

Small-scale agricultural product marketing innovation through BUMDes and MSMEs empowerment in coastal areas

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ABSTRACT

A region's economic growth depends on the development policies based on the wealth determined from the potential of human, institutional and local resources. Furthermore, the development needs to link primary sectors with future processing to increase agricultural products' added value and marketing competitiveness. This study develops an innovative marketing model in agricultural products for small-scale farmers through village-owned enterprises (BUMDes) and micro, small, and medium enterprises (MSMEs) empowerment in coastal areas. One way of realizing this program is by building agribusiness and agro-industry partnerships that are well-planned and associated with other economic sectors' development. The partnership involves community economic institutions, including BUMDes, credit institutions, farmer entrepreneurs, as well as Micro, Small, and Medium Enterprises. BUMDes is a rural-based business with a legal entity managed by the village government to create added value for the community's agricultural products. Together with MSMEs, these businesses need to support the agribusiness subsystem's development, including trading in agricultural production facilities and business activities. Furthermore, they need to promote agricultural production, support services, a source of market information for rural communities, the main actors of appropriate technology for agricultural products.

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1. Introduction

Several obstacles are likely to be encountered in the future development of agribusiness and agro-industry. The obstacles faced by small-scale farmers in coastal areas include limited agricultural capital and access to marketing, which is one of the critical production factors in small-scale farming in coastal areas. This is because farmers increase working capital for their agricultural business through rural institutions. According to Grashuis (2018), the farmers' cooperatives in the US improve financial performance by emphasizing sales and operating costs of bargaining power, product differentiation, and economies of scale. Previous research has demonstrated, farmers' capital ownership is still relatively small because it comes from previous farming income (Syahza et al., 2018). Therefore, agricultural products' competitiveness could increase the farming capital of rural farmers (Pigatto et al., 2020). Previous research has shown problems of land availability and soil fertility are common among small-scale farmers. As a production factor, soil fertility in coastal areas is a major problem since the land is made of peat soil with a PH of 4, meaning that limited land is useful. Changes in farming behavior significantly determine land use. The main problem for small-scale farmers is limited land ownership since the arable land in rural areas is less than 0.35 ha Syahza et al. (2020a). In line with this, Geoghegan et al. (2017), Lakitan (2019) stated that the government needs to

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distribute land fairly to rural small-scale farmers since they have limited and less fertile land. The coastal area is a wetland dominated by seawater as the primary means of transportation, hindering the procurement and distribution of production facilities. These facilities are essential in production for small-scale farmers to obtain satisfactory results. Also, they need to be planned for convenient use according to the farmers' needs. The limited ability of small-scale farmers to master technology slows down intensive production. This is because technology needs to be integrated into various production factors and facilities. Farmers acting as managers and workers in their agricultural activities must be knowledgeable and skilled in using various farming inputs to increase productivity and efficiency. Small-scale farmers are weak to determine the price level, and they need support from rural institutions. This is because institutions are vital platforms in the farming community concerning information delivery and farmer inspiration. Therefore, small-scale agricultural institutions are needed to strengthen the bargaining power of farmers. On the other hand, farm-level institutions drive rural agricultural development, as seen from the farmer group superiority in facilitating the coordination, extension, and provision of technology packages. According to Adanu (2017), potential institutional changes address specific rural-economic development challenges based on the business environment. Agricultural industrialization is necessary for strengthening the people's economy. Hence, a populist economy is achieved through the institutional development of agricultural businesses. This development needs to create the added value from every economic chain in agricultural industrialization.

Another factor that slows down rural economic development among small farmers is the limited human resources in the agricultural sector. The average education level of small-scale farmers in Indonesia is junior high school, a situation largely influenced by the available human resource quality. As a result, these two factors are used as indicators in assessing the problems existing in agricultural activities. Farmers are human resources with an essential role as workers and managers in determining a farming activity's success. The rural agricultural products could be developed by creating superior and reliable commodities, increasing agricultural products' added value, and creating marketing systems. Furthermore, the products could be developed through providing transportation and distribution facilities, developing partnerships, and restructuring agricultural and agro-industrial systems and institutions. Marketing and brand factors are very important because the added value of the agro-industry is measured from consumer perceptions. Agro-industry contributes significantly when a higher perception is provided through value creation and complemented with the right marketing applications.

