

Community Assessment Of The Cassava Cultivation Food Estate Program As A Strategic Logistics Reserve In Realizing Regional Food Security In Gunung Mas Regency, Central Kalimantan

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Abstract

This Study Aims To Assess Community Perceptions And Responses To The Food Estate Program For Cassava Cultivation As A Strategic Logistics Reserve To Realize Regional Food Security In Gunung Mas Regency, Central Kalimantan. A Quantitative Research Design Was Employed, Using Survey Data Collected From Hospitality Operators Along Tamil Nadu'S Through A Qualitative Approach With In-Depth Interview Techniques, Field Observations, And Documentation Studies, This Study Reveals The Extent Of Local Community Involvement, Their Understanding Of The Program'S Objectives, And The Perceived Socio-Economic Impacts. The Results Of The Study Indicate That The Cassava Cultivation Program And Food Estate In Gunung Mas Regency Face Various Challenges, Especially Related To Policy Inconsistencies, Limited Infrastructure, And Minimal Community Participation. Various Assessments From The Community Indicate A High Level Of Dissatisfaction With The Promised Socio-Economic And Food Security Impacts. The Program Also Experiences Serious Problems Such As Land Conflicts, Environmental Degradation, And Crop Failures. Therefore, A More Participatory, Inclusive, And Evidence-Based Policy Reformulation Is Needed, As Well As Increased Coordination Between Ministries To Ensure The Sustainability Of The Program. By Strengthening Infrastructure And Implementing Environmentally Friendly Agricultural Practices, This Program Is Expected To Provide Long-Term Benefits For National Food Security And The Welfare Of Local Communities Without Sacrificing Environmental Sustainability.

Keywords: Food Estate, Cassava Cultivation, Food Security, Community Participation, Sustainable Policy.

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1. INTRODUCTION

Constitution Number 18 Year 2012 on Food mandates "That National Food Security Must Be Built Based on Food Sovereignty and Independence Food". This is empirically also strong with Indonesia's position as a country agrarian and maritime which includes more than 17 thousand islands has an abundance of natural resources. Opportunities and chances are open very wide for nation this is to use the source its natural power for fulfillment adequacy food And ensure durability food national (Ahmad et al., 2022). Policies and various efforts to realize national food independence initiated by the Government of President Joko Widodo is program Which become priority use create condition independent food so that it can realize regional resilience (Yuniar, 2022) . Food security is an inseparable part inseparable and has a very strategic role in the resilience and defense capabilities of a country. country. Prolonged war situation by implementing guerrilla warfare tactics by Indonesian National Armed Forces And doctrine defense people universe (Hamkamrata), requires support from the logistics system and reserves which include defense equipment, food and drugs (Rahman et al., 2022) .

The Covid-19 pandemic has become a lesson learned regarding the urgency and very strategic role of national food logistics capabilities because several food producing countries in the world have stopped exporting food/ingredients food to the international market and they are more concerned with meeting their national food needs. Dependence high food on commodity Which imported from other countries very prone to to policy embargo or termination export from country producers (Isnawati et al., 2022) . The National Food Agency (Bapanas) stated that the rice stock that Perum Bulog must have in 2022 is ideally 1.2 million tons, which is mainly to

meet the needs of the government's rice reserves (CBP). However, the fact is that limited land when planting rice is accompanied by difficulties in developing new rice fields outside Java, as a requirement for growing rice, adding to the challenges in increasing food reserves (Rahman, 2018) . Considering this, the alternative source carbohydrate Which submitted is cassava (Dwiyanti et al., 2023) . Commodity cassava is choice Which realistic as well as in accordance with situation and condition in country.

Based on data from the Central Statistics Agency (2018) , the amount of solid cassava imports reached 308 tons in 2018. This amount is relatively much lower than the value of Indonesian cassava exports which reached 1,433 tons in the same year. However, if we look at the pattern in the last 10 years, the number of imports has experienced an increasing trend. The average cassava imports for the 2014-2018 period reached 4,070 tons/year, which is much larger than the average for the 2009-2013 period which was only 3,064 tons/year. On the contrary, exports showed a pattern of shrinkage. In the 2014-2018 period, the average cassava export was only 26,561 tons/year, much smaller than the 2009-2013 period which was still 117,236 tons/year.

