



Covid-19: Issues and Challenges in Vegetable Crops for Resilience During Pandemic

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Abstract. In the effort to reduce the spread of Covid-19 and to help keep the Indonesian people safe, since June 2020 the Indonesian Government has issued policies that limit people's mobility. With people unable to freely move throughout their communities, and beyond, there has been a significant decline in economic transactions, including within the vegetable market. Businesses' revenue has decreased and due to a shortage in the supply, the Indonesian people have been eating fewer vegetables. However, given health concerns with Covid-19, some people have started to increase their consumption of vegetables and other healthy foods as a way to boost their immune systems [1]. Recognizing both the challenge and opportunity, Mercy Corps Indonesia, through the POWER 2 program innovated to find solutions so that essential community staple foods (including vegetables) can still be fulfilled, and farmers can reach more customers by adapting their approach to marketing/selling their agricultural products. The POWER 2 approach facilitates organizational and business capacity building, including optimizing digital channels for marketing and partnering with other value chain actors. Currently, farmer groups across the program area, such as in Subang, Banyuwangi, and Gowa, have been able to market their crops directly to major traditional markets and have optimized social media, especially WhatsApp groups, to sell directly to consumers, and a few others have sold their crops through e-commerce.

Keywords: Business capacity building · Digital channel · pandemic · POWER · Selling product

1 Introduction

In Indonesia, the Coronavirus pandemic began in March 2020, and as of September 2021 more than 140,000 people have died and around 4.2 million people have been confirmed with positive cases. The National COVID Task Force has divided Indonesia's risk areas into four color zones: red (high risk), orange (medium risk), yellow (low risk), and green (zero cases).

As a response to the World Health Organization's declaration of Covid-19 as a global pandemic, the Indonesian government issued the Emergency Restrictions on People's Activity and Mobility (PPKM Darurat) policy to control the spread of the virus and to keep community members safe. This PPKM Darurat policy is intended for all levels

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of society, including economic activities, both in traditional markets and in modern shopping centers.

The restriction policy issued by the Government, in June 2020, has had a significant impact on community economic activities. While the restriction policy was an important and needed measure to keep communities safe, it had significant negative economic impacts. Residents' visits to traditional markets decreased by 50% [2] and the activity of buying staples and goods in the city for resale in the markets also became limited, affecting livelihoods [3]. This government policy resulted in a decline in economic growth in Indonesia [4].

This situation dramatically affects the community supply-demand of agricultural value chain. Prices of agricultural commodities have fallen, including for horticultural agricultural products. Many farmers have suffered losses. Farm products cannot be brought to the market for sale, and suppliers cannot take them for distribution to other areas.

On the other hand, the Covid-19 pandemic has also increased public awareness of the need for healthy living by consuming more vegetables. According to the Diet Decision Survey 2020 conducted by Herbalife, it has been shown that Indonesian people have made the health aspect their first priority, including the food that they consume. Consumption of vegetables rich in vitamins and minerals is needed to boost immunity [5]. Consumption of diverse foods, including spices, has also increased. This increase in food diversity occurs because of the desire to have better nutrition to support increased body immunity [6].

Considering this situation, Mercy Corps Indonesia's POWER 2¹, a program funded by John Deere Foundation innovated to address the economic impacts of the Covid-19 virus on farmers as well as the vegetable supply chain. Challenge of mobility restrictions. POWER2 supports farmers to increase agricultural yields and income through strengthening farmer groups (FGs). By using the upstream-downstream partnership approach (vertical forward linkage), Mercy Corps Indonesia facilitates farmer groups in developing agricultural business-based group institutions to meet market demand for staple foods and vegetables that can adapt to the conditions during the Covid-19 pandemic.

2 Methods

2.1 Research Method

The research method used is the CIPP (Context, Input, Process, and Product) evaluation method. The CIPP research method determines the form of intervention required by

¹ Since 2015, Mercy Corps Indonesia and John Deere Foundation have implemented POWER (Promoting Organizations that Work to Empower Rice Farmers), a program to support farmers to improve their yields and income through strengthening farmer organizations. In February 2019 Mercy Corps and John Deere Foundation launched the next phase of POWER. POWER 2 aims to reach more rice, corn, and horticulture smallholder farmers and increase yields and income by strengthening farmer organizations, improving agricultural practices, and increasing access and adoption of technology to make farming more productive and attractive to younger generations of farmers.

POWER program participants. The CIPP evaluation model is more comprehensive; because the object of evaluation is not only on results, but also includes context, input, process, and results [7].

The process of POWER activities begins with the preparation of a logical framework program, then this process allows us to obtain a design program that will be applied. Each process of program implementing activities from planning the logical framework and evaluating the program determines interventions to program participants.

