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Sustainable Food Self-Sufficiency Policy to Increase Food Crop Productivity

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Abstract
Food self-sufficiency remains an important component of Indonesia's national development agenda, especially amid growing challenges such as climate change, land conversion, and population growth. This study examines the implementation of sustainable food self-sufficiency policies and their impact on increasing the productivity of staple crops, particularly rice, corn, and soybeans. This study uses a qualitative-descriptive approach with a case study design. Data collection was conducted through in-depth interviews, policy document analysis, and field observations involving stakeholders in the district agricultural office, agricultural extension workers, and local farmers. This study aims to assess the implementation of existing sustainable food self-sufficiency policies, identify factors causing low productivity of staple crops, and formulate an effective collaboration model for policy implementation. Preliminary findings indicate that although a number of national policy instruments have been localized at the regional level, their implementation is still hampered by infrastructure limitations, a lack of human resources, and weak coordination between agencies. In addition, environmental conditions and the socio-economic limitations of the community have further exacerbated productivity levels.

INTRODUCTION

Food self-sufficiency is an important dimension of food security that refers to the ability of a country or region to meet its local food needs.[1] In a situation of increasing global , food self-sufficiency has become a policy priority.[2] The level of food self-sufficiency is a major factor in determining a country's food security. Food self-sufficiency is the ability to meet domestic food needs through production using one's own resources.[3] In a broader sense, self-sufficiency includes the availability of food in the domestic market, both from local production and imports.[4]

Self-sufficiency is assessed through the ratio of production to domestic consumption, both overall and per agribusiness product. If production is lower than consumption, the shortfall must be met through imports.[5] Conversely, surplus production can be diverted for export. Self-sufficiency analysis also involves market balance, including foreign trade and changes in

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3 Zhang, J., Fang, Y., Zheng, H., Fan, S., & Du, T. (2023). The Spatio-Temporal Evolution of Food Production and Self-Sufficiency in China from 1978 to 2020: From the Perspective of Calories. *Foods*, *12*(5), 1–23.
4 Gulyas, B. Z., & Edmondson, J. L. (2024). The contribution of household fruit and vegetable growing to fruit and vegetable self-sufficiency and consumption. *Plants People Planet*, *6*(1), 162–173
5 Ito, J., & Li, X. (2023). Interplay between China's grain self-sufficiency policy shifts and interregional, intertemporal productivity differences. *Food Policy*, *117*(April), 102446.

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domestic stocks.[6] A trade surplus does not always reflect food self-sufficiency; integrated agricultural policies remain a strategic step that plays an important role in supporting food security while reducing poverty.[7]

Integrated agricultural policies for food security and poverty reduction are not new.[8] Various studies have shown the positive contribution of agricultural policies to poverty alleviation.[9,10,11] The government needs to make comprehensive efforts to promote effective policy instruments in the implementation of poverty reduction and food security policies.[12]

In terms of consumption, Indonesia still faces major challenges in meeting the nutritional needs of its population. Affordable food prices play an important role in determining individual nutritional well-being. Currently, despite improvements, 21.6% of children under five still suffer from stunting. To achieve the target of reducing stunting to 14% by 2024, Indonesia must improve the accessibility and affordability of nutritious food and encourage healthy eating patterns. Based on food price data from 90 cities in 2021 and the March 2021 National Socioeconomic Survey (Susenas), around 68% or nearly 184 million Indonesians cannot afford nutritionally balanced food.

Increasing crop productivity is a key element in achieving sustainable food self-sufficiency, especially amid pressure from land conversion and population growth.[13] With rice's significant contribution to the poverty line, efforts to increase the productivity of rice and other crops are not only relevant to food security but also to poverty alleviation.[14] According to data from the Central Statistics Agency (BPS), the average rice productivity in Indonesia is around 5.2 tons per hectare. However, this figure can still be increased through the application of modern agricultural technologies, such as high-yield seeds, efficient irrigation systems, and agricultural mechanization.

