

EMPOWERMENT OF COFFEE FARMERS IN IMPROVING COMMUNITY WELFARE IN BOKON VILLAGE

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ABSTRACT

This study aims to analyze the empowerment of coffee farmers in Bokon Village, Tiom District, Lanny Jaya Regency, Papua, as an effort to improve community welfare. The urgency of this research lies in the challenges faced by farmers, such as low productivity, limited access to technology and information, and low quality of human resources. This research uses a qualitative approach with a field study method, involving in-depth interviews, participatory observation, and document study to collect primary and secondary data. The results show that empowerment through coffee farmer groups has had a positive impact on the income and welfare of local communities. Innovations in cultivation techniques, such as the utilization of shade plants and organic fertilizers, have successfully improved the quality of coffee production. However, the main challenges are still related to the low education level of farmers, the lack of interest of the younger generation to engage in the agricultural sector, and the lack of infrastructure support and market access from the government. The empowerment of coffee farmers in Bokon Village has great potential in improving the socio-economic conditions of the community. Increased government attention is urgently needed in the form of training, technical assistance, and expansion of marketing networks to support the sustainability of coffee farmer empowerment and the regeneration of young farmers in the region.

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1. INTRODUCTION

Starting in the early 1980s, through the Agricultural Technology Assessment Center (in Bahasa Balai Pengkajian Teknologi Pertanian, BPTP) program, when the late BJ Habibie was Indonesia's minister of state for research and technology, coffee around Tiom began to be planted in Tiom during the missionary period in the central mountainous region of Papua was cultivated again (Dwiartama, et.al, 2024).

The Papua region itself at the end of 2020, based on information from the Central Statistics Agency (BPS) of Papua Province, explained that the percentage of poverty until 2020 was recorded at 26.8 percent, so this shows that the number of poor people in Papua exceeds the number of a quarter of its own population, as well as the low human development index (HDI) of 60.84% or at the bottom nationally (BPS, 2020). While the percentage of poverty in the Lanny Jaya Regency area based on the Central Bureau of Statistics of Lanny Jaya Regency in 2018-2019 with a population of 85,000 with a percentage of 41.81 in 2016 there were 81,120 with a percentage of 39.60 and in 2018 there were 85,120 with a percentage of 45.48 so from 2018 to 2019 the percentage of poor people in Lanny Jaya Regency continued to increase (BPS, 2021). Since long time ago, Lanny Jaya Regency according to its geographical conditions has been famous for producing diverse natural resources such as tubers, honey, rice, coffee, red fruit, avocados, and various vegetables. one of the natural resources that began to expand its plantations in each Tiom sub-district of Lanny Jaya Regency is arabica coffee (Adnan, et.al, 2024),

Why arabica coffee because this coffee thrives in higher altitudes that have an altitude of up to 1200m above sea level, so that this climate is very suitable to support the image of coffee taste (Marit, 2019; Schroth, et.al, 2015), this arabica is very suitable for planting in bokon village, because this village has mountains and frequent rainfall so that this climate can be tolerated by arabica coffee plants, this is the best quality coffee and the image of taste like mango, pomegranate, strawberry and a unique aroma fragrant like jasmine flowers, and jasmin tea, coffee beans are large and green, red and dark red in color (Sheil, et.al, 2021).

Tiom sub-district has an area of 65.72 Km, and Tiom is one of the sub-districts that has the potential for the development of arabica coffee plants with a plantation area of 272 Ha, with a total of 30 owner farmers and 70 tenant farmers with traditional equipment. The average amount of arabica coffee production in 2018 decreased dramatically to 0.45 tons, which is vulnerable to falling production compared to 2022 and 2024, which can still feel and enjoy coffee production even though the amount of coffee production and income does not reach the average and on the sidelines of the problems faced by group leaders and farmers. This causes more production that is not processed and not sold more and more with a total of 23.7 tons. And when compared to 2018 and 2019 the amount of unprocessed production is greater.