In 2018, BPS recorded that 375,590 tons of cassava starch worth US\$ 185.6 million entered Indonesia as imports. Meanwhile, the number of exports in the same period was much smaller, only 8,090 tons or worth US\$ 5.28 million. This means that the comparison of cassava starch imports reached 45 times its exports. Like solid cassava, the trend of cassava starch imports has also increased in the last 10 years. The increase in the need for solid cassava starch imports is the impact of domestic production which is still lacking. Not only

lacking, but cassava production has continued to decline since 2014.

Based on the 2018 Agricultural Statistics book released by the Ministry of Agriculture, in 2018 cassava production only reached 19.05 million tons. In fact, in 2014 Indonesia was still able to produce 23.4 million tons of cassava. The cassava cultivation development program is a series of actions or strategies set by the government to encourage and increase production and development of cassava cultivation. This policy aims to strengthen the cassava cultivation sector as a source of food, industrial raw materials, and improve community welfare. The overall cassava cultivation development policy aims to increase productivity, efficiency, and sustainability of cassava cultivation, as well as improve community welfare. By implementing holistic and integrated policies, it is hoped that a resilient cassava cultivation sector can be created that contributes positively to the country's economy and food security.

The Indonesian government has taken several policies related to food in Indonesia. In 2022, the President of the Republic of Indonesia also ratified Presidential Regulation number 125 of 2022 concerning the Implementation of Government Food Reserves. This regulation is based on several previously existing policies such as Law Number 18 Years 2012 about Food, Government Regulation Number 17 of 2015 concerning Food Security and Nutrition, and Government Regulation Number 13 of 2016 concerning the Public Company (Perum) BULOG. In recent years, programs to increase food production on a large scale in Indonesia have been formulated in the food estate program. The Food Security Program or Food Estate is a popular term for large-scale plant cultivation business activities (>25 ha) (Karso, 2024). Food Estate is carried out with the concept of industrial agriculture based on science and technology (IPTEK), capital, and modern organization and management (Mulyani et al., 2011). The food estate program is implemented in various regions in Indonesia, namely North Sumatra, Central Java, West Java, East Java, Central Kalimantan, NTT, Papua, and South Papua (Widiastuti et al., 2022). The development of food security is a government effort in resolving the threat of a food crisis and aims to boost national economic recovery.

In 2021, the Indonesian Minister of Defense was officially appointed by the President of the Republic of Indonesia as the coordinator in the development and development plan for the Food Estate area. This is an effort to strengthen national food security as part of state sovereignty. In developing the "Food Estate" area in Central Kalimantan, the Ministry of Defense synergizes with the Ministry of PUPR, the Ministry of Agriculture, the Ministry of LHK, and the Ministry of BUMN, especially in developing cassava culture. Through the Cassava Cultivation Development Program as a Strategic Logistics Reserve carried out by the Indonesian Ministry of Defense, it is hoped that it can become one of the weapons to realize food security in Indonesia (Kemhan.go.id, 2021).

The government has established various strategies related to strengthening the food sector, as formally stated in the National Long-Term Development Plan (RPJPN-2025-2045)

and the National Medium-Term Development Plan (RPJMN-2020–2024), which places food security as one of the main priorities in ensuring national resilience. Food Estate as a national strategic program should be in line with the Local Food Diversification policy, Strategic Food Reserves, and the National Rice Production Increase (P2BN) program which aims to reduce dependence on imports and strengthen domestic production. In addition, the integration of this program with Social Forestry and Agrarian Reform policies is also an important aspect, considering that most of the land used for the Food Estate is in areas that were previously forests or land with customary ownership rights. Policy conflicts between the Food Estate and land use regulations show that this program still requires harmonization with environmental policies, especially in the context of sustainable land use and restoration of affected ecosystems.