The Indonesian Ministry of Agriculture, in its second revision of the 2020-2024 Strategic Plan, emphasizes the need to reduce the conversion of agricultural land and maintain food production through land protection with spatial planning and control, optimization, rehabilitation, extensification, productivity improvement, and population control. Extensification is carried out by opening up new land, including utilizing weed land such as reeds, which is more economical and environmentally friendly than clearing forests. Although infrastructure is still limited, this step is considered to have potential.

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6 Silva, J. V., Jaleta, M., Tesfaye, K., Abeyo, B., Devkota, M., Frija, A., Habarurema, I., Tembo, B., Bahri, H., Mosad, A., Blasch, G., Sonder, K., Snapp, S., & Baudron, F. (2023). Pathways to wheat self-sufficiency in Africa. *Global Food Security*, *37*(September 2022), 1–12

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8 Gren, I. M., Jonasson, L., Andersson, H., & Knutsson, R. (2024). Economic impact and food security effects of trade disruptions in agricultural products for Sweden. *Agriculture and Food Security*, *13*(1), 1–12

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11 Ullah, I., Dagar, V., Tanin, T. I., Rehman, A., & Zeeshan, M. (2024). Agricultural productivity and rural poverty in China: The impact of land reforms. *Journal of Cleaner Production*, *475*(October), 143723.

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13 Qu, B., Xiao, Z., Upadhyay, A., & Luo, Y. (2024). Perspectives on sustainable food production system: Characteristics and green technologies. *Journal of Agriculture and Food Research*, *15*(December 2023), 100988.

14 Ariyanti, S. D., Nabila, U., Rahmawati, L., Syariah, M. E., Ampel, S., Pascasarjana, D., Syariah, E., & Surabaya, I. (2024). Pemenuhan Kebutuhan Produksi Beras Nasional Dalam Meningkatkan Kesejahteraan Masyarakat Menurut Perspektif Ekonomi Islam Fulfilling National Rice Production Needs in Improving Public Welfare According to an Islamic Economic Perspective. Jurnal Ekonomi Syariah Dan Bisnis, 7(1), 82–93.

Extensification can be carried out independently by farmers or through government programs with full supervision. Potential land for agriculture includes dry land, tidal and non-tidal swamps, and other wetlands, of which 50.19% is located in Other Use Areas (APL), Limited Production Forests (HPK), and Production Forests (HP) (Arista et al., 2023). This enormous potential supports Indonesia's food needs, which are increasingly urgent with a population reaching 278.7 million in 2023.

The great potential of agricultural land in Indonesia, including dry land and tidal swamps, is also reflected in various regions that have similar land resource characteristics to support the development of strategic food crops. These regions are supported by vast agricultural land, both dry land and tidal swamps, which are suitable for the cultivation of various strategic food commodities. Corn, coconut, and rice are the main commodities that are widely cultivated, while plantation sectors such as rubber and oil palm also make an important contribution to the local economy. However, the utilization of these resources has not been optimal, as seen from the low level of utilization of processing industry capacity, especially for rubber commodities, due to price competition and the tendency to sell raw materials outside the region.

Data shows that in 2024, the harvest area for ginger, cardamom, turmeric, galangal, aloe vera, mahkota dewa, and lemongrass decreased compared to 2023. Meanwhile, the harvest area for noni, sambiloto, temulawak, and lime increased in 2024 compared to 2023. Food self-sufficiency in Indonesia ( ) has become a major focus of the government, with the hope that the country will be able to meet its food needs independently without relying on imports. The President and Vice President for the 2024-2029 term, Prabowo Subianto and Gibran Rakabuming Raka, have outlined their commitment in Astacita, one of which is to strengthen the country's defense and security system and promote national independence through self-sufficiency in food, energy, water, creative economy, green economy, and blue economy. Food self-sufficiency is once again one of the programs being prioritized by the new administration. The President and his ministers are optimistic that food self-sufficiency can be achieved within the next 4 to 5 years, despite the many challenges that must be overcome. Currently, Indonesia is still dependent on global supply chains.

