

Agricultural Sector Development Policy in Realizing Food Security in Kutai Kartanegara Regency

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Abstract

This study aims to analyze the agricultural sector development policy in realizing food security in Kutai Kartanegara Regency. The research method used is secondary data analysis. Agricultural statistical data and local government policies are the main sources in conducting the analysis. The results and discussion of the study indicate that the vision and mission of agricultural development in Kutai Kartanegara Regency are very clear in supporting food security. Area-based agricultural development programs, the active role of local governments, and support for agricultural infrastructure are key factors in achieving this goal. The use of agricultural tools and machinery (Alsintan), adequate agricultural infrastructure development, coordination between regional apparatus organizations (OPD), and the adoption of modern agricultural technology and livelihood diversification have been discussed as relevant and important strategies. The implementation of these programs has been shown to increase agricultural productivity, farmer welfare, and food security in the region. A deep understanding of the various aspects of agricultural development and the challenges faced, as well as strategies to overcome them, provides a solid framework for the development of effective and sustainable policies and programs. Suggestions for improvement include a more detailed explanation of the relationships between subtopics and the presentation of more concrete examples or case studies to enrich the discussion.

Keywords: Agriculture, Food Security, Kutai Kartanegara.

Introduction

The agricultural sector development policy in realizing food security in Kutai Kartanegara Regency is an urgent and strategic issue in the context of local and national development. Agriculture as a key sector in the Indonesian economy, especially in agrarian areas such as Kutai Kartanegara, plays a vital role in ensuring sufficient food availability for the population, improving the welfare of farmers, and encouraging regional economic growth. Kutai Kartanegara Regency, with its diverse geographical conditions and abundant natural resources, has great potential in the development of the agricultural sector. However, to realize sustainable food security, the right policies and integrated strategies are needed. The local government has set a clear vision and mission in agricultural development, focusing on increasing productivity, modernizing agriculture, and improving farmers' welfare. One of the important policies is the development of region-based agriculture, which aims to optimize the potential of local land and resources. This program involves the arrangement of agricultural land, the selection of superior commodities according to local conditions, and the application of modern agricultural technology. The use of agricultural tools and machinery (Alsintan)

is expected to increase production efficiency and reduce the workload of farmers. The role of local governments is also very crucial in supporting food security. Through various programs and assistance, such as the provision of superior seeds, fertilizer subsidies, farmer training, and agricultural infrastructure development, local governments strive to create an environment conducive to the growth of the agricultural sector. In addition, coordination between regional apparatus organizations (OPDs) is also needed to ensure effective and synergistic policy implementation.

However, the challenges faced in the development of the agricultural sector in Kutai Kartanegara Regency are not few. Inadequate agricultural infrastructure, limited access to technology and capital, and climate change are obstacles that need to be overcome. Therefore, agricultural sector development policies must include efforts to improve infrastructure, increase farmers' access to technology and resources, and develop agricultural systems that are adaptive to climate change (Syahza, 2003). Population growth, urbanization, climate change, and other global challenges have placed food security at the top of the list in economic and social development around the world (Pujiriyani et al., 2015b). In the Indonesian context, these challenges are also reflected in Kutai Kartanegara Regency. Therefore, agricultural sector development policies are crucial to overcome these challenges and ensure adequate food supply for local populations (Saputri & Oktaviana, 2023).

In this paper, we will comprehensively discuss the agricultural sector development policies implemented in Kutai Kartanegara Regency, as well as the efforts made to realize food security at the local level. The discussion will include an analysis of agricultural conditions in Kutai Kartanegara Regency, the potentials it has, the challenges it faces, as well as the policies and programs that have been and are being implemented by the local government in supporting the development of the agricultural sector and achieving food security (Kusumaningrum, 2019). Kutai Kartanegara Regency is located in East Kalimantan Province, Indonesia. This region is known for its diverse geographical conditions, including lowlands, mountains, and large rivers such as the Mahakam River which is one of the main sources of life for the locals. Demographically, Kutai Kartanegara Regency has a heterogeneous population with various ethnicities and cultures, most of which depend on the agriculture, plantation, and fisheries sectors for their livelihoods. The economy of Kutai Kartanegara Regency is largely supported by the agriculture, plantation, and mining sectors. The agricultural sector plays an important role in the region's economy, providing employment for most of the population and being the main source of local food. The social conditions in this area show the need to improve the welfare of the community through the development of key sectors, especially agriculture, which is the backbone of the local economy.

In the agricultural sector, Kutai Kartanegara Regency shows significant potential with various types of cultivated crops, such as rice, corn, rubber, oil palm, and tropical fruits. Rice is a major commodity, especially in areas that are fed by rivers and have adequate irrigation. In addition, palm oil and rubber are important plantation commodities, supporting the regional economy and making a significant contribution to farmers' incomes. The agricultural system used in Kutai Kartanegara Regency varies, ranging from traditional to modern systems. Although there are still many farmers who

use traditional methods, there are constant efforts from local governments to encourage the application of modern agricultural technology. The use of agricultural tools and machinery (Alsintan) has been introduced to increase efficiency and productivity. Technologies such as drip irrigation, automatic fertilization, and the use of superior varieties have also begun to be implemented in some regions. The productivity of the agricultural sector in Kutai Kartanegara Regency shows a positive trend, although there are still challenges in terms of efficiency and sustainability. Factors such as suboptimal infrastructure conditions, access to technology, and agricultural financing are still obstacles that need to be overcome. However, with the existence of region-based agricultural development programs initiated by local governments, it is hoped that it can increase the productivity and welfare of farmers as a whole. The implementation of these programs, which involves coordination between OPDs and the use of modern technology, aims to realize better food security in Kutai Kartanegara Regency (Kusumaningrum, 2019).