In terms of regulation, the Food Estate program also needs to be more connected to the Government Rice Reserve (CBP) policy and the Basic Food Price Policy, so that it not only targets high production but also ensures that the harvest can be absorbed at a stable price and benefits farmers. Integration with food logistics policies, such as the Sea Toll Road and the National Logistics System (Sislognas), is also an important aspect so that production from the Food Estate area can be distributed efficiently to various regions in need, especially areas that are still vulnerable to food crises. However, until now, the implementation of Food Estate is still fragmented and has not been fully coordinated and integrated with other national food policies. Therefore, further study is needed to assess the extent to which Food Estate has been integrated with broader national food policies, as well as how the government can improve cross-sector coordination to ensure the sustainability of this program in the long term and how the public's perception or view of food estates is very crucial to explore. Food estate program which was implemented starting in 2021 in Gunung Mas Regency with an area of 600 ha which was initially a production forest with cassava as a commodity was considered by several parties to be unsuccessful and faced many complex problems (BBC, 2023; Detik finance, 2023; Kompas, 2023; Liputan6.com, 2023). Several reports showed that after two years of the program running, it was identified that much cassava was not growing ideally (Kompas, 2024). The food estate program in Gunung Mas aims to achieve food security. However, the failure of the cassava harvest that occurred on 600 ha of land, where only 3 ha were successfully harvested, revealed different conditions and realities in the field. This made the assessment and perception of the community in Central Kalimantan divided between pros and cons regarding the development of the cassava food estate project (Marie, 2020).

In addition, the transmigration program that accompanied the expansion of agricultural land in the past caused social conflict and inequality in access to resources, especially for indigenous peoples and local farmers who lost their land without fair compensation. This trauma makes most people more skeptical of the latest Food Estate initiative, because they see it as a continuation of the same policy without significant improvements in land governance and local community empowerment. In addition to social resistance, ecological and

technical factors are also the main causes of the failure of previous programs. As a result of these various factors, the Cassava Food Estate program has the potential to experience the same obstacles if there is no stronger mitigation strategy, especially in terms of synchronizing policies between ministries, guaranteeing land tenure for local communities, and using agricultural technology that is appropriate to environmental conditions. In the absence of a more participatory approach and based on previous failure experiences, this program is at risk of becoming an unsustainable project, repeating the same pattern of failure as previous programs.

General trends and content that appear on social media platforms such as Instagram, Twitter, and TikTok also show differences in the assessment of the Indonesian public regarding the cassava food estate in Gunung Mas. Some people welcome the Cassava food estate initiative because of its potential to increase local food production and contribute to national food security. They believe that this is a positive step to reduce dependence on food imports. However, some people have concerns about the environmental impact of land development for food estates, especially in areas that may be ecologically sensitive such as Gunung Mas. They are concerned about deforestation, land degradation, or other environmental damage that could arise from this project (bbcindonesia.com, 2023). Some people are concerned because the use of land for food estates can compete with other important land uses, such as land for nature conservation or other local interests. Some people are also skeptical about the success of the cassava food estate, doubting the implementation, management, or maintenance of the project.

In addition to the failure in the production aspect, one of the main root problems in the development of Food Estate is the lack of positive impacts for local communities. Instead of improving welfare, this program worsens the economic and social conditions of the community.

Land conflict issues are also a major factor that worsens public perception of this program. Many farmers lost their land without any fair compensation mechanism, so this program worsens the socio-economic conditions of the community. In addition, the monoculture approach in this program is also a problem. By only focusing on large-scale cassava production, this program creates economic dependence on one commodity, which is very vulnerable to market price fluctuations. If the price of cassava falls, farmers and communities who depend on this program for their livelihood will experience greater economic difficulties. Another factor is the lack of transparency and communication between the government and the community. Many people feel that they do not receive clear information about the goals, mechanisms, and long-term benefits of this program. Minimal socialization causes people to have limited understanding, so that when the expected results are not as expected, they feel that this program is not on their side. The lack of active community participation in planning and implementation also causes a low sense of ownership of this program, which leads to resistance and rejection from various community groups.

Based on the various factors above, it can be concluded that the failure of the Food Estate program in providing a positive impact on the community is not only caused by technical constraints in production, but more to a non-inclusive policy approach, unresolved land conflicts, lack of supporting infrastructure, and unpreparedness in creating a sustainable agricultural ecosystem. Based on the data and facts above, research on cassava cultivation food estate program as a strategic logistical reserve to realize regional food security, with a case study of community assessment in Gunung Mas Regency, Central Kalimantan, is important to do because it can analyze the extent to which the cassava food estate program can contribute to achieving food security goals in the Gunung Mas Regency area both socially and economically. This study aims to evaluate community assessments of the implementation of the Cassava Food Estate program and how this policy impacts social, economic, environmental, and food security aspects.