From January to June 2024, Indonesia imported 3.05 million tons of rice, 8.44 million tons of wheat, 509.09 thousand tons of corn, and 1.67 million tons of soybeans. The government still faces various challenges, such as land conversion and climate change, which have caused a decline in food production. Therefore, careful policy planning and synergy between ministries and related institutions are essential to achieve food self-sufficiency. The government has planned various policy programs to support the achievement of food self-sufficiency, including continuing the food estate program in Papua and adding harvest land outside Java. This policy aims to increase the production of strategic commodities such as rice, corn, and cassava. The food estate program is a continuation of the previous administration's efforts, but it still faces a number of obstacles and challenges that need to be overcome. The food estate policy faces environmental challenges. The commodities grown on food estate land are generally staple foods such as rice, chili, cassava, corn, peanuts, and potatoes.

Although some regions have shown good results, many have failed and caused ecological damage. This is due to several factors, including the incompatibility between the type of land and the varieties planted, the uneven availability and capacity of human resources to manage the land, and concerns that the land used is forest area that functions as a conservation area. In addition, the food estate policy also faces challenges from socio-economic aspects in the target areas and new land outside Java. The government must ensure that the community is not harmed, especially the indigenous people in the region. Another challenge is climate change and extreme weather, such as the El Nino phenomenon, which also has a negative impact on food production in Indonesia. Recent data shows a significant decline in rice production in

2024 due to drought caused by extreme weather, threatening the adequacy of government rice reserves.[15]

Given these challenges, Indonesia still has much to do to achieve its goal of food self-sufficiency. The first step is to prioritize land intensification policies by providing better seed varieties that are more resistant to extreme conditions and pests and capable of producing higher yields. In addition, the government also needs to continue to ensure the availability of adequate fertilizers and irrigation systems. Through land intensification efforts, the government is expected to be able to boost land productivity and improve the welfare of farmers. Second, there needs to be careful planning and assessment of food estate policies in order to minimize failure and environmental damage. The government also needs to ensure community involvement in managing food estate land, including indigenous communities. This program also needs to pay attention to the integrity of conservation areas so as not to threaten environmental sustainability. Third, encourage food diversification, given that Indonesia is rich in food resources, thereby reducing dependence on certain commodities. Fourth, improving the welfare of farmers as the spearhead of food availability and encouraging regeneration. The government needs to continue its policies of farmer empowerment, farmer insurance, and capacity building for farmers, both individually and institutionally. In addition, efforts are needed to support farmer regeneration.[16]

Based on the assessment results of the 2023 Performance Plan of the Food Security, Agriculture, and Fisheries Agency in South Barito Regency, Indonesia, four programs were evaluated as poor, with an average achievement of only 33.7%. The "Processing and Marketing of Fishery Products" program recorded the lowest achievement (0.31%), while "Food Insecurity Management" had the highest achievement (53.5%), but still below the target. This low achievement indicates the need for more effective strategies, resource optimization, and policy support to increase productivity, diversification, and processing of agricultural and fishery products.

Several programs showed achievements that were far below the target. The Provision and Development of Agricultural Facilities program only achieved 8.2% of the 19.30% target, while the Processing and Marketing of Fishery Products program only achieved 11.41 tons of the 3,626.19 ton target, reflecting the lack of facilities and product processing. The improvement in Community Food Diversification and Security and Food Insecurity Management only reached 8.43% and 9.09% of the target, respectively, indicating the need for more effective strategies. These low achievements require the optimization of infrastructure, technology, and community involvement to support the success of the program.

The 2023 Annual Report of the South Barito Regency Food Security, Agriculture and Fisheries Service shows that rice paddies only reached 42.58% of the target, indicating the need for improvements in efficiency and cultivation technology. Cassava experienced a decline in achievement from 56.65%, indicating potential problems in land management or agricultural inputs. Sweet potatoes had a very low achievement, only 8.27% of the target, although this was a slight increase from the previous year's 3.91%, requiring a specific strategy to overcome significant obstacles in production. Rice fields achieved 52.20% of the target, an increase from the 2022 achievement of 26.22%, but still far from optimal, possibly due to limitations in technology or field land management.