After that, it will be discussed about the potential possessed by Kutai Kartanegara Regency in the development of the agricultural sector. This includes an analysis of the wealth of natural resources, climatic conditions, and market potential at both the local and national levels. From the analysis, it will be known to what extent Kutai Kartanegara Regency can take advantage of its potential to develop its agricultural sector and increase its contribution to food security. However, the discussion will not only highlight the potential and success, but will also identify the challenges and obstacles faced in the development of the agricultural sector in Kutai Kartanegara Regency. From climate change to limited infrastructure and market access, these challenges are a key focus in formulating effective and sustainable policies (Saputri & Oktaviana, 2023).

Furthermore, policies and programs that have been implemented by local governments in supporting the development of the agricultural sector and realizing food security will be analyzed. This includes policies related to subsidies, technical assistance, infrastructure development, local market promotion, and various other initiatives aimed at improving the productivity, efficiency, and resilience of the agricultural sector in Kutai Kartanegara Regency. In this introduction, the purpose of further discussion regarding agricultural sector development policies in Kutai Kartanegara Regency will also be conveyed. These objectives include providing a deeper understanding of local agricultural conditions, identifying potentials and challenges, and formulating policy recommendations that can increase the contribution of the agricultural sector to food security at the local level. Thus, this paper is expected to make a significant contribution to efforts to realize sustainable food security in Kutai Kartanegara Regency (UU_2008_11, 2008).

Definition of Policy

Policy is a vital instrument in regulating and managing various aspects of the life of the community and the state. By being a guide for governments or other organizations, policies create a foundation for achieving certain goals in a social, economic, political, or environmental context. The policy-making process is the result of decision-making that involves the steps of problem analysis, determination of clear goals, identification of

alternative actions, and evaluation of the impact of each alternative. Thus, policies are not just rules, but also a reflection of joint efforts to improve or change existing conditions (Handoyo, 2012). Every policy has crucial components that make up its framework. Measurable goals guide policy direction, focusing on improving or changing certain conditions in society or the environment. A clear policy scope ensures that the policy has well-defined boundaries, including who will be affected and the geographic areas covered. A structured decision-making process involves systematic steps, from problem identification to evaluation of implementation results, by involving a variety of stakeholders who can provide input and support (Nur & Guntur, 2019).

The types of policies vary according to their focus and scope. Starting from public policies that aim to solve social or economic problems, to environmental policies that seek to protect and preserve nature. Policies can also be in the form of social policies aimed at improving people's welfare or economic policies that regulate the distribution of resources to achieve sustainable economic growth. In addition, international policy is also important in the context of cooperation between countries to solve common problems or achieve common goals (Suaib et al., 2022). The policy-making process is not simple, but requires hard work and good coordination between various related parties. Steps such as problem identification, needs analysis, development of policy alternatives, evaluation, decision-making, implementation, and periodic evaluations are integral to the process. Regular evaluation and monitoring of policy implementation is key to assessing its effectiveness and making improvements if needed. Thus, policies are not only a regulatory tool, but also a driver of positive change and improvement of the welfare of society as a whole.

Agricultural Concept

Agriculture is a deep and broad concept in the context of human life. Since ancient times, agriculture has been a major milestone in the development of human society. It was from this agriculture that humans learned to grow crops and raise livestock, which in turn allowed them to settle down and form stable communities. In history, the transition from nomadic life to sedentary agriculture is considered one of the greatest revolutions that brought about significant changes in the social, economic, and cultural structure of humans. The concept of agriculture covers a wide range of aspects, from food production to natural resource management and the environment. Food production is one of the main aspects that involves various activities such as planting, maintaining, and harvesting crops, as well as managing land efficiently to get maximum yields. Natural resource management in the context of agriculture is also very important, as it involves the sustainable use of land, water, and forests to maintain the balance of the ecosystem.

Agriculture is also not limited to farming activities only, but also includes livestock, fisheries, and forestry activities. Animal husbandry involves raising animals for the production of meat, milk, eggs, and other products that are essential to human life. Fisheries include the cultivation of fish and other aquatic creatures as a source of protein and essential nutrients for humans. Forestry, on the other hand, includes forest management to obtain timber, sap, and other forest products that have high economic value.

Thus, agriculture is not only the main source of food, but also provides raw materials for industry, fuel, and various other needs in daily life. Raw materials such as cotton, rubber, and plant fibers are used in the textile, automotive, and many other sectors. Oil-producing crops such as palm oil and soybeans are used as a source of biofuels. In addition, various agricultural products are also used in the manufacture of medicines, cosmetics, and other consumer goods. Agriculture has a strategic role in meeting global food needs. The growing population reinforces the urgency of the importance of agriculture in ensuring an adequate food supply for the entire world's population. The concept of modern agriculture has undergone significant development along with the advancement of technology and human knowledge. From traditional methods to modern farming techniques that use advanced technologies such as automated irrigation and sensor-based farming, agriculture is constantly evolving to improve production efficiency and address challenges in maintaining food security (Suaib et al., 2022).

One of the important aspects of the concept of agriculture is sustainability. Sustainable agriculture pays attention to the wise use of natural resources, maintains the balance of ecosystems, pays attention to the welfare of farmers and rural communities, and maintains the economic sustainability of the entire food supply chain. The development of technology and knowledge in agriculture has presented the concept of data-driven agriculture. Data-driven agriculture, or often referred to as digital agriculture, uses information and communication technology to collect, manage, and analyze data to improve agricultural productivity and efficiency. Soil sensors, agricultural drones, and big data analytics have become an integral part of modern agriculture, allowing farmers to make more informed and effective decisions in land management, fertilization, and irrigation (Nur & Guntur, 2019). In addition, the concept of organic farming is also a major concern in maintaining human health and the environment. Organic farming emphasizes the use of natural fertilizers and pesticides, without the use of synthetic chemicals that have the potential to damage the environment and human health. This method aims to produce healthier and safer food for consumption, while maintaining the balance of the ecosystem. The principles of organic farming include several important aspects. First, the maintenance of biodiversity. Organic farming encourages the cultivation of various types of crops in one land to create a more balanced and resistant ecosystem to pests and diseases. It also helps maintain and increase populations of pollinators and beneficial soil organisms.

