

Food Security Policy Analysis through a Multisectoral Approach to Achieve Sustainable Food Security in Central Sulawesi

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Abstract

This study analyzes food security policy in Central Sulawesi through a multisectoral approach aimed at achieving sustainable food security. The research employs a qualitative method with a case study design, integrating primary data obtained through in-depth interviews with key institutional actors and an analysis of regional policy documents. The findings indicate that although Central Sulawesi possesses abundant natural resources and records a rice surplus, disparities in food access persist, as reflected in the increasing number of priority food-insecure subdistricts. The regional government has undertaken various initiatives to strengthen food security, including innovative programs such as Tetra Pandu, the Gerakan Pangan Murah (Affordable Food Movement), and local food diversification involving cross-sectoral collaboration. However, policy implementation continues to face significant challenges, including weak inter-agency coordination, the absence of integrated cross-sectoral data systems, limited logistics infrastructure, commodity price volatility, and vulnerability to natural disasters. From a theoretical perspective, this study contributes to the literature on network governance in regional public policy by highlighting the limitations of hierarchical administrative models in the context of multisectoral food policy. Practically, the study recommends strengthening cross-sectoral data integration, institutionalizing horizontal coordination mechanisms, and reforming governance architecture to promote a more sustainable and adaptive regional food security system.

Keywords: Policy Implementation, Food Security, Multisectoral Approach, Central Sulawesi.

INTRODUCTION

Food security is one of the strategic issues directly related to the social, economic, and political stability of a region. At the national level, Law No. 18 of 2012 on Food emphasizes that food security is a condition in which food is sufficiently available for the state down to the individual level, reflected in the availability of food that is adequate in quantity and quality, safe, diverse, nutritious, equitable, and affordable. Food is a fundamental need that must be met sustainably, encompassing aspects of quantity, quality, safety, nutritional content, and affordability according to people's purchasing power. Food shortages not only affect the economy but can also disrupt social stability and security.

The current global food crisis has become a pressing issue requiring serious attention from the entire international community. Achieving food security remains a challenge for many low- and middle-income countries, including Indonesia (Thow et al., 2019). Each country must develop alternative strategies to ensure food security and guarantee the quality of life of the world's population. According to the Food and Agriculture Organization (FAO), the global level of food insecurity remains above the pre-COVID-19 condition. In fact, over the past four years, progress has stagnated with only marginal improvements (FAO, 1948) (Organi, 1948).

In 2023, estimates based on the Food Insecurity Experience Scale (FIES) indicated that approximately 2.33 billion people struggled to access adequate food, with around 864 million of them facing severe food insecurity. Addressing food insecurity, however, cannot rely solely on the agricultural sector; it requires the involvement of multiple interacting sectors such as trade, infrastructure, health, environment, education, and community empowerment. In general, food security depends on four fundamental prerequisites: (1) adequate food availability, (2) accessibility, (3) proper utilization through storage, preparation, and consumption, and (4) stability in supporting development priorities (Hosseini et al., 2017)

From the perspective of public policy, food security is not only defined in terms of availability but also encompasses access and utilization, particularly in relation to nutritional quality (FAO, 2008; Law No. 18 of 2012 on Food). These dimensions are interrelated and cannot be addressed solely through a sectoral approach. Instead, they

require cross-sectoral orchestration involving agriculture, fisheries, plantations, trade, infrastructure and logistics, health and nutrition, education, environment, social welfare, and disaster management. Food availability refers to the physical presence of food within a given region, which may be sourced from domestic production, imports, trade, or food aid. Food accessibility refers to the ability of households to obtain sufficient food, whether from their own production, purchases, bartering, gifts, loans, or food assistance. Even when availability is adequate, unequal access often persists. Food utilization refers to household use of food and the individual's ability to absorb and metabolize nutrients optimally. This includes storage, preparation, and cooking practices, as well as sanitation, water, fuel use, and cultural dietary habits, especially for groups with specific nutritional needs such as children, pregnant women, and nursing mothers. How to assist the communities to enhance their livelihoods and food security in a sustainable way is one of the greatest challenges we face. Food security strategies should be based on the premise that food insecurity and famine derive from failure of access to food rather than global food shortage (Kotzé, 2003).

Food stability, as emphasized by Gross et al 2000) and FAO (2007), reflects the temporal sustainability of these three dimensions. Instability such as volatile food prices or disrupted supply chains undermines overall food security even when availability, access, and utilization are otherwise sufficient.