Sustainable food self-sufficiency policies require a holistic and integrated approach, involving crop diversification, the adoption of modern agricultural technologies, and sustainable natural resource management. Crop diversification, as described by Wanger et al.

[15] Masyithah Aulia Adhiem dan Rizki Mona Syawlia (2024). Upaya Mendukung Asa Swasembada Pangan. Kompaspedia.kompas.id, 22 Februari 2024

[16] Masyithah Aulia Adhiem dan Rizki Mona Syawlia (2024). Upaya Mendukung Asa Swasembada Pangan. Kompaspedia.kompas.id, 22 Februari 2024

(2024) , can increase food security by reducing dependence on a single crop and improving farmers' incomes. In addition, an agroecological approach that emphasizes food system diversity, as described by Frison (2016), also offers sustainable solutions for maintaining soil health and biodiversity.

Government policies that support sustainable agricultural practices and greenhouse gas emission reduction, as discussed by Schattman (2020), can accelerate the transition to a more environmentally friendly food system. On the other hand, the implementation of short food supply chains, introduced by Petruzzelli et al. (2023), strengthens the local economy and reduces the environmental impact of food distribution. All these policies must be balanced with wise natural resource management, as researched by Starck et al. (2023), which highlights the importance of phosphorus recycling to reduce dependence on external inputs and ensure future food sustainability.

A study by Gustaman (2019) shows that policies that integrate natural resource management and appropriate agricultural infrastructure can increase food crop productivity at the local level. However, many existing policies tend to pay insufficient attention to the technical aspects and supporting infrastructure needed to ensure the sustainability of agricultural yields. Research by Fadly and Noor (2021) also reveals that better infrastructure development and increased access to agricultural technology can drive significant increases in agricultural yields.

However, a gap in existing research is the limited number of studies focusing on the implementation of sustainable food self-sufficiency policies in specific regions with unique local characteristics and challenges. Most previous studies have focused on food policies at the national or regional level, thus failing to describe the dynamics of policy implementation at the smaller regional level. Research identifying local factors that influence the success or failure of sustainable food self-sufficiency policies is still relatively limited.

This study offers a novel contribution by examining in depth the implementation of sustainable food self-sufficiency policies at the regional level, particularly in efforts to increase food crop productivity in a sustainable manner while taking into account local conditions and potential. This study analyzes the relationship between policies implemented by relevant agencies in the field of food security and agriculture and the increase in food crop productivity, as well as how these policies can be adapted to local needs and challenges. Thus, this study is expected to provide a new perspective on the effectiveness of sustainable food self-sufficiency policies at the regional level, as well as to produce relevant policy recommendations that can be replicated in other regions with similar characteristics. The title of this study is "Sustainable Food Self-Sufficiency Policies to Increase Food Crop Productivity."

RESEARCH METHOD

This research was conducted at the South Barito Regency Food Security and Agriculture Office, Central Kalimantan Province, which is the center for the implementation of food self-sufficiency policies. This location was chosen because of its relevance to the focus of the research, which is to explore the implementation of policies to increase sustainable food crop productivity. This research lasted for 6 months, starting in June 2025 and ending in December 2025. This study used a qualitative approach that aimed to understand the phenomenon in depth through detailed descriptions based on actual conditions in the field.[17] In this study, a qualitative approach was used to analyze facts and phenomena related to the food self-sufficiency policy, including the challenges faced, opportunities that could be exploited, and the views of stakeholders, such as agency officials, farmers, and the community. This approach allows for in-depth exploration to understand how policies are designed, implemented, and

[17] Sugiyono. (2019). Metode Penelitian Pendidikan Pendekatan Kuantitatif, Kualitatif, dan R&D. CV Alfabeta.

evaluated in order to achieve sustainability goals in the agricultural sector. The selection of George C. Edward III's policy implementation theory in this study is based on conceptual, methodological, and empirical considerations, which are strongly relevant to the nature of the problem, the research objectives, and the context of sustainable food self-sufficiency policies in South Barito Regency.

