



Implementation Model of Food Security Policy in the Island Region in Lingga Regency

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Abstract—A major challenge is implementing food security policy in island regions like the Lingga Regency. The research method used is post-positivism, which focuses on explaining and understanding complex social situations. The research results show that Lingga Regency has limited land for agricultural development and relies on the fisheries sector. To overcome these challenges, diversification of food resources, increased agricultural productivity, infrastructure improvements, and awareness and education of society need to be done. Implementing food security policy in island regions requires standards and objectivity, proper resource utilization, and good Disposition implementers. Food security, the policy implementation model for island regions in Lingga Regency, aims to increase agricultural and fisheries production, community involvement, environmental sustainability, and food accessibility. Efforts to strengthen food security in Lingga Regency are also aimed at overcoming stunting problems or malnutrition in children. In the global context, food security policy is essential to sustainable development goals (SDGs) listed in the 2030 agenda.

Keywords: Model; Implementation; Policy; Food Security; Archipelago

I. INTRODUCTION

The implementation of food security policy in island regions can be said to be a significant challenge. This is due to several factors, such as difficult geographical and environmental conditions. Island regions in Indonesia have scattered and separated locations. This condition challenges establishing networks and distribution routes for food supplies. This can lead to a delayed food supply or even a shortage of stock, which can cause food inflation. Another essential condition is the diversity of different food resources on each island that must be maintained and maximized [1], [2].

Providing balanced and sufficient food is a top priority in improving food security in island regions. The emergence of supply problems and the distribution of food products is also a significant problem. Food supply requires careful and thorough planning to avoid stock shortages. According to data from the Central Statistics Agency (BPS), in 2022, our rice import reaches an average of 2 million tons per year. Indonesia has enough potential for rice due to sufficient agricultural land. Still, difficulties in maintaining productivity due to natural disasters and pandemics must be overcome because they have a micro and macro inflation impact [3], [4].

Many efforts need to be made to optimize food security in island regions. One of the primary efforts is to maximize food production by improving the quality of crops. The government needs to enhance the quality of food and increase the quantity of production results on each island that is balanced with existing resource potential [5], [6]. In addition to raising funds for agricultural facilities and facilities, it is also necessary to provide training and exercise so that the technology applied can be good from planting to harvesting. Improving the welfare of farmers is very important in effectively increasing food production.

Providing targeted financial assistance facilitation for purchasing fertilizers, seeds, and farming equipment is an effective solution. This can be done by paying attention to micro and medium agricultural economies, accelerating access for farmers and fishermen to small loans, and in the long run, it is expected to improve the standard of living and the economy of the community in island regions [7], [8]. A healthy community diet is another essential factor in supporting food security programs. Introducing diversity of local foods to children early in this Program is very important.

In addition, ensuring that the food consumed by the community is guaranteed quality, including nutrition and safety, is the government's responsibility. The distribution system must also be maintained because it is imperative that the community can quickly obtain healthy and nutritious food. Areas that are difficult to access or have limited economic access can be a constraint in implementing food security programs. Building infrastructure, such as better connecting highways between each island, is the best solution to reduce food distribution difficulties [9], [10]. The government must be able to build ports and supporting facilities on a remote archipelago so that needs on the island can be quickly and easily fulfilled, as well as build food storage warehouses as a distribution centre that is increasingly accessible to the community [11]–[13].

Food security policy is a form of action the government takes to ensure the availability of sufficient and affordable food in the community. This policy aims to increase agricultural productivity, improve food distribution, and reduce the risk of hunger [14]–[16]. Food security policy is also essential for dealing with climate change, natural disasters, and an increase in population. The implementation of food security policy in island regions is a vital thing to do in Lingga Regency, which has many minor archipelagos

scattered around it. This geographical condition makes access to food inadequate. In addition, agricultural production in island regions is usually low due to less fertile land and a lack of supporting infrastructure.

II. RESEARCH METHOD

Post-positivist research method is a research approach that seeks to overcome weaknesses in positivist paradigms in conducting research, especially in social sciences [17]. Post-positivist paradigms know that social reality cannot be studied and explained like natural reality. Therefore, post-positivist research methods focus on defining and understanding complex social situations. Researchers use subjectivity and personal experience in interpreting the data collected. This allows researchers to understand social conditions more comprehensively, including society's views, values, and culture related to the situation [18].