Achieving food security in Indonesia does not depend on a single system but rather on the interaction of various subsystems that ensure stable and sustainable food supply (Syukur et al., 2025). Availability must be managed through production, stock, imports, and exports, ensuring adequate supply throughout the year despite seasonal fluctuations. Sectoral approaches have often produced fragmented, short-term interventions, whereas multisectoral approaches allow regional governments to harmonize objectives, indicators, programs, funding, and monitoring within an integrated governance framework.

Central Sulawesi, located in Eastern Indonesia, has abundant natural resources, particularly in agriculture, fisheries, and plantations. Districts such as Parigi Moutong, Banggai, and Sigi are known as regional food barns. However, these potentials have not been fully optimized to establish a sustainable food system (Srifridayanti & Fachrul Reza,

2025). Geographically, Central Sulawesi encompasses diverse ecosystems paddy fields in Palu, Sigi, and Donggala, as well as fisheries and plantations in Parigi Moutong, Banggai, Morowali, and Tolitoli providing a solid foundation to meet local needs and contribute to regional food supply (Central Sulawesi Government, 2021). Despite this potential, challenges remain. The province's Food Security Index (IKP) in 2023 was 81.3, ranking 9th nationally with a surplus of 75,663 tons of rice. However, the 2023 Food Security and Vulnerability Atlas (FSVA) indicated an alarming rise in priority-1 food-insecure districts, increasing from 4 to 25,(PPID PROVINSI SULAWESI TENGAH, 2025) reflecting persistent inequality in food access.

According to Central Bureau of Statistics (BPS) Central Sulawesi (2024) the province still faces multiple challenges: fluctuating production of strategic commodities, climate change, limited irrigation and inputs (seeds, fertilizers), uneven distribution networks, poor infrastructure, high price volatility, limited access to financing, and low diversification of local food sources (Badan Pusat Statistik Provinsi Sulawesi Tengah, 2024). Furthermore, Central Sulawesi remains vulnerable to natural disasters such as earthquakes, floods, and droughts, which further disrupt production and distribution systems. A multisectoral approach has been recognized as essential in the development of public policies aimed at fostering systemic innovation in response to complex and multidimensional challenges, such as household food security, rural development, and environmental change (Saint Ville et al., 2017).

A multisectoral approach is therefore critical in addressing the complexity of food security issues in Central Sulawesi. This requires coordinated action across government agencies, private sector actors, academia, and civil society. For instance, agriculture must integrate with infrastructure to improve logistics, trade to stabilize prices, health to safeguard nutrition, and environmental sectors to ensure sustainability. Without such collaboration, food security policies risk being fragmented and ineffective. Moreover, the pursuit of sustainable food security aligns with the Sustainable Development Goals (SDGs), particularly Goal 2: Zero Hunger. To achieve this, policies must address not only availability but also access, utilization, and long-term stability. In low- and middle-income countries such as Indonesia, which face complex food security challenges, the promotion of locally produced functional foods has become increasingly relevant for building

resilient food systems and achieving the Sustainable Development Goals (Hati et al., 2025). Furthermore, Central Sulawesi must adopt strategies adaptive to climate change, empower farmers with technological innovation, strengthen local food institutions, and promote food diversification based on local resources.

In contrast to studies that rely exclusively on normative document analysis, this research adopts an empirical policy research approach by drawing upon field based data, systematic observation of program implementation dynamics, and comprehensive analysis of policy documents and official local government reports. Such an approach is consistent with findings from prior scholarship, which underscore that the analysis of public policy implementation particularly in complex issue areas such as food security requires robust empirical evidence to enable a more nuanced understanding of coordination processes and inter actor interactions (Klijn & Koppenjan, 2015a). further assert that the study of network governance necessitates rigorous empirical examination of interaction patterns, negotiation processes, and the distribution of power within policy networks dimensions that cannot be adequately captured through formal documentation alone. Furthermore, empirical studies in Indonesia examining the implementation of food security policies indicate that document-based analysis alone is insufficient to explain the dynamics of policy implementation at the local level. For example, a study by Selvia & Widyastuti (2024) employed interviews, observation, and document analysis to reveal variations in policy effectiveness at the sub-district level in East Kotawaringin, which were influenced by local resources and leadership capacity. Another study Dharma et al (2025) conducted in Garut found that multisectoral collaboration had not yet functioned optimally due to challenges in coordination and program synchronization. Similarly, research by Rahmi & Jumiati (2020) on community food reserves reinforces the finding that interviews with implementing actors and field observation are essential to capture the realities of policy implementation at the regional level.