Coffee plants are annual plants that only produce once a year. Most farmers in Lanny Jaya Regency depend on this production (Adnan, et.al, 2024). The lower the coffee production, the lower the income earned, and vice versa. The low income of farming households will determine the type and amount of food consumed and will indirectly affect the level of food security of farming households. It cannot be denied that farmers in Tiom, Lanny Jaya Regency, have low quality human resources. The low quality of human resources is influenced by the low level of education (James & Singogo, 2013). The average farmer is a farmer who never went to school, did not graduate from elementary school, or graduated from elementary school. Only a few have graduated from secondary school or university. This condition is further exacerbated by the low interest of the younger generation, who in fact have a relatively higher education, to work as farmers. They flock to work in other sectors. Higher education is mostly directed towards the industrial world, so the motivation of agricultural graduates is relatively low (Yigibalom, et.al, 2020). Meanwhile, farmers' access to information and new technologies is still very limited. This is due to the fact that the majority of farmers are located in rural areas with relatively limited transportation and communication facilities and infrastructure. As a result, farmers' uptake of new innovations and technologies is still low. Good human resources will produce superior and qualified farmers (Soviah, et.al, 2023). So that it can be possible for a development that will be significant to change the standard of living of the farming community for the better.

Through empowerment and improving the economy of the coffee farming community, it is hoped that there will be supporting facilities and infrastructure so that human resources can know, instill ways, how to make the quality of human resources better and be able to compete (Hasdiansyah & Suryono, 2021). So that later it will develop from time to time and can produce quality human resources. Excellent farmers are farmers who have the potential for quality resources. If this exists in every coffee farmer, the agricultural sector will develop in line with the empowerment of coffee farmers' human resources in increasing production. Empowerment can be interpreted as a process of growing the power and ability of both individuals and community groups that are still poor, marginalized and not empowered (Civera, et.al, 2019). Through the empowerment process, it is hoped that the lower community groups can be elevated to the middle and upper human groups. This can happen if they are given the opportunity as well as facilities and assistance from related parties. It is difficult for the poor in rural areas to carry out the empowerment process without assistance and facilities. So this is a big problem for coffee farmers and they get a big loss where they don't get the results of coffee production and income due to the impact of covid-19 which causes lockdowns in every city until a new problem arises, namely transportation equipment (Kabeta & Dangia, 2022).

Based on the description above, this article focuses on "Empowering Coffee Farmers in Improving Community Welfare in Bokon Village" because it reflects the main challenges faced by coffee farmers in Tiom, Lanny Jaya Regency, including low productivity, limited access to technology and information, and the quality of human resources that still need to be improved. Bokon Village, which has great potential in developing high-quality arabica coffee. This empowerment aims not only to increase production output and income, but also to strengthen food security and overall community welfare. Thus, this study can make a real contribution in supporting the sustainability of the coffee farming sector as well as addressing the socio-economic challenges faced by rural communities in the region.

2. RESEARCH METHOD

This research uses a qualitative approach with a field method that aims to deeply understand the empowerment of coffee farmers in improving community welfare in Bokon Village, Tiom District, Lanny Jaya Regency. Data were obtained through various techniques, namely in-depth interviews, participatory observation, and document studies. Interviews were conducted freely and tied with resource persons such as traditional leaders, community leaders, religious leaders, and coffee farmers, both men and women. Participatory observation techniques were used to directly

understand social interactions, environmental conditions, and coffee cultivation practices, providing a comprehensive picture of the subject under study.

Data sources in this study are divided into two categories: primary data and secondary data. Primary data was obtained directly from interviews and observations in the field, while secondary data was collected from supporting documents, such as literature, notes, and transcripts related to coffee cultivation and community empowerment. The collected data were analyzed using the Miles and Huberman (1984) analytical model, which includes three main stages: data reduction to filter out relevant information, data presentation in an organized form, and conclusion drawing to develop useful strategic recommendations.

This research places the researcher as the main instrument (human instrument) who directly collects and analyzes data. Armed with theory and prior knowledge, researchers are able to dig up information, analyze social situations, and give meaning to the data found. The analysis process aims to reveal the values hidden behind the visible data, resulting in an in-depth understanding of the socioeconomic conditions of coffee farmers. The results of the research are expected to be the basis for providing advice and empowerment strategies that are relevant to the people of Bokon Village.

3. RESULTS AND ANALYSIS

3.1. Empowerment of Bokon Village Coffee Farmers

in 1960, in addition to spreading religion, missionaries also introduced agricultural cultivation and education. In addition to spreading religion, missionaries also introduced coffee plants and taught them how to grow coffee, but at that time they (read: the villagers) only planted coffee without knowing the benefits of coffee fruit. Starting in the early 1980s, through the Balai Pengkajian Teknologi Pertanian (BPTP) program, when the late BJ Habibie was Indonesia's minister of state for research and technology (Bachrein, 2006). Coffee around Tiom began to be planted in Tiom when missionaries entered the central mountainous region of Papua was cultivated again through the program. There are several farmer groups formed and assisted by BPTP. Not only for coffee, but also vegetable farming and vegetable-producing plants. In Bokon village, there is one group called the Tiom Coffee Farmer Group, led by Moses Yigibalom (30 years old) with 30 households.