In addition, the post-positivist research method also emphasizes the importance of paying attention to social and historical contexts in data analysis. It recognizes that research is carried out by researchers who have different interests, values, and backgrounds. This method also considers that knowledge produced from research is sometimes temporary and can be improved by further investigation [19], [20]. Post-positivist research also recognizes that social reality is a product of human interpretation and construction, so the study must consider various participants' perspectives and experiences. Some techniques and tools used in post-positivist research methods include in-depth qualitative data collection, discourse analysis, coverage analysis, and circle study analysis.

III. RESULT AND DISCUSSION

Food Security Conditions in the Island Region of Lingga Regency

In addition, The scattered community in Lingga Regency poses significant differences in water, land, and weather availability, which vary due to soil tilt and texture, plant types, and climate. The Lingga Island region is tropical and has high rainfall intensity, so plant water supply can be considered sufficient [21], [22]. However, over time, the Lingga Island region has experienced a decrease in the quality of its agricultural assets, especially with the proliferation of business and economic development in this region. Nevertheless, the efforts of farmers to maintain regional food security are adequate. Farmers in Lingga Regency have tried to utilize the land as widely as possible with irrigation so harvest production increases and can open up new job opportunities in the region.

According to the map above, the geographical conditions of having many archipelagos make the food security conditions in Lingga Regency quite good. Most of the territory of Lingga Regency consists of an archipelago around it, making it accessible enough for fishing activities and other marine resource management. In addition, Lingga Regency also has sufficient agricultural land to cultivate food crops such as rice and vegetables. However, although the food security conditions in Lingga Regency are promising, several challenges must be faced.



Figure 1. The Geographical Location of Lingga Regency

Source: <https://peta-kota.blogspot.com/2017/01/peta-kabupaten-lingga.html>

Analysis of the Implementation of Food Security Policies in the Island Region of Lingga Regency

The policy implementation concept used is the Van Meter and Van Horn Concept [23]. It is a form of effort to analyze the food security in the island region of Lingga Regency. The explanation can be described and elaborated as follows.

a. Policy Activities

Lingga Regency carries out various food policy activities to ensure adequate food availability for the community in the region. Some of the programs include integrated agricultural development programs, improved quality of food production, empowerment of micro, small and medium enterprises (MSMEs), agricultural infrastructure development, and food security programs. These programs are expected to increase the welfare and prosperity of farmers and the Lingga community in general. Thus, there are two elements in policy activities as follows.

1. Standards and Objectivity

Food security is one of the critical issues that every region must face to ensure the availability and access of the community to sufficient and quality food. Lingga Regency, as an island region with varying geographical conditions, requires appropriate strategies to implement food security policies. In implementing food security policies, standards and objectivity must be the primary considerations. The standards must be regulated according to the local community's needs and the existing geographical conditions.

In Lingga Regency, the existing standards must be adapted to island conditions, such as the fulfilment of salt and seafood needs, which are the primary commodities. In this regard, the government's role in assisting and aiding the community in improving food production and quality is significant. Objectivity must also be a concern in the implementation of food security policies. All aspects must be evaluated objectively, including production, distribution, and consumption. Evaluations must be carried out periodically

and accurately so that the decisions taken can become the correct basis for decision-making in the future.

In addition to standards and objectivity, close collaboration between local governments and various parties, including farmers, fishermen and food entrepreneurs, is also essential. With close collaboration, efforts to increase food production and quality can be done together. This will positively impact the community's availability and access to sufficient and quality food. Several things must be considered in implementing food security policies: standards and objectivity, collaboration between local governments and various parties, and periodic and accurate evaluation.