Furthermore, Surya et al. (2021), the increase in the productivity of the regional economic sector has an impact on the development of agropolitan areas based on rural agribusiness, in a synergy, there will be an increase in community income and regional economy. The regional development of superior commodities creates business opportunities for rural communities. Previous research has demonstrated, business opportunities are a source of additional income for the communities that are able to use this potential to develop real business activities. The community's ability to utilize existing opportunities is influenced by its management of resources and the development of a viable business (Syahza et al., 2018). In developing countries, the agricultural sector's development depends on the State Revenue and Expenditure Budget and is influenced by political, economic, social, and technological factors. This means that the agricultural sector's development is one important area that maintains a country's socio-economic stability. According to Veldkamp et al. (2009), agricultural innovation programs have 5 main characteristics. The first characteristic concerns sustainable development with dynamic system properties. Secondly, sustainable development requires system innovation. Third, agricultural innovation is a process of renewal to increase added value. Fourth, innovation encourages the participation of farmers and policymakers related to agricultural progress. Fifth, the innovation program requires the collaboration of various parties to increase the added value of agricultural products.

The development of commodity diversity at the farm level with inadequate land ownership and high farming risks needs local government support. Hence, local governments must ensure that agricultural commodities are seeded to become superior by increasing their commercialization. Improved commercialization is achieved through increasing productivity and outcome quality, expanding the planting area using specific location technology, applying special agricultural tools and machinery for product processing, and increasing public awareness promotion. According to Zinchuk et al. (2019), progressive economic change does not produce the same results, necessitating the need for a humancentric rural development model, an observation supported by Berlanga (2012). Many studies have been conducted on agricultural sector development and product innovation, including Fu et al. (2011), Pehrsson (2016), Lahham (2016), Zhou et al. (2016), Naknaen (2017), Devaux et al. (2018), Huang and Liang (2018), Barzola and Dentoni (2020), Liu and Zeinaly (2020). Studies on institutional empowerment and the rural economy include Hendriani (2018), Indarti, S. (2018), Syahza (2019), Syahza and Asmit (2019), Caska and Indrawati (2019), Syahza et al. (2020b), and Kamaliah (2020). Furthermore, studies on MSMEs need to exploit innovation's power to maintain competitiveness Cano-Kollmann et al. (2018); Parida et al. (2012). Also, the adoption of innovations in the agricultural sector and MSMEs overcome the scarcity of internal resources and competencies (Bogers et al., 2018; Di-Pietro et al., 2018; Van Hemert et al., 2013; Wyncarczyk et al., 2013; Lichtenthaler, 2011).

Strategies to improve the welfare of small-scale farming communities need to build agribusiness-based partnerships since there are breakthroughs to increase the added value of agricultural products. This study identifies the factors supporting agribusiness-based rural economic development to find an innovative model of marketing agricultural products for small-scale farmers in coastal villages.