Figure 1 Coffee farmer group in Bokon Village

In Bokon Village, there are 30 households cultivating coffee plants, one of which is Moses himself as the head of the coffee farmer group as well as the tiom coffee producer. He admitted that the coffee he is now processing is his father's coffee whose seeds from BPTP until now are Moses and his father, Mr. Piter Yigibalom, are still processing coffee. Until now, the activities of the coffee farmer group in Bokon Village, led by Moses, have not received adequate attention from the local government. Whether in the form of support for transportation facilities or access to information and technology, this farmer group is forced to rely on independent efforts to manage the cultivation of coffee plants. With the existing limitations, they carry out all stages of the process manually and simply, starting from land preparation, planting, to plant maintenance. The coffee cultivation process in Tiom is quite unique. It developed as a result of the acculturation of traditional farming knowledge in managing the existing land with knowledge from empowerment programs for coffee cultivation, both those carried out by missionaries in the early days of the opening of the Puncak Jaya region to the outside world, as well as during empowerment by the government in the New Order in the 1980s.

Most plants, including coffee, derive their nutrients from the soil in which they grow. Plant roots absorb water and nutrients from the soil to be processed into substances useful for the survival of the plant. Plants that lack nutrients will be stunted in growth, stunted in flowering and fruiting, and may even die. Even if they are able to bear fruit, the quality and quantity are not optimal. The soil used to grow coffee must ensure that the soil conditions are suitable for growing coffee, bokon village is at an altitude and the ideal climate is that the soil surface is loose enough to grow coffee, to plant coffee farmers dig the soil to a depth of about 30 cm, using manual tools such as lingkis, cleaver, shovel or hoe, besides that Moses and his group also prepare trees that can be used as shade or protection for coffee plants.

Some kind of shade plant is needed to accelerate the growth process of coffee plants. A shade plant is a type of plant that has wide canopy characteristics, grows tall, and has deep roots (Rosniar, et.al, 2019). Shade plants play an important role in coffee cultivation because they protect coffee plants from excessive sun exposure and from rainwater that can cause soil erosion. With the presence of shade plants, the intensity of sunlight received by coffee plants can be regulated so that it suits their needs. This is important because coffee plants do not require full and intense sun exposure to grow optimally (Rasiska & Khairullah, 2017).

In addition to protecting from weather conditions, shade plants also provide additional benefits in land management. Shade crops such as pine trees, cassowaries, or banana trees are often used because they can naturally reduce weed growth. By suppressing weeds, farmers can reduce the use of herbicides, making it more environmentally friendly. These shade plants also help control the growth of coffee flowers and fruits, creating more stable conditions and supporting better quality coffee yields (Pida & Ariska, 2022). Therefore, the presence of shade plants is a crucial element in agroforestry systems involving coffee plants. Not only do they maintain ideal microclimatic conditions, they also contribute to ecosystem sustainability by maintaining environmental balance, reducing soil degradation, and increasing overall land productivity. This combination of benefits makes shade trees an integral part of a sustainable coffee farming management strategy. In clearing land can be done manually or mechanically, mechanical land preparation is usually done for land that is still overgrown with large and wild trees. Usually this mechanical land clearing uses heavy equipment, because the felling of large trees can be done more quickly, but the disadvantage is that the soil becomes dense, farmers need to loosen the soil again before planting coffee.

Manual land preparation is better because the soil remains loose, the dam can map the land to be planted more carefully, and can sort out plants that can be used as shade (Pahlevi & Banamtuan, 2024). If using the manual method, the disadvantages are that the labor required is greater, and the processing time is longer. The planting time is usually during the transition of the dry season to the rainy season, because the soil is neither dry nor wet so this mid-season is very good for planting coffee said Moses as the head of the Tiom Coffee Farmer Group. The spot that will be used as a coffee planting location is marked with wooden stakes, after which the shade plants begin to be planted, every two holes of coffee plants, the planting time is adjusted to the type of size, and the speed of growth of the shade plants themselves, 6-3 months before planting, the distance between holes is adjusted to the contours of the soil and the desired land density. dug holes with a depth of 30 cm. to plant coffee seeds, the steps are as follows:

