unsold food/ produce. ➤ Another food sharing effort that success in implementation is <u>BADAMI</u> application in Bandung. In partnership with <u>Badami</u> Foundation and the communication department of Bandung, the application run and able to reach more than 100 food SMEs and reach more than 1000 users. ➤ <u>Gita Pertiwi</u> and local partners succeeded in getting donations from various parties, such as members of the Association of Food Industry in Solo, <u>Dompel Dhuafa</u>, food businesses and personal donors. ➤ <u>KONPASERA</u>, a women consumer group, volunteers in cooking the raw materials into ready-to-eat foods, following the principles of healthy food processing in Solo City.

Rikolto had contributed to developing the National Cocoa Curriculum in collaboration with CSP. This National Cocoa Curriculum gave standardized knowledge in cocoa production to cocoa farmers in various regions of Indonesia with the assistance of the government (i.e., Agriculture Office) in each area. With the

⁹ <https://ciat.cgiar.org/about/strategy/sustainable-food-systems/>

increase in GAP knowledge, the farmers can increase their cocoa gardens' production quantity and quality from the previous average of < 1kg per tree to 1.4 kg per tree, ultimately increasing their income.

The cost of production per cocoa standings had been decreased because of Rikolto's recommendation to subsidy fertilizer that had been formulated specifically for cocoa. This recommendation was further disseminated through CSP and was approved by the government, providing subsidies for the cocoa-specific fertilizers for the farmers. As a result, production costs decreased, and cocoa productivity was increased.

FSC has also recorded some success in promoting a sustainable food sector:

- Provide evidence and organize research on sustainable food production and consumption such as Food Environment Context Analysis in Indonesia, Food Resilience in household level in Bandung, Depok and Solo, Urban and Peri-Urban Agriculture research in Solo, Effectiveness of Urban Farming in Bandung, and the use of pesticides on vegetables in Denpasar.
- Influence public opinion and multi-stakeholder processes on food smart cities: participation in international events (as guest speakers) such as Milan Pact, Glasgow Declaration, national events such as UNFSS dialogues, and cities talks, webinars and discussions with local governments and communities.
- Advocate inclusive procurement policy and promote healthy food consumption practices to urban markets: Healthy canteen programme in Bandung, Solo and Denpasar.
- Building awareness on reducing food waste and developing distribution channels of food leftover: Badami application in Bandung, Carefood programme in Solo, Resto Suka - Suka in Depok, and food donation by Pasar Rakyat in Bali.
- The healthy canteen activity in the city of Solo, it is proven that moving alone is not effective in carrying out a series of programme activities, even though it has collaborated with agencies that handle healthy canteen affairs, in this case, the Health Office. Although it has embraced the Health Office, the activity has not gone well because it requires coordination with the Education Office and BPOM. Finally, through the Healthy City-Solo Forum Member platform and facilitated by Bappeda, the activities at the school's healthy canteen can run smoothly.

6.3 EQ6. How is the evidence generated by Rikolto’s pilot interventions used to influence policy decisions?

There were several examples of interventions done by FO through CSP (Cocoa Sustainability Platform), such as demonstration plots generated, use of appropriate technology on the field, and continuous improvement of capacity and capability resources. The demonstration plots are integrated with the National Cocoa Curriculum application. That curriculum was adopted by The Ministry of Agriculture and, later on, the allocated budget for subsidized cocoa fertilizer.

Table 10: Pilot Interventions Are Used to Influence Policy

COCOA	FSC
<p>➤ <u>Rikolto</u> and the partners developed demo plots for specifically formulated fertilizer used in cocoa. It is integrated with the National Cocoa Curriculum application.</p>	<p>➤ The efforts done by Gita Pertiwi i.e., healthy canteen, food sharing and urban farming inspired The Solo City Government and The Bandung City Government to sign Milan Pact Urban Food Policy in 2020. Furthermore, the city government together with Gita Pertiwi have been developing Food Smart City Roadmap; furthermore, the aspect of food smart city has been integrated in its City Regional Long Term Development Plan (RPJMD) 2022-2026</p> <p>➤ The Bandung City government also signed the Milan Pack agreement after inspired by FSC and has been developing Food Smart City Roadmap.</p> <p>➤ In the city of Depok (near to the Capital of Jakarta), PIB (<u>Persatuan Indonesia Berseru</u>) and YLKI (Indonesian Consumer Organisation) worked together based on the evidence built (i.e., Food Sharing/Donation) to influence Depok City Government to start drafting City Mayor Regulation (<u>Perwali</u>), which integrates the Food Smart City concept.</p>

