

# Changes in Community Agricultural Activities Before and After the Development of Farm Road Infrastructure (Case Study in Paroto Village, Soppeng Regency)

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## ABSTRACT

The development of farm road infrastructure in Paroto Village, Soppeng Regency, has significantly impacted agricultural activities and community welfare. Prior to this development, farmers faced limited accessibility, which hindered the distribution of agricultural products and restricted access to markets. After the construction of the farm road, transportation efficiency improved, and access to farmland became easier, leading to increased productivity and crop diversification. This study employed a descriptive qualitative method, collecting data through surveys and in-depth interviews with local farmers. The results revealed notable changes in travel time, distribution costs, and farmers' work patterns. Farm roads not only increased farmers' incomes but also created new business opportunities, contributing to local economic development and enhancing the community's quality of life. This research provides a clear overview of the impact of farm road infrastructure on the welfare of farming communities and can serve as a reference for future development policies.

**Keywords:** agricultural activities, farm road development, accessibility, productivity, Paroto Village.

## 1. INTRODUCTION

Paroto Village, located in Lilirilau District, Soppeng Regency, South Sulawesi is one of the villages with great agricultural potential. Agricultural activities in Paroto Village have become an integral part of the local community's life, with farm road infrastructure playing an important role in improving accessibility and efficiency in agricultural endeavors.

Changes in community economic activity are one of the important indicators in assessing the impact of farm road infrastructure development on community welfare, [1], [2], [3]. In Paroto Village, Soppeng Regency, the development of farm roads has become one of the government projects that is expected to change the socio-economic dynamics of the local community. Before the development of the farm road, the Paroto Village community experienced various limitations in accessibility which had an impact on multiple aspects of life, including the economy [4], [5], [6].

The economic activities of the Paroto Village community before and after the development of the farm road showed significant transformations that impacted various aspects of life. Before the development of the farm road, the economic activities of the Paroto Village community were largely dependent on subsystem agriculture. Farmers used simple traditional tools to manage their farmland, such as hoes, paculs, crowbars and plows pulled by animals (cows or horses), so agricultural production was relatively low and only sufficient to meet daily basic needs. The process of transporting agricultural products is also difficult and time-consuming, due to the absence of adequate road infrastructure. Farmers can only transport their agricultural products with energy such as carrying, carrying, and carrying for women or using animal power such as horses.

However, after the development of the farm road, there was a drastic change in the socio-economic life of the community. Better road infrastructure facilitates access to farmland and speeds up the process of transporting agricultural products using motorized vehicles or cars. However, the farm roads are still in the form of dirt roads, criticized and some are already concrete roads. But farmers have started to use modern farming equipment, such as tractors and modern pest sprayers, which increases farming efficiency and productivity. The increased production is not only sufficient to meet basic needs, but also allows farmers to sell agricultural products to a wider market, even traders who come directly to farmers' gardens so that their income increases. In addition, the development of farm roads has also opened up new business opportunities, such as trading, selling by opening kiosks under the house or in front of the house, services, and others that further strengthen the village economy. These changes not only improved the economic welfare of farmers, but also changed the social structure of the Paroto Village community, from traditional to more modern and dynamic [7].

Paroto Village has great economic potential, especially in agriculture. The village has an area of 17 km<sup>2</sup> and the majority of the people work as farmers. They mostly plant cocoa/chocolate compared to other crops, which is reinforced by the existence of a village monument depicting cocoa fruit [8]. However, the results of field observations and direct interviews with the community found that farmers generally plant corn, red beans, and beans. After the cocoa crop failed to produce due to various diseases, as revealed by La'Bu (54) a farmer as well as a Farmer group that cocoa is no longer planted because of many diseases, so cocoa trees are cut down and then planted with corn because the fruit is not good (eaten by pests called brown cancer or stem borers), and corn can be produced around 4 months, while the fastest cocoa can bear fruit starting at the age of 5 years, even if it is healthy, and there are also many maintenance costs (interview, October 31, 2024).

The results of these interviews show that the average community switches to corn because it is faster to produce, only in a period of 4 months compared to the cacao plantation which takes around 5 years to maintain and start producing.