1. Coffee planting starts in the morning or evening, when the sun is not too strong. It would be better if the plants were showered with rain a few hours after planting. This rainwater can reduce the risk of death to the plants.
2. The existing hole is re-dug to a depth of 30-50 cm.
3. After that, the polybag containing the coffee seedlings is taken out and the soil is compacted, cutting the bottom of the polybag about 3 cm from the bottom.
4. After that, make a longitudinal cut from top to bottom on one side of the polybag.
5. These cuts and incisions are done carefully so that the soil in the polybag does not fall apart.
6. If there is a taproot whose length exceeds the bottom of the hole, it should be cut off.
7. The polybag containing the coffee seeds is inserted into the hole. Try to keep the root neck parallel to the surface of the hole.
8. Pull out the polybag, then fill the hole with soil while occasionally compacting it.
9. The soil in the hole is compacted by hand or gently trampled. The soil should cover the hole in a convex shape with the top of the hole being the coffee plant stem. This will prevent stagnant water that can rot the coffee roots.
10. Surround the plant with straw or dry leaves to maintain soil moisture. In addition, soil damage due to rainwater can also be prevented.

After planting coffee, you must often go to the coffee plantation to check the coffee plants and shade the coffee plants 1 week 3 times to check, if it doesn't rain, there is a risk of death of coffee plants, so you must often give organic fertilizer and water. Coffee plant maintenance is carried out by checking the condition of the soil, the condition of the coffee plant itself, and the effect of shade plants on coffee plants. This check should be done on a regular basis, at least once every three days. If it does not rain for a few days, the inspection can be done even more intensively.

Care is taken to determine soil moisture and the presence of crop-destroying weeds. After rain, the soil usually becomes more moist. Therefore, the area around the coffee plants needs to be loosened to help the soil evaporate. If it has not rained for several days and the soil looks dry, watering should be done immediately. Additional shade can also be provided to reduce evaporation. Coffee is a plant that cannot withstand dryness, so it should not be allowed to dry for too long. In this Moses farmer group, most of its members use organic fertilizers rather than inorganic fertilizers, because of the mountainous location and frequent rainfall, organic fertilizers are ideal for maintaining the nutrients needed by coffee plants. In addition, nowadays many coffee lovers are looking for organic coffee. Because the price of organic coffee beans and powder is more expensive than inorganic ones.

The process of inspecting newly planted coffee plants needs to be done in batches. In the early months of planting, inspection can be done 2-3 times a week. The aim is to be able to immediately identify and make solutions if there are problems with the coffee plants. Checks may include plant growth, the presence of pests and diseases, and pruning. If there are pests such as caterpillars, they are removed manually. Manual pest eradication is preferred to maintain the quality of the harvested coffee beans. Coffee plants can grow up to a dozen meters if left alone, coffee that is too tall can also be troublesome to maintain and handle the harvest. Therefore, it is necessary to prune these plants in batches. This pruning aims to obtain young stems that will be the place for new lateral stems to grow.

The function of shade plants is to protect coffee plants from wind, sunlight, and rain to maintain soil moisture, and resist erosion, shade plants used cassowary and banana trees, shade plants that are too lush also make the air humidity too high. This makes the coffee plants contain too much water which is not good for the growth of branches and twigs and fruit production. The need to prune shade plants is useful to optimize the function of these plants in protecting coffee plants from wind and sunlight while not disturbing their productivity. One way is to prune the branches and twigs of the shade plants. The height of the shade plants should be higher than the coffee plants. Pruning is often done at the beginning of the rainy season or at the same time as the beginning of the coffee plant's inflorescence.

Coffee fruits do not grow simultaneously like fruits in general so that picking cannot be done at once, coffee that is ready to be harvested can be distinguished from the color variants on the coffee plant, unripe coffee fruit is green (Sobari, et.al, 2012). This fruit is still hard and not slimy. unripe coffee beans are pale white and wrinkled, then the coffee fruit is yellowish green to yellow, this color indicates that the coffee fruit is in a semi-ripe state. When peeled, the seeds are gray. The aroma and taste also do not meet the requirements of good coffee beans. While the coffee fruit is ripe and can be harvested. Coffee with a fresh red color or dark red color is the best to pick, this fruit tastes sweet, like sugar, there is also a lot of mucus, so it is easy to peel, the aroma and taste of the seeds are also optimal, if not picked, the red color will change to dark red and then black.