The results that Rikolto achieved through the CSP shows that collective action in a forum or national cocoa platform can encourage positive changes effectively and efficiently. For example, the institutionalization of recommendations through government policies was possible because CSP had a collaborative action. Each actor could contribute their knowledge and expertise as social capital, allowing more ideas and innovations to be made. The platform also provides an exchange of information between stakeholders and, therefore, increases each stakeholder's knowledge of how each actor reacts to changes within the value chain. The platform also encourages consolidated resources and catalyzes farmers' growth through enormous joint funding.

Rikolto and the partners (Gita Pertiwi, University of Parahyangan, YLKI and PIB) has succeeded in using the evidence to influence policy:

- The participation in the Milan Pact raised awareness about the importance of the sustainability of food production. Two cities (Bandung and Solo) signed the Milan Pack agreement, and now the government of those two cities are designing the Food Smart City Road Map.
- Urban farming has the potential to meet the growing urban needs. Four cities of the FSC programme (Depok, Bandung, Solo and Denpasar) show positive urban farming results. There are more than 150 spots of urban farming in 4 cities of intervention. All the communities involved in urban agriculture use the product for their own, and when possible, they also sell the produce to the nearest neighbourhood or donate them.
- Healthy canteen in Solo opens the door for the demand for healthy food. With the Mayor of Solo's circular letter on healthy canteens in Solo, it means all schools in Solo should provide healthy food in their schools.
- Food waste and food donation can build awareness on reducing food waste at the community level. It shows from the Badami application that it was made for food donation.

Several things to note in influencing policies in FSC:

- Active participation or opportunities in international events. Such as Bandung and Solo being part of the Milan Pact have given them some options in international events to speak about their cities and policies.
- Egocentrism of each local government. Sometimes, they prefer to do something different than other cities' budget limitation priorities of the local and national government.

7. Covid-19 Evaluation Questions

7.1 EQ1. How agile is Rikolto in responding to an external shock?

Within the pandemic of Covid-19, most of the farmers reported that they received the usual price for their cocoa beans. The results showed the ability of the FOs to withstand the external shock of sudden disaster. Further, Rikolto and partners took several additional measures to reduce the impact of the pandemic on the value chain. For instance, they increased awareness of Covid-19 and distributed equipment to prevent the spread of the covid-19 virus (standard operational safety measures, masks, sanitizers, hand washing, and posters on important covid-19 related information). The activities were also focused on how to increase the farmers' resilience and health (by planting spice plants on empty land, or intercrops, using yard land for horticultural crops and family medicinal plants). The programs carried out were also made more flexible. There were also a reduced number of physical meetings, in which Rikolto and partners made the arrangements online rather than in person.

7.2 EQ2. Which impact did Covid-19 responses have on the target groups?

While the measures helped reduce the impact of the sudden pandemic shock, there were also several problems faced by Rikolto and partnering FOs. For example, there have been some activity delays in recent programmes. The pandemic also made meetings with many people impossible, and therefore the training has to be designed well to reach more people effectively and efficiently. There were certain limitations with online meetings and training, as they lacked hands-on experience. Other than that, some regions still have limited digital access to comfortably join online discussions and pieces of training.

Farmer Survey showed that the pandemic also affected farmers' accessibility to technical assistance, additional workforce, and transportation services as they require physical presence. But lack of necessary input is the 'traditional problem' that 'naturally' exists, not necessarily affected by the pandemic.

Rikolto's farmers survey also shows that the majority of the surveyed households recovered from the pandemic and they reach the same level of well-being as before COVID-19.

7.3 EQ3. To which extent has Rikolto's response to the COVID-19 outbreak left a more resilient food system in place, able to respond more swiftly to a next systemic crisis?