This study can contribute to the global discussion on more sustainable food security strategies, considering that the Food Estate program in Indonesia is often compared to similar models in other countries, such as Brazil with its agricultural projects in the Amazon region or China with its agro-industry-based food security model. By highlighting the obstacles and opportunities of Food Estate implementation in Indonesia, this study not only provides input for domestic policies but also provides lessons for other countries facing similar dilemmas in balancing food security, environmental protection, and social welfare.

Literature Review

2.1 Feasibility Analysis of Sustainable Cassava Food Estate in Gunungmas Regency Central Borneo Province

The data used was in Nalindo et. al., (2023), spatial data relating, and interviews with experts regarding the weight and value to determine the extent of the interest in hierarchy analytical process. Weighting is done on each criterion based on its level of importance on land suitability. The value of all by virtue of conformity each sub criteria. The highest value represents an area that has a high level of suitability. The weighting overlay method was used to produce a land suitability map for a sustainable cassava food estate. The results of the study show that the available land for the development of a food estate in Gunungmas Regency is 33,799.15 Ha. Sustainable cassava food estate land suitability class is 31,496.21 Ha, very suitable 496.74 Ha, class is not suitable 1,806.21 Ha.

2.2 The role of the Ministry of Defense in preparing strategic logistics reserve for facing the National Food Emergency

Tanjung, A., & Anwar, S. (2021) explain the data analysis technique used a qualitative descriptive analysis. This article seeks to identify various problems in implementing Strategic Logistics Reserve Agency at the policy and operational levels. From the research results, there are findings that illustrate that logistics supplies in the face of universal defense are unable to

support both the needs of the TNI and the needs of its supporters.

2.3 Directions of ensuring food security of the state considering the potential and directions of development of territorial communities

Revkova, A., & Okhota, Y. (2024) explain that these aspects are interconnected and together form a solid foundation for the sustainable development of territorial communities, ensuring their long-term prosperity and well-being. Further development of the territorial communities in the Vinnytsia region is determined by the fact that in the context of European integration processes and the military aggression of the Russian Federation against Ukraine, the resource potential of the region is not being fully utilized. Therefore, our proposals include the activation of the above-mentioned components of sustainable development, which are an essential prerequisite for forming a capable community. The monograph is conducted within the initiative theme 'Ensuring the Development of Territorial Communities in the Context of Local Self-Government Reform.

2.4 Regional Logistics in Improving the Defense Economy in the Region

The plan to develop the "Food Estate" according to Arifin, A., Saputro, G. E., & Haetami, H. (2022) area in Central Kalimantan launched by the President of the Republic of Indonesia Joko Widodo is a collaboration between the Ministry of Defense, the Ministry of PUPR, the Ministry of Agriculture, the Ministry of Environment and Forestry and the Ministry of SOEs. The research method uses descriptive qualitative. The results of the study show that the strength of food security is no less important than the strength of weapons, especially in dealing with the current situation such as the impact of the Covid-19 pandemic. For this reason, Indonesia must have adequate food reserves.

2.5 Food Estate Management System and Policies in Pulang Pisau and Kapuas Regencies, Central Kalimantan Province

This juridical basis according to Istani, I., Absori, A., Dimiyati, K., Wardiono, K., Budiono, A., & Achmadi, A. (2025) is to further strengthened by Presidential Decree No. 109/2020 on the Third Amendment of Presidential Decree No. 3/2016 on the Acceleration of the Implementation of the National Strategic Project and the Decision of the Minister of the National Development Planning No. Kep.18/M.PPN/HK/03/2023 on the Main Food Estate Development Plan/Center of Food Production Area in Central Kalimantan Province. Applying the food estate program has led to an increase in the average rice production. Many facilities have also been built on the food estate land, including roads, worker barracks, water sources, buildings, etc.

