

Village Food Security Management in Langkat District

Ikhah Malikhah, Oktarini Khamilah Siregar, Soulthan Saladin Batubara

Abstract

This study aims to analyze food security management in villages in Langkat Regency using a qualitative approach. The focus of the study was on village government strategies, the role of local institutions, and community participation in maintaining food availability and access. Data were obtained through in-depth interviews with village officials, farmer groups, and community leaders, field observations, and a review of village planning documents. Data analysis was conducted using thematic analysis methods to explore patterns, meanings, and practices of food security at the village level. The results indicate that food security management in villages in Langkat Regency is influenced by three main factors: (1) optimizing local potential through agricultural commodity diversification and homestead land utilization; (2) the role of village institutions such as Village-Owned Enterprises (BUMDes), farmer groups, and food barns, which serve as instruments for managing food production and distribution; and (3) active community participation in self-help and mutual cooperation-based food security programs. However, the study also identified several challenges, including limited infrastructure, fluctuating commodity prices, and low utilization of modern agricultural technology. Academically, this study emphasizes the importance of participatory food governance and sustainable development in strengthening village independence. The practical implication is that village governments in Langkat Regency need to strengthen local institutional capacity, develop food reserve systems, and encourage agricultural innovation based on appropriate technology. Thus, village food security will not only serve as an instrument for meeting basic needs but also as a strategy for improving community welfare and regional food sovereignty.

Keywords: *Food Security, Village Management, Local Institutions, Community Participation, Langkat Regency*

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Introduction

Food and nutrition security are crucial strategic issues for every country, including Indonesia. Good food security management is necessary to ensure that all people have access to sufficient, nutritious, and safe food, thereby improving their quality of life and preventing stunting, malnutrition, and other diet-related diseases [1]. In the context of regional development, food security management based on self-reliance and local food security is a relevant approach to strengthening local food systems and reducing dependence on imports.

Food security is a strategic issue in national development, particularly at the rural level, which is the primary food production base. According to the FAO, food security is achieved when every individual has physical, social, and economic access to sufficient, safe, and nutritious food. In the Indonesian context, achieving food security is not only part of agricultural sector development but is also closely linked to village development, as the smallest government unit directly connected to the community [2]. Villages play a crucial role in managing local resources to support food availability, reduce vulnerability to crises, and improve the well-being of their residents.

Langkat Regency in North Sumatra Province is one of the regions with significant potential in the agriculture and fisheries sectors. Villages in this region are known for their diverse food commodities, such as rice, corn, vegetables, and inland fisheries. However, despite this abundant potential, food security remains a serious challenge. Food availability at the village level is often unbalanced with distribution and affordability, resulting in some communities experiencing food insecurity, particularly during lean seasons or when market prices fluctuate. This situation demonstrates that the presence of abundant natural resources does not automatically guarantee sustainable food security [3].

In addition to availability and distribution issues, another challenge faced is the weakness of village institutions in managing food security programs. Several villages in Langkat lack a well-managed food reserve system, leaving them vulnerable to supply shortages during crop failures or natural disasters. The role of village institutions, such as village-owned enterprises (BUMDes), farmer groups, and village food barns, has not been optimal in bridging community needs with local food availability [4,5]. Other contributing factors include the low utilization of modern agricultural technology and minimal assistance from the local government.

Village community participation is also crucial in achieving food security. The culture of mutual cooperation and community self-reliance can be a social force supporting food management in villages. However, in practice, this participation is often not systematically directed and integrated with village development programs. As a result, many local initiatives are partially implemented and unsustainable. This situation highlights the need to develop a participatory, sustainable food security management model that aligns with local village potential. Based on the above, research on food security management in villages in Langkat Regency is crucial. This research is expected to explore existing strategies, identify challenges, and formulate recommendations for strengthening food security based on local institutions and community participation [6]. Thus, this research will not only contribute to the development of knowledge in the field of village development management but also provide practical benefits for local governments and communities in achieving food independence and sovereignty at the local level.

Several previous research [7,8,9] findings are relevant to the conditions in villages in Langkat Regency. The abundant agricultural and fisheries potential aligns with the results of national studies on locally resource-based food availability. However, challenges in distribution, accessibility, and suboptimal food institutions indicate the need for more participatory and sustainable governance strategies. Existing literature supports the importance of strengthening village institutions (village-owned enterprises, farmer groups, food cooperatives) and developing local innovations to strengthen community food security.