The process continues to the harvest and post-harvest stages, including the processing of coffee beans through roasting techniques, until finally the coffee is ready for market. Unfortunately, the entire process is carried out using makeshift equipment, which often hampers the efficiency and quality of production. Despite these limitations, the farmer group continues to work collectively to develop their coffee products, showing tremendous spirit even in the absence of significant support from the government. Nevertheless, with a strong determination to develop coffee cultivation and empower the local community. Coffee farmer groups continue to run coffee production in Tiom even though it is managed independently by the community and work together for the production process to packaging and marketing so that it sells well. Poor quality coffee beans, picked too early or too late, have to be sorted and put together with those of equal quality. The quality will not match that of red-fruit coffee, no matter how processed it is.



Figure 2 Coffee Harvesting Process

The equipment used for the harvesting process is very simple, the tiom coffee farmer group only uses ordinary or makeshift Pakean, some use mud shoes or boots, some do not, to pick tall coffee cherries often use makeshift chairs. To fill the coffee fruit temporarily often use noken there are also those who use sacks. Post-harvest, coffee cherries that have been put into sacks should not be stored for more than 12 hours. Prolonged storage can cause fermentation, resulting in bad-smelling coffee beans. Coffee fruits and beans that are damaged before post-harvest handling will be difficult to recover.



Figure 3 Coffee Fruits ready for Harvest

Fruit sorting is done to separate good fruit from bad fruit. This sorting can be done by soaking the harvested coffee cherries. From soaking, unripe, dry, overripe, and empty coffee cherries will appear to float. Conversely, perfectly ripe fruit will sink. These floating fruits should be removed, as they may contain diseases or defects.



Figure 4 Coffee fruit washing process

The water used to soak the harvested coffee must be clean, colorless, odorless, and contain no chemicals. Coffee fruits and beans are very sensitive in absorbing certain odors and chemical elements. When sorting, it should be done at the same time as removing trash and debris. Gravel, twig pieces, and leaf residue will interfere with the post-harvest process. This post-harvest method is called the dry method, because it does not use water in separating the coffee beans from the fruit. This method is often used on small plantations, as the process only requires very simple equipment.



Figure 5 Drying process of coffee beans

The stages in this process are drying, peeling, sorting, packaging, and storage. The drying process in this method is carried out by drying in direct sunlight. Drying should start on the same day as the coffee fruit is picked.

This drying process should not be done directly on the ground, as the coffee cherries can be contaminated with mold. The dried coffee should be placed on para-para, tarpaulin, and preferably. If it rains or at night, the coffee can be moved to a dry place that is protected from rainwater. Try to keep this coffee storage place not tightly closed, so that fermentation does not occur in coffee cherries that are still wet.

This drying can be said to be complete if the coffee fruit is completely dry or the maximum moisture content is 12.5%. one sign is that there is a rustling sound on the coffee fruit when stirred, in normal weather, from the beginning of drying until the coffee fruit is completely dry it can take 2-3 weeks. The next stage is peeling. The skin and dried coffee fruit as well as the horns and epidermis are separated from the seeds. This stripping must be done using a peeling machine. This is followed by seed sorting. At this stage, damaged and defective beans are separated from the perfect beans. Garbage and other foreign objects that may be mixed with the seeds are also separated. This separation is usually done manually. Once clean, the coffee beans are put into sacks. Usually, the sacks used are sacks that can hold 40-50 kg of coffee beans. The sacks that are often used are clean, dry, odorless and without holes.

The next stage is storage. Coffee beans are stored in special warehouses, and these warehouses must be clean and odorless, which can affect the aroma of the coffee beans. It must also be covered to keep it safe from pests and destructive organisms, such as rats, mold, and insects. The humidity of the warehouse must also be maintained to prevent the coffee beans from becoming moldy. For this reason, there must be adequate ventilation, no leaks on the roof, and no stagnant water on the floor. After everything is done, then enter the production and packaging stages.

The coffee production process is carried out after all the preparation stages are completed. The main responsibility for this process lies with the head of the Lani Coffee Tani Group. The production of the coffee harvest includes a structured series of steps, starting with the roasting stage which is carried out using a special roasting machine. The roasting process is carefully timed, as each type of roasting is designed to meet specific needs and produce specific coffee characteristics. Roasting techniques are divided into two main types, namely filter roasting and natural roasting, each of which has its own characteristics.