2. Resources

Implementing food security policies in the island region in Lingga Regency requires an understanding and proper utilization of resources. The resources that can be maximized are as follows:

- **Natural Resources:** The natural environment in Lingga Island, which is still pristine and the sea waters are still rich, can be used as food resources, such as fish, clams, seaweed, etc.
- **Human Resources:** In implementing regional food security policies, human resources must be considered. Involvement of the community in local food planting and management can be done by increasing the capacities of local human resources, whether through training or counselling.
- **Technological Resources:** Using technology in agriculture and fisheries, such as assistance in plant management, can significantly improve the productivity and quality of food resources.
- **Financial Resources:** Financial resources must be carried out by considering the needs and capacities of the community. Increased capital and access to finance can be done through banking and related financial institutions. In implementing food security policies on Lingga Island

b. Factors Affecting Policy Implementation

The implementation of food security policies in the island region of Lingga Regency is a program that aims to increase the self-sufficiency of the community in meeting food needs through effective and efficient programs. Several factors affect the implementation of the island's regional food security program, which can be explained as follows:

1. Communication Interaction Between Organizations and Law Enforcement Activities

Organizations and law enforcement activities are crucial in implementing the island's regional food security policy in the Lingga Regency. Both parties must interact and collaborate to achieve the same goal: to improve the island's regional food security. Communication interactions between organizations and law enforcement activities can occur in several ways, including:

- They provide information and socialization about the island's regional food security policy to the community. The organization can act as a liaison between the government and the community to provide information about the procedure. Meanwhile, law enforcement activities can help disseminate this information effectively and ensure compliance with the policy.

- **Supervision of policy implementation.** Organizations and law enforcement activities can collaborate in overseeing the performance of the island's regional food security policy in Lingga Regency to ensure that the policy is implemented effectively. This will help to improve the quality and effectiveness of the island's regional food security policy.
- **Law enforcement against policy violators.** If there are violators of the island's regional food security policy, both organizations and law enforcement activities must work together to enforce the law against violators. This will have a deterrent effect on violators and encourage other communities to comply with the policy.

With good communication interactions between organizations and law enforcement activities, the implementation of the island's regional food security policy in Lingga Regency can run more effectively and efficiently. The community will also be more educated and actively involved in supporting the policy. Effective communication between organizations and law enforcement agencies is crucial for the success of any regional food security policy. In the case of Lingga Regency, this communication can help ensure that the policy is implemented effectively and efficiently.

One way that communication can help is by providing organizations with information about local law enforcement activities. This can enable them to better coordinate their efforts with these agencies and ensure they comply with relevant regulations and requirements. Another way that communication can help is by educating the community about the importance of the policy. By providing clear and concise information about the benefits of regional food security, organizations can help to build support for the policy among residents.

2. Characteristics of Implementing Organizations

The characteristics of implementing organizations play a vital role in implementing the food security policy in the island region of Lingga Regency. The following are some of the elements included:

- **Organizational Structure.** The organizational structure in implementing food security policy in Lingga Regency must be clear and well-structured to provide support and guidance for all organization members and stakeholders involved. The organizational structure must facilitate decision-making and effective performance to ensure that all tasks and responsibilities of the Program can be carried out well.
- **Leadership.** Leadership in the implementing organization must provide clear guidance and empower all members in implementing the food security policy. Leaders must be able to control the roles and responsibilities of each organization member. These leaders must be able to motivate, inspire, and facilitate all organization members to improve performance and achieve goals.
- **Commitment and Expertise in Human Resources.** Implementing organizations must have human resources (HR) that are competent and have adequate expertise in the field of food security. All members involved must have high dedication and commitment to their tasks. Organizations must focus on technology and innovation, as well as training and development, to strengthen the skills and capacities of HR.

- Collaboration. Collaboration with related parties is essential in implementing the food security program. Implementing organizations must be able to collaborate with other organizations or institutions to increase the involvement of the community, optimize resources, and build strong networks to support food security development.
- Resource Management. Resource management must be well managed in the implementing organization. Focus on innovation and the application of new technology, selection of practical materials and tools, the use of resources on a large scale, and result-oriented work relationships must be emphasized in resource management. Resource management must be continuously improved by ensuring effective and efficient management to maximize the results of food security program implementation.

In implementing the food security policy in Lingga Regency, the characteristics of implementing organizations play a vital role in achieving the desired goals. A clear and well-structured organizational structure, leadership that can provide guidance and empower members, HR expertise and commitment, strong collaboration, and sound resource management must be the focus of the program implementation. With adequate organization characteristics, the food security program is expected to be implemented well and achieve the desired goals.