Literature Review

Food Security Theory

Food security conceptually refers to the FAO definition, which states that food security is achieved when all individuals, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food to meet their needs for a healthy and active life. Within this framework, there are four main dimensions: (1) food availability, (2) food access, (3) food utilization, and (4) food stability. These four dimensions serve as a foundation for understanding the dynamics of food security at the village level [10]. Food security is built upon four dimensions: availability, access, utilization, and stability [11,12]. The Human Capital Theory [13] emphasizes skill development, while the Resource-Based View [14] sees human resources as a key asset for sustainable advantage. Institutional Theory [15] underlines the role of organizational norms in shaping governance practices. Recent studies suggest that inclusive governance and adaptation to local contexts are vital for sustainable food systems [15].

That village food security in Indonesia is influenced by local food diversification, village institutions, and support from local government policies [16]. Another study, emphasizes the importance of strengthening the role of Village-Owned Enterprises (BUMDes) in maintaining food availability and stabilizing food prices at the village level [17]. A study by Maxwell & Smith stated that food security in developing countries is determined not only by food production, but also by factors such as accessibility, distribution, and price stability [18]. Devereux's (2001) research highlights that risk management and rural communities adaptation strategies to food crises are crucial for maintaining long-term food security.

Food security management

Self-reliance-based food security management emphasizes strengthening local food production and empowering communities to manage food resources. This is crucial for creating sustainable resilience, especially in areas with local food potential. Some strategies that can be implemented include [19,20,21]:

1. Food Diversification
Encouraging communities to utilize a variety of nutrient-rich local food sources, such as tubers, sago, and other local foods. This food diversification not only increases access to nutritious food but also protects local ecosystems from overexploitation of a single crop.
2. Empowering Local Farmers
Capacity building and technology programs for local farmers are crucial for increasing the productivity and efficiency of food production. By strengthening farmers' ability to innovate, they can increase agricultural yields without relying on expensive external inputs, such as chemical fertilizers and imported seeds.
3. Agroecological Development
Agriculture based on agroecological principles combines sustainable agricultural techniques with environmental conservation. This system uses natural methods to manage pests and improve soil fertility, thus creating a balance between food productivity and environmental sustainability.

Food Security Strategy

Regional governments play a crucial role in food security management, particularly in integrating food self-sufficiency programs into regional development plans. Several strategic steps that regional governments can take include [22,23]:

1. Strengthening Agricultural Infrastructure and Food Distribution
Building infrastructure that supports food production and distribution, such as irrigation, farm roads, and harvest storage. Furthermore, adequate transportation access is crucial to ensuring equitable food distribution.

2. Food Risk Management
Developing an early warning system to anticipate potential food crises due to climate change, natural disasters, or global price fluctuations. Regions also need to have sufficient food reserves to face emergencies.
3. Developing Local Markets and Market Access for Local Food Products
Regional governments need to encourage the marketing of local agricultural products through the development of traditional or digital markets, which can connect local farmers directly with consumers, resulting in more stable food prices and fairer returns for farmers.

Research Methodology

This research uses a qualitative approach with a case study method. This approach was chosen because the research aims to deeply understand the food security management process in villages, including social dynamics, institutions, and community participation. Qualitative research allows researchers to explore the meanings, perceptions, and experiences of local actors within a complex social context. The research locations were determined purposively in several villages in Langkat Regency, North Sumatra Province, which have different characteristics in food management. The location selection was based on the following considerations: (1) villages with a production base in agriculture and fisheries, (2) villages that already have food institutions such as village granaries or BUMDes, and (3) villages facing food vulnerability challenges.

Informants were selected using purposive sampling and snowball sampling techniques. Key informants included:

1. Village government officials (village heads, village officials in the development and community empowerment sector).
2. Village food institution managers (village-owned enterprise (BUMDes) administrators, farmer groups, cooperatives, and food barn managers).
3. Community leaders, including traditional leaders, religious leaders, and community members involved in agriculture and fisheries.
4. Village residents who are beneficiaries of the food security program.

The number of informants was determined based on the saturation principle, which occurs when the information obtained is considered saturated and no significant new data is available.

Results and Discussion

Food Security Profile in Langkat

The research results show that villages in Langkat Regency have relatively abundant food potential, both from the agricultural, plantation, and inland fisheries sectors. The main commodities cultivated include rice, corn, cassava, oil palm, and freshwater fish. Some villages also cultivate horticultural crops such as chilies, vegetables, and fruits. However, this potential has not been fully utilized due to limited production facilities, access to capital, and the use of modern agricultural technology. Food availability at the village level is relatively stable during the harvest season but tends to decrease during the lean season, leaving communities dependent on supplies from outside the village. Agricultural villages mainly cultivate rice, corn, and vegetables, while coastal areas rely on fisheries. Despite potential, land conversion to oil palm plantations has reduced food crop cultivation. Many households remain dependent on external markets for staple food.