2. Research Methods

The study used a survey with the Descriptive Research method, focusing on the development of economic institutions through village-owned enterprises (BUMDes), as well as micro, small, and medium enterprises (MSMEs) in Riau Province. This survey method was used with a gradual location determination in the area or district. The location chosen is a potential area for development based on commodity superiority, farming, as well as village and human resource potential. A stratified cluster sampling technique was used to obtain a sample representing each selected area. This method considers that the research locations are scattered based on BUMDes and MSMEs' characteristics as various research objects. Purposive sampling was employed on each cluster based on the rural businesses engaged in agriculture (agribusiness) and the existence of micro, small and medium enterprises that have conducted the post-harvest process (agro-industry). The research used primary data obtained from business people in MSMEs and BUMDes, community leaders, and rural bureaucracy. Data from the rural bureaucracy and community leaders were about existing resource potentials, the community's economy, superior and supporting commodities, farming diversification, and ownership of production factors. Furthermore, primary data were sourced from trade system institutions directly related to the community economy. On the other hand, secondary data were obtained from literature reviews and related agencies that supported this research. Data were collected using the Rapid Rural Appraisal (RRA) method, which is a participatory approach to obtain general information and field assessments in a short time (Townsend, 1996). Respondent information was based on the interview guidelines prepared by the research team. The RRA method focused on farmer participation in achieving sustainable agricultural development (Ison and Ampt, 1992) and is widely used by researchers, including Uddin and Anjuman (2013), Mustanir and Lubis (2017), Sandham et al. (2019). The data sources were reviewed in case the required information was lacking. The descriptive data were analyzed quantitatively and qualitatively through socio-economic conceptual approaches based on regional conditions, superior rural commodities, socio-economy, and government policies. It is hoped that this research develops a model of agricultural product marketing innovation for small-scale farmers in coastal areas.

3. Results and Discussion

3.1 Agricultural Product Marketing Constraints

The marketing of small-scale agricultural products in coastal areas plays a dual role. This includes price transfer between producers and consumers and a physical transmission from producers to the consumers. However, in playing these two roles, small-scale farmers face various obstacles in marketing agricultural products. According to Mariyono et al. (2019), the marketing channels for vegetable agriculture in Indonesia are quite complex and relatively long. Hence, the farmers choose a particular channel because of their business circumstances and limited knowledge. Moreover, distance and agreement between farmers and traders limit rural farmers from choosing the desired marketing channel, affecting their income. Previous research has demonstrated, the obstacles in marketing rural agricultural products include production continuity and low-quality products, insufficient market information, and fluctuating prices. Other obstacles are unclear marketing networks, inadequate markets, long marketing channels, and low bargaining power (Syahza & Indrawati, 2010; Syahza et al., 2018),

1. Production continuity

One cause of the problems in marketing agricultural products is the small production volume due to the small-scale business. Farmers conduct agricultural business activities on land less than 0.35 ha. On the contrary, agricultural businesses with export products, such as oil palm, rubber, coconut, sago, have average land ownership of around 2-5 ha per patriarch. Furthermore, the technology used is still simple and has not been managed intensively, resulting in low and seasonal production. This causes seasonal and surplus production, reducing the selling price of these products. On the other hand, during the off-season, the available products are limited, and the selling price soars, forcing the collecting traders to provide sufficient capital to buy the products. Moreover, the product may be unavailable occasionally, forcing importation from other regions. Third, the farming businesses are scattered, making it difficult for traders to collect the products. Also, farmers try to find a planting location with suitable soil and climatic conditions that support crop cultivation. This makes traders take longer to collect and transport the products from farmers, increasing marketing costs. Fourth, heavy and perishable agricultural products require much space. As a result, certain traders are unwilling to sell agricultural products because they are economically less profitable than industrial products (agro-industry). According to Gras and Hernández (2014), agricultural production is driven by economic and institutional changes, leading to economic concentration. Hence, it is necessary to increase farmers' capital and resources in expanding agricultural scale and production. According to Shikur (2020), government policies increase agricultural commodities through technical assistance and irrigation. As a result, the implementation of these policies greatly affects agricultural productivity.

2. Low production quality

The low-quality production is caused by less intensive handling of activities from pre-harvest to post-harvest activities, including standardization and grading, where quality is determined. Standardization streamlines the loading and unloading process and saves space, while grading eliminates the need for inspection. Furthermore, grading facilitates price comparisons, reduces fraudulence, and accelerates the buying and selling process. Therefore, these two activities protect goods from damage, reducing transportation and storage costs. On the other hand, the production quality is improved by applying appropriate technology for small-scale farmers since innovation needs to be a continuous process. According to Indrawati et

al. (2020), the 5 factors inhibiting rural technological innovation are government support, human resource quality, funding, economic conditions, and business partners. However, the biggest limiting factor is funding technological innovation, an observation that aligns with Pereira et al. (2020), which stated that innovation and technology are essential in leveraging the agricultural sector. These two activities are difficult to perform due to the production of perishable agricultural products. The product's quality may change after arriving at the destination, shrinkage or damage during transportation, handling, and storage. This causes products previously classified based on quality and demand to change and become rejected or purchased at a lower price.