The subjects of this study are individuals or groups directly involved in the implementation of sustainable food self-sufficiency policies in South Barito Regency. The subjects include officials and staff at the South Barito Regency Food Security and Agriculture Agency and farmers in five subdistricts. The object of the study is the main focus or aspect being studied. In this study, the object of research is the sustainable food self-sufficiency policy designed and implemented by the South Barito Regency Food Security and Agriculture Office. The data collection techniques used in this study are observation, interviews, and documentation. The data obtained from observations, interview transcripts, field notes, and various other materials were analyzed and processed using the scenario planning method, with the aim of simplifying the information so that it was easier to understand.

RESULTS AND DISCUSSION

Results

Based on Law of the Republic of Indonesia Number 5 of 2002, State Gazette of the Republic of Indonesia of 2002 Number 18, Supplement to State Gazette of the Republic of Indonesia Number 4180, South Barito Regency was divided into two regions, namely South Barito and East Barito, with an area of 8,830 km² and consisting of 6 (six) sub-districts. Based on South Barito Regency Regulation Number 4 of 2014 concerning the 2014-2034 Spatial Plan for South Barito Regency, the area of South Barito Regency is 702,009.90 hectares , which is divided into 6 sub-districts, 7 urban villages, 86 villages, 161 neighborhood associations, and 695 neighborhood groups.

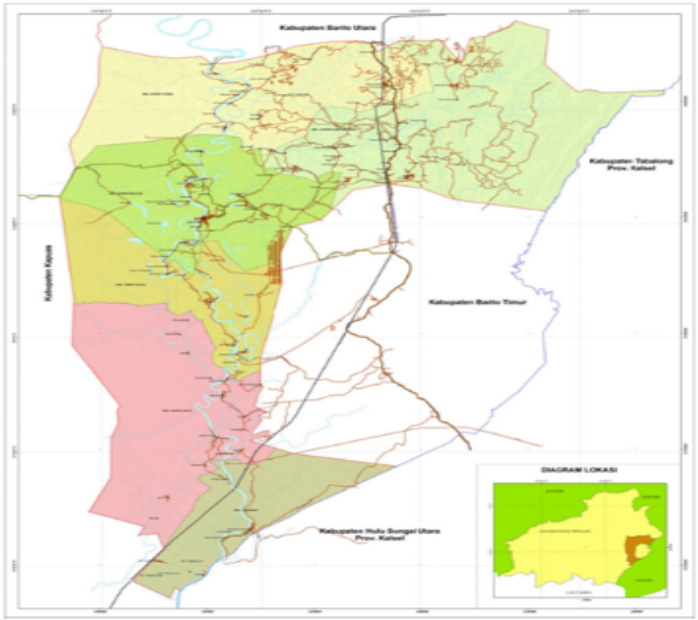

Figure 1. Map of South Barito Regency
Source: Barito Selatan Regency in Figures 2024

Several factors that hinder agricultural development services in Barito Selatan Regency, when viewed from the perspective of spatial planning, include:

a. The lack of agricultural development areas that are in accordance with spatial planning, resulting in the absence of specific and integrated areas for agricultural development in accordance with regulations.
b. The suboptimal development of areas with potential for specific commodities, resulting in low production and productivity levels in certain areas.
c. Special treatment is needed in developing an area into an ideal agricultural area, due to suboptimal and marginal land conditions, such as peatlands, critical lands, and abandoned lands.

The following are the general conditions of Food Security and Agricultural Development in South Barito Regency, which show the performance results of the South Barito Regency Food Security and Agriculture Service during 2017-2022.