In addition, the implementing organization should also prioritize the participation and involvement of local communities and stakeholders in the Program. This can be achieved through community engagement and consultation to ensure that the Program is tailored to the specific needs of the local people. Building strong partnerships with local government agencies, NGOs, and private sector organizations is crucial in leveraging resources and expertise to support the Program. Moreover, the implementing organization should prioritize using sustainable and locally appropriate agricultural practices, including local seeds and traditional farming methods. Promoting gender equality and women's empowerment in the agricultural sector is essential to ensure inclusive development and address gender disparities in food security.

Continuous monitoring and evaluation of the program implementation is also necessary to track progress, identify challenges, and make adjustments to improve its effectiveness and sustainability. Overall, a robust and well-functioning implementing organization is critical in ensuring the success of food security programs in Lingga Regency and should be prioritized in program planning and implementation.

3. Economic, Political, and Social Conditions

Lingga Regency has economic, political, and social conditions that affect the implementation of food security policy in the region. Some factors that influence food security in Lingga Regency are as follows:

- Economic conditions: Lingga Regency is a border region in Riau Archipelago Province with limited access. Most

residents work in the agricultural and fisheries sectors, the primary income sources. This affects purchasing power and community accessibility to food. In connection with that, implementing policies to improve regional food security, such as agricultural and fisheries development programs, infrastructure development, and empowering farmers and fishermen, are very important.

- Political conditions: Lingga Regency has proactive leadership in developing regional food security programs. The provincial government continues to strive to improve accessibility and quality of food in the region. However, political factors such as differences of opinion and priorities among political parties can also affect the success of implementing policies.
- Social conditions: The Lingga community has a strong culture related to agricultural and fisheries activities. However, problems are still associated with the accessibility and quality of consumable food. The implementation of food security policies must also consider social factors such as changes in consumptive patterns of society that tend toward consuming instant and imported food.

In implementing the regional food security policy in Lingga Regency, there must be synergy between the provincial government, the community, and the private sector in maintaining the availability, accessibility, and quality of consumer food.

c. Disposition Implementer

Disposition Implementer is the activity carried out by those responsible for implementing the policy that has been established. In implementing agricultural policy in regional areas, the Disposition Implementer aims to provide guidance, coordination, and control in implementing the policy. The Disposition Implementer process starts with appointing delegations responsible for implementing the policy. The appointed boards will coordinate all necessary activities to achieve the policy objectives.

The responsible party will also monitor the activities' progress, evaluate the implementers' performance, and take corrective action if necessary. Disposition Implementer is very important to achieve policy objectives in implementing agricultural programs or food security policies in the island region of Lingga Regency. With an effective Disposition Implementer, activities can run smoothly, resources are well allocated, and policy objectives are achieved effectively and efficiently.

Implementation Model of Food Security Policy in Island Region in Lingga Regency

The purpose of the Implementation Model of the Food Security Policy in Lingga Regency's Island Region is to increase agricultural and fishing productivity in the region while enhancing the availability and access of the population to high-quality and sufficient food. The model utilizes the Van Meter & Van Horn concept theory, as seen in Figure 2.