In addition to agricultural potential, Paroto Village has great tourism potential to improve the economy and improve the welfare of the community. However, there needs to be government support and seriousness to develop tourism potentials that have existed since their ancestors such as the traditional event of the People's Party called *Mattojang* is a high swing using a special rope tied to two large kapok wood poles.

Changes in the agricultural activities of the Paroto Village community before and after the development of the farm road can be understood through materialistic and idealistic perspectives. In this context, social change in agriculture is influenced by material factors such as new technology and production capabilities. As explained by [9]. Social changes from a materialistic perspective include new technologies (modes of production) consisting of subsistence production, namely; the power of production includes land, commercial production, namely production capabilities include land and non-land as a means of production, and capitalist production, namely; the power of production includes capital as a means of production [9], [10], [11], [12]. Developing farm roads in Paroto Village can increase accessibility and efficiency in agricultural activities, thus encouraging changes in the types of production and modes of production used by the farming community. In addition, social change can also be influenced by non-material factors such as ideas or ideas that can justify the will to implement changes [9]. Therefore, research on changes in agricultural activities in Paroto Village must consider both perspectives to gain a comprehensive picture of the changes taking place.

Social data from the Paroto Village website shows that the Paroto Village government and community have made various efforts to improve the village economy. For example, conducting public consultations for the draft local regulation on tourism villages and managing village finances in accordance with regulations.

From the literature review above, it can be concluded that Paroto Village has experienced significant changes in the economic activities of its community before and after the development of the farm road. The people of Paroto Village have tried to improve the village economy through various efforts, both from the government and the community itself.

The remote and hilly geography of Paroto Village with inadequate road access has been a major obstacle to the community's economic development. The mobility of the community, especially farmers who make up the majority

of the population, is very limited, making it difficult to transport agricultural produce to the market. This results in low incomes for farmers as they often have to sell their crops at low prices to collectors who come to the village.

The development of farm roads in Paroto Village was able to overcome these problems by providing better access for the community. Farm roads not only facilitate more efficient transportation of agricultural products to the market but also open up opportunities for other economic activities such as trade and services [13, 14, 15]. With better access, there is an increase in community income, a decrease in transportation costs, and an overall improvement in quality of life.

This study aims to analyze changes in the economic activities of the Paroto Village community before and after the development of farm road infrastructure. This analysis includes various aspects such as income, accessibility, prices of goods, and business opportunities. By understanding the changes that occurred, it is hoped that this research can provide a clear picture of the impact of infrastructure development on the welfare of farming communities and serve as a reference for future development policies.

Through a comprehensive approach, this research is expected to make a real contribution to understanding the socioeconomic dynamics in Paroto Village and provide relevant recommendations for the development of similar villages in other regions.

## **2. RESEARCH METHODS**

The research method used in this study is a descriptive qualitative method, which aims to analyze changes in the agricultural activities of the Paroto Village community before and after the existence of farm road infrastructure development. The data collection mechanism was carried out through field surveys and in-depth interviews with local communities with informants consisting of the Village Head, Hamlet Head, Head of Farmer Group, Community Leaders, Neighborhood Association (NA), and Farmers by purposive sampling. Primary data obtained from interviews was supported by secondary data related to rural farmers' infrastructure development, such as books, journals, other references from the internet, and reports from the government. Data analysis was conducted descriptively and qualitatively to describe patterns of change in community agricultural activities before and after the development of farm roads, including land productivity, accessibility to markets, and changes in farmers' income.

## **3. RESULTS AND DISCUSSION**

### **3.1. Conditions of Agricultural Activities Before the Development of Farm Roads**

Prior to the development of farm road infrastructure, the condition of agricultural activities in Paroto Village was greatly affected by the limited accessibility to farmland. Farmers often faced great challenges in transporting crops from the field to the market because farmers could only walk on foot by carrying, carrying, upholding for women their agricultural products according to their own abilities, or riding horses for those who owned horses, as said by a farmer that before the development of farm roads by the government, the process of transporting agricultural products was a big challenge for farmers. They were forced to rely on traditional methods such as walking while carrying the harvest, carrying, or using other methods such as mattekee (transportation using horse power) and visiting, especially for women. Hiring horses is also an alternative for transporting agricultural produce, although this often adds to the cost and slows down the distribution process. These methods are not only laborious but also less efficient, hindering farmers' access to markets, traders and reducing their income potential (Interview; La'Bu, Tammasse, and Alfiansyah Putra, October 31, 2024).

