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Building Local Food Security in Indonesia: The Dynamics of Institutional Entrepreneurship Networks in Policy Implementation

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ABSTRACT

Background: This study examined institutional network entrepreneurship, emphasizing the institutional structure and actor strategies to promote resilient food systems in two regions of South Sulawesi Province, Indonesia. **Methods:** The success of the Sustainable Food Yard Program (P2L), as evidenced by case studies and thematic analysis, hinges on two primary factors: the robustness of its institutional structure and its effectiveness of actor strategies. The robust institutional framework demonstrates sufficient access to agricultural resources, stable policies, and effective management of the Women Farmers Group (KWT) through participatory practices. Effective actor strategies emphasize collaboration among stakeholders, enhancement of developmental capabilities, and creativity in marketing. **Results:** This study identifies various challenges in implementing of P2L, including limited resource availability, inconsistent governmental support, and internal dynamics within KWT. Therefore, a more cohesive and extensive strategy integrating a network of entrepreneurial institutions is necessary to attain local resilience and food sustainability. **Conclusion:** A solid institutional structure that responsive to local needs and collaborative actor strategies are essential in overcoming local food security challenges. Sustainable local food security requires a more integrated and collaborative institutional entrepreneurial network approach.

Introduction

The sustainability of local food security necessitates consideration of the unique food context of each location in Indonesia. The country's social, economic, and cultural variety is crucial as it affects community support for food policies (Siankwilimba *et al.*, 2024). This variability necessitates strategic players, or

institutional entrepreneurs capable of tailoring food policies to local circumstances. To ensure the efficacy of this policy, a coalition of stakeholders within food security institutions is essential for resource mobilization and the establishment of strategic alliances (Bruton *et al.*, 2010).

Institutional entrepreneurship networks are an

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integrated approach to local food security governance. In the context of food policy, this perspective involves interaction and collaboration among various actors, including individuals, groups, and organizations, who actively seek to change the rules, norms, and practices in the local food security (Battilana *et al.*, 2009). The main task of institutional entrepreneurs is to build, change, and transform institutions to achieve the desired food policy goals. They are more focused on policy implementation and also on fundamental changes in food rules and institutional structures.

The study of institutional entrepreneurship networks in food security is a combination of institutional entrepreneurship theory and a network approach and its relationship with food security. The network approach in this process is a perspective that still needs to be explored in the food security literature and introduces a new dimension to understanding how the structures and strategies of institutional actors address food challenges at the local level. Previously, research has focused more on institutional entrepreneurship in a global or international context (Greenwood *et al.*, 2011). The literature review by Dacin *et al.* (Dacin *et al.*, 2010) also states that institutional entrepreneurship studies often focus on significant social changes or global movements.

Institutional structures of local food security are essential in the institutional entrepreneurship network that can strengthen food security in Indonesia, a country with complex geographic and socioeconomic challenges. These institutional structures help coordinate between local governments, communities, and the private sector and play a vital role in translating national policies into concrete actions appropriate to local conditions (Timmer, 2014). In addition to these structures serving as the main foundation for local food security (Porter *et al.*, 2015), the structures also strengthen community resilience by building a robust and adaptive food system to climate change, economic crises, and natural disasters.

In policy implementation, strategic actors often leverage their resources and capabilities through the formation of coalitions and lobbying. These

actors also influence various levels of government to gain support for their policy initiatives. Actors in the collaborative network enable the leveraging of collective strength and shared resources to achieve the desired outcomes (Klijn and Koppenjan, 2015).

Policy implementation in the context of networks requires collaboration with other actors who have different interests. Agranoff and McGuire (Agranoff and McGuire, 2001) emphasize that the success of implementation depends on the actors' ability to build effective relationships, exchange information quickly, and adjust actions based on feedback. Negotiating and managing conflict is essential to bringing policy agendas into complex networks.

The main obstacles to implementing food policies in Indonesia are coordination between the central and regional governments and limited resources (Waluyo, 2023). As a result, implementing the Sustainable Food Yard Program (P2L) focuses on fulfilling food at the family level, which should have been able to run more optimally. This problem is getting worse, with the high number of poor people (26.36 million, 9.57%) in 2022 who need food assistance from the government (Central Agency of Statistic 2023). This problem worsens because the country increasingly depends on rice imports, reaching 407.74 thousand tons in January-December 2021 (Statistic, 2022). Therefore, this study explores how institutional structures and actor strategies play a role in implementing local food security in Indonesia.