Interventions carried out in this study are:

2.1.1 Partnership

The partnership approach is carried out to support the business activities of market-value chain actors and in collaboration with the government, including support to transform farmer groups to the next level of business. This partnership approach aims to link farmer groups with partners who will support the farmer groups' agricultural business. This has been done through increasing the business capacity of farmer groups and facilitating integrated strategic partnerships with market players in the market value chain. This includes a model of access to bundled services, which allow farmers to access a complete package of ag-services, such as ag input, and Good Agricultural Practices (GAP) assistance, and a financial product partnership method that makes a real contribution to the business needs of farmer groups in running their agricultural businesses.

Through the partnership, farmer groups are introduced to financial products from microfinance institutions (Dwi Karya Cooperative, Banyuwangi and PT BPR Subang) and a Regional Development Bank (Bank Sulselbar), one of which is a loan that is used as business capital for farmer groups and their members. Partnership is also carried out along with technical support partners for agricultural production, namely PT. Cap Panah Merah (high quality seed producer), and BASF and PT. Nufarm (crop protection companies).

In almost all areas of POWER, in-person field activities involving gatherings of farmers, such as Training of the Trainer (ToT) of farmers network and harvest events, are totally prohibited. Fortunately, the program has digitally adapted and conducted the ToT of Farmers' Best Friends three times during this period through digital channels (via Zoom Meetings, with WA groups for the extensive discussions) in each program location (Lombok, South Sulawesi and Lampung), with 45 farmers from ten FGs participating. Meanwhile, only one ToT for Farmers' Best Friends event was conducted through an in-person meeting, which took place in Humbang District and was attended by 13 farmers from three FGs. The goal of these trainings is to create independent extension workers who can provide agricultural advisory services for their farmer community, embedded with the kiosk businesses run by the FGs. Besides the independent extension workers, program partners such as BASF and Syngenta continue to provide agriculture advisory services through their agronomists and field staff for POWER 2's farmers throughout the growing season.

2.1.2 Training

Mercy Corps Indonesia conducts business capacity building and training on institutional and business management to farmer groups (topics include leadership skills, organizational and financial management, and marketing). Since the pandemic was ongoing throughout the year, and therefore restrictions on mobility and gatherings of people remained, the business capacity building training was modified to be administered online. More than 50 FGs across program areas have been trained via our virtual curriculum. The training also introduced digital marketing through social media and e-commerce platforms for members of farmer groups to be empowered to run their businesses virtually.

Besides that, POWER 2 also conduct demo plots and the training of trainers of farmers' networks, including field school activities, the goal of which is to create independent extension workers who can provide agricultural advisory services for their farmer community, embedded with the kiosk businesses run by the farmer groups (FGs). Before the pandemic, all this training was done through in-person classes; however, during the pandemic, the program has had to adapt to the "new normal" condition by optimizing the use of digital technology to continue delivering the field school activities and to create more WhatsApp groups to connect and to encourage and facilitate sharing of knowledge and information among farmers.

Key adjustments that have been implemented within our programming, especially during the pandemic, are as follows:

- Optimized digital channels to conduct virtual meetings on GAP assistance with our farmers. We have done this in collaboration with private partners across the program areas.
- With Ewindo, promoted the SIPINDO application (Sistem Informasi Pertanian Indonesia/Indonesian Agricultural Information System), an application that provides holistic information about farming, from GAP to market access (especially horticulture) to be used by our horticulture farmers in Subang and Lampung.
- We created 54 different WhatsApp groups across the program areas, whose members are mostly from farmer groups and our agronomist partners.
- Continuing to conduct regular meetings (weekly) with farmer groups, especially related to business assistance, but with only a few people per group (usually not more than three) to ensure a safe distance for attendees.

2.1.3 Stimulant

As a part of the program strategy and follow-up from the business capacity building activity that was conducted, up to now (August 2021) 99 FGs have received a business stimulant (\$300–\$700) through this program to help build their business capital. The form of the stimulant depends on the needs and the characteristics of the farmers' business: whether their business is ag-input kiosk or equipment rental services. This stimulant has been used as initial capital for purchasing input products, or even for marketing/promotion (merchandise/goody bags), and purchase of ag-machinery for rental service businesses.

Currently these 99 POWER-assisted farmer groups have ran their business and have partnered primarily with agricultural companies and financial institutions, 23 of which just started their businesses on July 2021. All these FGs reported during this period that although the partnership was running well and both sides (private and FGs) have benefitted from this cooperation, however, during the pandemic, the average the input product and crop protection sales are still relatively low.

2.1.4 Mentoring

Mentoring aims to assist and monitor the business of farmer groups and good farm practices applied by farmers. While the advisory services are mostly via online media and Facebook, the business monitoring was conducted through regular visits and meetings with key committees of FGs, in order to better evaluate the results of monitoring with the groups to ensure that their businesses can run well.

Besides that, The M&E plan designed to more holistically capture the impact and value of POWER 2 activities including income and productivity increases, increased entrepreneurial activities, access to and awareness of mechanization, and use of knowledge to improve livelihoods.