3. Lack of market information

Market information helps farmers determine the type of production, market opportunities to get the best price and profit. Accurate market information will reduce risks for rural farmers, allowing traders to operate with low marketing margins, benefiting themselves, producers, and consumers. On the contrary, limited market information is related to remote farming locations, limited knowledge and market analysis skills. Furthermore, farmers' formal education is still very low, resulting in inefficient digestion or analysis of information sources. This causes farming to be conducted without careful planning, resulting in traders with no knowledge about market macro conditions. According to Ahmed and Mesfin (2017), agricultural institutions provide welfare for small-scale farmers. Moreover, membership in agricultural enterprises strongly influences the bargaining power of agricultural products. Alho (2015) showed that tighter competition for raw materials among farmers increases pressure on traders to obtain optimal raw materials.

4. Price fluctuation

The prices of agricultural products fluctuate depending on changes in supply and demand. The price fluctuations could be short-term, such as monthly, weekly, daily, or long-term. Agricultural market-type contracts cannot maximize farmer income because farmers cannot avoid market risks and bargaining (Sun and Li, 2019). Furthermore, market demand changes sometimes affect the prevailing prices of perishable agricultural products. This is especially felt in traditional markets both in rural and urban areas. Moreover, the seasonal price changes depending on the product's abundance or scarcity make it difficult for farmers and traders to plan production and estimate demand, respectively.

5. Lack of clear marketing network

Producers and traders from rural areas have difficulty finding new markets for their agricultural products. This is because they are not included in the marketing network and the limited knowledge of the applicable system. As a result, the resulting production experiences obstacles in expanding the marketing network. In general, the marketing system between farmers and intermediate traders has family agreements with strong ties, making it difficult for other parties to know. According to Sathapattanon et al. (2018), the main problems facing small-scale farmers are the marketing of agricultural products, market uncertainty, increased production costs, and weak marketing networks. Iba and Lilavanichakul (2020) show that the development of marketing channels requires farmers to allocate family labor efficiently, have marketing skills, manage marketing chains, and farmer cohesiveness. Marketing skills through and mastery of digital technology enable farmers to expand markets and build networks.

6. Inadequate market

The intended market insufficiency relates to fixing prices and payments. There are 3 ways to determine the selling price of agricultural products, including the prevailing price, bargaining, and wholesale. Based on prevailing prices, marketing depends on supply and demand following market mechanisms. Pricing through bargaining is familial, implying that a transaction is conducted when an agreement is reached between the seller and the buyer. On the other hand, wholesale marketing practices take place because of the farmers' weak financial condition. This takes place through the intermediary traders buying products by giving down payments to farmers to guarantee the product desired by the trader concerned. As a result, farmers did not have the opportunity to sell the products to other traders. According to Devaux et al. (2018), opportunities arising from new and developing markets for agricultural products are derivative product innovations that build a marketing chain between small-scale farmers and capital owners.

7. Marketing channel length

The length of a marketing channel causes high marketing margins and is partly spent as profit for traders, reducing the farmers' share and increasing the consumers' costs. Moreover, the length is indicated by a large number of intermediary traders to be passed from farmers to the final consumer. Field observations show that farmers carry out two marketing channels. First, about 75% of small-scale farmers market their agricultural products through collectors, wholesalers, and processing factories (agro-industry). The second route, the remaining 25%, is sold to wholesalers and processing factories. A large number of farmers sell their crops through the first route because traders go directly to farmers. On the contrary, selling through the second channel involves traders waiting for the farmers that face risks related to the perishability of their agricultural products.