The government-initiated development of farm roads is expected to address the problem by providing better access for the transportation of agricultural produce. With proper roads in place, farmers can now transport crops more quickly and efficiently, reducing reliance on laborious hauling methods. This not only increases their productivity but also speeds up the time of sale to traders, which in turn can improve farmers' overall welfare. Better access allows farmers to sell agricultural products at more competitive prices and reduce transportation costs, thus positively impacting the local economy (Interview; Alfian Putra, and Imran, October 31, 2024).

Access to farmland is through paths that are very difficult for motorized vehicles to pass, making it very difficult for farmers to transport their crops. There are even paths that cannot be traversed by motorized vehicles with varying

distances to each farmer's farm, so farmers are forced to use human or animal power to transport their crops (Interview, Ram Fredy, October 31, 2024).



**Figure 1:** The condition of the path that has not yet been built

**Source:** Documentation of research results, 2024

In addition, limited agricultural infrastructure also has an impact on productivity. Farmers are more likely to grow crops that do not require rapid distribution or are durable, such as maize, tubers, groundnuts, red beans, bananas, and a small proportion of rice, especially in the lowland areas of the Waelnae river basin. Crop diversification is limited due to the risk of crop damage during long journeys. Weather-dependent farming activities are also a challenge as the paths are often inadequate during the rainy season as they are slippery with the topography of the terrain generally hilly. So the roads are usually downhill, uphill, or sloping, and sometimes cross small rivers, making access to the land very challenging. As stated by La'Bu (54), when it rains heavily, we do not go to the farm because it is slippery and flooded and we have to cross the river because there is no bridge, even if there is a bridge, it is made of bamboo or you tied around 5 sticks, and it is very dangerous because it sways when passed (interview, October 31, 2024).

When the rain is pouring down, the decision not to go to the garden becomes very logical. Slippery ground conditions and potential flooding make travel risky. In addition, access to the farm often requires crossing a river that has no permanent bridge. The situation is further exacerbated if the only existing bridge is made of bamboo or wood tied together simply. Not only do these bridges lack stability, but they can also wobble when crossed, adding to the discomfort and danger for anyone trying to cross them.

The existence of inadequate infrastructure such as these bamboo or wooden bridges reflects the challenges faced by communities in going about their daily activities, especially in rural areas. Weather unpredictability and poor road conditions often hinder access to farmland, which is the main source of livelihood for many. Therefore, it is important to consider long-term solutions that can improve accessibility and safety, such as the development of permanent bridges and better drainage systems to prevent flooding and improve road conditions when it rains.

### **3.2. Changes in Agricultural Activities after Farm Road Development**

After the development of farm roads in Paroto Village, there were significant changes in the community's agricultural activities. Adequate farm road infrastructure allows motorized vehicles and cars to access farmland more easily, making the process of distributing and transporting agricultural products faster and more efficient. Travel time from home to farm or market is drastically reduced, which directly reduces transportation costs and increases farmers' income. As stated by Tammase (53), since the development of farm roads built by the government, we have been greatly helped and feel comfortable as farmers because we can take a motorized vehicle or car to the farm to transport agricultural products quickly. Even buyers or traders of agricultural products come directly to our farms (interview, November 01, 2024).



**Figure 2:** Farmer's road in gravel condition

**Source:** Documentation of research results, 2024



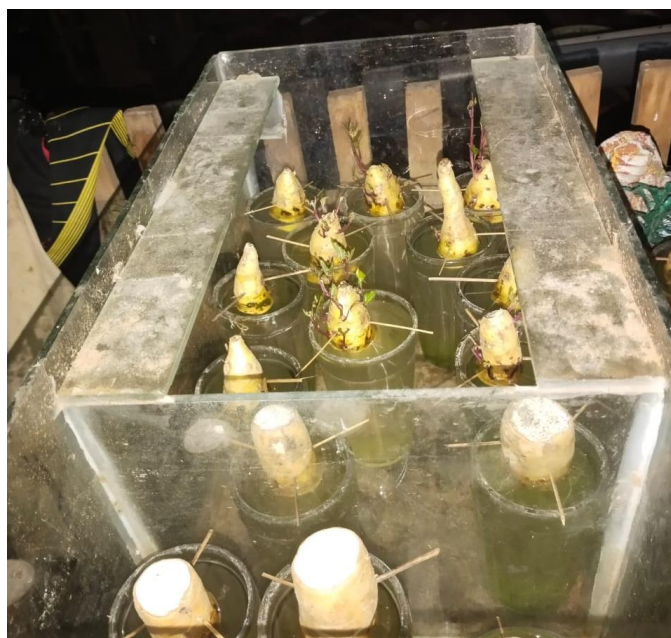
**Figure 3.** Concrete farm road accessing plantation and rice fields