In reducing the pandemic shock impact, Rikolto also gave suggestions to FO on what activities to take and how to break down their yearly activity into smaller meetings, or online discussions, to prevent the spread of the covid-19 outbreak from increasing their resilience. For example, several FO conducts activities on sustainable food yard training (TOGA) to increase their access to traditional herbals and collaborate with health workers (PUSKESMAS or PUSTU) to educate FO and farmers on how to increase immunity through healthy diet and lifestyle.

The Covid-19 pandemic has disruptively affected Indonesia, including implementing Rikolto's programmes. Indonesia's Government issued the measures of mobility restriction and physical distancing to curb the spread of the virus in early March 2020, from which Rikolto's partners could not carry out their programme activities properly. Our internal Rikolto did a quick survey of Rikolto's partners to identify what kind of activities are affected and the support they need. Such information allowed to adjust strategies and interventions. At the partners' level, we found that they faced difficulties in distributing and marketing their products and conducting physical mass activities such as training and multi-stakeholder meeting. Therefore, we identified four areas in which we could intervene, namely: (1) food security of the farmer household; (2) virtual activities-capacity building, meetings, webinars, etc.; (3) market facilitation; and (4) sectoral Covid-19 response which depended on the partner's necessities.

Rikolto's Covid Response in Indonesia: How to work out¹⁰

(1) Food security of the farmer household

Rikolto has empowered cocoa farmers in Polewali Mandar and North Luwu Districts to manage nutrition gardens at the household level through capacity building and non-cocoa seedling (i.e., veggies, fruits, and herbs) distribution. By July 2020 (the latest monitoring date), 329 Covid affected farmers (all-female farmers) are reached through this intervention. In July, a flash flood occurred in North Luwu District and hit hard three villages, namely Masamba, Malangke, and Baebunta. Instead of starting harvest season, more than 1,000 farmers lost their cocoa gardens covered by the mud of 1 meter high. The demo plot of the nutrition garden supported by Rikolto was also affected by this disaster. Rikolto in Indonesia has supported local fundraising led by the partner to aid the affected farmers. Furthermore, farm rehabilitation is in the pipeline.

(2) Virtual activities-capacity building, meeting, online seminars/webinars, etc.

Rikolto has made the most of the online platforms to carry out capacity building, meetings, and webinars. Within internal Rikolto, we optimized the use of the Microsoft Teams App for an online discussion and disseminated a guide on "How to use Microsoft Teams" for our local partners. Rikolto also initiated a virtual learning class for the partners and public with various attractive topics such as the export strategy of agricultural products, innovative agribusiness, and online marketing. Rikolto also encouraged partners to use online platforms to conduct capacity building, for instance, online public classes on urban farming and healthy food consumption amidst the pandemic held by Food Smart City's partners. By Juli 2020, we recorded 271 participants who attended all the training.

(3) Market facilitation

Rikolto facilitated market linkage in the coffee sector by encouraging and assisting the partners in employing e-commerce, i.e., online trading platforms and social media. This intervention allowed 5,090 coffee farmers to have better access to markets. Besides, one coffee farmer organisation in Flores has sealed a deal with a Dutch-based social lender providing funding as an investment for the e-commerce platform. Total 36.22 tons of Green Beans Equivalent (GBE) has been traded thanks to e-commerce platforms.

(4) Sectoral Covid-19 response

FSC partners in Solo and Depok City have saved a total of 4.55 tons of food waste by July 2020 through the Food Sharing/Donation initiative in collaboration with multi actors, i.e., local communities, governments, private sectors, and local NGOs. Meanwhile, 2,175 citizens/consumers benefited from this initiative. One FSC partner, YLKI, has been researching "Household Spending Decisions on Food" with additional scopes that relate to Covid-19 Crisis. They have consulted the research design with some related experts and have continued implementation. Also, Rikolto has granted the FSC partner in Bandung, Parahyangan University (Unpar), with EUR 21,641 to implement a digital-based solution addressing market linkage issues amidst the pandemic in the city. The initiative in food sharing application is along with other efforts, i.e., urban farming and public awareness in food waste management where Unpar is partnering with multi actors, e.g., city governments, private sectors, local communities, etc."

¹⁰ Covid-Response Report of Rikolto Indonesia 2019

8. Conclusion and recommendations

8.1 Farmer Level

Rikolto has provided the farmers with capacity building in sustainable agriculture practices/GAP, i.e., organic cultivation, intercropping and selective harvesting. Furthermore, the intervention programmes have improved household livelihoods, including farmers' income, through involvement in the FOs' collective marketing activities.