2.6 Agriculture, food security, and nutrition in Malawi

The impact of forest conversion is analyzed by Aberman, N.-L. (Ed.), Meerman, J. (Ed.), & Benson, T. (Ed.). (2018) that conducting spatial analysis of land cover and calculating

potential carbon stocks lost, as well as providing suggestions or solutions to problems or gaps from an economic, social, and political environmental perspective. Findings: From the results of literature studies, the government must learn from the experience of food estate projects on peatlands in the past where peatlands became thin and when the dry season arrived, the land would be flammable due to lack of attention to the biophysical aspects of the soil. Conclusion: In addition, economic and social aspects involve and assist the community in carrying out food security programs and agricultural technology sophistication. Novelty/Originality of this Study: This analysis provides a unique perspective on the climate change impacts of forest conversion for food estate programs, bridging the gap between national food security policies and environmental conservation imperatives

METHODS AND MEASURES

Given the exploratory nature and context of the study, a qualitative research approach was used in the article. This study uses a case study method with a qualitative descriptive approach, which aims to describe the phenomenon naturally and in depth according to the conditions in the field. This study was conducted in Gunung Mas Regency, Central Kalimantan, to assess public perceptions of the cassava cultivation program as a national strategic logistics reserve to realize regional food security. The qualitative approach was chosen because humans are used as the main source of data, with data collected through observation, interviews, and documentation systematically and contextually (Cooper & Schindler, 2017; Moleong, 2006).

The main instruments used in this study are the Analytical Hierarchy Process (AHP) and SWOT analysis. AHP is used to assist multi-criteria decision making by comparing elements in pairs to determine priority weights through the consistency calculation method (Saaty, 1980). Meanwhile, SWOT analysis is used to formulate strategies by considering internal factors (strengths and weaknesses) and external factors (opportunities and threats), to maximize potential and minimize risk (Nisak, 2013).

The data used in this study consisted of primary and secondary data. Primary data were obtained through interviews with key figures such as the Head of PCLS Kemhan, sub-district heads, community leaders, and cassava farmers. While secondary data were obtained through literature studies from documents of the Ministry of Defense, PUPR, KLHK, and local governments. The sampling technique was carried out purposively, by selecting informants who were considered relevant and had in-depth knowledge of the cassava cultivation program in Gunung Mas Regency (Sugiyono, 2014).

Results

3.1. Overview of Gunung Mas Regency, Central Kalimantan Province and Research Data Analysis

Gunung Mas Regency is one of the areas in Central Kalimantan Province which was formed from the expansion of Kapuas Regency based on Law No. 5 of 2002. Its capital is in Kuala Kurun, and administratively consists of 12 sub-districts and 127 villages/sub-districts with an area of 10,804 km². Based on the 2020 Population Census, the population

reached 135,373 people, with a density of around 12.5 people/km² and dominated by Generation Z (30%) and millennials (29.3%). This district has quite striking religious diversity, with most of the population being Christian (67.97%), followed by Islam (20.14%) and Kaharingan (11.86%).

Table 1 population of Gunung Mas Regency 2019-2024

No	Kecamatan	Jumlah Penduduk Kabupaten Gunung Mas										
		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
1	Manuhing	7.693	7.779	7.861	7.941	8.005	10.580	11.278	11.608	12.013	12.202	
2	Manuhing Raya	5.470	5.590	5.709	5.827	5.937	6.466	6.311	6.373	6.471	6.449	
3	Rungan	9.825	9.919	10.006	10.092	10.156	11.941	12.851	13.073	13.372	13.424	
4	Rungan Hulu	6.016	6.073	6.127	6.179	6.219	7.676	7.456	7.545	7.678	7.668	
5	Rungan Barat	5.743	5.797	5.894	5.898	5.936	6.846	6.699	6.740	6.818	6.769	
6	Sepang	6.630	6.749	6.865	6.982	7.085	8.501	9.014	9.447	9.955	9.852	
7	Mihing Raya	5.368	5.494	5.622	5.750	5.869	7.542	7.748	8.002	8.309	8.469	
8	Kurun	26.173	27.118	28.273	29.467	30.647	33.301	33.617	34.813	36.249	36.397	
9	Tewah	18.789	19.210	19.724	20.245	20.736	22.159	22.028	22.338	22.776	22.793	
10	Kahayan Hulu Utara	7.999	8.206	8.333	8.459	8.569	8.907	8.746	8.805	8.934	8.820	
11	Damang Batu	3.844	4.034	4.076	4.115	4.147	5.586	5.475	5.516	5.588	5.807	
12	Miri Manasa	3.917	3.978	4.039	4.099	4.151	4.310	4.150	4.147	4.166	4.185	
	Gunung Mas	107.467	109.947	112.484	115.054	117.457	133.815	135.373	138.407	142.309	142.835	

Sumber: Data BPS, 2014-2024

The four main sectors contributing to Gunung Mas' Gross Regional Domestic Product (GRDP) are agriculture, forestry, and fisheries (29.56%), mining (13.86%), construction (11.96%), and wholesale and retail trade (9.93%), while the sector with the lowest contribution is water and waste management (0.05%). Geographically, the district borders Katingan Regency and West Kalimantan Province to the west, Murung Raya to the north, Kapuas to the east, and Pulang Pisau and Palangka Raya to the south. Gunung Mas has a varied topography from lowlands to mountains, with the lowest area at an altitude of 50-100 meters above sea level.