Table 1. Number of Farmers (RTUP) and Farmer Groups in Barito Selatan District for the Years 2023–2024

Data Component	Value	Source
Agricultural Household Units (RTUP)	17,058 RTUP	ST2023 – BPS
Registered Farmer Groups	629 Poktan	SIMLUHTAN/LaKIP DKP3 2024
Farmers' Groups Moving Up a Class	465 Farmer Groups (74%)	SIMLUHTAN/LaKIP DKP3 2024
Average RTUP per Farmers' Group	±27 RTUP / farmer group	Calculation based on the above data
Distribution of Poktan per Subdistrict	South Gunung Bintang Awai: 166 Hamlet: 156 North Hilir Karau Jenamas: 42 Hamlet: 115 Hamlet: 84 Kuala: 66	

Source: Barito Selatan District Food Security and Agriculture Office, 2025.

The 2023 Agricultural Census (ST2023) recorded that South Barito Regency has 17,058 Agricultural Business Households (RTUP). This figure reflects the minimum number of farmers directly involved in cultivation and agricultural businesses. Thus, the agricultural sector remains one of the main sources of livelihood for the people of South Barito Regency. The number of RTUPs also indicates the significant potential of agricultural human resources that need to be facilitated through extension policies, capacity building, and improved access to production facilities.

The results of the identification of strategic issues in the field of food security and agriculture in the preparation of planning documents include:

1. The availability and adequacy of quality food for the community is not yet optimal
2. Low production and productivity of the agriculture and plantation sectors
3. Suboptimal achievement of strategic targets

In addition, there are several factors that are not conducive to the development of the agriculture and plantation sectors in improving food security, including:

1. Regulatory Development
2. Strengthening Food Reserves
3. Improving Information on Food Prices, Supply, and Access
4. Addressing Food Insecurity
5. Improving Fresh Food Safety
6. Improving the stability of food supply, prices, and distribution
7. Climate Change

Discussion

Based on the results of research on the implementation of sustainable food self-sufficiency policies in increasing food crop productivity, it can be concluded that these policies have been implemented in accordance with the applicable regulatory framework, but have not yet fully achieved their substantive objectives as expected. The analysis was conducted using Edward III's Policy Implementation Theory framework, which focuses on four main variables, namely communication, resources, implementer disposition, and bureaucratic structure. These four aspects are interrelated and collectively determine the level of success of policy implementation at the regional level.

Empirically, geographical conditions dominated by swampy land, prone to flooding, and limited infrastructure are contextual factors that greatly influence the effectiveness of food self-sufficiency policies. In addition, the socioeconomic characteristics of farmers, who are still dominated by traditional farming patterns, limited capital, and low adoption of modern technology, also influence crop productivity. Therefore, the results of this study not only describe the performance of policy implementation but also reveal the structural and cultural challenges faced in efforts to achieve sustainable food self-sufficiency at the regional level.

1. Policy Communication Aspects

Communication is a fundamental element in the implementation of sustainable food self-sufficiency policies. The results of the study show that, formally, communication mechanisms between the central government, provincial governments, and local governments have been implemented through various channels, such as coordination meetings, program socialization, and the delivery of technical guidelines for the implementation of activities. National programs such as the people's rice field printing program, land optimization, and production facility assistance have become the main medium for communicating policies to local governments.

However, the effectiveness of policy communication is still not optimal. Communication tends to be administrative and top-down, emphasizing the delivery of instructions and program targets rather than a dialogical process that builds understanding and active participation among farmers. Field findings show that some farmers do not yet fully understand the strategic objectives of the food self-sufficiency policy, particularly those related to increasing crop index, diversifying commodities, and applying modern agricultural technology.

Communication limitations are also influenced by vast geographical conditions, uneven regional accessibility, and vulnerability to flooding. These factors hinder the intensity of socialization and policy assistance at the grassroots level. As a result, the food self-sufficiency policy has not been fully translated into changes in behavior and sustainable farming practices. Thus, weak communication is one of the main factors limiting the effectiveness of policy implementation in the study area.

2. Resource Aspects

The resource aspect is a crucial factor in determining the success of implementing sustainable food self-sufficiency policies. The results of the study show that there are still significant resource constraints, both in terms of human resources, funding, and agricultural support facilities and infrastructure.