Various studies have shown that weaknesses in food security policy implementation often stem from poor interagency coordination and fragmented data across sectors. For instance, discrepancies between production data and consumption or distribution data result in delayed or misaligned interventions. As Novayanti Sophia

Rukmana (2020) highlights, policy implementation success depends on inter-organizational networks that facilitate resource sharing and joint action among stakeholders. Efficient and effective performance thus requires collaborative use of resources across sectors. Also, a study by Alwi et al (2020) which examined governance networks in the implementation of food security policy in Bone Regency, found that although multiple actors were involved, coordination among them primarily operated through mechanisms of mutual adjustment. This pattern reflected a low level of information and resource exchange, which in turn affected the effectiveness of policy implementation.

Similarly, another regional level study an evaluation of food security policy implementation in Padang City conducted by Sundari & Yusran (2025) revealed that budget constraints, weak cross sectoral coordination, and limited community participation were the principal factors influencing the effectiveness of food security programs. These findings were derived from interviews with government officials, local business actors, and beneficiary communities. Such empirical evidence reinforces the argument that a network governance approach, which takes into account the structure of interactions among actors, is highly relevant for explaining the effectiveness of food security policy implementation in autonomous regions such as provinces and regencies/municipalities.

In particular, there remains limited empirical research that identifies weaknesses in cross sectoral coordination, fragmentation of authority among local government agencies, and barriers to the integration of programs and data within regional food systems. Various policy reports indicate that the failure or limited effectiveness of food security policies at the regional level is often attributable not merely to production constraints, but to issues of governance and institutional coordination.

This research gap underscores the need for an analytical approach capable of explaining how policy actors interact within a network, how resources are exchanged, and how leadership and coordination mechanisms influence the effectiveness of policy implementation. In this context, the network governance framework is explicitly adopted as the primary theoretical foundation of this study. This perspective emphasizes that complex public issues, including food security, cannot be effectively managed through

purely hierarchical or sectoral approaches; rather, they require collaboration among interdependent actors within policy networks. By applying this perspective, the study analyzes policy not only as a regulatory product, but also as a process of interorganizational interaction embedded within a network structure.

The network governance approach is particularly relevant for analyzing this issue because it emphasizes that public policy in complex domains cannot be implemented by a single actor; rather, it must be carried out through collaborative networks involving multiple institutions with interdependent resources. This perspective enables a more comprehensive analysis of patterns of actor interdependence, mechanisms of resource exchange, network leadership, and interorganizational coordination dynamics in the implementation of food security policy. For example, a comparative study by Runi Arrang et al (2024) on the implementation of food security policy in West Papua Province demonstrates that network coordination involving both governmental and non-governmental actors should be examined through interorganizational relationship indicators, such as information exchange, levels of trust, and the distribution of functions within the policy network.

Accordingly, this study offers two principal contributions. First, from an empirical perspective, it addresses a gap in the literature concerning the implementation of multisectoral food security policies at the regional level, particularly in the context of Central Sulawesi, which presents a paradox between production surplus and increasing food vulnerability. Second, from a theoretical standpoint, the study extends the application of the network governance framework in regional food security policy research by emphasizing actor interdependence, coordination mechanisms, and network leadership as key determinants of policy success.

Given the complexity of the challenges and the region's existing potential, an analysis of food security policy through a multisectoral approach in Central Sulawesi is of critical importance. This study explicitly aims to: (1) analyze the implementation of food security policy in Central Sulawesi Province through a multisectoral approach; (2) identify barriers to cross-sectoral coordination and institutional integration within the regional food system; and (3) evaluate the role of network governance in supporting the achievement of sustainable food security.

In line with these objectives, the research seeks to address the following questions: How is food security policy implemented through multisectoral mechanisms in Central Sulawesi? What challenges arise in cross-sectoral coordination? And how does network governance influence policy effectiveness in achieving sustainable food security? This analysis is expected to identify policy gaps and overlaps, formulate cross-sectoral collaboration strategies, and generate practical recommendations to achieve food security that not only addresses short-term needs but also ensures sustainability for future generations.