Based on the results of the AHP analysis, the criterion with the highest weight is *the Financial Feasibility Assessment* by the Ministry of Defense, with a value of 0.430769. This shows that the financial aspect is a dominant factor in assessing the success of the cassava *food estate program*. The sustainability of the program is highly dependent on the effectiveness of cost management and production results. Two other criteria that have equal weights, namely *Socio-Economic Impact* and *Impact on Food Security* (each 0.252885), are also of primary concern, because they are related to community welfare and contribution to national food availability.

Meanwhile, *Efforts and Obstacles in Cassava Cultivation* have the lowest weight (0.063462), indicating that technical or field challenges are considered less influential than financial and social factors. However, this factor remains important and should not be ignored, because it can be an obstacle if not managed properly. Therefore, to achieve program effectiveness, it is necessary to strengthen the financial aspect and mitigate socio-economic and food impacts, accompanied by data-based strategic planning.

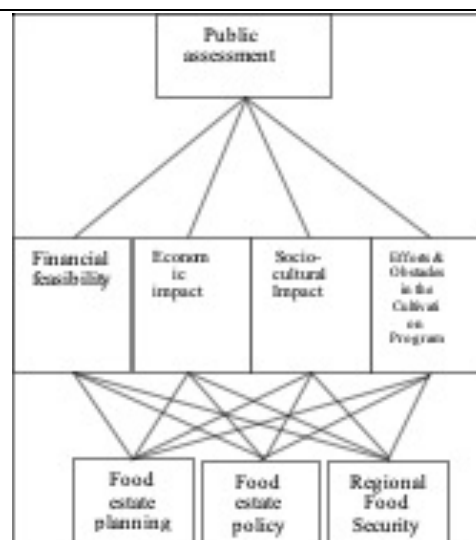


Figure 2. Decision Priority Hierarchy Analysis

3.1. Community Assessment of the Cassava Cultivation Development Program as a Strategic Logistics Reserve to Achieve Regional Food Security

The cassava cultivation program as part of national food security implemented in Gunung Mas Regency received mixed responses from the community. Most residents who knew about the program hoped that the initiative would open economic opportunities and improve local welfare. However, not all parties fully understood the concept and impact of the food estate. Limited information and lack of active participation in the initial socialization caused some people, including village officials, to feel less involved or not know in detail the direction of the policy to be implemented. In fact, understanding and direct involvement of the community is very important so that a program like this can truly answer local needs, not just become a national project that is foreign to the local community.

In terms of socio-economic impacts, there are differences in views between farmer groups and local entrepreneurs. Farmers tend to see this program as a real opportunity that can have a positive impact on their welfare, especially because of their direct involvement in the cultivation process. In contrast, entrepreneurs are more cautious, given the uncertainty in terms of markets, logistics, and program sustainability. This difference shows that the success of the program depends not only on technical implementation, but also on how the government is able to bridge the interests and needs of various groups, both direct producers and supporting business actors, through an inclusive and sustainable approach.

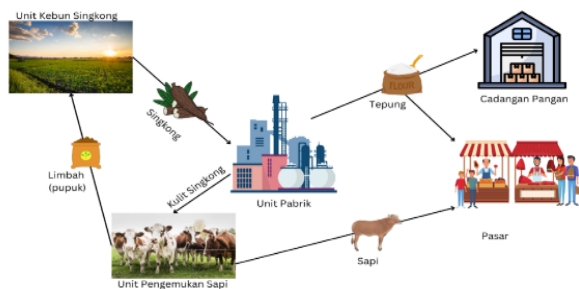


Figure 3. Farming Integration of Cassava Development in Gunung Mas Regency

The Cassava Food Estate Program in Gunung Mas Regency received mixed responses from the community. Farmer groups tended to be more optimistic about the socio-economic impact of the program, because their direct involvement in production gave hope for increased yields and access to agricultural resources. In contrast, entrepreneur groups and village officials were more skeptical, especially due to the unclear distribution system, market uncertainty, and limited infrastructure support. The low average assessment score reflects that despite the potential, program implementation still faces many challenges, both in terms of technical aspects and coordination between stakeholders.