Literature review

Local food security governance

Local food security governance is an important approach in addressing the increasingly complex challenges of food security. This approach involves the management and coordination of policy actors and resources at the local level for sustainable access to safe, and nutritious and sufficient food for communities (Klijn and Koppenjan, 2015). This approach involves multiple actors who can respond more quickly to

the needs and vulnerabilities of local communities. Therefore, it supports community involvement and ownership in food policy (Ericksen, 2008, Godfray *et al.*, 2010).

This approach also emphasizes decentralization of decision-making, which gives local governments greater authority to determine food policies appropriate to their local needs, as this allows local governments to respond more quickly to changing food conditions (Candel and Biesbroek, 2016). In addition, the sustainability of local food resources and social equity are key concerns so that all citizens, regardless of socioeconomic status, have equitable access to safe and nutritious food (Allen, 2010).

In this approach, local governments play a major role in shaping policies that support food availability through subsidies, agricultural assistance, natural resource regulation, and food infrastructure development. This strengthens the food security system that allows it to respond to specific local conditions (Walker *et al.*, 2004).

Effective local food security governance requires on collective natural resource management that maintains local food production (Ostrom, 2020). However such management faces the challenges of climate change, which requires crop diversification strategies and weather risk management to maintain stable food production (Adger *et al.*, 2018). This can be achieved if there is adequate infrastructure so that food procurement and distribution are guaranteed. Good infrastructure allows for rapid distribution from production areas to consumption, while inadequate infrastructure can hinder market access for farmers and threaten food stability (Barrett, 2010, Pingali, 2007).

Institutional entrepreneurial network in food security

Institutional entrepreneurship networks in local food security combine institutional entrepreneurship theory and network theory in the context of local food governance. This perspective holistically explains the roles of actors and their networks in the institutional structure of local food security. Network theory offers a framework for

examining the dynamics and structure of relationships between entities in the local food system (Borgatti and Halgin, 2011), while institutional entrepreneurship explains the role of individuals or groups that establish or alter institutional rules and norms (Battilana *et al.*, 2009).

The advantages of both theories are combined in this viewpoint to demonstrate how institutional entrepreneurs might influence local food governance through their social and financial networks. Utilizing network theory, institutional entrepreneurs can discern pivotal actors and interactions within the local food system that require enhancement or fortification to attain local food security (Borgatti and Halgin, 2011). Centrality and broking centrality ascertain the strategic positioning of these actors in effecting change.

Institutional entrepreneurs can utilize their networks to form coalitions and secure backing from many stakeholders, including farmers, distributors, governments, and consumers. Moreover, robust networks can surmount resistance and obstacles to institutional change by the dissemination of knowledge and resources (Bednar, 2016).

This approach emphasizes the significance of institutional frameworks and the strategies of actors. Institutional structures function as collaborative interactions among actors engaged in modifying or establishing institutional rules, norms, and practices to attain strategic objectives. Collaborations may be formal, encompassing agreements and policies, or informal, characterized by relationships founded on trust and social interaction (Ostrom, 2020, Vermeulen *et al.*, 2014). Informal relationships, which are flexible and adaptive to environmental changes, also play an important role in supporting the effectiveness of local food security (Boonstra, 2016).

In addition, resource mobilization strategies, including financial, human, technological, and information resources, are critical in supporting institutional change. The effectiveness of this change depends on the right combination of

resources to strengthen the capacity of institutional networks to face dynamic environments (Dorado and Ventresca, 2013, Pacheco *et al.*, 2010).

Materials and Methods

Research approach

This study uses a qualitative approach to explore the institutional structure and strategies of actors in the institutional entrepreneurial network in implementing local food policies in Indonesia. With this approach, researchers can understand the meaning, perceptions, and subjective experiences of various parties such as the government, the private sector, and members of the Women Farmers Group (KWT) who are stakeholders in the Sustainable Food Yard Program (P2L) (Asmorowati *et al.*, 2024).