Second, the restoration of soil fertility. Organic farming uses techniques such as compost, green manure, and crop rotation to improve and maintain soil fertility. Third, ecologically sustainable agricultural practices. Organic farming encourages the wise and sustainable use of natural resources. This includes reducing the use of water, energy, and fossil fuels, as well as avoiding soil and water contamination by synthetic chemicals. Organic farming also prioritizes the welfare of farm animals by ensuring they live in natural and healthy conditions.

By adopting the principles of organic farming, farmers can produce healthier and more environmentally friendly products. Consumers who care about health and the environment are increasingly interested in organic products, so the market demand for

these products continues to increase. In addition, organic farming can also provide long-term economic benefits for farmers through increasing soil fertility, reducing chemical input costs, and increasing product selling prices (Putri, 2023). In addition, agriculture has also become an economic base for many rural communities, forming a unique lifestyle and culture. In the context of sustainable development, agriculture plays a role as a driver of inclusive economic growth, providing opportunities for smallholders and rural communities to improve their standard of living.

However, agriculture is also faced with a variety of complex challenges. Climate change, declining availability of agricultural land, soil degradation, and food security issues are some of the main challenges that need to be addressed by the concept of modern agriculture (Handoyo, 2012). Thus, the concept of agriculture not only includes food production, but also covers various aspects of human life, from environmental sustainability to economic and social development. Modern agriculture requires a holistic and integrated approach to address existing challenges and ensure food security for the entire world's population, today and in the future.

Food Security

Food security agreed at the United Nations Summit in 1996, affirming that food security is not just about the availability of adequate amounts of food, but also includes equitable access, nutritional quality, and sustainability in meeting the food needs of individuals and communities (Kharimah & Ardiyansyah, 2021). The concept of food security is rooted in the understanding that food is not only a basic human need, but also a human right. Food security becomes key to achieving sustainable development, fighting poverty, improving social welfare, and reducing inequality. In the midst of climate change, economic instability, and the global health crisis, maintaining food security is becoming increasingly important in ensuring human survival and well-being around the world (Mayrowani, 2012).

The main pillars of food security include four main dimensions:

1. **Food Availability:** This dimension emphasizes aspects of production and the availability of food in sufficient quantities to meet the needs of the population. Factors such as agricultural productivity, sustainability of natural resources, and food supply stability are the focus in ensuring sufficient food availability.
2. **Food Access:** Physical and economic access to food is an important dimension in food security. The availability of transportation infrastructure, equitable food distribution, and affordable food income and prices are decisive factors in ensuring that all individuals have equal access to food.
3. **Food Utilization:** This dimension highlights nutritional quality and food safety. The availability of high-quality, nutritious, and safe food for consumption is very important in ensuring the health and welfare of the community.
4. **Food Stability:** Food supply stability and resilience to external changes are the main focus in this dimension. Protection against risks and crises, such as natural disasters, conflicts, or fluctuations in food prices, is necessary to maintain food stability in the long term.

In a global context, food security also involves international cooperation and fair food trade. Countries that are more economically and resource-savvy need to play an active role in helping less developed countries achieve food security. It involves technology transfer, development assistance, and policy support to strengthen local capacity to achieve food security (Kurniawati, 2020). In addition, a holistic and cross-sectoral approach is key in promoting food security. Integration between agriculture, health, education, infrastructure, and social policy is needed to address the root causes of hunger and malnutrition holistically. This requires coordination between governments, the private sector, civil society, and international institutions in implementing effective strategies and programs (Wanimbo, 2019). Complex challenges such as climate change, environmental degradation, armed conflict, and economic crises continue to test global food security. Therefore, a strong commitment and joint action from all parties are needed to maintain food security as a top priority in sustainable development. With sustainable and coordinated efforts, food security can be realized as a foundation for a healthy life. healthy, productive, and sustainable for everyone around the world.

Kutai Kartanegara food security is an important concept in ensuring that the entire population in Kutai Kartanegara Regency has adequate, safe, and nutritious access to sufficient food to meet nutritional needs and achieve sustainable welfare. Kutai Kartanegara, a district in East Kalimantan Province, Indonesia, has unique challenges and potential in achieving sustainable food security (Sadono, 2008). One of the important aspects of Kutai Kartanegara's food security is the availability of sufficient local food to meet the needs of the community. This district has great agricultural potential, including vast and diverse agricultural land, as well as abundant natural resources. Major food crops such as rice, corn, and sweet potatoes are an integral part of the agricultural system in Kutai Kartanegara. In addition, the potential of fisheries and livestock also makes an important contribution in ensuring food availability for the community.

However, despite the great agricultural potential, Kutai Kartanegara is also faced with challenges in achieving optimal food security. One of the main challenges is limited access to modern agricultural technologies and practices. Access to safe and nutritious food is also a focus in achieving food security in Kutai Kartanegara. Limited access to nutritious food, especially for vulnerable groups such as children and the elderly, is a serious problem that needs to be addressed. In addition, food diversity is also a concern in ensuring that people have access to balanced and nutritious food (Wahyuni et al., 2013). Sustainable management of natural resources is also an important part of Kutai Kartanegara's food security. Land degradation, deforestation, and environmental pollution can threaten food production and the balance of the ecosystem as a whole. Therefore, the protection and restoration of natural resources is a key aspect in maintaining long-term food security in this area.