8. *Low bargaining power*

The ability of farmers to offer their products is still limited due to insufficient capital, making products to be sold at low prices, while the traders receive the highest profits. This capital limitation is related to two factors, the first being the mental attitude of farmers that happily receive loans from intermediaries. This results in the farmers' dependence on intermediary traders, placing them in a weak position. Second, the government credit facilities have not been optimally utilized. This is due to insufficient knowledge of the borrowing procedure, the credit institution's distant location, and the inability to meet the stipulated requirements. Furthermore, farmers are worried about risks and uncertainties during production, and they cannot return the credit. This shows that their knowledge and understanding of credit issues are limited, and their trust level is low. One of the institutional functions of rural farmers is increasing the ability to bargain agricultural products. Institutions must provide market information and locations. Courtois and Subervie (2015) showed that market information service benefits farmers, improve efficiency, and increases agricultural product prices. Furthermore, Velázquez and Buffaria (2017) showed that market information services at the smallholder level offset inequalities along the marketing chain and increase efficiency, farmer income, and consumer welfare. Previous research has demonstrated, the relatively low education level of farmers affects agricultural technology absorption, making it difficult for them to develop and accept agricultural reforms. Additionally, farmers lack adequate training facilities, resulting in improper product handling from pre-harvest to post-harvest and marketing. On the other hand, farmer development has mainly focused on cultivation rather than marketing practices, limiting their marketing knowledge. Therefore, the marketing subsystem is weak and needs to be included in agribusiness (Syahza & Indrawati, 2010). Choosing market type and secondary income contracts increases the income of risk-seeking farmers (Sun & Li, 2019). Similar conditions of the limited ability of intermediary traders are experienced in urban areas. This is observed from the inability to negotiate with modern trade and business partners, such as supermarkets, restaurants, and hotels. The modern market is an excellent opportunity for agricultural products because it provides high added value Engotoit et al. (2016). However, there is a significant positive relationship between performance expectations and behavioral intention to use mobile-based communication technology to access and disseminate agricultural information. Hence, farmers need to use technology to obtain market information for agricultural products in the future.

3.2 *Agricultural Product Marketing Innovations in Rural Areas*

A new paradigm is needed to overcome the problems experienced by farmers in marketing agricultural products. One alternative solution is to empower rural economic institutions, including Village-Owned Enterprises (BUMDes), a rural-based business with a legal entity managed by the village government. Therefore, the village government is capable of establishing the businesses according to the village's needs and potential. The establishment is regulated by village regulations, and the businesses' management consists of village government and local communities. BUMDes are essential in the development of small-scale agribusiness enterprises. Small agribusiness cannot develop without BUMDes, which are associated with big entrepreneurs. Moreover, they are essential in improving the rural socio-economic standards by utilizing the potential and absorption of labor and directing benefit because it aligns with the village community's life. Moreover, the village economy develops because BUMDes is formed based on rural needs. According to Brown et al. (2011), the marketing system's modernization is essential for smallholders to access the available premium prices and increase international competitiveness. The empirical results show that organizational agility is a mediator in conveying the positive influence of e-commerce capabilities on improving agricultural business performance through product marketing (Li et al., 2020). BUMDes is a rural business entity and a full implementer of the agribusiness subsystem. Moreover, it functions as an intermediary trader and a marketing agent of agricultural products of its members. At BUMDes, product sorting, processing, packaging, labeling, and storage are conducted according to market demands and needs. The business entity plays a role as market information media related to opportunities and purchasing power, as well as price developments. BUMDes need to create market opportunities for agricultural products through this information, enabling farmers to carry out their farming activities because their products are guaranteed accommodation. This encourages member participation and supports the BUMDes business, resolving the problems faced by farmers. The agribusiness-based agricultural product marketing innovation is seen in Fig. 1.