RESEARCH METHOD

This study employs a qualitative approach to gain an in-depth understanding of the implementation of local government policies in Central Sulawesi in achieving sustainable food security. The choice of qualitative methods is based on the perspective of Sugiyono (2021), who asserts that this approach is appropriate for exploring natural conditions and comprehensively describing social phenomena. Philosophically, this approach is grounded in the post-positivist or interpretive paradigm, which views social reality as complex and inseparable into isolated variables, but rather as something that must be examined holistically and contextually (Ridwan, R., & Tungka, 2024). Furthermore, Fatimah et al. (2023) emphasize that this approach is often employed in research concerning social issues, as it highlights the importance of contextually grounded data. Thus, the use of qualitative methods in this study aims to uncover facts, problems, and contextual field data, particularly regarding the Food security policy in Central Sulawesi.

In qualitative research, the researcher occupies a central position, functioning as the primary instrument in the processes of data collection, analysis, and interpretation (Nasution, as cited in (Sugiyono, 2012). To ensure data accuracy and credibility, the researcher employed interview guidelines, observation protocols, and document analysis as supporting instruments. The literature review process in this study was conducted systematically and in a structured manner in accordance with established stages (Triandini et al., 2019). The steps undertaken included: (a) formulating the research questions; (b) identifying and mapping relevant scholarly articles aligned with the research focus; (c) screening and selecting the retrieved articles based on

predetermined criteria; and (d) synthesizing and analyzing the findings to draw conclusions consistent with the objectives of the study.

This study integrates primary and secondary data to ensure analytical depth and validity. Primary data were obtained through interviews with key informants selected using purposive sampling, based on their strategic positions and direct involvement in the implementation of food security policy. The informants included representatives from the Central Sulawesi Provincial Food Agency, the Regional Development Planning Agency (Bappeda), the Department of Food Crops and Horticulture, the Regional Office of Perum BULOG in Central Sulawesi, and the Regional Inflation Control Team (TPID).

In addition, the researcher conducted limited observations of cross-sectoral coordination activities and the implementation of food stabilization programs. Policy documents were also collected and analyzed, including the Regional Action Plan for Food and Nutrition (RAD-PG), reports on the Food Security Index (IKP), the Food Security and Vulnerability Atlas (FSVA), and various relevant regional regulations. The data sources in this study consist of secondary data, drawn from various official documents such as reports, the Food Security Index (IKP), and relevant scientific publications or previous research findings.

Data analysis was conducted with the aid of Atlas.ti software, which allows for systematic organization of data while maintaining analytical flexibility (Warsono et al., 2022). Atlas.ti is widely recommended in contemporary qualitative research because it assists researchers in managing large volumes of data, conducting systematic coding procedures, tracing relationships among categories, and maintaining an auditable trail of the analytical process, thereby enhancing research credibility (Frieze, 2022). The analysis process began with open coding of interview transcripts, observation notes, and policy documents to identify relevant units of meaning, such as inter-agency coordination, data integration, fragmentation of authority, price stabilization, logistics distribution, and multisectoral collaboration. The subsequent stage involved linking these categories and identifying patterns of interaction among actors, as well as coordination mechanisms that emerged in the implementation of the policy. The final stage was conducted through selective or thematic coding to develop overarching themes grounded in the network governance theoretical framework. The use of

qualitative data analysis software further contributed to ensuring consistency in coding, systematic development of thematic categories, and thorough documentation of the analytical process, thereby enabling scientific auditability (Silver & Lewins, 2017).

To ensure the validity and trustworthiness of the data, this study employed both source triangulation and theoretical triangulation. The importance of triangulation in enhancing the credibility and dependability of qualitative research has also been emphasized by Cooper & Schindler (2002) who argue that the use of multiple theoretical perspectives in the analytical process contributes to more comprehensive interpretations and strengthens the validity of research findings. Through this empirically grounded qualitative case study design, the research does not merely conduct a normative review of policy documents, but also provides an in-depth analysis of the multisectoral implementation of food security policy in Central Sulawesi from a network governance perspective. This approach ensures consistency among the research design, data sources, and analytical procedures employed in the study.

RESULT AND DISCUSSION

A Multisectoral Approach to Achieve Sustainable Food Security in Central Sulawesi

The multisectoral approach in food security policy requires the involvement of various cross-sector actors, including government, private sector, academia, and civil society. The complexity of inter-actor relations aligns with the concept of Network Governance as articulated by Klijn & Koppenjan (2015b) which asserts that the implementation of public policies can no longer be sustained by a single organization, but rather through collaborative networks that share resources, information, and responsibilities. Multisectoral collaboration in food security policy implementation has shown considerable progress, although challenges remain Wanner & Miljand (2025) A review of policy documents and reports indicates growing awareness of the importance of inter-sectoral synergy. Local governments have also initiated participatory planning by involving private actors and civil society. All sectors, both governmental and private, must establish cooperation and collaboration to address the challenges of ensuring sustainable food security for society. Fundamentally, food security aims to guarantee food availability for all segments of the population while improving access to nutritious

and high-quality food. In this regard, local governments play a strategic role through the formulation of policies and programs, while the private sector and communities play important roles in supporting implementation at the grassroots level.