The POWER 2 program has also integrated an ROI (return on investment) calculation into the program's M&E system. Up to July 2021, we have completed the ROI from around 15.000 farmers, which includes information about ages, yields, revenue, production costs, and income of POWER 2 farmers. We have been tracking each individual POWER 2 farmer by collecting baseline and endline data in each planting and harvest season.

2.2 Research Instruments

In measuring the level of success or suitability of program interventions, research instruments are needed. The results of the instruments that have been carried out are used as material for evaluating the POWER program activities through the CIPP evaluation method.

The instruments used in this research are:

2.2.1 Data Collecting

Before the planting season and after the harvest season, data were obtained through questionnaires and interviews. This is needed to be able to record the progress of each participant in the POWER program during the assisting process.

In technical data collection, assisted by the Monitoring, Evaluation and Learning (MEL) team in the POWER program, using a tool in the form of ONA which is commonly used by various NGOs and UN agencies for its accuracy in recording data.

2.2.2 Regular Monitoring

The monitoring function in the POWER program is carried out by the MEL team and also the District Coordinators (DC), where the MEL team performs its monitoring function

through processing data obtained in the field, while the DC team performs its monitoring function more complexly, namely through a series of mentoring processes for each POWER program participants.

2.2.3 Documentation

Documenting the process and achievements of the POWER program is completed through reports that must be prepared every semester. Apart from being a form of responsibility for the POWER program donors, reports are also made to be used as evaluations when the program is running. To produce a comprehensive report, the report presented is supported by up-to-date data that has been summarized in the data dashboard and also various visuals such as photos and graphic charts.

3 Discussion

The Covid-19 pandemic has resulted in changes in various sectors, including changes in business strategies and marketing of agricultural products. Many agricultural businesses suffered losses and eventually went out of business due to changes in people's habits. Due to restrictions on people's activities outside the home, people's basic shopping activities have switched to online channels. By taking partnership, training, and monitoring approaches, Yayasan Mercy Corps Indonesia through the POWER 2 program is able to encourage farmer groups to adapt to the changes in the market that have occurred due to the Covid-19 pandemic and to capitalize on opportunities from the new habits of people who are more aware of the need for healthy nutrition to boost immunity during the Covid-19 pandemic.

Through existing corporate partnerships, Mercy Corps is supporting the use of mobile information services to expand farmers' access to information. This experience shows that digital services are best used in partnership with direct training and face-to-face mentoring. POWER 2 will leverage the AgriFin and EWINDO experiences, and coordinate with an anticipated private digital farm services program to identify solutions and entry points for using digital delivery platforms to increase farmers' access to information and advisory services, as well as to increase the impact of in-person advisory services provided by public/private and farmers networks.

The results obtained from activities using the partnership, training, and monitoring methods are as follows:

- Two farmer groups in Subang regency run rice and horticultural cultivation businesses and directly sell their crops to major traditional markets and restaurants in Subang.
- One farmer group in Banyuwangi has been able to market healthy beverage products made from local lemons through various social media platforms and e-commerce.
- One farmer group in Sidrap district is able to market group-milled rice through various digital platforms so that their marketing has increased by more than 100% compared to before using digital platforms.
- In South Sulawesi (Gowa District), 35 POWER farmers have sold their harvests, namely horticulture crops (pumpkins) through the Facebook Marketplace. The total

sales reached 40 tons with a total value of IDR 36 million (\$2,571), which is 5% higher than those sold at local traders.

- One farmer group collaborated with the West Lombok district government in distributing the Indonesian government's social assistance program for vulnerable and poor families and the social security program for households affected by COVID-19. Through this program, the farmer cooperative bought unhusked harvested rice and eggs from the nearest farmers, then processed the harvest into rice for consumption and distributed the rice to poor and vulnerable households affected by COVID-19. The farmers group bought 6 to 9 tons of unhusked harvest from farmers per month, valued at 85 million rupiah (\$6,071) and 585 trays of eggs, valued at 24 million rupiah (\$1,714). The program has been running for about 10 months and continues at present.

4 Conclusion

Business assistance for farmer groups in selling food and horticulture crops through the POWER Program from Mercy Corps Indonesia has formed farmer groups that are capable of cultivating food and horticulture crops (such as chilies, tomatoes, and other vegetables) through a partnership, training, and mentoring approach. Farmer groups can also adapt during the Covid-19 pandemic by utilizing digital means in marketing their agricultural products through social media and e-commerce platforms.

Through the program, we also found that there is strong correlation between the FGs' business activities and improvements in the lives and livelihoods of their members. One of the great examples is comes from our farmers group in West Lombok, which contribute to government program as government partners to distribute government donation for marginalized people on facing the pandemic.

Stronger business services from the FG mean that farmers are better able to access high quality inputs and to correctly apply the best farming practices, which led to increased yields and income. This increased income has helped households better meet their basic needs. Farmers reinvested additional income to pay for children's school fees, buy better food, buy new assets like a car, and rent additional land. Some farmers saved towards important family priorities, enabling long-awaited marriages to finally take place.

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