Also, such interventions significantly increased farmer productivity, commercialisation, and higher purchasing price, leading to increased profit margins from focus crops. Thus, the farmers could meet their basic households' needs (i.e., food, education, and health). Rikolto's intervention played a significant role in strengthening the business professionalism of the FOs and in supporting the collective marketing.

The intervention programmes at the farmer level have succeeded in increasing the resilience capacity of the farmers due to the capacity building activities in environmentally sustainable production that improved the absorptive capacities and the income diversification activities that enhanced the adaptive capacities for some commodities.

The changes at the farmer level in terms of capacities, participation, and resilience have contributed to changing the cluster landscape towards a more sustainable and inclusive value chain. The application of good agricultural practices affected the improved quality of the focus crop and attracted more buyers. The increase in focus crop's commercialisation induced the higher reputation of the region as a high-quality producing area.

Gender Equity and Inclusion of Youth

At the on-farm level (for cash crops and plantations, Rice and Coffee), gender equity is not an issue. Neither men nor women experience barriers to access to sustainable agricultural activities. Traditionally, men and women have had their own roles. Men usually do jobs that require muscle strength such as tillage, fertilizing and watering; women do work that requires perseverance and neatness such as planting (on rice) and sorting at harvest or post-harvest. Meanwhile, harvesting activities are carried out together. In certain ethnic groups (Bugis) in Sulawesi, even harvesting and selling are the domains of women. It has been agreed that women are wiser to manage the harvested money.

In contrast to forest plants (Cinnamon), in general, their business under the on-farm level is dominated by men because it requires too much strength. Post-harvest activities are, of course, more dominated by women. Agricultural cultivation in Indonesia is a family business. Actually, there is no term for male farmers or female farmers. Even if there are female farmers, it is usually due to the absence of a man as the head of the family in their household.

Youth inclusion is more of an issue at the on-farm level. In general, young people (especially those with higher education) are not interested in engaging in farming activities, because they think that farming cannot provide adequate income to support their lives. Young people prefer to work in other sectors that provide a more stable and prestigious income according to the society. However, during the project, young farmers who had seen a brighter future in the agricultural sector were found. They have seen for themselves that with good agricultural practices, agricultural business can provide attractive income.

Upscaling Effort

Demonstration plots played a significant role in the up-scaling effort. There were many demonstration plots for organic rice or SRP (sustainable rice platform), coffee, cocoa, and cinnamon. The demonstration plots attracted interested stakeholders who needed inspiration for their future development. Organic rice and SRP attracted surrounding rice farmers to learn and practise through their farmer groups. Cocoa

Doctor and Master Trainer (coffee) involved youth in the field and off-farm business. They spread all the critical knowledge and skill in sustainable agriculture and sound processing practice in their surrounding areas. Many of these youth would be our local champions in the future.

Environmental Sustainability

The results of the analysis of various environmental indices show a significant decrease throughout the project. Of course, not all indices are decreasing. There are certain indexes on certain focus crops that are improving, for example sustainable landscape management index for Coffee and Cinnamon. However, the index of soil conservation, biodiversity, and climate change has decreased significantly.

Despite the decline in these environmental indices, the cultivation process continues and even shows an increase in productivity per hectare throughout the life of the project. The farmers also experienced an increase in the average income from their focus crops. Commercialization through FO is also increasing. This could happen because buyers perceive that the products produced by farmers are in accordance with market requirements, which include the sustainable cultivation process¹¹.

M&E Approach

All Rikolto interventions have frameworks in which change pathways are described along with relevant outcome indicators, which are updated yearly. These form the basis for half-yearly strategic reflections within each regional office and with partner organisations, which result in updates to the intervention strategies, target values, and report purposes. The data collection method used by Rikolto to measure the programme's impact at the farmer level is Farmer Survey. It offers Rikolto data from a random selection of targeted farmers on income, profit margins, diversification of revenue, environmental production practices, gender relations and the role of youth in the value chain to obtain more insight into the livelihood of farmers. The questions in the Farmers Survey related to Rikolto's interventions are:

- Revenue is derived from main crops by looking at production and commercialisation.
- Environmental Sustainability is based on production and post-production practices.
- Aspirations and strengths-based on farmers' participation in the value chain.
- The resilience is based on their livelihood and life strategies.