In order to achieve sustainable food security, cooperation between the government of a country, the private sector, civil society in a region, and international institutions is very important. Capacity building for farmers to implement sustainable agricultural practices, investment in agricultural infrastructure, and promotion of local food are important steps that need to be taken. In addition, increasing access to nutrition education and health services is also an integral part of the strategy to achieve

comprehensive food security. With joint efforts and strong commitment from all related parties, Kutai Kartanegara food security can be realized as a foundation for sustainable development and the welfare of the community as a whole. By paying attention to local challenges and potentials, as well as implementing a holistic and sustainable approach, Kutai Kartanegara can be an example for other regions in achieving inclusive, equitable, and sustainable food security (Sidik, 2021).

Method

The qualitative method is a research approach used to understand social phenomena in a more in-depth way through descriptive, interpretive, and contextual analysis. In the context of food security in Kutai Kartanegara, a qualitative approach can provide valuable insights into the dynamics, perceptions, and challenges faced by the community in achieving food security (Mulyadi, n.d.). In addition to in-depth interviews, participatory observation is also a relevant qualitative method in the context of food security in Kutai Kartanegara. By actively engaging in the daily activities of the community, researchers can gain a more direct understanding of agricultural practices, food consumption patterns, and socio-economic dynamics at the local level. Participatory observation allows researchers to gain deeper insights into the factors that affect food security directly from the perspective of the community itself. In addition to interviews and observations, document analysis is also an important qualitative method in research on food security. Documents such as government policies, research reports, and academic publications can provide additional context and information that is important for understanding the factors affecting food security in Kutai Kartanegara. Document analysis can help researchers track policy developments, identify trends, and evaluate the impact of food programs that have been implemented.

In addition, focus group discussions (FGD) can also be used as a qualitative method to explore the views and collective understanding of the community related to food security. In the FGD, a group of people with different backgrounds and experiences can openly discuss food-related issues, share experiences, and find solutions together. The FGD can provide diverse and comprehensive perspectives on issues relevant to food security in Kutai Kartanegara. Thus, qualitative methods are a very useful tool in understanding the complexity and diversity of local contexts related to food security. By using various qualitative approaches such as in-depth interviews, participatory observations, document analysis, and FGDs, researchers can gain a holistic and in-depth understanding of the challenges, potentials, and strategies to improve food security in Kutai Kartanegara.

Results and Discussion

Vision and Mission of Agricultural Development

The vision and mission of agricultural development carried out by the Ministry of Agriculture and the Kutai Kartanegara Regency Government are the main milestones in guiding the direction of agricultural sector development in Indonesia. These discussions on vision and mission are important because they reflect the government's commitment to achieve certain goals in agricultural development. At the national level, the Ministry

of Agriculture has a vision to create an advanced, independent, and modern agriculture. This vision reflects the ambition to present an efficient, innovative, and competitive agricultural sector, able to meet domestic food needs, and contribute to the national economy. In this context, the "advancement" of agriculture refers to increasing the production and productivity of agriculture as a whole, by utilizing modern agricultural technologies and practices. In line with the national vision, the Kutai Kartanegara Regency Government also has a vision that is in line with realizing advanced, independent, and modern agriculture. This district places agriculture as one of the main pillars of regional development, with the aim of improving the quality of life of farmers and rural communities as a whole. This vision emphasizes the importance of agriculture in supporting food security and farmers' welfare as an integral part of regional development (Wahyudi, 2018). Furthermore, the government's mission in realizing this vision involves several strategic steps. First, increasing the production and productivity of food commodities is a top priority. This includes efforts to increase agricultural output by applying modern technology, improving the quality of crops and animals, and improving agricultural infrastructure.

Second, the mission also includes efforts to achieve food independence. This means not only increasing overall food production, but also ensuring that people have adequate access to nutritious and safe food. This involves strategies to improve accessibility to food through efficient market systems and better distribution mechanisms.

Third The government's commitment to improve the welfare of farmers is an important step in strengthening food security in Kutai Kartanegara. By paying attention to the central role of farmers in food production, the government seeks to increase their income through several strategies. One of the main strategies is to increase agricultural production and productivity. By implementing modern technology and efficient farming practices, farmers can increase their yields, which in turn will significantly increase their income. Empowering farmers in utilizing modern technology and agricultural practices is also the government's main focus in improving farmers' welfare. Through training, education, and access to up-to-date agricultural information, farmers can improve their knowledge and skills in managing land and crops more effectively. The use of technologies such as automatic irrigation, proper fertilization systems, and the use of superior varieties can also help improve farmers' productivity and well-being (Pujiriyani et al., 2015a).

This vision and mission reflects the government's commitment to improving the quality of life of farmers and rural communities as a whole. They place agriculture as one of the main sectors of development, with the belief that advanced, independent, and modern agriculture will be the driving force for economic and social development at the national and local levels (Prawitasari, n.d.). So, the vision and mission of agricultural development carried out by the Ministry of Agriculture and the Kutai Kartanegara Regency Government are an important foundation in formulating agricultural development policies and programs. They reflect the government's commitment to achieving efficient, productive, and sustainable agriculture, as well as improving the well-being of farmers and rural communities as a whole. Thus, this vision and mission is

a guide for agricultural development efforts carried out by the government and various other stakeholders in achieving broader development goals(Azaki, 2019).

Region-Based Agricultural Development Program

The Region-Based Agricultural Development Program (PPBK) is a strategic approach that aims to increase productivity, sustainability, and welfare in the agricultural sector by taking into account the geographical, ecological, social, and economic conditions of a particular region. PPBK is designed to optimize local potential and create synergies between various components that affect the agricultural sector, so that it is able to provide more optimal and sustainable results. One of the main components of PPBK is efforts to improve infrastructure. Adequate infrastructure is essential to support efficient and productive agricultural activities. This includes the construction and repair of road networks, which allow farmers to transport their crops more easily and quickly to the market. The development of good irrigation and drainage channels is also a priority, because the availability of sufficient and well-managed water is the key to increasing agricultural land productivity. In addition, adequate storage facilities for agricultural products are also very necessary. This facility helps in reducing crop losses due to inadequate storage and extending the shelf life of agricultural products. With good infrastructure, farmers will have easier access to agricultural inputs such as seeds, fertilizers, and modern agricultural tools. This will help improve efficiency in the agricultural supply chain and reduce production costs.