Collaboration between local governments and relevant agencies in Central Sulawesi can be realized through programs to increase agricultural production, develop food distribution systems, manage natural resources sustainably, and provide education and training for farmers and livestock breeders. Technical agencies such as the Provincial Food Office and the Office of Food Crops and Horticulture (TPH) play essential roles in providing technical and logistical support to farmers, including crop protection against pests and diseases. Furthermore, through a multisectoral approach, the local government and related agencies can strengthen the development of local food markets, establish partnerships with micro and small enterprises in the food sector, and expand public access to information on healthy and nutritious food. With strong cross-sectoral synergy, food security in Central Sulawesi is expected to be achieved optimally and sustainably.

Food Security Conditions and Policy Context in Central Sulawesi

At the national level, food security in Indonesia is no longer understood merely as an effort to increase production, but rather as the development of a comprehensive food system encompassing availability, accessibility, distribution, utilization and nutrition, food safety, as well as price and supply stability. (Badan Ketahanan Pangan, 2025) Law Number 18 of 2012 on Food stipulates that food security is a condition in which food needs are fulfilled for the state down to the individual level, reflected in the availability of sufficient, safe, diverse, nutritious, equitable, and affordable food on a sustainable basis, in accordance with religious values, beliefs, and cultural practices of society. (Satria, 2024) The law also broadens the scope of food policy to include food sovereignty and food self-reliance as foundational principles for building a sustainable and equitable national food system for both producers and consumers. The central government further promotes policy integration through the National Medium-Term Development Plan (RPJMN), the National Strategy for Food and Nutrition Security, and by strengthening the role of Regional Inflation Control Teams (TPID) in stabilizing the prices of strategic commodities. In this context, food policy is no longer limited to efforts aimed solely at

increasing rice production; rather, it is conceptualized as a form of multisectoral governance involving the agricultural, trade, logistics, financial, and social protection sectors.

Furthermore, the policy directives of the Indonesian Food Security Agency emphasize that strengthening food security encompasses three principal dimensions: (1) diversified food availability based on local resource potential; (2) food accessibility through supply and price stabilization, as well as the management of food reserves; and (3) food utilization, including consumption diversification and the monitoring of food quality and safety. Seftiyana et al (2024) These strategies involve enhancing cross-sectoral coordination and synergy, strengthening institutional capacity, and promoting community participation in the administration of the national food system.

Both policy frameworks indicate that the national food system is designed not only to ensure domestic production, but also to secure equitable food distribution, fair economic access, and safe and nutritious utilization for all segments of society. This approach is consistent with the evolution of the food security concept in the international literature. The Food and Agriculture Organization (FAO), for example, defines food security as a condition in which all people, at all times, have physical, economic, and social access to sufficient, safe, and nutritious food (Nugroho et al., 2025).

In the context of Central Sulawesi, these policy directions are translated into various regional instruments, such as the Regional Action Plan for Food and Nutrition (RAD-PG), food supply and price stabilization programs, the Affordable Food Movement (Gerakan Pangan Murah/GPM), as well as cross-institutional collaboration through the Regional Inflation Control Team (TPID) and the Tetra Pandu program. The Provincial Government has also designated food security as a regional development priority, particularly in the post-disaster context and in efforts to control food inflation, which contributes significantly to regional inflation rates. Nevertheless, the implementation of these policies takes place within a distinctive geographical and structural context characterized by a vast territory with mountainous and archipelagic topography, alongside distribution infrastructure that is not yet evenly developed.

Data indicate that Central Sulawesi ranks ninth nationally in the Food Security Index (IKP), reflecting relatively strong performance in macro-level indicators of food availability

and utilization. Rice and maize production in recent years has also shown a surplus. However, findings from the 2023 Food Security and Vulnerability Atlas (FSVA) reveal a significant increase in the number of priority districts categorized as food-vulnerable compared to the previous period. This condition highlights a structural paradox between aggregate production achievements and the persistence of regional vulnerability. Interviews with officials from the Provincial Food Agency confirm that the primary challenge lies not in production, but in distribution and accessibility. As one informant stated:

“Production is actually sufficient, even surplus. However, mountainous and island areas are difficult to reach, resulting in higher prices and limited community access.”