The use of all these data entirely depends on the accuracy of the data at the time of data collection (interviews, input data, and data verification). Rikolto has developed digital surveys (i.e., Kobo Toolbox) that can be used offline and online to reduce errors or inconsistencies in entering data. The structure in the survey is identical for each intervention, yet the poverty index's indicators differ in each country. Adjusting questions and answers is also necessary for commodities, farmer organisations, and joint action mechanisms on farmers who do not benefit from the Rikolto programme (as comparison groups).

Recommendations:

1. Farmer Survey assesses variables used as impact indicators in SCA I and SCA II. Using such indicators will give Rikolto Intervention Framework more relevant disclosures for business purposes. The 'profit margin' should also be included in the impact indicators of SCA I and SCA II. The combination of 'profit margin' and 'total rice sold' as impact indicators will be beneficial for project performance measurement purpose. To know how the dynamics of the profit margin in farmer level will give the FOs and project management further information about the farmers capacity in cultivation and assets development.

¹¹ There is discrepancy lies between the certification schemes and the Rikolto's environmental standard index. Evaluator believes the Rikolto's environmental standard index is higher than the certification standard or business environmental requirements. That's why nevertheless the Farmer Survey said that the environmental indices decreased, business relations still promote environmental sustainability.

2. Work on Food Smart Cities should be associated with diversification of producer activities, both in terms of variety of crop (red, white and black rice for instance) and crop transformation. For cocoa, coffee and cinnamon, this most likely involves the development of agroforestry-based production systems. This should seek both to add value and increase resilience at producer and FO level, as well as increase food security at territorial level. Secure contracts would also help producers and transformers to secure capital to invest in improved practices and equipment and support activity diversification. The issue of healthy food should be central to such multi-stakeholder agreements.
3. Rikolto works with ageing farmers. The involvement of youth and women would be beneficial not only to the programmes but even more to the agricultural sector. Demonstration plots could be the centre of attraction for them. Rikolto should give more room to the youth and women's involvement in developing demonstration plots. Not only for the sake of knowledge but also income generation. They will learn critical practice in on-farm activities. Once the cycle is completed, they also will experience the learning curve. Incubate them with the taste of off-farm business. Then they will be ready to rely on agribusiness for their livelihood. Develop a business model for youth and women and integrate it into the cooperative strategic business activities. It requires support in capacity building such as leadership and management and technical skills on off-farm and on-farm that targets youth and women.
4. Farmers' level of opinion consideration in the organisation decreased during the period. There is an emerging need to improve activities related to organisational skills targeting of farmers' group leaders.

8.2 Farmer Organisation Level

Rikolto in Indonesia supports the enhancement of FO professionalism to become a self-sustained and profitable business entity. Rikolto contributed to providing capacity buildings in business administration and management, linking the cooperatives with buyers through promotional events and collaboration with platform organisations (SRP, SCOPI, CSP) and other strategic actors to support their business growth and strengthen the inclusive business relations. As a result, the cooperatives have met sustainability standards and demands in both domestic and international markets.

The market demand for quality products is one of the major driving factors in maintaining sustainable and socially inclusive production. The awareness of national and international buyers to sustainable and inclusive production continuously increases. Such conditions should be seen as an opportunity to initiate a movement to meet the increasing market demand; certification encourages farmers to organise themselves in groups and build efficient collective marketing. Organic certifications owned by the FO became an added value of the FO in front of the farmers and private sectors. Furthermore, an Internal Control System (ICS) was an essential aspect in the collective action mechanism to ensure the quality of the product and provide price transparency to the producers. And it needs proper financial support to reach optimal market performance.

The increase in focus crops sales has contributed to improving farmers' income. The ability of the FO to connect with buyers and negotiate have generated an impact on the higher prices received by farmers. Moreover, farmers gained better access to services, facilities, market channels, and finance since joining collective marketing. The benefits offered by the FOs thus increased the farmers' motivation to be more active in joint marketing activities through the FO. It is shown by the increased volume of focus crops through farmer organisations from 2017 to 2021. Most farmers are satisfied with the FOs because FOs contribute to farmers' income leverage.