Filter roasting produces coffee beans with a light brown color and is able to bring out a variety of unique fruit flavors, such as mango, pomegranate, and strawberry. In addition, filter roasted coffee also imparts a delicate aroma, resembling the smell of jasmine and jasmin tea. These characteristics make the coffee produced from this process very attractive to coffee connoisseurs looking for complex and refreshing flavors and aromas. This process requires special attention to time and temperature to ensure that the beans can bring out the optimal flavor and aroma according to the characteristics of the filter.

Natural roasting, on the other hand, produces beans with a dark brown to black color, which gives them a stronger and more distinctive flavor, a blend of bitterness and acidity. The aroma produced from this process is more intense, resembling honey and traditional coffee in general. This process creates coffee with a heavier character, suitable for those who like the deep, robust flavor of classic coffee. These two roasting methods give the farmer groups the flexibility to produce different coffee variants according to market needs and consumer preferences (Edowai &

Tahoba, 2018). This production process not only highlights the quality of the coffee produced, but also reflects the skill and attention to detail possessed by the farmer groups.



Figure 6 Product packaging

The results of this coffee plant cultivation greatly help the needs of the family economy in the village community. Coffee cultivation in Bokon Village, Lanny Jaya Regency, has had a significant impact on improving the welfare of the local community. One concrete example is the success of a local figure who continues the family business in managing coffee plantations. After completing his studies in Bandung, he returned to his hometown to develop the coffee plantation inherited from his father, who had retired when he was still in middle school. With passion and dedication, he established a coffee farmer group in 2016 to organize farmers and increase coffee production in the area.

In 2018, his hard work was recognized with an award from Bank Indonesia for the best quality coffee. This success encouraged him to keep going, until in 2023 he won first place in a documentary film competition on coffee processing. Now, he is a coffee producer under the brand “Kopi Lani Mendek,” who has opened two shops and is able to supply coffee to various regions, including Jayapura, Wamena, and even outside Papua. Together with his farmer group of 30 households, he has managed to build a sustainable coffee business ecosystem, providing economic opportunities not only for himself, but also for the local community.

The success of coffee cultivation is also felt by other farmers, such as a farmer group member who without a formal education background is still able to send his children to higher education. His efforts and persistence in coffee farming not only provide for his family's daily needs, but also provide a better education for the next generation. For farmers, growing coffee is likened to saving money; the trees can continue to produce, and well-stored coffee beans will not spoil easily. Coffee becomes an asset that can be sold at any time to meet urgent needs such as school fees, medical treatment, or other needs. Thus, coffee is not only an economic commodity, but also a symbol of hope and sustainability for the people in Bokon Village.

3.2. Encouraging and Hindering Factors for Empowerment of Bokon Village Coffee Farmers

Members of the coffee farmer group in Bokon Village consist of various backgrounds, including the State Civil Apparatus (ASN) and the general public, with an average age range of 40 to 60 years. Meanwhile, the involvement of the younger generation in coffee cultivation is still very limited. Among the young men and women, only the head of the Lani Coffee Tani Group, Moses, is actively involved. Most of the younger generation in Bokon Village, both those who have completed formal education and those who did not continue their schooling, tend to be more interested in becoming civil servants. This is quite concerning considering that coffee cultivation has very promising potential to improve the welfare of the community.

According to Moses' experience, coffee cultivation is not just a farming activity, but also a form of long-term investment. Cultivated coffee not only has a stable economic value, but also a high shelf life. Well-processed coffee beans can be stored for a long time without losing their quality, and the quality even tends to improve over time. Thus, coffee cultivation can be considered a valuable asset that continues to provide benefits to farmers. Moses has also succeeded in building awareness among his group members that good coffee management can have a positive impact, especially in improving the economic conditions of the family.

Before the coffee farmer group was formed, the majority of members had to struggle to fulfill their daily needs through heavy labor such as planting yams in the mountains far from where they lived. Some of them also sought additional income by selling firewood, although the proceeds were often only enough to buy basic necessities such as cooking oil, salt and small amounts of rice. However, since they started focusing on coffee cultivation, significant changes have occurred in their lives. During the first harvest period, group members could produce 1-2 sacks of coffee

weighing 50 kilograms. With improved cultivation skills and management, their yield in the next harvest even reached 5-7 sacks. This proves that coffee cultivation not only provides a better income, but also reduces the physical workload that was previously very heavy.