Overall, the program has not fully met community expectations. Dissatisfaction arises due to the lack of real impact in the field, minimal socialization, and weak synergy between central policies and implementation in the regions. Although there is great potential in increasing national food logistics reserves, the program requires comprehensive improvements, including ongoing technical assistance, improvements to the distribution system, and strengthening public communication and participation. With a more inclusive and targeted approach, the Cassava Food Estate has the potential to become a strategic program in realizing sustainable national food security.

3.1. The Impact of Cassava Cultivation Development as a Strategic Logistics Reserve on Community Socioeconomics and Regional Food Security

The cassava cultivation development program in Gunung Mas focuses on improving food security through collaboration between various stakeholders. Cassava, which plays an important role in domestic consumption and international trade, is expected to become a strategic food reserve.

Although Indonesia is one of the largest cassava producers in the world, there has been a decline in planting area and production in recent years. Therefore, the development of agro-industry involving processing and marketing technology is

key to increasing the added value of cassava, which will also contribute to meeting the need for diverse and quality food. In addition, food security and diversity are also the focus of this development policy.

The food estate program in Gunung Mas Regency, which focuses on developing cassava cultivation, has had a significant impact in terms of finance, social, economy, and food security. Financially, this program has succeeded in increasing farmers' income through harvests and opening income opportunities from processed cassava products. However, dependence on government funding and fluctuations in Cassava commodity prices have the potential to disrupt farmers' economic stability, coupled with environmental degradation such as the decline in microorganisms in peatlands. On the social side, this program creates employment opportunities and helps alleviate poverty but also triggers land conflicts with indigenous communities and social tensions between immigrants and local communities. Economically, although this program can increase regional income and encourage economic diversification, dependence on one cassava commodity is vulnerable to global market fluctuations.

Food security also benefits from this program, by increasing national food reserves and reducing dependence on food imports. However, the main challenge lies in the sustainability of the program, given the existence of land conflicts that can threaten the stability of the program in the long term. Environmental damage and unfairness in the distribution of economic benefits between small farmers and large companies are also issues that need to be addressed to ensure the sustainability of this program. Overall, although this program has great potential to improve people's welfare, its implementation needs to be accompanied by solutions to address the social, economic, and environmental problems that arise.

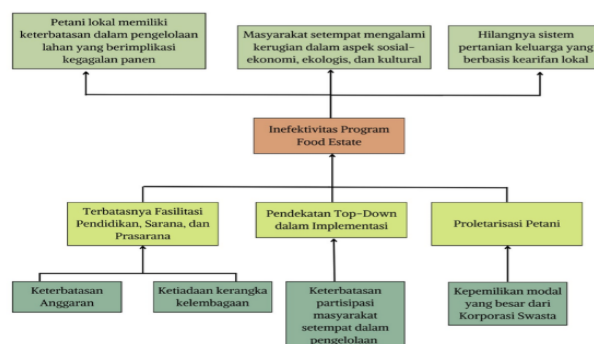


Figure 4 Mechanism of Ineffectiveness of Food Estate Program

In this context, the sustainability of the food estate program is highly dependent on more careful and collaborative management with local communities, as

well as attention to environmental impacts that can worsen local soil and ecosystem conditions. Therefore, community involvement in decision-making and equitable resource utilization will be key to realizing positive long-term benefits for Gunung Mas Regency. In the future, continuous evaluation of the results of this program is also needed to improve existing shortcomings and encourage the program to continue to focus on food independence based on local wisdom.

The Strategic Logistics Reserve (CLS) program launched by the Indonesian government aims to ensure national food security in the face of crises, whether caused by disasters or war. This policy involves various ministries, with the Ministry of Agriculture as the main sector in the food estate program, which focuses on land management to increase sustainable food production. In addition, the regulatory basis for food security in Indonesia is already covered in several laws and regulations that aim to ensure sufficient, safe, nutritious, and affordable food for all levels of society.