**Source:** Documentation of Research Results, 2024

The development of the farm road has greatly influenced farmers' work patterns, resting time, and socializing time in the community. Previously, we left at 6 am to go to the farm and returned home at 6 pm, but now we leave in the morning and return at 10 am. So the time used is quite short compared to before the development of the farm road. However, the increase or decrease in crop yields is very dependent on weather conditions, rainy season or dry season. The existence of farm roads has greatly improved relations and cooperation between farmers because of the easy access to visit each other (interview, Hasanuddin, November 01, 2024).

After returning from the farm, farmers in Paroto Village, like Tammase, continue other productive activities at home, one of which is the nursery of Cilembu honey tubers. This is done under the columns of his house, demonstrating the integration between agricultural activities and daily life. Cilembu honey yam is known to have high economic value and its cultivation process is relatively simple, with a short harvest period of about 4-5 months. By utilizing the existing space in the house, farmers not only increase their productivity but also utilize their free time after working in the garden to supplement family income. This activity reflects the high entrepreneurial spirit and innovation among farmers, as well as their ability to adapt to environmental conditions and available resources (interview, Tammase, November 01, 2024).

Cilembu honey tuber breeding also has significant nutritional benefits for the community. It is rich in antioxidants and has the potential to boost immunity, so in addition to being a source of income, it also contributes to community health [16], [17], [18]. By developing skills in honey bulb nursery and cultivation, farmers in Paroto Village can create new sustainable business opportunities. This shows that even though they are engaged in their main job as farmers, they are still actively looking for ways to improve their welfare through business diversification at home. Initiatives such as these not only help to increase individual income but can also contribute to the overall economic development of the village (Tammase), as shown in figure 4.



**Figure 4:** Cilembu honey tuber nursery

Source: Research Document, (interview, Tammase, November 01, 2024)

With the infrastructure of farm roads built by the government, farmers began to diversify their crops. In addition to staple food crops such as rice and corn, farmers began to plant horticultural crops that have a higher selling value, such as fruits vegetables, and tubers that were previously difficult to market due to limited access. This has helped to increase farmers' household income.

### **3.3. Socio-economic Impact of Farm Road Development**

The development of farm roads in Paroto Village, Soppeng Regency, has great potential to improve the welfare of farming communities, in line with the findings presented by [19] in its Infrastructure for Development report. The report emphasizes that good infrastructure, such as farm roads, serves as a key driver in improving accessibility and efficiency in the agricultural sector. With adequate roads, farmers in Paroto Village can transport their crops to market more quickly and cheaply, thereby increasing their income and reducing losses due to crop damage during transportation. In addition, the development of farm roads also opens up opportunities for business diversification and the enhancement of other economic activities, which in turn contributes to local economic growth and an overall

improved quality of life for the community. Thus, the development of farm road infrastructure not only supports the mobility of agricultural products and inputs, but is also an important catalyst in the process of social and economic change in the village.

The development of farm roads not only affects the agricultural sector, but also affects the socio-economic aspects of the community. Better access to farmland opens up employment opportunities for villagers who were previously not involved in the agricultural sector, such as transportation services for agricultural products by renting out their motorized vehicles to those who do not own vehicles specifically designed for the transportation of agricultural products. In addition, increased agricultural productivity also boosts local economic growth due to increased demand for other goods and services related to agriculture.