Another important component in PPBK is the application of modern and environmentally friendly agricultural technology. PPBK also emphasizes the importance of strengthening farmers' capacity through training and mentoring. With better knowledge and skills, farmers can adopt more efficient and sustainable agricultural practices. This training can cover various aspects, ranging from good cultivation techniques, farming business management, to the use of information technology in agriculture. In addition, coordination between various related parties, such as local governments, research institutions, farmer organizations, and the private sector, is also very important to ensure the success of PPBK. Good cooperation between various parties will create synergy and maximize existing resources to support the development of the agricultural sector (Pujiriyani et al., 2015b). Furthermore, the provision of Agricultural Tools and Machinery (Alsintan) is a crucial component in PPBK. Alsintan includes a variety of modern equipment such as tractors, tillage machines, irrigation pumps, and harvesting machines. The adoption of Alsintan allows farmers to reduce their dependence on human and animal labor, increase production capacity, and reduce the time and labor required in the agricultural process(Safri et al., 2021). In addition, Alsintan also helps reduce the risk of crop damage due to the inefficient use of traditional agricultural techniques.

The third component of PPBK is the empowerment of farmer groups in agricultural areas. This involves the formation and strengthening of local farmer groups that can work together on a variety of agricultural activities, from production to marketing. Farmer group empowerment also includes education and training in modern agricultural techniques, agricultural business management, and other skill development.

Thus, farmer groups can increase their adaptation capacity to environmental and market changes, as well as strengthen their bargaining position in negotiating with other parties such as agricultural input suppliers and crop buyers. In implementing PPBK, collaboration between the government, the private sector, farmer organizations, and local communities is very important. Effective implementation measures include in-depth analysis of regional conditions, stakeholder consultations, adequate resource allocation, regular education and training, and continuous monitoring and evaluation of program progress and impact (Nurcahyo et al., 2021).

The Area-Based Agricultural Development Program has a number of potential benefits, including increased agricultural productivity, economic empowerment of farmers, environmental sustainability, and increased food security. However, the program also faces a number of challenges, such as resource constraints, climate uncertainty, lack of farmers' knowledge and skills, and the complexity of agricultural policies and regulations. With a deep understanding of the components and challenges faced, PPBK can be an effective instrument in realizing sustainable and inclusive agricultural development (Nasruddin et al., n.d.).

The Role of Local Governments in Supporting Food Security

The role of a local government, especially the Kutai Kartanegara Regency Government, in supporting food security is an integral part of the Kutai Kartanegara government's efforts to ensure adequate food availability for the local community. Local governments have an active role in designing and implementing various measures and programs aimed at increasing agricultural productivity, increasing farmers' access to necessary agricultural inputs such as Alsintan and fertilizers, and improving agricultural infrastructure. In the context of Kutai Kartanegara Regency, concrete steps have been taken to address the challenges of food security, and various initiatives have been launched to achieve this goal (Prawitasari, n.d.).

One of the main efforts of the Kutai Kartanegara Regency Government in supporting food security is to provide Alsintan assistance to farmers in the region. Alsintan, or agricultural tools and machinery, is the key in increasing agricultural productivity and efficiency. With Alsintan's assistance, farmers in Kutai Kartanegara Regency can reduce their dependence on human and animal labor, increase production capacity, and reduce the time and labor required in the agricultural process. Alsintan's assistance includes a variety of equipment such as tractors, tillage machines, irrigation pumps, and harvesting machines, all of which have an important role in improving farmers' productivity and well-being (Nurcahyo et al., 2021). In addition to Alsintan's assistance, the Kutai Kartanegara Regency Government also provides support in terms of providing fertilizer for farmers. Fertilizer is one of the most important agricultural inputs in increasing plant productivity. Support in the provision of this fertilizer can be in the form of fertilizer subsidies for farmers, or other programs that aim to ensure the availability of sufficient and affordable fertilizers for farmers in the Kutai Kartanegara Regency area. With this support, it is hoped that farmers can get easier and more affordable access to fertilizers, so that they can increase their crop yields and ultimately increase food security in the region.

Table. 1 Support of the Kutai Kartanegara Regency Government in the provision of fertilizers for farmers

No.	Types of Support	Information
1.	Fertilizer Provision	The government provides quality fertilizers at affordable prices for farmers.
2.	Fertilizer Subsidy	The government provides subsidies to reduce the burden of fertilizer purchase costs.
3.	Fertilizer Distribution	The government ensures timely and targeted distribution of fertilizers.
4.	Training	The government conducts training on the efficient and effective use of fertilizers.
5.	Monitoring	The government monitors and evaluates the use of fertilizers in the field.

Source : Researcher Processing, 2024

This support aims to ensure that farmers in Kutai Kartanegara Regency get easy and affordable access to fertilizers, so that they can increase crop productivity and farmers' welfare. In addition to Alsintan and fertilizer assistance, the Kutai Kartanegara Regency Government is also active in improving agricultural infrastructure in the region. Adequate infrastructure is an important prerequisite for region-based agricultural development. The local government has built and improved the network of roads, irrigation, drainage channels, and storage facilities for agricultural products to improve farmers' accessibility to markets, agricultural inputs, and technology, as well as improve the availability of water for agriculture. These measures are important to reduce crop losses due to transportation difficulties and improve efficiency in the agricultural supply chain in Kutai Kartanegara Regency(Wahyudi, 2018). In addition to concrete programs such as Alsintan assistance, fertilizers, and infrastructure development, the Kutai Kartanegara Regency Government also has a role in coordinating and facilitating various activities that support food security. Local governments act as coordinators between various stakeholders such as farmers, non-governmental organizations, the private sector, and international organizations to increase synergies in efforts to achieve food security in the region. By coordinating various activities and existing resources, the Kutai Kartanegara Regency Government can maximize the results of various initiatives carried out in supporting food security(Nurcahyo et al., 2021).