The limited involvement of the younger generation in coffee cultivation in Bokon Village can be attributed to a cultural and socio-economic preference for formal employment, particularly in civil service positions. This phenomenon is not uncommon in rural areas of Indonesia, where becoming a civil servant is often seen as a more stable and prestigious career option (Yuniarta & Sujana, 2018). The lack of youth participation in agriculture, including coffee farming, poses a challenge to the sustainability of agricultural livelihoods and rural economic development. To address this, it is essential to create awareness about the economic potential of coffee cultivation and provide targeted training and incentives for young people to take up farming. As studies show, successful agricultural ventures with proper mentorship and support can be attractive alternatives for younger generations (Piras, et al., 2021).

The transformative impact of coffee cultivation on the livelihoods of Bokon Village farmers underscores the potential of agriculture as a tool for rural economic development. The transition from labor-intensive subsistence farming and firewood collection to more productive coffee farming illustrates the role of skill development and improved resource management in increasing economic resilience (Bicchieri, et al., 2022). Moses' leadership in fostering awareness and improving cultivation practices highlights the importance of local leaders in driving community-based development initiatives. To ensure long-term sustainability, the government and agricultural agencies must collaborate with coffee farmer groups to enhance access to markets, provide financial support, and integrate advanced farming technologies.

Farmers in Tiom District, Lanny Jaya Regency, face major challenges in improving the quality of their human resources. This low quality is mainly due to low education levels. The majority of farmers in this region have never received formal education or did not even finish primary school. Only a handful manage to complete secondary education or go on to university. This condition is also exacerbated by the low interest of the younger generation to enter the agricultural sector, potentially threatening the sustainability of future farmer regeneration.

On the other hand, limited access to information and new technologies further exacerbates the situation. Most farmers live in rural areas with limited transportation and communication facilities and infrastructure (Curry, et.al, 2017). As a result, farmers' ability to absorb new innovations and technologies is still very low. In fact, quality human resources are the key to creating excellent farmers who are able to adapt to change (Sarirahayu & Aprianingsih, 2018; Cafer & Rikoon, 2018). With this capacity building, it is expected that significant developments can occur that will bring positive changes to the living standards of the farming community. Unfortunately, until now the local government's attention to the agricultural sector in this region is still very minimal, in contrast to other regions such as Tana Toraja, where the local government actively provides assistance and support to coffee farmers (Neilson, 2022).

The lack of attention from the government in Lanny Jaya Regency can be seen in the absence of educational programs or assistance for farmer groups. In addition to the farmer group led by one of the local leaders, there are also several other farmer groups that face similar conditions. To overcome this lack of support, farmers often have to fend for themselves in the process of harvest management and distribution (Kumar & Kalita, 2017). The head of a coffee farmer group in the region, for example, has to use a motorcycle taxi or rent a car to transport coffee from remote rural areas with steep and rocky roads. If the harvest is large enough, a car is the first choice despite the higher cost. After all the coffee has been collected, the farmer group leader tries to find a marketing network so that the harvest can be sold well (Amamo, 2014). This situation shows how important government intervention is to support farmers, both in the form of providing access to technology, capacity building, and adequate infrastructure development to improve the welfare of farmers in Lanny Jaya Regency.

4. CONCLUSION

The empowerment of coffee farmers in Bokon Village shows great potential in improving the welfare of the local community despite various challenges. The success of farmer groups, such as the one led by Moses Yigibalom, shows that coffee is not only an economic commodity but also a tool for social empowerment. Coffee cultivation has provided opportunities for farmers to increase their income and reduce their heavy physical workload, while still optimally utilizing local resources. Cultivation processes that combine traditional and modern methods, such as the use of shade crops and organic coffee processing, reflect promising adaptations and innovations. However, the sustainability of this empowerment still requires more intensive support, especially from the local government in the form of improved access to technology, information, and infrastructure.

On the other hand, limited human resources, low education, and lack of interest from the younger generation are the main obstacles in the regeneration of coffee farmers. Without adequate attention and intervention, the huge potential of coffee cultivation may be difficult to develop optimally. The active role of the government is crucial, both

in providing training, technical assistance, and building a wider marketing network. The successful experiences of some farmer group members show that investing in capacity building and providing access can bring significant positive impacts. With the right strategic steps, the empowerment of coffee farmers in Bokon Village can be a model of success for other areas in Papua, as well as a symbol of the hope and independence of local communities in managing their own resources.

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