

Strategies for Strengthening Network Capacity in the Implementation of Food Security Policies at the Local Level in Indonesia

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ABSTRACT

This study aims to analyze network management strategies in the interactive governance perspective in the implementation of food security policies in North Luwu Regency, Indonesia. The complexity of food security issues requires effective collaboration and interaction among various actors in the policy network. Using a qualitative approach with an explanatory case study design, this research examines seven indicators of network management strategies: network (de-)activating, constitutional reform, (de)coupling games, changing incentives, changing internal structure and position of actors, changing relations, and management by chaos. Data were collected through in-depth interviews, participatory observation, and document analysis, involving relevant stakeholders from government agencies, farmer organizations, and private sector partners. The findings reveal that the application of network management strategies facilitates interaction among network actors and contributes to the success of interactive governance in implementing food security policies. Network (de-)activating involves the engagement of new coalitions and resource mobilization to strengthen cooperation and interaction. Constitutional reform through changes in rules and resources helps develop coordination mechanisms and strengthen policy integration. (De) coupling games demonstrate the separation of strategies carried out by various actors to support a holistic approach in achieving food security. Changing incentives through incentive interventions can increase motivation and active participation of actors in realizing food security. Changing relations indicate changes in cooperative relationships and actor roles to enhance effective collaboration. Management by chaos through the application of principles of flexibility, adaptability, and the ability to manage uncertainty can strengthen interactive governance in facing complex and dynamic challenges. This study recommends strengthening cross-sectoral collaboration, developing a structured incentive system, enhancing the capacity of farmer organizations, and optimizing the use of information technology to improve the success of interactive governance in food security policy implementation.

1. Introduction

Food security is a crucial issue in sustainable development across various countries. Access to sufficient, safe, and nutritious food is a fundamental right of every individual, as emphasized by several prominent researchers. Raponi (2017), Ayala & Meier (2017), and Bourke-Martignoni (2020) reinforce this principle through their studies encompassing philosophical aspects, policy implications, and practical implementation. This concept underscores the importance of quantity sufficiency, consumption safety, and nutritional quality of food, highlighting that food security is not merely a welfare issue but an integral component of human rights and sustainable development. However, achieving food security remains a challenge, especially at the local level. Ataei et al. (2021) identify specific obstacles in rural Iran, including infrastructure problems and technology access. Wickramasinghe (2019) explores regional complexities in South Asia, covering issues of climate change and unequal food distribution. Meanwhile, Barichello (2021) offers a global perspective, linking local challenges with international trade issues and agricultural policies. Various factors, such as climate change, resource limitations, and socio-economic dynamics, affect communities' ability to meet their food needs.

The implementation of food security policies at the local level involves various actors from government, private sector, and civil society. Head (2008) emphasizes the importance of measuring the effectiveness of network-based collaboration in public management. Ilhami & Achmad (2023) underscore the crucial role of actor networks in policy formulation, while Breuer, Janetschek, & Malerba (2019) highlight the complexity of policy implementation in the context of interrelated development goals. These three studies affirm that policy success is determined not only by its substance but also by the ability of actors to interact, collaborate, and synergize their capacities in addressing complex and interconnected challenges in achieving policy objectives. Therefore, strengthening network capacity becomes an important aspect in realizing effective and sustainable food security at the local level (Nicolétis et al., 2019; Kumar & George, 2019; Rahmanto et al., 2021).

The Interactive Governance approach becomes relevant in analyzing the dynamics of actor networks in the

implementation of food security policies. Interactive Governance emphasizes interaction and collaboration among actors in the policy-making and implementation process (Innes & Booher, 2003; Broccardo et al., 2019; Jäntti et al., 2023). This approach recognizes the complexity and interdependence among actors, as well as the importance of communication, coordination, and collective learning in achieving common goals (Torfing, 2012; Emerson et al., 2012; Ansell & Gash, 2018; Kujala et al., 2021).

In the context of implementing food security policies at the local level, Interactive Governance analysis can help understand how actor networks are formed, how they interact, and how they can strengthen collective capacity in addressing food security challenges (Vervoort et al., 2014; Saint Ville et al., 2017; Pahl-Wostl, 2019; Santo & Moragues-Faus, 2019). This analysis can also identify factors influencing network effectiveness, such as trust, commitment, and clear role distribution among actors.