In evaluating the role of the Kutai Kartanegara Regency Government in supporting food security, several aspects need to be evaluated. First, the effectiveness of the programs that have been implemented needs to be evaluated to see the extent to which these programs can achieve the goals that have been set. In addition, community involvement and participation in various activities also need to be evaluated to see the extent to which the community can be actively involved in efforts to achieve food security. From the results of the evaluation, conclusions can be drawn to formulate policy

recommendations and follow-up programs that can be implemented by the Kutai Kartanegara Regency Government in supporting food security in the future. Thus, the role of the Regional Government, especially the Kutai Kartanegara Regency Government, in supporting food security is very important in ensuring sufficient food availability for the local community (Barizah, 2018).

Challenges of Agricultural Infrastructure

Agricultural Infrastructure Challenges, especially related to water infrastructure for rice field irrigation, are one of the main problems faced by the Regional Government. This sub-chapter discusses various efforts made by local governments, especially in coordination between related OPDs and synergy between the Public Works Office (PU) and the Agriculture and Livestock Service (Distanak), to deal with this water infrastructure problem and build an effective irrigation network. Water infrastructure for rice field irrigation has a crucial role in supporting agricultural productivity and food security. However, in many areas, including in this region, irrigation infrastructure often experiences various challenges and constraints, such as water shortages, damage to channels, and lack of efficiency in water management and distribution. Therefore, the Regional Government, with coordination between the relevant OPDs, especially the Public Works Office and the Distanak, has made various efforts to overcome this problem (Mulyadi, n.d.). Good coordination between these two agencies is very important to ensure that the development of irrigation infrastructure can be carried out in an integrated and effective manner. By working together, the Public Works Office can be responsible for the physical development of irrigation infrastructure, such as water canals and buildings, while the Public Works Office can provide technical input related to water needs and water resource management in agriculture.

Table. 2 Agricultural Infrastructure Challenges Related to Water Infrastructure for Rice Field Irrigation Faced by Local Governments

No.	Challenge	Description
1.	Lack of Water Resources	Limited availability of water sources to meet irrigation needs.
2.	Damaged or Old Irrigation Infrastructure	Many irrigation canals are old and damaged, thus hampering water distribution.
3.	Outdated Irrigation Technology	The use of irrigation technology that is inefficient and outdated.
4.	Ineffective Water Management	Water management is not optimal, causing uneven water distribution.
5.	Lack of Investment in Infrastructure Development	Lack of funds and investment for the repair and development of irrigation infrastructure.
6.	Floods and Droughts	Unexpected flood and drought problems disrupt the availability of water for irrigation.

8.	Lack of Community Participation	Low community participation in maintaining and managing irrigation infrastructure.
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Source: Researcher Processing, 2024

This table illustrates the various challenges faced by the Regional Government in providing adequate water infrastructure for rice field irrigation, which is very important to increase agricultural productivity. In addition, synergy between the Public Works Office and the Distanak is also needed in terms of planning, managing, and maintaining irrigation infrastructure. These two agencies need to work together in planning the development of adequate irrigation infrastructure, managing water distribution efficiently, and carrying out routine maintenance to prevent damage and leakage. Through this synergy, it is hoped that irrigation infrastructure can be better managed and provide maximum benefits for farmers in this region (Kinanthi & Indrayati, 2023). In addition to coordination efforts between related OPDs, local governments also need to take concrete steps in the development of effective irrigation infrastructure. This includes designing irrigation systems that suit local needs, ensuring equitable and equitable water distribution for all farmers, and adopting appropriate technologies to improve the efficiency of water use in agriculture. The development of effective irrigation infrastructure requires commitment and cooperation between local governments, local communities, and various related stakeholders.

Thus, through the efforts made by the local government, especially in coordination between related OPDs and synergy between the Public Works Office and the Distanak, it is hoped that the problem of water infrastructure for rice field irrigation can be overcome gradually. The development of an effective irrigation network is an important step in supporting agricultural productivity, improving farmers' welfare, and achieving food security in this region. Therefore, there is a need for an active role and close collaboration between local governments and various stakeholders in addressing this agricultural infrastructure challenge (Fitriastuti et al., 2015).

Impact of Strengthening the Agricultural Sector

The strengthening of the agricultural sector has a significant impact, both directly and indirectly, especially related to increasing farmer productivity and overall community welfare. This sub-chapter discusses various positive impacts arising from efforts to strengthen the agricultural sector, as well as the benefits of synergy between various government agencies in achieving agricultural development goals (Azaki, 2019).

First of all, the strengthening of the agricultural sector has a direct impact on increasing farmers' productivity. For example, with the adoption of modern technologies such as Alsintan and organic farming methods, agricultural productivity can be significantly increased. In addition, providing better access to a supply of quality fertilizers and seeds can also help farmers in increasing their yields (Azaki, 2019). Another impact of strengthening the agricultural sector is an increase in farmers' income and community welfare. With the increase in agricultural productivity, farmers' incomes can increase, thus having a positive impact on their welfare. Higher incomes could also

drive economic growth in the region, as farmers will have more money to reinvest in the local economy. In addition, increasing farmers' income can also open up opportunities for diversifying livelihoods and developing other businesses in the agricultural sector, such as agrotourism or the agricultural product processing industry.