Several studies [24,25,26] have shown that villages with participatory food governance tend to be more resilient in the face of crises, such as food price fluctuations and natural disasters. This is due to the existence of a food reserve system, diversified food sources, and strong social networks among residents. Therefore, food security management in villages is not only about production management, but also about risk management, adaptation to climate

change, and community empowerment to maintain sustainable food self-sufficiency. Therefore, food security management in villages is a fundamental aspect of rural development. It not only contributes to meeting the community's basic needs but also serves as a crucial pillar in reducing poverty, improving welfare, and strengthening national food sovereignty. Local institutions, such as village-owned enterprises (BUMDes), farmer groups, and village food barns, have been instrumental in supporting food management, but their role has not been maximized. In some villages, BUMDes play a role in providing fertilizer, distributing rice, and marketing agricultural products, but still face management challenges and limited capital. Village food barns are largely symbolic, lacking sustainable management mechanisms. Farmer groups are relatively more active, particularly in providing seeds and coordinating production, although their scale remains limited.

Community participation in food security management manifests itself in the form of mutual cooperation (*gotong royong*), self-help in building simple irrigation systems, and utilizing home gardens for growing vegetables. However, this participation tends to be sporadic and not systematically coordinated within village programs. Some communities still view food programs as the responsibility of the village government, resulting in relatively low levels of active involvement in planning and decision-making. The cultural factor of mutual cooperation is actually a strong social capital, but it has not been optimally integrated into village policies.

Some of the main challenges identified in this research include:

1. Limited infrastructure: inadequate irrigation, damaged production roads, and a lack of agricultural storage facilities.
2. Commodity price fluctuations: selling prices for agricultural products often do not match production costs, thus discouraging farmers from increasing production.
3. Low utilization of technology: most farmers still use traditional methods, resulting in low productivity.
4. Dependence on specific commodities: villages tend to rely on rice or palm oil, making them vulnerable to crop failures and market price fluctuations.

Several villages in Langkat Regency have developed strategies to strengthen food security, including:

1. Diversifying local food crops by planting alternative crops such as cassava and corn to reduce dependence on rice.
2. Strengthening village institutions through revitalizing Village-Owned Enterprises (BUMDes) and farmer groups to play a greater role in food production, distribution, and reserves.
3. Utilizing home gardens for family farming to meet daily food needs.
4. Developing a village food reserve system, although still limited, is beginning to be pursued in the form of grain savings within farmer groups.
5. Collaborating with local governments through agricultural extension programs, seed assistance, and farming capital.

Food security is a key focus of village development, as stipulated in Decree of the Minister of Villages, [27]. This decree mandates that the establishment of food security programs and activities be conducted through village deliberations (*musdes*), involving various business actors in the food sector. The Foundation of the Food Security Program: *Musdes* serves as an important forum for gathering proposals from business groups such as farmers, fishermen, and food processing businesses. The outcomes of these deliberations should include at least the following: The identification of programs that support food security. Food security management in villages is a strategic process encompassing the planning, implementation, monitoring, and evaluation of various programs aimed at ensuring the availability, affordability, and quality of food for all village communities. This concept aligns with the FAO's definition of food security: a condition where all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food, as needed to lead an active and healthy life. In the

village context, food security management is not only related to agricultural production but also encompasses institutional aspects, community participation, and the integration of local government policies.

Practically, village food security management is based on local potential. As the smallest unit of government, villages possess land, human resources, and local wisdom that can be optimized to achieve food self-sufficiency. For example, agricultural land management through food crop diversification, the development of village food barns, and the application of appropriate technology to increase productivity. Furthermore, institutional mechanisms such as Village-Owned Enterprises (BUMDes), farmer groups, and food cooperatives play a crucial role in ensuring effective food distribution and stable food prices at the local level. From an academic perspective, village food security management is also inseparable from the theory of sustainable development and local governance. Developing food security not only addresses temporary food shortages but also ensures sustainable production by considering ecological, social, and economic aspects. Local governance emphasizes the importance of community participation, transparency, and accountability in managing food security programs. In other words, food security in villages is the result of collaboration between village governments, communities, the private sector, and policy support from local and national governments.

Conclusion

Food security management in villages is an integral strategy that combines aspects of production, distribution, institutions, and community participation to ensure sustainable food availability, access, and quality. As the smallest administrative unit, villages play a vital role in maintaining food self-sufficiency by optimizing local potential, strengthening village institutions, and implementing appropriate technology. From an academic perspective, the success of food security management is strongly influenced by the principles of sustainable development and participatory, transparent, and accountable governance. By prioritizing food diversification, food reserve systems, and community empowerment, villages can become more resilient in facing challenges such as climate change, food crises, and price fluctuations. Therefore, village food security management is not only an instrument for meeting basic needs, but also a crucial foundation for improving community welfare, reducing poverty, and strengthening national food sovereignty.

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