This finding is consistent with data contained in the RAD PG documents and regional program implementation reports, which indicate interregional price disparities driven by high logistics costs. In addition, limited road infrastructure, sea transportation, and storage systems exacerbate the risk of supply instability in remote areas. In several districts, the prices of rice and other strategic commodities are recorded as higher than those in the provincial capital, despite the province experiencing an overall production surplus.

Interview findings and policy documents identify dominant categories such as distribution inequality, limited accessibility in remote areas, price disparities, and constraints in logistics and transportation infrastructure. Moreover, issues of data fragmentation among agencies were identified, affecting the accuracy and targeting of policy interventions. These conditions suggest that food security challenges in Central Sulawesi are not merely a matter of production availability, but rather issues of distribution governance, policy integration, and cross-sectoral coordination.

From a network governance perspective, this paradox reflects weak integration among actors in managing the flow of resources, information, and authority. Although various programs exist—such as the Affordable Food Movement (GPM), supply stabilization by BULOG, and TPID interventions to control food inflation coordination among actors remains largely sectoral and reactive. Consequently, food security in

Central Sulawesi is more appropriately understood as a matter of distribution and institutional governance rather than solely an issue of agricultural production.

Institutional Structure and Actor Configuration in Multisectoral Food Governance

Based on available data, most regions of Central Sulawesi remain categorized as moderately food insecure to food insecure (Central Sulawesi Government, 2024). This reflects an upward trend in 2023 compared to 2022. According to the 2023 Food Security and Vulnerability Atlas (FSVA) for Central Sulawesi, the number of districts classified as priority 1 food-insecure areas increased significantly, from 4 districts in 2022 to 25 districts in 2023.

Food vulnerability in Central Sulawesi is influenced by multidimensional factors. One of the dominant challenges is geographic conditions that are difficult to reach due to limited infrastructure, especially in island, inland, and mountainous areas. Accessibility barriers negatively affect the availability, affordability, and utilization of food according to the principles of Diverse, Nutritious, Balanced, and Safe (B2SA).

In response, the Provincial Government of Central Sulawesi initiated multisectoral collaboration through direct interventions in food-insecure areas. One key innovation is the Integrated Food Terminal and Transportation (Tetra Pandu) program (Central Sulawesi Government, 2024). This program involves at least 20 institutions, including the Plantation and Livestock Office, the Cooperative & MSME Office, the Health Office, the Regional Research and Innovation Agency (Brida), the Village Community Empowerment Office, the TPH Office, the Family Planning and Population Office, the Industry and Trade Office, the Women's Empowerment and Child Protection Office, the Food Office, the Social Affairs Office, the Maritime Affairs and Fisheries Office, the Transportation Office, the Provincial Economic Bureau, Tadulako University (UNTAD), the Provincial BPSIT, BPOM Palu, and the NGO Mombine Palu, with the Provincial Development Planning Agency (Bappeda) as the main initiator. However, interview findings suggest that coordination remains partially administrative rather than fully collaborative. An informant from Bappeda stated that:

"Coordination forums exist, but integration across agencies often depends on sectoral priorities rather than shared strategic planning."

This indicates that while institutional interaction exists, the governance structure remains semi-hierarchical, with coordination centered on formal authority rather than horizontal negotiation.

From a network governance perspective Klijn & Koppenjan (2015b) effective networks require resource interdependence, trust, and negotiated coordination. The findings reveal that although actors are interdependent—particularly regarding logistics, budget, and inflation control—the mechanisms of collective decision-making and shared accountability are not yet fully institutionalized. This affects the overall coherence of food security policy implementation.

Multisectoral Program Implementation and Collaborative Practices

In Central Sulawesi, multisectoral efforts are also reflected in the synergy between the local government, BULOG, Bank Indonesia, and law enforcement agencies within the Regional Inflation Control Team (TPID). Regular TPID coordination meetings serve as a platform for policy synchronization, including initiatives such as low-cost markets, strengthening local e-commerce, and pioneering food-related regional-owned enterprises (BUMD) and commodity-based community coffee shops. BULOG Central Sulawesi also targeted the distribution of approximately 13,056 tons of rice under the Food Supply and Price Stabilization (SPHP) program to maintain price stability and purchasing power. These efforts are reinforced through market operations and the Cheap Food Movement (GPM), involving the provincial government, police, and technical agencies. The program, in collaboration with BULOG, ID Food, and other related institutions, aims to provide affordable access to quality food while controlling inflation and ensuring price stability (PPID PROVINSI SULAWESI TENGAH, 2025).