In addition to the direct impact, the strengthening of the agricultural sector also has a significant indirect impact on various other economic sectors. The growth of the agricultural sector can encourage the growth of related sectors, such as the food processing industry, trade, and agricultural supporting services. This can create new jobs and increase economic activity in the region as a whole. In addition, increasing agricultural production can also reduce dependence on food imports, thereby contributing to national economic stability. The benefits of synergy between various government agencies are also very important in achieving agricultural development goals. Collaboration between various agencies can strengthen existing agricultural development programs. For example, collaboration between the Department of Agriculture and the Department of Industry and Trade can facilitate the development of local agro-industries to process agricultural products into value-added products, thereby increasing added value and farmers' income (Safri et al., 2021). In addition, synergy between various government agencies can also increase effectiveness in managing natural resources and the environment. For example, collaboration between the Environment Agency and the Agriculture Service can ensure that sustainable and environmentally friendly agricultural practices are widely implemented, thereby maintaining environmental sustainability and reducing the negative impacts of intensive agriculture.

However, to achieve synergy between various government agencies, a strong commitment from all relevant parties is needed. Effective coordination, smooth information exchange, and clear division of responsibilities are key to achieving optimal synergy between various government agencies. In addition, good communication with various stakeholders, including farmers, non-governmental organizations, the private sector, and the general public, is also needed to ensure that the policies and programs designed truly meet their needs and expectations (Kinanthi & Indrayati, 2023).

Hope for Increased Agricultural Development

Kutai Kartanegara Regency, with its great potential, shows itself as one of the potential food barns in East Kalimantan. Factors such as abundant natural resources, a supportive climate, and the commitment of local governments in developing the agricultural sector are a strong foundation for the region's very promising agricultural development prospects. An evaluation of the various programs and activities that have been carried out by the local government shows that concrete steps have been taken to increase the productivity and welfare of farmers, as well as to optimize the overall agricultural potential (Nasruddin et al., n.d.). One of the main hopes in increasing agricultural development in Kutai Kartanegara Regency is the achievement of a significant increase in farmer productivity. This effort is realized through various measures, such as the development of adequate infrastructure, the provision of better access to agricultural technology, and assistance in terms of fertilizers and seeds. With

increased productivity, farmers will be able to produce larger harvests, thus having a significant positive impact on their income and well-being (Fitriastuti et al., 2015).

In addition, it is hoped that the increase in agricultural development will also have a wide positive impact on the welfare of the people of Kutai Kartanegara Regency (Wahyudi, 2018). Along with increasing the productivity and welfare of farmers, another hope is the realization of a greater role of Kutai Kartanegara as a food barn in East Kalimantan. With the potential possessed by this area, it is hoped that Kutai Kartanegara will be able to play a central role in meeting the food needs not only for the local population, but also for the surrounding areas. This will not only reduce dependence on food imports from outside the region, but will also increase food security and economic stability in East Kalimantan as a whole (Mulyadi, n.d.).

Optimizing the Utilization of Agricultural Technology

The use of modern agricultural technology is the main key in increasing agricultural efficiency and productivity in Kutai Kartanegara Regency, a strategic step that will not only benefit individual farmers but will also have a positive impact on the overall regional economy. This district, with its great potential in the agricultural sector, can benefit significantly from the use of the latest technology in agricultural practices. Therefore, the use of sensors and geographic information systems (GIS) for crop monitoring, the implementation of precision agricultural techniques, and the use of digital technology in agricultural management are the main focus in efforts to optimize agricultural technology (WULANDARI, 2023).

The use of sensors and GIS in crop monitoring is one of the important aspects in improving agricultural management in Kutai Kartanegara Regency. By using sensors grown in the field, farmers can monitor plant conditions in real-time, including soil moisture levels, water needs, and soil fertility levels. The data obtained from these sensors can be integrated with geographic information systems (GIS) to provide an accurate mapping of agricultural conditions in the region.

In addition, the implementation of precision agricultural techniques is also an important step in increasing agricultural productivity in Kutai Kartanegara Regency. This technique involves the use of advanced technological devices, such as tractors and agricultural machinery equipped with GPS and sensors, to optimize the use of resources such as fertilizers, pesticides, and water. With this technique, farmers can carry out more targeted and efficient agricultural actions, such as layered planting, optimal spacing, and proper application of pesticides to infected areas. This will not only increase crop yields but will also reduce production costs and minimize negative impacts on the environment (Sidik, 2021).

The use of digital technology in agricultural management is also important to be applied in Kutai Kartanegara Regency. With the adoption of a digital-based agricultural management system, farmers can plan, monitor, and evaluate their agricultural activities more efficiently. Mobile apps and web platforms developed specifically for agriculture allow farmers to access important information about the latest weather, markets, and farming techniques. In addition, digital agricultural management systems can also help in inventory tracking, inventory management, and agricultural financial management,

thus assisting farmers in better decision-making and in improving overall agricultural productivity.

By optimizing the use of agricultural technology such as the use of sensors and GIS, the implementation of precision agricultural techniques, and the use of digital technology in agricultural management, it is hoped that Kutai Kartanegara Regency can achieve a significant increase in agricultural productivity, reduction in production costs, and reduction of negative environmental impacts. In addition, the adoption of this technology will also increase the region's agricultural competitiveness in the global market, as well as provide greater economic and social benefits for farmers and local communities as a whole. Therefore, further investment and support in the development and application of modern agricultural technology is essential for the sustainable and productive future of Kutai Kartanegara Regency's agriculture.

Diversification of Agricultural Products

Diversification of agricultural products is a very important strategy in increasing the added value and competitiveness of agricultural products from Kutai Kartanegara Regency. The importance of this diversification step will be reviewed as a potential solution to reduce farmers' economic risks and increase food security at the local level. Diversification of agricultural products offers a diverse approach to developing the agricultural sector in the region, which includes the development of new flagship commodities, such as horticultural crops and technology-based livestock, as well as the promotion of local agricultural products through effective marketing and branding (Koesliana et al., 2018).