North Luwu Regency, as one of the regions in Indonesia facing food security challenges, becomes an interesting location to study strategies for strengthening network capacity in the implementation of food security policies. Nugraha et al. (2019) found the importance of networks in sustainable cocoa agribusiness systems, which are crucial for the local economy and food security. Bulkis et al. (2023) demonstrate the vital role of income diversification and women's empowerment through non-agricultural entrepreneurship in strengthening food security. Meanwhile, Estiningtyas & Rahman (2020) emphasize the urgency of building resilient networks to face climate change challenges for sustainable food sovereignty. With its unique geographical, socio-economic, and institutional characteristics, North Luwu can provide valuable lessons on how actor networks can be strengthened to achieve better food security at the local level.

This research is important to provide a deeper understanding of strategies for strengthening network capacity in the implementation of food security policies at the local level. The results of this study can contribute to the development of more effective policies and practices in addressing food security challenges, particularly in North Luwu Regency and other regions with similar characteristics. This research can also enrich the literature on Interactive Governance in the context of implementing food security policies at the local level.

This study specifically examines the application of the Interactive Governance approach in analyzing strategies for strengthening network capacity in the implementation of food security policies at the local level, particularly in North Luwu Regency. This research seeks to fill the knowledge gap on how actor networks can be strengthened to achieve better food security, considering the complexity and dynamics of interactions among actors in a specific local context.

2. Method

This research employs a qualitative approach with an explanatory case study design (Yin, 2018). The explanatory case study was chosen to investigate the phenomenon of interactive governance in the implementation of food security policies in North Luwu Regency, Indonesia. This approach allows for an in-depth exploration of contemporary phenomena in real-life contexts (Yin, 2018). The study was conducted in North Luwu Regency, South Sulawesi Province, Indonesia.

Research participants were selected using purposive sampling technique (Patton, 2015) with the following criteria: (1) involvement in the implementation of food security policies in North Luwu; (2) possession of knowledge and experience related to interactive governance in the context of food security. Participants included representatives from the Department of Fisheries and Food Security, the Department of Agriculture, Sub-district Extension Teams, Heads of Farmer/Women Farmer Groups, Heads of Combined Farmer Groups, and Subsidized Fertilizer Agents/Shops.

Data were collected through semi-structured interviews, participatory observation, and document analysis (Creswell & Poth, 2016). In-depth interviews were conducted with research participants using a prepared interview guide. Participatory observation was carried out by observing interactions between actors in the implementation of food security policies. Analyzed documents included policies, reports, and other relevant documents.

Data analysis employed a thematic analysis approach (Braun & Clarke, 2006). The analysis stages included: (1) data familiarization; (2) initial coding; (3) theme searching; (4) theme reviewing; (5) defining and naming themes; (6) report writing. The analysis was conducted iteratively until data saturation was achieved.

Data validity was ensured through data source triangulation, member checking, rich and thick description, and

clarification of researcher bias (Creswell & Creswell, 2016). Triangulation was performed by comparing data from various sources. Member checking involved confirming findings with participants. Rich description provided detailed accounts of the context and findings. Researcher bias was clarified through reflexivity.

3. Results and Discussion

Network (de-) Activating

Network management strategies, particularly the network (de-)activating indicator in the implementation of food security policies in North Luwu Regency, demonstrate the involvement of new coalitions or actors in the network. For instance, private agricultural extension workers collaborate with government extension workers to facilitate farmer institutions. Coordination and resource mobilization among actors are conducted through meetings at the Agricultural Extension Center in each sub-district. The implementation of food security policies also involves various other Regional Apparatus Organizations, such as Bappeda (Regional Development Planning Agency), BPS (Central Bureau of Statistics), BMKG (Meteorology, Climatology, and Geophysical Agency), and the Health Department, which utilize the Desirable Dietary Pattern (PPH) instrument as a guide in making food security-related policies.