The development of FO professionalism in performing a profitable business during the five-year intervention programme is strongly related to establishing business relations with buyers and trust from strategic stakeholders. Rikolto has contributed to strengthening the ties through various capacity buildings, shared experiences, and engagement activities for FO.

Gender Equity and Inclusion of Youth

In contrast to the on-farm level, women and youth are more interested in being involved in FO business activities. Women are more involved in the processing and business of derivative products of focus crops. Some of the women are also actively involved in marketing focus crops and their derivative products. Meanwhile, youth are more involved in FO management and marketing activities for focus crops and their derivative products.

The involvement of youth in FO activities seems to have brought them closer to the agricultural sector. Starting from marketing, then they look back to on-farm activities. Their knowledge of the intricacies of focus crops along the value chain then becomes more and more complete. This has encouraged them to study further and understand that agricultural sector businesses can provide a decent livelihood for their future.

Upscaling Effort

Rikolto's intervention in FOs has made FOs a more professional and independent business entity. The success of FOs in running the business has been seen by other stakeholders. FOs are also involved in discussions with local governments, BUM Desa (Village Owned Enterprises), NGOs, other business institutions, and platform organizations.

It is this interaction of FOs with stakeholders that allows Rikolto's model of intervention to inspire them. Even several other FOs who are not from the surrounding area have expressed interest in joining the project and are ready to implement what has been done by Rikolto's FOs.

Environmental Sustainability

FOs understand very well that environmental sustainability is one of the main keys in their business. The carrying capacity of the environment determines whether focus crops will still be able to meet market requirements in the long term. Therefore, FOs continue to pay attention to and strengthen the implementation of ICS along their value chain.

FOs also keep striving so that environmental sustainability can get the needed support from buyers. FOs have tried their best to keep focus crops paid at a premium price by buyers. This premium price is needed to finance sustainable cultivation practices. By the end of the project, FOs can be considered successful in this endeavour.

M&E Approach

Rikolto interventions have frameworks in which change pathways are described along with relevant outcome indicators, which are updated yearly. These form the basis for half-yearly strategic reflections within each regional office and with partner organisations, which result in updates to the intervention strategies, target values, and report purposes. SCOPE Insight and New Business Model Principal Assessment are the data collection methods used by Rikolto to measure the impact of the programme at the FO level. SCOPE Insight and New Business Model Principal Assessment have shown the strength of the business relationship lies in the established effective communication and profitable business done by both entities, fair and transparent business, and having shared values, understanding in terms and conditions on environmental sustainability and social issue.

Recommendations:

1. FOs should capitalise more clearly on the reputation of their areas as high-quality producing areas. The possibility of developing a geographical indication around a set of products should be given more attention, particularly for coffee, cocoa and rice. In particular, such systems could most likely enable to market cocoa through business models offering higher revenues as it is unlikely that cocoa used by MARS may offer as much added value as geographical origin cocoa. Business models

integrating Fair trade, organic certification or associated to production models which may protect national parks (coffee or cocoa without deforestation...) are all models to be investigated more thoroughly.

Rikolto could also facilitate the assessment of risk and opportunity of business models such as social enterprise, the more commercial but more inclusive business.

Such work implies consolidating Internal control system (ICS).

2. Increased added value could also be sought through product diversification through improved local transformation of the various products (rice milling, cocoa fermentation...).
3. Though the motivation of the farmers to join in collective marketing with the cooperative, there is still a lack of participation of the farmers in fulfilling the membership payment and investing capital for the cooperative. FOs need to diversify and improve their offer of services as well as their financial management and business capacity, recruiting professional staff to run a profitable business. Capacity building in these issues is essential to conduct. More generally, a clear strategy in terms of BDS should be determined at the level of each FO, including orientations as to which services should be developed internally and which may be externalised (at least partially).

More detailed monitoring and evaluation of the effects of collective marketing would also help developing arguments to convince farmers of the interest of FO membership.