Programs such as Tetra Pandu, Gerakan Pangan Murah (GPM), and TPID initiatives illustrate practical manifestations of multisectoral collaboration. The Tetra Pandu program, involving approximately twenty institutions, represents an innovative attempt to integrate food logistics, transportation, social assistance, and economic empowerment. Similarly, TPID coordination involving BULOG, Bank Indonesia, and law enforcement agencies demonstrates inter-agency synergy in stabilizing food prices. Nevertheless, qualitative findings reveal that collaboration is largely reactive rather than preventive. One TPID informant explained that:

“Coordination intensifies when prices surge, but long-term integrated planning remains limited.”

This suggests that while multisectoral collaboration exists, it operates primarily under crisis driven mechanisms rather than strategic, network based governance planning. Consequently, policy responses tend to be shortterm interventions rather than systemic reforms.

Challenges and Barriers to the Multisectoral Approach in the Implementation of Food Security Policy in Central Sulawesi

At the national level, ministries in collaboration with provincial and district governments continue to strengthen food production through irrigation improvement, targeted distribution of subsidized fertilizers, provision of agricultural machinery, and expansion of agricultural land (Dahiri et al., 2021). These policies are complemented by inter regional cooperation (KAD) that links surplus and deficit areas to achieve more equitable distribution. In addition to production and distribution, nutritional aspects are integrated through stunting convergence programs, which connect the health, education, public works, social, and village community empowerment sectors. Collectively, these initiatives indicate a shift from sectoral approaches toward more comprehensive multisectoral collaboration in ensuring sustainable food security in Central Sulawesi.

Beyond the Tetra Pandu innovation, the Provincial Government of Central Sulawesi also promotes food security through diversification policies. This strategy emphasizes the development of local food resources rooted in cultural heritage, such as Banggai cassava, maize, bananas, breadfruit, taro, sweet potatoes, and other commodities. Food diversification is seen as essential for optimizing the use of local food, improving nutritional quality, and accelerating development toward a more prosperous Central Sulawesi.

Central Sulawesi is endowed with abundant natural resources across agriculture, mining, and fisheries. Fertile land and favorable climate conditions provide significant potential for agricultural and plantation development. Leading commodities include oil palm, cocoa, coffee, rubber, and tropical fruits. With government support and wide market opportunities, agricultural investment is highly prospective. This sector not only

provides food but also supplies industrial raw materials and household incomes, contributing significantly to regional and national economic development.

In terms of staple foods, Central Sulawesi has diverse local crops. Seven major commodities dominate: rice, maize, soybeans, peanuts, mung beans, cassava, and sweet potatoes (AntaraSulteng, 2023b). Among these, rice remains dominant with production reaching 771,525 tons in 2022, followed by maize at 482,117 tons. Nevertheless, the government continues to promote alternative crops such as sorghum and porang in line with national diversification policies, thereby strengthening regional food security.

Challenges of the Multisectoral Approach in Implementing Food Security Policy in Central Sulawesi. One of the key weaknesses in implementing food security policies lies in weak inter agency coordination and the lack of integrated cross sectoral data. For example, production data is not always aligned with distribution and consumption data, resulting in delayed or poorly targeted interventions. Although the Provincial Government has established a legal framework through Governor Regulation No. 6 of 2020 on the Regional Action Plan for Food and Nutrition (RAD-PG) 2020-2024, program integration across agencies (OPD) still faces fragmented mandates, limiting network effectiveness. Another challenge is budget allocation, which is often disproportionately directed toward ceremonial activities rather than substantive program priorities (AntaraSulteng, 2023a).

Additionally, the harmonization of monitoring indicators—such as the Food Security Index (IKP), the Food Consumption Pattern (PPH), and the prevalence of inadequate food consumption—remains inconsistent, making it difficult to evaluate the overall impact of collaboration. Other constraints include limited cross sectoral funding dependent on central programs, inadequate logistics infrastructure in island and mountainous areas, and frequent natural disasters disrupting production and distribution. Socio culturally, the low diversification of food consumption and volatile food prices exacerbate food access vulnerability.