3.2. Food Estate Development Strategy as a Strategic Logistics Reserve to Realize Regional Food Security Based on Community Assessment

The Food Estate Program in Indonesia, which began with the Mega Rice Project (MRP2L) in Central Kalimantan in 1995-1999 and the Merauke Integrated Food and Energy Estate (MIFEE) in Papua, experienced major challenges that led to the termination of the previous project. However, the food state developed in Central Kalimantan is now considered to have great potential to support food security, especially in dealing with issues of population growth, food needs, and climate change. The program also aims to reduce dependence on food imports and as a response to the Covid-19 pandemic. Restarted in 2021, the food estate program focuses on development in the provinces of Central Kalimantan, North Sumatra, South Sumatra, East Nusa Tenggara, and Papua, with an emphasis on economic diversification through processing agricultural products and increasing economic resilience.

In the context of the cassava cultivation program, the results of the analysis show difference in perception between farmers and entrepreneurs regarding efforts and obstacles in cassava cultivation. Farmers tend to give a more positive assessment than entrepreneurs, who prioritize aspects of financial and market feasibility. Obstacles faced include lack of market access, price uncertainty, and limited infrastructure support. This program has a large target to produce 40 million tons of cassava as a national strategic food reserve, which is expected to replace tapioca and wheat imports. Although there is hope for this program, major challenges related to obstacles faced by entrepreneurs need to be addressed with more inclusive and evidence-based policies.

Good communication and coordination strategies between the government, communities, and related parties are essential to increase the effectiveness of the

program. For example, in the implementation phase, it is important to ensure a clear flow of information about the program and its benefits, as well as listening to input from the community regarding things that need to be improved or adjusted to local conditions.

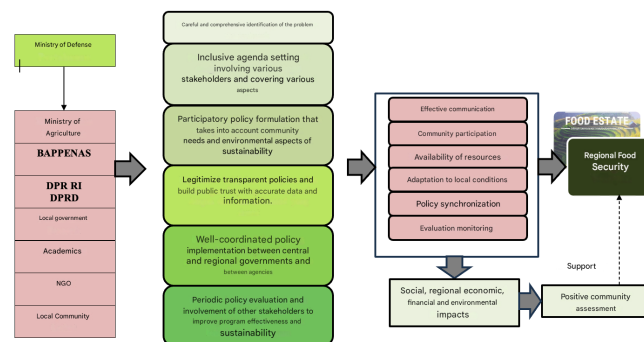


Figure 5 Recommendations for the Food Estate Development Model as a Strategic Logistics Reserve to Realize

Community involvement also includes their involvement in decision-making that will affect the environment and existing resources. In this case, policy formulation that directly involves the community can increase a sense of ownership and responsibility for the success of the program. In addition, the process of evaluating policies that are carried out periodically is also an important factor in ensuring that programs can be adapted and improved if there are obstacles or inconsistencies with conditions in the field.

In addition, transparent and accurate data-based evaluation will help improve program accountability. By involving various parties and considering environmental, social, and economic factors, the Food Estate program can not only support regional food security but also provide long-term benefits for the community and the existing ecosystem.

This public policy model reflects the importance of a comprehensive and inclusive approach in managing large programs such as the Food Estate. The active involvement of all parties involved, from local communities to government agencies, is key to creating sustainable success and reducing the risks that can arise from inappropriate policies or those that do not pay attention to social and environmental dynamics.

From a policy perspective, the sustainability and success of the Food Estate program is highly dependent on collaboration between the various sectors and stakeholders involved. This includes adjusting policies to local conditions, as well as implementing the principles of transparency and participation at every stage from policy formulation to evaluation.

CONCLUSION

This study concludes that the cassava cultivation and Food Estate programs in Gunung Mas Regency face various challenges, especially related to policy inconsistencies, limited infrastructure, and lack of community participation. Various community assessments indicate high dissatisfaction with the

promised socio-economic and food security impacts. The program also faces serious problems such as land conflicts, environmental degradation, and crop failures. Therefore, a more participatory, inclusive, and evidence-based policy reformulation is needed, as well as increased inter-ministerial coordination to ensure the sustainability of the program. By strengthening infrastructure and implementing environmentally friendly agricultural practices, the program is expected to provide long-term benefits for national food security and local community welfare without sacrificing environmental sustainability

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