Changes in farmers' work patterns are also one of the impacts of the development of farm roads. With easier access, farmers can be more optimal in managing their time and energy. Some farmers even utilize their free time to seek additional income through work in other sectors, such as trade or small businesses. As explained by La'Bu (54), we farmers work in the garden more relaxed than office employees, because we go to the garden after dawn prayer, and return at 8 am before the sun heats up; because we don't need to hoe in the garden like we used to, we only spray the grass for at most 2 hours. After that, we return home to do other work that can generate profits (interview, 01 Nov 2024).

### **3.3.1 Improved Accessibility**

The development of farm roads improves accessibility for farmers to reach farmlands and markets. With better access, farmers can more easily transport agricultural products to markets, which in turn can increase their income. A study shows that the presence of farm roads can accelerate the distribution of agricultural products and reduce transportation costs [20]. With the development of farm roads in Paroto Village, farmers really feel the convenience and benefits as farmers, because they do not need to walk to their gardens, they can ride their motorbikes or be escorted by their children or grandchildren within 5 minutes to reach the garden (interview, Aco, October 31, 2024). Farm road infrastructure is very helpful and facilitates access to agricultural products for us as farmers in this village, (interview, Imran, October 31, 2024). The results of these interviews show that the development of farm road infrastructure is very helpful and provides comfort to the people of Paroto Village.

Although the development of farm roads in Paroto Village is still ongoing in stages due to budget constraints from the government, farmers have felt the positive impact of this initiative. With better road access, farmers can now use motorized vehicles to transport their agricultural products, although the road has not yet fully reached their gardens. This shows that although the infrastructure is not yet fully completed, the increased mobility provided by the farm road is significant enough to help farmers in carrying out their daily agricultural activities. The use of motorized vehicles not only speeds up the process of transporting agricultural products, but also reduces costs that were previously incurred for manual transportation or using motorcycle taxis called Taxis. Motorcycles that are specially designed to transport agricultural products that are able to pass through hilly terrain (Interview, Tammasse, and La'Bu, November 31, 2024).

The positive impact of the development of this farm road is also seen in the increase in agricultural productivity. With better access, farmers can be more efficient in transporting fertilizers and agricultural tools to their fields, which in turn can increase crop yields. Although there are still agricultural lands that have not been reached by the development of farm roads, farmers are optimistic that the completion of the road development will further facilitate agricultural activities and improve their welfare. The existence of farm roads is expected to encourage local economic growth and strengthen food security in the village, along with increased accessibility and efficiency in the management of agricultural resources (Interview, Tammasse, and La'Bu, November 31, 2024).

### **3.3.2. Increasing Agricultural Productivity**

With good road infrastructure, agricultural productivity tends to increase. Farm roads allow farmers to use agricultural tools and machinery more efficiently, thereby increasing yields. Research in other areas shows that farm roads contribute to production specialization and efficiency in transporting agricultural products [20].

After the development of access roads for farmers that can be used by modern equipment such as tractors to plow gardens or rice fields, garden productivity has increased significantly compared to before when plowing the land traditionally with one's own power by hoeing or digging, not much area can be done in a day. But after using modern machines, of course the work that used to take a month can be completed in one day. Energy is not drained either but garden productivity increases, even though there is a dependence on the weather in the rainy or dry season (interview, La'Bu, November 31, 2024).



**Figure 6:** Hand tractors used by farmers in Paroto Village

**Source:** Documentation of research results, November 31, 2024)

The equipment is assistance from the government to farmers through the head of the farmer group as the person in charge. However, subsequent maintenance costs are borne by the members of the farmer group with a joint cost system if there is damage that needs to be repaired. While the cost of fuel is borne by each farmer who uses it.

The equipment provided by the government to farmers through the head of the farmer group serves as a stimulus to increase agricultural productivity. With this assistance, farmers can access more modern technology and tools, which previously may have been difficult for them to obtain due to limited funds. The head of the farmer group plays a role in managing the equipment, ensuring that all group members can utilize the tools properly. This not only increases work efficiency, but also encourages collaboration between farmer group members in optimizing the use of equipment.

Although the equipment is provided free of charge by the government, the maintenance and repair costs are the shared responsibility of the members of the farmer group. A joint cost system is implemented to ensure that each member contributes according to their ability to maintain the condition of the equipment. This approach not only teaches the importance of collective responsibility, but also creates a sense of ownership of shared assets. Thus, each member is expected to be more concerned about tool maintenance and ready to make repairs if necessary, so that the sustainability of equipment use can be maintained and its benefits can be felt in the long term.