One of the key steps in diversifying agricultural products is the development of new superior commodities. Kutai Kartanegara Regency has vast potential in terms of natural resources and a supportive climate, making it possible for the development of various types of diverse horticultural crops, such as tropical fruits, vegetables, and spices. In addition, opportunities for technology-based livestock development can also be a promising alternative. The use of technology in livestock management, such as environmental control systems, technology-based feed, and livestock reproductive management, can improve production efficiency and product quality. In addition to the development of new commodities, the promotion of local agricultural products is also an important part of diversification efforts. Through effective marketing and branding, local agricultural products can be more widely known in the domestic and international markets.

Diversification of agricultural products also provides benefits that go beyond just economic aspects. One of the main benefits is in reducing farmers' economic risks. By owning various types of agricultural commodities, farmers will be more resistant to price fluctuations and market demand for one specific type of product. If one type of crop experiences crop failure or price drops, farmers can still rely on other types of commodities to maintain their income. This will help improve the economic stability of farmers and prevent poverty (DI, 2016). In addition, the diversification of agricultural products also contributes to increasing food security at the local level. By having various types of agricultural products, this region will be more self-sufficient in food and not

dependent on one type of product or supply from outside the region. This will help reduce the risk of food supply instability and improve food accessibility for local communities. In addition, with diverse production, this region can also meet the diverse nutritional needs of its residents.

Agricultural Institutional Development

Agricultural institutional development is an important aspect that must be considered in an effort to improve coordination, collaboration, and empowerment in the agricultural sector of Kutai Kartanegara Regency. This sub-chapter highlights the vital role of these institutions in strengthening the social and economic infrastructure that supports agriculture in the region. In this context, the discussion covered several things, ranging from the formation and strengthening of farmer organizations to cooperation between farmer groups, as well as the important role of government and private institutions in supporting sustainable agricultural development (Barizah, 2018). One of the main focuses in the development of agricultural institutions is the formation and strengthening of farmer organizations. Farmer organizations are a forum that allows farmers to unite, share knowledge and experience, and collaborate in overcoming various problems faced. Through these organizations, farmers can improve their access to resources, information, and market opportunities. In addition, farmer organizations can also be a platform to improve the technical and managerial capacity of farmers, thus helping them in facing challenges and opportunities in the agricultural sector (Wahyudi, 2018). In addition to the formation of farmer organizations, cooperation between farmer groups is also an important thing to pay attention to. Collaboration between farmer groups allows for the exchange of knowledge and resources between farmers who have similar interests and goals. This can improve production efficiency, expand market reach, and reduce economic risks faced by farmers. In addition, cooperation between farmer groups can also open up opportunities for joint business development, such as the procurement of joint agricultural tools or collective marketing, which can increase the competitiveness and overall welfare of farmers.

Local governments and private institutions also have an important role in supporting the development of agricultural institutions. Local governments can provide institutional and policy support that supports the growth and sustainability of the agricultural sector, such as providing access to resources, funding for training and development, and incentives for innovation and diversification. On the other hand, private institutions, including agribusiness companies and financial institutions, can provide technical and financial support to farmers, as well as assist in the marketing and distribution of agricultural products.

With the development of strong agricultural institutions, it is hoped that more effective synergy can be created in achieving the goals of agricultural development as a whole. Synergies between various stakeholders, including farmers, local governments, private institutions, and civil society, will enable the adoption of more holistic and sustainable solutions to the various challenges faced by the agricultural sector. In addition, strong institutions will also help in strengthening farmers' capacity for adaptation and innovation amid dynamic environmental and market changes. Thus, the

development of agricultural institutions is the key to building a sustainable, inclusive, and competitive agricultural sector in Kutai Kartanegara Regency.

Conclusion

Results and discussions regarding the vision and mission of agricultural development, region-based agricultural development programs, the role of local governments in supporting food security, agricultural infrastructure challenges, the impact of strengthening the agricultural sector, expectations for increasing agricultural development, and optimizing the use of agricultural technology. This is in line with the clear strategies that can be applied to increase agricultural productivity, improve farmers' welfare, and achieve food security in Kutai Kartanegara Regency (Pujiriyani et al., 2015b).

In terms of the use of agricultural infrastructure, coordination between related OPDs, the use of modern agricultural technology, and diversification of livelihoods, are very relevant and important steps in the development of the agricultural sector. This is a concrete step about the implementation of programs in the field and their impact on the welfare of farmers and rural communities.

Aspects of agricultural development and the efforts that the Government can make to overcome the challenges faced by the agricultural sector have a very positive impact. All of these points form a solid framework to formulate effective and sustainable agricultural development policies and programs in Kutai Kartanegara Regency.

Region-Based Agricultural Development Program. This is the Kukar Idaman Dedication Program aimed at ensuring the continuity of the economic transformation process of Kutai Kartanegara, by establishing strategic agricultural areas (in a broad sense) in an integrated manner, starting from the certainty of land availability, irrigation, preparation of superior farmers to regional facilities and infrastructure (roads and public transportation). The implementation carried out by the local government in supporting food security in Kutai Kartanegara Regency is by providing assistance in the form of Agricultural Tools and Machinery (Alsintan) and needs such as fertilizers and others that continue to be given to farmer groups in the agricultural area as a commitment to realizing Kutai Kartanegara as a food barn for East Kalimantan as well as a partner of the Nusantara Capital City (IKN). Strengthening the agricultural sector must be done seriously and continue to be carried out in various sectors by local governments, one of which is in terms of modern agricultural equipment to make it easier for farmers to carry out their activities and this triggers even better productivity produced by farmers.

For the Kutai Kartanegara Regency Government, it is hoped that it can pay attention to all farmer groups in all strategic agricultural areas that have been determined so that people or groups who have not felt the assistance provided by the local government can enjoy the assistance as soon as possible in order to encourage the acceleration of agricultural production activities that increase compared to before in order to realize Kutai Kartanegara Regency as a food barn in Kalimantan East.

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