In terms of human resources, the number of agricultural officials and extension workers is quantitatively adequate, but qualitatively they still face challenges in the form of limited technical competence, an unbalanced workload, and an overly broad coverage area. These conditions mean that the intensity of assistance provided to farmers is not yet optimal,

especially in encouraging the adoption of agricultural technology innovations that are suitable for swampy land.

In terms of funding, limited regional budgets are a structural constraint that directly impacts the lack of support for production facilities, rehabilitation and construction of swamp irrigation networks, construction of farm roads, and procurement of agricultural tools and machinery. In fact, agricultural land requires large and sustainable infrastructure investments to overcome problems such as waterlogging, seasonal flooding, and declining land quality.

These resource constraints have an impact on fluctuations in food crop productivity and the failure to achieve a sustainable rice surplus. Thus, resources are the most dominant obstacle to the implementation of food self-sufficiency policies.

3. Disposition or Attitude of Implementers

From the perspective of disposition or attitude of implementers, the results of the study indicate that policy implementers in agencies dealing with food security and agriculture generally have a commitment and positive attitude towards sustainable food self-sufficiency policies. Implementers demonstrate a high level of compliance with applicable regulations, willingness to implement policy programs, and normative support for policy objectives and directions, reflecting strong acceptance and willingness to support the successful implementation of these policies.

However, this commitment has not been fully matched by a strong level of motivation and drive at the field level. This is due to various external constraints, such as limited resources, the risk of production failure due to climatic factors, and low farmer response and participation in the programs offered. Farmers' resistance to changes in cropping patterns, low interest among the younger generation in the agricultural sector, and uncertainty regarding the results of farming activities pose serious challenges to policy implementation.

These findings indicate that the success of policy implementation is not only determined by the attitudes and commitment of formal implementers, but also depends heavily on the level of acceptance, trust, and active participation of the target group, particularly farmers. Therefore, strengthening the disposition of implementers needs to be accompanied by more participatory and contextual farmer empowerment strategies.

4. Aspects of Bureaucratic Structure

The structural aspects of bureaucracy in the implementation of sustainable food self-sufficiency policies have been normatively supported by the existence of regulations, division of tasks, and relatively clear operational procedures. The organizational structure of agencies dealing with food security and agriculture is designed to accommodate various technical functions, ranging from planning, production, extension, to food security monitoring, so that institutionally it has provided an adequate framework to support the implementation of policies in a systematic and coordinated manner.

However, empirically, various obstacles are still found in the implementation of these bureaucratic functions. Imbalances in workloads between fields, overlapping authorities, and suboptimal cross-sector coordination are factors that hinder the effective implementation of policies. In addition, a bureaucratic structure that tends to be administrative and inflexible slows down responses to field dynamics, such as floods, climate change, and fluctuations in agricultural prices.

Although bureaucratic structures are not a major obstacle, they do not yet fully serve as enablers capable of accelerating, integrating, and strengthening the contextual implementation of policies. Thus, there is a need to improve bureaucratic governance to make it more adaptive and responsive to field requirements.

These results show that the four variables in Edward III's policy implementation theory—communication, resources, implementer disposition, and bureaucratic structure—do not work separately, but rather interact with each other and form a unified policy implementation system. Weak policy communication has a direct impact on farmers' low understanding of the objectives and mechanisms of the food self-sufficiency program, which ultimately reduces the effectiveness of the utilization of resources provided by the government. This condition shows that the availability of resources without effective and dialogical communication has the potential to result in policy implementation that is administrative, symbolic, and does not address real needs at the field level.

Limited resources, particularly in terms of swamp irrigation infrastructure, production facilities, and agricultural machinery, also influence the disposition of policy implementers at the field level. Implementing officials, who in principle are committed to and have a positive attitude toward the policy, often find themselves in a dilemma when they have to implement programs amid limited resources, the risk of production failure due to climatic factors, and low farmer confidence in the success of the policy. This situation has the potential to reduce the motivation of implementers and encourage the implementation of policies that are routine in nature rather than innovative and adaptive to local conditions.