BUMDes invest in transportation and rural agricultural processing machines (agro-industry) on behalf of members. This means that each member owns BUMDes asset shares, promoting the concept of agroestate in rural areas (Syahza, 2007). Moreover, BUMDes provide credit from institutions and entrepreneurs, and lending is based on the agricultural enterprises that develop superior commodities and have market opportunities. The rate of return on credit by farmers is determined by reducing sales of agricultural products to BUMDes. According to Gaudreau, there is a tendency for relatively few agribusiness activities to be managed by multinational companies. On the other hand, the supply of local food movements is still limited and requires capital owners' support to develop the agricultural sector. Hence, the concept of agribusiness must involve various parties to build an integrated system (Gaudreau, 2019). Surya et al. (2021). Moreover, the concept of agricultural system integration needs to exist in the development of agropolitan areas based on the balance of ecosystems and local economic growth in rural areas. Barzola and Dentoni (2020) stated that proactive farmers significantly encourage their low-level product innovation, while entrepreneurial intentions are not essential for innovation.

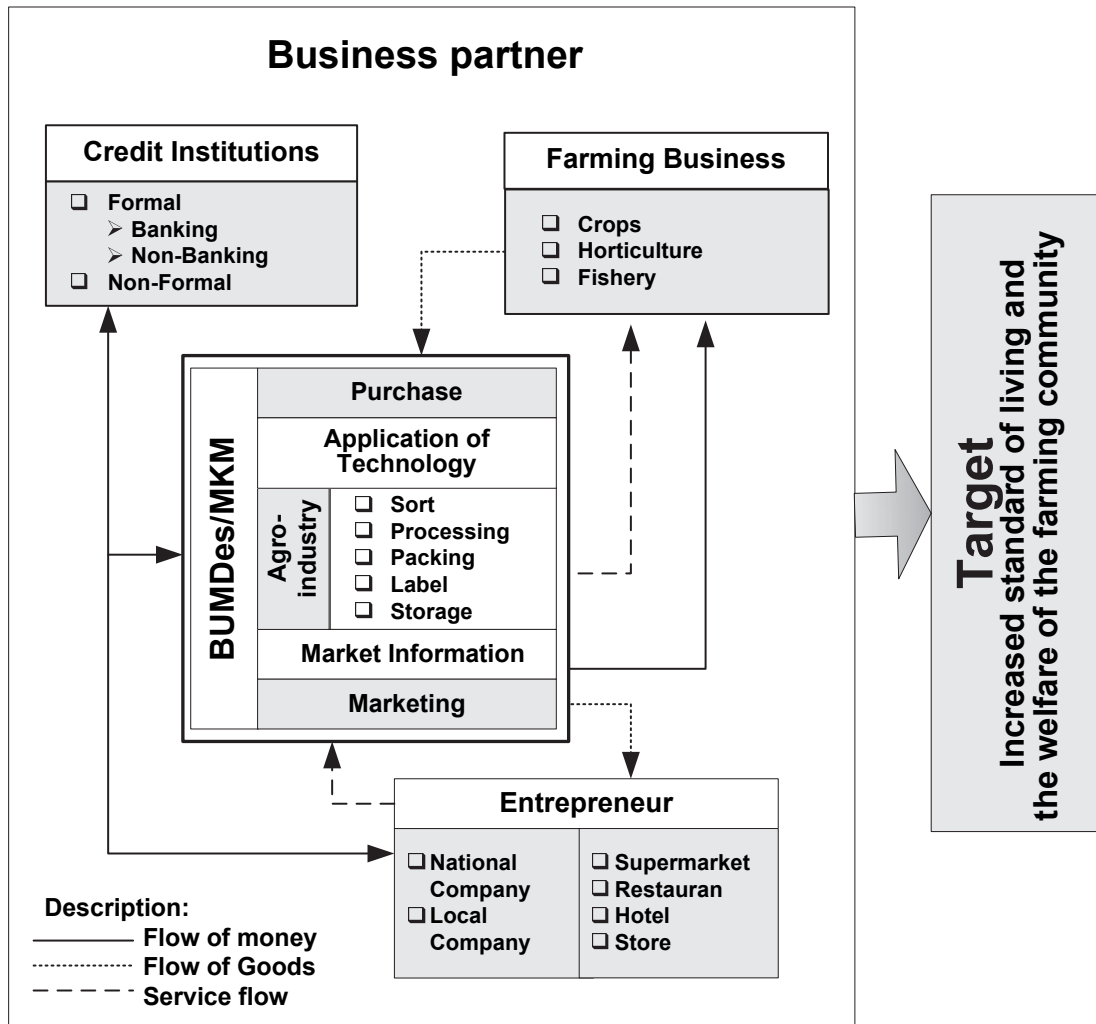


Fig. 1. Agribusiness-Based Agricultural Product Marketing Innovation Model in Coastal Areas