4. Business diversification is imperative for the FOs' business development. The FOs have raised the issues during the intervention period and implemented the strategy to develop derivative businesses and services. However, it requires focus and more capacity building to make the derivative business profitable.
5. New Business Model Principal Assessment resulted in 2021 has shown the gap in inclusive business relations between FOs and buyers, including equitable access to service, inclusive innovation, and outcome measurement. Developing interventions based on these priority issues could be strategic in the future programme.
6. Based on the resilience indices assessment, there was a significant decrease in soil and water conservation, climate change, and biodiversity, which are essential in supporting the sustainability of the business and meeting the market demand for focus crops. It correlates with the application, monitoring and evaluation activities based on these indicators conducted by farmer organisations. Involving in a sustainability certification scheme might be not the only factor contributing to improving the FOs' sustainability indicator. Still, it could generate the capacity and experience for FO to run the monitoring and evaluation system on sustainability issues.

8.3 Institutional Level

Collective action in a forum or platform organisation can encourage the institutionalisation of recommendations through government policies effectively and efficiently. Furthermore, collective action can contribute to the increase in each other's knowledge and increase social capital. Platform organisations or consortiums also encourage the emergence of impactful innovations that were not previously aimed or targeted. Platform organisation is proven to increase stakeholder engagement, fostering participation and social learning that emerges innovations. The diverse stakeholder (private sectors, research institutions, universities, professional associations etc.) could participate with different professionalism, encouraging potential to innovate in collaboration resulting in a win-win solution for the involved actors.

As a new programme starting in 2018, Food Smart Cities has faced the challenge of identifying programme components that fit into the needs of the respective cities it works with while understanding what the Sustainable Food System means for Rikolto and what themes the organisation wants to focus on.

Understanding the needs of the cities, Rikolto took up several topics: food waste management, healthy school canteen, urban farming, and food sharing. Positive progress has been achieved, thanks to Rikolto's reliable partners that can formulate these in practical work at the city level by engaging multiple actors, public and private institutions. By 2021, there were, in total, 19 public policies that favor sustainable production and consumption. Focus has been done but can be done more to reflect the direction of Rikolto International to amplify the impacts beyond the scope of the regional office by participating in Milan Pact and Food and Climate Glasgow Declaration.

Rikolto learned that the involvement of local communities in building evidence is essential and will promote local ownership of the programme. Rikolto in Indonesia works mainly with partners (Gita Pertiwi, YLKI, and PIB). The scope of Rikolto's work is supporting partners for advocacy and influencing public opinion and the multi-stakeholder process. The goal is to influence the city governments and private sector of Solo, Depok and Bandung to have policies or regulations favour sustainable production and healthy consumption. And the work pays off. Solo and Bandung now have Food Smart City Road Map policies, while Depok started drafting City Mayor Regulation (Perwali), which integrates the Food Smart City concept.

Recommendation:

1. Continue developing attractive business models which can contribute to improve the image of agriculture related jobs as modern and economically rewarding and thus develop their attractiveness. Professionalising agricultural institutions and building their links with private companies upstream and downstream of production offers a good opportunity to create a much more modern, entrepreneurial and inspiring image of rural activities. Building a more attractive vision of agricultural activities for young generations is key to scaling-up. In this spirit, Rikolto should keep the same approaches to engage societies with the support of Rikolto's reliable local partners to promote local ownership of the programme.
2. Rikolto should continue engaging local governments in the implementation of the sustainable food system. The local authorities play a crucial role in educating societies during the campaigns, e.g., children and their parents, to consume healthy food.
3. Monitoring and evaluation of the environmental effects of Rikolto promoted production system should be given more attention and involve more directly FOs, in order to understand more clearly the reasons why certain environmental indicators have had negative trends.
4. Rikolto should encourage the platform organisation to conduct more exercises in the existing demonstration plots; furthermore, expanding the plots in various selected areas.
5. Rikolto should follow, capitalise and systematise the pathways of change and logics it follows to develop new business models and achieve change. In particular, so as to promote upscaling, it is important that Rikolto elaborates clear indicators to monitor progress in this area. Business models and pathways of change should be characterised and broken down sufficiently precisely so as to be able to identify clearly which of their elements are relevant and can be integrated within a given intervention. The advantages and disadvantages of each type of business model within a given context and for various types of producers (size of production unit, geographical location and associated agricultural calendar...) or food chain actor (producer, BDS provider, off taker...) should be clearly understood.