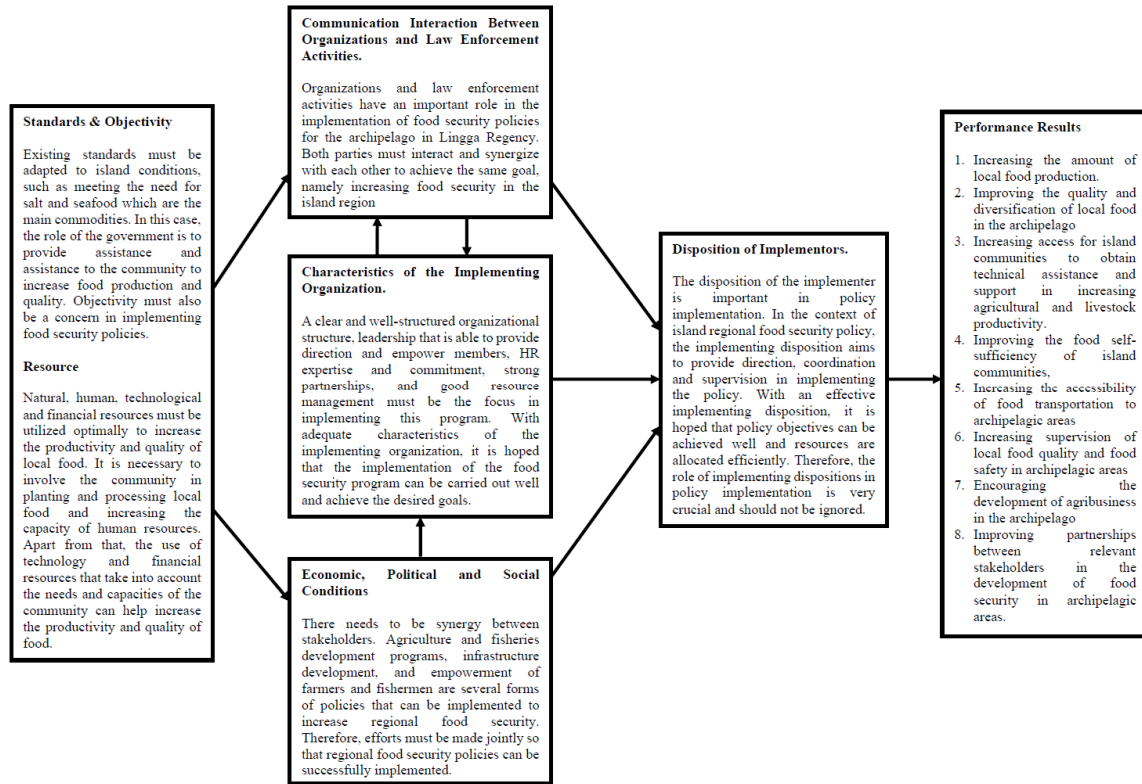


Figure 2. Policy Implementation Model of the Van Meter & Van Horn Concept on Island Regional Food Security in Lingga Regency
Source: Researcher Analysis Results, 2023

The successful implementation of this regional food security policy is expected to bring about positive changes in the entire population of Lingga Regency, remarkably increasing their well-being and quality of life and decreasing their dependence on external food supplies. The specific aims of this policy implementation model include:

- They are increasing agricultural and fishing production to satisfy the population's nutritional needs independently.
- Improving agricultural and fishing products' quality and added value in the local and national market.
- It enhances community involvement in developing regional food security and improving their ability to sustainably manage agricultural and fishing resources.
- They are improving the environmental sustainability and realization of the agricultural and fishing production in Lingga Regency.
- It enhances the accessibility of sufficient, nutritious, and affordable food for the population through various planned, systematic, and targeted food distribution programs.

IV. CONCLUSIONS AND SUGGESTIONS

Lingga Regency is an island that faces challenges in food security, such as dependence on the fisheries sector, limited agricultural land, and inadequate infrastructure. However, steps are being taken to overcome such challenges by diversifying food resources, boosting agricultural productivity, improving infrastructure, and increasing public awareness and education. Standardization and objectivity

must be the primary considerations, resources must be utilized efficiently, and the executor's disposition must be carried out correctly while implementing food security policies in archipelagic areas.

The model for implementing the food security policy for the archipelago in Lingga Regency is designed to escalate agricultural and fisheries production, involving local communities in building regional food security while enhancing the quality and accessibility of community food. Therefore, it is expected to create stable food security, improve the community's economic welfare and enhance public health. Additionally, the strategy for carrying out the food security policy for the island in Lingga Regency includes developing potential local commodity-based food resources with local wisdom as an added advantage. This positive impact strengthens the local economy and the regional cultural identity.

Efforts to strengthen food security in Lingga Regency also target countering the problem of malnutrition and stunting in children. Conflicts of interest can exist between sectors, such as fisheries and agriculture when implementing food security policies. Therefore, an integrated and synergistic approach, including environmental and socio-cultural sectors, is needed. Furthermore, food security policies are essential for sustainable development goals (SDGs) policies, listed in the 2030 agenda in the global context. As an island, Lingga Regency has unique challenges in achieving these goals.

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