The activities of this business unit provide a multiplier effect on people's economy. As a business unit, agribusiness creates opportunities in economic activities, increasing the rural communities' income and improving their welfare. BUMDes and MSMEs are also crucial in developing alternative solutions to agricultural problems, such as providing credit and forming joint capital through savings. Moreover, they provide production facilities, integrated pest control, agro-industry players, and marketing agricultural products. Second, BUMDes and MSMEs provide business training and guidance to farmers. Third, farmers need to be organized to strengthen their bargaining position in facing competition and forge partnerships with other parties.

In the current globalization era and future trade liberalization, the government's role is getting smaller, even the import tax and subsidy policies would be eliminated in due course. Hence, the private sector's participation, including large companies, is needed to fill and complement various government programs. For instance, entrepreneurs in a strong position could help weak farmers through partnership networks. According to Bissonnette, the development of the agribusiness concept increases the added value and small-scale farmer's income. However, the greatest challenge for agribusiness actors is to improve the governance function and regulatory framework for small-scale farmers and wage workers in the agricultural sector (Bissonnette, 2016). In line with Savitri and Syahza (2019), Savitri et al. (2020), the small and medium enterprises sector related to most Indonesians' economic life is vital in strengthening the national economy's structure. On the other hand, business performance is influenced by adaptation strategies, entrepreneurial orientation, and government policies. According to Huang and Liang (2018), traditional farmers participate effectively in modern agriculture through cooperatives, determining their central position in the agricultural organization system. Kireyenka stated that the national food security approach is highlighted in terms of agricultural conditions, targets, and objectives. Therefore, agricultural development must consider national priorities in production, domestic consumer markets, and foreign trade (Kireyenka, 2019).

This relationship provides various benefits to farmers, such as technology transfer and provision of inputs. Hence, farmers compete with other products using superior inputs and technology and quickly obtain market information and opportunities, access capital, and market certainty for agricultural products.

4. Conclusion

Several obstacles can be faced in the development of agribusiness and agricultural systems based on agro-industry in coastal areas. These constraints are related to weak capital structure and accessibility, limited land and soil fertility, as well as the procurement and distribution of production facilities. Another problem is the limited mastery of technology, weak agricultural institutions, limited management skills, as well as the limited number of workers who are interested in doing business in the agricultural sector, especially in coastal areas. On the other hand, farmers face obstacles in marketing agricultural products, including sustainable production, the length of the marketing channel, and insufficient market. Other challenges include lack of market information, low bargaining power, price fluctuation, low production quality, unclear marketing network, and low-quality human resources. Strategic policies are needed to increase rural communities' income and welfare to achieve populist economic development in the agricultural sector. Moreover, agribusiness and agro-industry-based agricultural programs must be strategic and associated with other economic sectors' development. One solution is agricultural product marketing innovation for small-scale farmers since an innovative model of marketing agricultural products improves rural communities' welfare. However, this innovation must increase communities' welfare through farmers' income because it is built in partnership. This business partnership involves community economic institutions, including Village-Owned Enterprises (BUMDes), credit institutions, farmer entrepreneurs, as well as micro, small and medium enterprises (MSMEs). BUMDes is a rural-based business with a legal entity managed by the village government to create added value for the rural community's agricultural products. On the other hand, agribusiness-based partnerships support the agribusiness subsystem's development through trade in agricultural production facilities, business activities, and product processing. Moreover, the partnership support services are expected to be able to provide market information for rural farmers and adopt appropriate technology for agricultural advancement.

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