Network interdependence is evident from the interconnectedness and mutual influence among entities, aligning with the interactive governance perspective. The network (de-)activating indicator helps address differences of opinion and promotes cooperation through interaction. This finding is consistent with Turrini et al. (2010), who identified various determinants of network effectiveness, including the ability to strategically activate and deactivate relationships among network members. Meanwhile, Provan et al. (2005) emphasize the importance of network analysis in strengthening community partnerships, demonstrating how understanding relationship structures can help community leaders enhance inter-organizational collaboration.

The ability to effectively manage network activation can improve coordination, align different objectives, and ultimately enhance network effectiveness in addressing complex public issues. Consequently, this can improve network performance in implementing food security policies in North Luwu Regency.

Constitutional Reform: Changing Rules and Resources

Network management strategies, particularly the indicator of constitutional reform: changing rules and resources in the implementation of food security policies in North Luwu Regency, demonstrate changes in rules and resources. Rule changes refer to adjustments in policy frameworks and coordination mechanisms within the network. For instance, the placement of one or two Agricultural Extension Workers (PPL) in each village according to the village's potential, as regulated by the Minister of Agriculture Regulation No. 67 of 2016. These rule changes help develop coordination mechanisms in interactive governance, improve collaboration among actors, facilitate information exchange, and strengthen policy integration.

Meanwhile, resource changes encompass budget allocation, the use of new technologies, and the utilization of existing resources in the implementation of food security policies in North Luwu Regency. This finding is supported by Metz & Glaus (2019), who demonstrate that rule changes leading to more integrated policy design can enhance coordination across policy sectors, territorial entities, and decision-making levels.

(de) Coupling Games

Network management strategies, particularly the (de)coupling games indicator in the implementation of food security policies in North Luwu Regency, demonstrate the separation of strategies employed by relevant actors. The Department of Fisheries and Food Security focuses on food availability, distribution, consumption, and safety, with food storage programs and food aid initiatives. The Department of Agriculture concentrates on enhancing the institutional capacity of farmers through training, extension services, regular meetings, field schools, and mentoring to increase productivity and promote sustainable agriculture.

Farmer institutions, such as Combined Farmer Groups (Gapoktan) and Farmer Groups (Poktan), facilitate problem-solving, exercise policy discretion in managing food reserves, promote crop diversification, utilize local resources, and adapt technologies. Meanwhile, farmer shop partners play a role in supporting transparency in the distribution of subsidized fertilizers to farmer groups.

This separation of strategies demonstrates a holistic and diverse approach in supporting local food security and achieving broader food security policy success. Slade (2013) provides strong support for the notion that the

separation of strategies and a holistic approach are crucial in supporting local food security and achieving broader food security policy success. This approach allows for adaptation to local contexts, involves various levels of government, and considers the diverse needs of different community groups.

Changing Incentives

Network management strategies, particularly the changing incentives indicator in the implementation of food security policies in North Luwu Regency, demonstrate the provision of incentive interventions to farmer institutions, such as Women Farmer Groups (KWT) and Farmer Groups. These incentives include assistance in the form of agricultural tools and machinery (alsintan), seeds, fertilizers, tanks, and other production facilities (saprodi).

These incentives not only function as material support but also psychologically increase farmers' motivation to sustainably enhance food production and improve access to welfare through increased agricultural product value. Well-designed incentive changes can encourage behavioral changes in farmer institutions to actively participate in realizing food security.

The changing incentives indicator can support interactive governance in achieving successful implementation of food security policies by strengthening collaboration, increasing engagement, enhancing interaction, and stimulating innovation in achieving sustainable food security goals. However, changing incentives must be carefully designed to ensure that they not only benefit powerful actors but also protect the interests of more vulnerable parties (Florini & Pauli, 2018).

Changing Internal Structure and Position of Actors

Network management strategies, particularly the indicator of changing internal structure and position of actors in the implementation of food security policies in North Luwu Regency, have not yet shown significant changes. The complexity of food issues involves various stakeholders from government, private, and community sectors, requiring coordination and integration among related units. Although changes in internal structure and actor positions have not occurred explicitly, the coherence and integration among various sectors and related departments can be considered an initial step in strengthening interactive governance in food security policies. However, it is important to continuously monitor and evaluate the dynamics of relationships between actors and strengthen cross-sector collaboration to enhance responsiveness, effectiveness, and sustainability of food security in North Luwu Regency. Mattioni et al. (2022) reveal the importance of the strategy of changing internal structure and position of actors in food security policies, as local authorities can drive change from within through the use of internal power, discursive tools, material and organizational resources, and reorientation of resources.