### **3.4 Local Economic Development**

The development of farm roads can stimulate the local economy by creating new jobs, both in development and in the agricultural sector itself. With increasing farmer income, people's purchasing power also increases, which has a positive impact on other local businesses such as shops and transportation services [21], [22], [23], [24], [25]. In Paroto Village, community economic development is carried out through various skills development and training programs aimed at social groups. This training covers various fields, such as sewing, culinary arts, make-up, and the development of shallot farmer groups. In addition, the community is also trained in handicrafts such as weaving bags and making organic fertilizers, as well as cultivating oyster mushrooms. These programs not only aim to improve

individual skills but also to build the collective capacity of the community in facing economic challenges. With the skills acquired, it is hoped that community members can create new sustainable business opportunities and increase their family income (Interview from Paroto Village Officials, Busri, 2024).

In addition to skills training, Paroto Village also develops various other economic businesses that have the potential to increase community income. The egg-laying and broiler chicken farming business is one of the main focuses, in addition to the manufacture of brown sugar and there are also cigarette manufacturing entrepreneurs with tobacco imported from outside the region. This business diversification is important to create economic resilience at the village level and reduce dependence on just one type of business. With various business options, the community can adjust their economic activities to market conditions and available resources. This is expected to encourage more inclusive and sustainable local economic growth (Interview with Paroto Village Officials, Busri, 2024).

### **3.5 Social Change in Paroto Village Society**

Social change is a process that involves modifications in patterns of interaction, values, norms, and social institutions in society. According to [26], social change can occur quickly or slowly and can be caused by internal or external factors. In the context of infrastructure development, these changes are often related to improving the quality of life of the community, economic growth, and broader social dynamics.

Infrastructure changes often bring significant social changes in the social life of the community. With better access, social interactions between villagers can increase, strengthening communities and collaboration between farmers and local governments in further development [22], [24], [27], [28]. However, it should be noted that these changes can also create new challenges, such as shifts in livelihoods or land use conflicts.

Social changes in Paroto Village have undergone significant transformations alongside increased community accessibility. Historically, the village exhibited a robust tradition of cooperation, characterized by communal activities such as *mappakkele* (working together from 7 am to 11 pm) and *mappakaraweng* (working together from 1 pm to 5 pm), or *mannoreng* (group work in turns) for managing and cleaning gardens. However, this traditional cooperative framework has shifted towards a wage-based work system, indicating a departure from these practices.

An interview with the Village Head on October 31, 2024, highlighted that while the values of cooperation persist—evident in communal tasks like lifting or moving houses and preparing for traditional celebrations—the frequency and nature of these activities have evolved. This transition reflects positive and negative impacts stemming from enhanced accessibility to the farm road network. On one hand, communities are now better connected to markets and economic opportunities; this shift poses a risk to the social solidarity that was once tightly woven through cooperative practices.

Despite these changes, the enduring values of cooperation are still evident in specific contexts. This suggests that even as Paroto Village adapts to new economic realities, its cultural roots remain resilient, albeit expressed in different forms. The insights from the Village Head's interview underscore the complexity of social change within the community, where modernization coexists with traditional values, illustrating a nuanced landscape of social dynamics (Interview results from the Village Head, October 31, 2024; Interview results, La'Bu, 2024).

### **3.6 Environmental Impact of Farm Road Development**

The development of farm roads also has environmental impacts that need to be considered. Although this infrastructure can increase productivity, there is a risk of converting agricultural land into settlements or other unsustainable uses. Therefore, land use management around farm roads must be carried out carefully to prevent long-term negative impacts [27].

The environmental impacts that occurred in Paroto Village with the development of farm road infrastructure, due to the felling/eviction of trees/plants, excavation/excavation of land or shifting that is passed by the farm road, and also the reduction of agricultural land by 3 meters for the body of the farm road (interview with the Village Head, Makmur, October 31, 2024). The reduction in land does not mean reducing the welfare of the farming community, because land prices have increased drastically by up to 100% compared to before the farm road was passed, the price was only around IDR 10 to IDR 20 million/hectare after the development of the farm road, it increased to IDR 50 million to

IDR 100 million/hectare. Even according to a farmer (La'Bu) the price of rice fields that are in contact with the farm road has experienced a significant increase in price from the price before IDR 50 million/hectare to IDR 150 million/hectare, so this is a very extraordinary increase for us as farmers with the development of the farm road (Interview November 31, 2024).