In addition, a relatively rigid and administratively oriented bureaucratic structure further reinforces these limitations. When communication is ineffective and resources are limited, an inflexible bureaucratic structure slows down decision-making and hinders policy adaptation to field dynamics, such as seasonal flooding, climate change, and fluctuations in agricultural prices. Therefore, the limitations of food self-sufficiency policy achievements in South Barito Regency cannot be understood in isolation, but must be seen as the result of complex interactions between policy implementation variables.

The empirical conditions of the region, with its swampy terrain, high rainfall, and vulnerability to seasonal flooding, present unique challenges to the implementation of sustainable food self-sufficiency policies. Policies formulated at the national level with a general approach are often not fully aligned with local needs, which require special technical treatment, long-term infrastructure investment support, and a more persuasive and participatory social approach to farmers. The fluctuating productivity of food crops indicates that policy interventions have not been able to establish a stable and sustainable production system, mainly due to high dependence on climatic factors, limited swamp irrigation functions, and low adoption rates of modern agricultural technologies.

Therefore, food self-sufficiency policies require a territorial-based approach that comprehensively considers local agroecological, socioeconomic, and institutional characteristics. Increased food crop productivity cannot be achieved solely through setting production targets and distributing production assistance, but must be supported by strengthening a participatory and sustainable policy communication system, so that farmers are positioned as subjects of policy, not merely objects receiving programs. In addition, resource strengthening needs to be carried out in an integrated manner through improving the quality of human resources, providing adequate budgets, and developing and rehabilitating agricultural infrastructure in accordance with the characteristics of swampy land.

In addition, the disposition of policy implementers needs to be strengthened through capacity building, the provision of proportional incentives, and realistic and adaptive policy support for field conditions. Implementing agencies need adequate discretion to adjust policy implementation to local dynamics without being hampered by rigid bureaucratic procedures. Academically, this study contributes to the development of public policy implementation studies, particularly in the context of agricultural policy and food security in regions with limited resources and complex agroecological conditions. The findings of this study reinforce the relevance of Edward III's Theory as a tool for analyzing policy implementation, while also

demonstrating the importance of a contextual and adaptive approach in understanding the successes and limitations of sustainable food self-sufficiency policies.

Thus, it can be asserted that the implementation of sustainable food self-sufficiency policies still faces various structural, institutional, and socioeconomic challenges. Weaknesses in policy communication and resource availability are the dominant factors hindering the achievement of policy objectives, while the disposition of implementers and the bureaucratic structure that has been normatively established have not fully functioned as enablers of implementation at the field level. This situation indicates a gap between policy formulation and implementation practices.

The success of future food self-sufficiency policies will depend heavily on the ability of local governments to strengthen cross-sector coordination, increase active farmer participation, and adapt national policies to local contexts in a more flexible and responsive manner. Through an adaptive, collaborative, and needs-oriented implementation approach, sustainable food self-sufficiency policies have a greater chance of significantly increasing crop productivity while promoting sustainable farmer welfare.

CONCLUSION

Based on an analysis of the implementation of sustainable food self-sufficiency policies using Edward III's theoretical framework, it can be concluded that these policies have not been effective in increasing food crop productivity and achieving regional food security ( ). Communication remains weak because it is administrative and one-way in nature, and therefore has not been able to build optimal understanding and participation among farmers. This situation is exacerbated by limited geographical access and infrastructure. The resource aspect is the most crucial obstacle, marked by budget constraints, infrastructure limitations, and the quality and distribution of human resources that are not yet commensurate with the complexity of agricultural problems and the characteristics of swampy land that requires large investments. Although policy implementers have commitment and a positive attitude, this disposition is not yet fully supported by the motivation and support of the target group, especially farmers, who still face climate risks, uncertainty of yields, and resistance to change. Meanwhile, the bureaucratic structure is normatively clear, but empirically it is still not flexible and responsive to field dynamics. Overall, weaknesses in communication and resources are the dominant factors hindering implementation, so adaptive, collaborative, and contextual policy strengthening is needed to optimally achieve the goal of sustainable food self-sufficiency.

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