Changing Relation

Network management strategies, particularly the changing relations indicator in the implementation of food security policies in North Luwu Regency, demonstrate shifts in cooperative relationships and actor roles. Firstly, the proposal to entrust food reserves to Bulog (National Logistics Agency) rather than Gapoktan (Combined Farmer Groups) indicates the introduction of a new actor in the food storage program system and the exclusion of Gapoktan's role. This reflects a drive to strengthen cooperative relationships with institutions that have greater roles and capacities in food management. Secondly, the transfer of the Sustainable Food Yard (P2L) program from the Department of Fisheries and Food Security to the Department of Agriculture indicates a change in governmental relations regarding food security activities. These changes in relations demonstrate flexibility and adaptability in responding to evolving dynamics.

Food systems face increasing pressure from dynamic and interactive environmental, political, and socio-economic factors. This highlights the need for changing relationships among actors to address this complexity and the necessity for networks that can better adapt to uncertain pressures (Pereira & Ruysenaar, 2012). By considering these changing relations, it is expected that interactive governance in the implementation of food security policies can be enhanced, thus playing a crucial role in improving effective collaboration and more successful policy implementation in supporting food security in North Luwu Regency.

Management by Chaos

Network management strategies, particularly the management by chaos indicator in the implementation of food security policies in North Luwu Regency, demonstrate the application of principles of flexibility, adaptability,

and the ability to manage uncertainty in facing complex and dynamic situations.

The local government shows responsiveness to changes in food market price conditions by monitoring markets and identifying necessary intervention measures, such as the Affordable Food Movement involving cooperation with traders. In response to flood disasters, the local government implements the Food Storage program by entrusting Government Food Reserves to Combined Farmer Groups (Gapoktan) as a responsive and adaptive measure. Cultural and collaborative practices in farmer institutions, such as "Tudang Sipulung" and "Buka Bumi", also contribute to problem-solving and enhancing food security through active interaction among stakeholders. Thus, the application of management by chaos principles can strengthen interactive governance in the implementation of food security policies in North Luwu Regency, supporting collaboration between local government, communities, relevant institutions, and the private sector to address complex and dynamic challenges, and achieve success and sustainability in food security.

This aligns with research findings by Leeuwis et al. (2021), which emphasize that food system transformation is a socio-political challenge characterized by competing perspectives and limited opportunities for centralized control. Food systems are complex multi-dimensional entities, requiring approaches that anticipate and accommodate inherent social tensions. This conceptualization is consistent with the principles of chaos-based management, which recognize the inherent uncertainty and complexity in systems.

4. Conclusion

Based on the analysis of network management strategies across seven indicators in the implementation of food security policies in North Luwu Regency, it can be concluded that the application of network management strategies from an interactive governance perspective can facilitate interactions among network actors in achieving successful interactive governance. The network (de-)activating indicator shows the involvement of new coalitions and resource mobilization to strengthen cooperation and interaction. Constitutional reform through changes in rules and resources helps develop coordination mechanisms and strengthen policy integration. (De)coupling games demonstrate the separation of strategies by various actors to support a holistic approach in achieving food security. Changing incentives in the form of incentive interventions can increase motivation and active participation of actors in realizing food security. Changing relations show shifts in cooperative relationships and actor roles to enhance effective collaboration. Management by chaos through the application of principles of flexibility, adaptability, and the ability to manage uncertainty can strengthen interactive governance in facing complex and dynamic challenges. To improve the success of interactive governance in the implementation of food security policies in North Luwu Regency, the following recommendations are proposed: Strengthen cross-sector collaboration and coordination among actors through effective communication platforms, Develop a more structured and sustainable incentive system to encourage active participation of actors, Enhance the institutional capacity of farmers through intensive training and mentoring and Optimize the use of information technology to improve transparency, accountability, and responsiveness in interactive governance. Future research could explore factors influencing the effectiveness of network management strategies in different contexts, as well as analyze the long-term impact of implementing these strategies on food security and community welfare.

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