### **3.7 Challenges and Opportunities Facing the Development of Farm Road Infrastructure**

Although the development of farm road infrastructure brings many benefits, there are still challenges to be faced. One of the main challenges is the maintenance of the farm road itself. In the long term, the road requires routine maintenance to remain usable, especially during the rainy season when the risk of damage increases, sometimes there are landslides or damage to culverts/water channels.

In addition, the increase in economic activity also requires the development of other supporting infrastructure, such as access to electricity, clean water and better communication networks. However, the existing clean water network channels are sometimes dry and there are also certain hours that can flow. While the communication network is still weak so people still have difficulty developing their IT-based economy.

On the other hand, the development of farm roads opens up new opportunities for the development of sustainable agriculture in Paroto Village. With better infrastructure, farmers can utilize modern technology to increase productivity, such as more efficient use of fertilizers and pesticides, as well as the use and application of environmentally friendly and modern agricultural equipment. Such as an example of modern agricultural equipment used by Tammase, a modern farmer in Paroto Village.



**Figure 7.** Agricultural equipment used by farmers to carry out activities

Source: Documentation of research results, (November 1, 2024)

Tammase (53) stated that with good road access, they can now manage their gardens in a modern way using the No Tillage (TOT) system. This system allows farmers to minimize excessive tillage, thus maintaining soil structure and increasing fertility. With the support of modern equipment such as poison tanks for spraying and biovoni drilling machines for making planting holes, farmers can plant various types of crops such as cocoa, bananas, and coconuts more efficiently. The use of this technology not only speeds up the planting process but also increases yields, because crops can be planted at the right distance and under optimal conditions. This reflects progress in agricultural practices in Paroto Village, where good road accessibility contributes to the adoption of modern farming methods that are more environmentally friendly and sustainable.

The existence of adequate farm roads also supports farmers in obtaining agricultural equipment and raw materials more easily. Previously, limited access often hampered the use of modern technology in the agricultural sector. However, with better infrastructure, farmers can not only transport their crops quickly but also gain access to training and information on the latest agricultural techniques. This encourages increased capacity of farmers to adapt to climate change and dynamic market demand. Thus, the combination of good road access and the application of

modern agricultural technology strengthens the economic resilience of rural communities and improves their overall quality of life.

#### **4. CONCLUSION AND RECOMMENDATION**

##### **4.1 Conclusion**

The development of farm road infrastructure in Paroto Village has brought significant changes in the community's agricultural activities. Before the development, farmers faced various obstacles in accessing agricultural land and distributing their crops, resulting in low productivity and income. With the development of farm roads, accessibility has increased, allowing farmers to transport agricultural products more efficiently using motorized vehicles. This not only speeds up the distribution process but also opens up opportunities for crop diversification and increased income. In addition, these changes contribute to the social transformation of the community, from traditional patterns to more modern and dynamic ones. Overall, the development of farm roads has made a positive contribution to the economic welfare of the Paroto Village community.

##### **4.2 Recommendations**

The government must continue to develop farm road infrastructure by enhancing and expanding the existing road network, including routine maintenance to ensure ongoing accessibility. Additionally, training programs are essential for farmers to effectively utilize modern agricultural tools that can enhance efficiency and productivity, enabling them to adapt to changing conditions.

Communities are encouraged to explore business diversification in both agricultural and non-agricultural sectors to increase income and reduce reliance on a single commodity. Furthermore, the government must provide additional support through policies that promote local economic development, including the marketing of agricultural products from Paroto Village to broader markets.

Investing in road infrastructure is vital as it facilitates better access to markets, enhances agricultural productivity, and supports economic growth in rural areas. Improved roads not only lower transportation costs but also enable farmers to sell their products at higher prices by connecting them with urban markets. This infrastructure development is essential for fostering a resilient agricultural sector and ensuring sustainable economic opportunities for local communities.

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