A key concern in food security efforts is the availability and sustainability of non-rice food supply. The central issue is whether current non rice food production can adequately meet market demand if rice is no longer relied upon as the primary staple. Thus, the Food Crops and Horticulture Office must take anticipatory measures not only

to increase the supply of local non rice commodities but also to develop markets to ensure these products are well absorbed by consumers.

These findings align with network governance theory, which highlights the trade offs between efficiency, inclusiveness, and control in collaborative networks. Therefore, strengthening coordination mechanisms, harmonizing cross sectoral data, and integrating food security policies with disaster mitigation and logistics management are essential prerequisites for achieving sustainable food security in Central Sulawesi.

Theoretical and Policy Implications

This study contributes theoretically by demonstrating that food security policy implementation in Central Sulawesi cannot be adequately explained through hierarchical administrative models. Instead, a network governance perspective provides a more appropriate analytical lens to understand actor interdependence, coordination dynamics, and institutional capacity constraints. Empirical findings reveal that the current governance structure remains semi hierarchical and reactive, limiting the potential effectiveness of multisectoral collaboration. Strengthening network governance requires: integrated cross sectoral data systems, institutionalized coordination mechanisms, horizontal decision making processes, reduced sectoral fragmentation, and stronger disaster logistics integration frameworks. From a policy perspective, sustainable food security in Central Sulawesi depends not only on increasing production but on improving governance architecture, strengthening institutional trust, and ensuring coherent multisectoral integration aligned with SDG Goal 2.

CONCLUSION

This study originates from a conceptual and empirical gap in regional food security research, particularly concerning how multisectoral policies are implemented within a network governance framework at the provincial level. Most previous studies have tended to emphasize production aspects or document-based policy analysis without deeply examining the dynamics of inter-actor interaction, resource distribution, and coordination mechanisms that determine policy implementation effectiveness. Through a qualitative case study approach in Central Sulawesi, this research demonstrates that food security challenges do not primarily stem from production capacity, which in

aggregate terms shows surplus conditions and relatively strong Food Security Index performance, but rather from weaknesses in governance integration, institutional fragmentation, and limited cross-sectoral coordination in managing food distribution, access, and price stabilization. Empirical findings indicate that the food security policy network in Central Sulawesi remains in a semi-hierarchical and reactive stage. Although interdependence among actors such as Bappeda, the Food Agency, the Agriculture Agency, BULOG, and the Regional Inflation Control Team (TPID) has been established, mechanisms for collective decision-making, cross-sectoral data integration, and shared accountability have not yet been fully institutionalized. Institutional, technical, economic, and environmental constraints interact in shaping a governance gap between production achievements and equitable food access. Accordingly, this study underscores that the sustainability of regional food security is determined more by network governance capacity than by agricultural production capacity alone. From a theoretical perspective, this research contributes to the development of network governance literature in regional public policy studies by demonstrating that hierarchical administrative models are insufficient to explain the complexity of multisectoral food security policy implementation. The findings reveal that semi-hierarchical characteristics, asymmetrical resource distribution, and weak data integration are key factors limiting policy network effectiveness, thereby enriching understanding of how network governance operates in regions characterized by challenging geography and limited fiscal capacity.

From a practical standpoint, the policy implications of this research highlight the need to transform administrative coordination into institutionalized collaborative governance. Strengthening integrated food data systems, aligning cross-agency performance indicators, institutionalizing operational horizontal coordination mechanisms, and enhancing logistical capacity in remote areas are essential prerequisites for reducing the gap between production and food access. Without governance architecture reform, interventions such as the Affordable Food Movement or price stabilization programs will remain reactive and short-term in nature. This study also has several limitations. First, its focus on a single province limits the generalizability of the findings to other regions with different institutional and geographical characteristics. Second, although interviews and thematic analysis were employed, the range of

informants was largely confined to institutional actors and did not fully capture the perspectives of beneficiary communities. Third, the study does not quantitatively measure the impact of policy implementation on household welfare indicators. Future research should therefore expand comparative analysis across provinces to identify variations in network governance models within regional food security policies. Subsequent studies may also integrate mixed-method approaches to empirically examine the relationship between network governance quality and household-level food security outcomes. Additionally, developing governance models that are more adaptive to disaster risks and climate change constitutes an important agenda for strengthening sustainable regional food security systems. In conclusion, this study affirms that the principal challenge of regional food security lies not merely in production capacity, but in the capacity of network governance to integrate actors, resources, and policies in a collaborative and sustainable manner.

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