Research design

This study adopts a case study design focusing on implementing the P2L Program in Bone Regency and Maros Regency, two leading food-producing areas in South Sulawesi. These areas are interesting to study because even though they act as food barns, the food security index and poverty levels show relatively low rankings compared to other areas in Indonesia. Bone Regency, for example, is in the 79th position with a score of 83.86, and Maros Regency is in the 81st position with a score of 83.70 out of 416 regencies in Indonesia on the food security index (2023). In addition, these two areas could be better regencies in South Sulawesi Province. This phenomenon raises interest in studying the implementation of household-based food security policies in the two regencies.

Informants

The informants in this study were selected based on the purposive sampling technique: people who have important roles in implementing the P2L Program. These informants include the Head and staff of the Food Security Service (6 people), KWT extension workers (4 people), and KWT chairperson and members (40 people) from Bone and Maros Districts, South Sulawesi Province, Indonesia.

Data collection technique

Data collection techniques in this study included in-depth interviews, observations, FGDs, and documentation. In-depth interviews were conducted with the head and staff of the Food Security Service and KWT extension workers to obtain information about the program mechanism, formal and informal relationships of institutional entrepreneurs, and benefits received by KWT members (Vaivio, 2012). Observations focused on natural objects such as gardens and plants and their maintenance to assess the impact of the P2L program in supporting family food security. Focus Group Discussions (FGDs) were conducted with the head and members of KWT to collect information about organizational dynamics, motivation, and benefits obtained from the program. Documentation included various official documents and relevant publications as secondary data to support information obtained from primary sources.

Data processing techniques

Data processing techniques included several stages, namely interview transcription, observation notes, and document organization. The next stage involved data coding, which identified the main emerging themes and categorized themes according to the research objectives (Braun and Clarke, 2006).

Data analysis techniques

The data analysis technique in this study used a thematic analysis approach that included identifying, analyzing, and reporting patterns (themes). The stages of data analysis consisted of several steps:

- Data familiarization - reading all data to understand the initial context;
- Initial coding - identifying and labeling parts of the data related to the research question;
- Forming themes - grouping coding into main themes;
- Reviewing themes - evaluating themes to ensure appropriateness and consistency with the data;
- Determining and naming themes - finalizing themes and providing detailed descriptions for each theme;
- Writing the report - compiling a research report

that integrates findings into a coherent narrative (Miles and Crisp, 2014).

Results

The objective of this study is to analyze the institutional framework and strategies of stakeholders executing the Sustainable Food Yard Program (P2L) as a local food security initiative in two districts of South Sulawesi Province, Indonesia. This initiative seeks to enhance accessibility, availability, and utilization of food to bolster food security at home level. As a national program, the local government through food security institutions runs this P2L program, with

KWT as the target group of this program.

Thematic analysis reveals five main themes in the implementation of this regional food security policy, namely challenges in KWT productivity, the role and performance of agricultural extension workers, consistency and effectiveness of government assistance, internal dynamics and management of KWT, as well as market access, and agricultural product marketing strategies.

The **Table 1** below summarizes the role of institutional entrepreneurial networks in each of these themes.

Tabel 1. Institutional entrepreneurship network in the implementation of local food security policy.

Main theme	Institutional structure	Actor strategy
Productivity challenges of KWT	KWT has limited access to resources such as seeds, fertilizers, technology, and the influence of external factors such as climate.	KWT leaders and members foster internal cooperation, innovate in agricultural practices, and increase participation.
The role and performance of agricultural extension workers	Equitable distribution of extension workers and resource support for extension	Extension workers act as facilitators in increasing KWT capacity through effective communication strategies.
Consistency and effectiveness of government assistance	Policies and regulations for assistance and distribution of assistance	The government increases the consistency of assistance through program supervision and evaluation
Internal dynamics and KWT management	Organizational structure of KWT that supports decision-making	Leadership and management development in KWT facilitates active participation and managerial skills.
Market access and marketing of agricultural products	Infrastructure and policies for market access	Marketing strategies such as collaboration with cooperatives or digital platforms increase product competitiveness.

Discussion

Challenge Productivity of KWT

Institutional structures play a critical role in addressing KWT productivity challenges. They often need more access to vital agricultural resources such as seeds, fertilizers, and technology, as well as external constraints such as climate change and reliance on traditional cropping patterns. A solid and flexible institutional structure supports KWT's efforts to build member capacity, optimize participation, and facilitate more effective decision-making. Water-efficient irrigation and drought-resistant varieties are technologies that play an important role in helping farmers adapt to

local weather conditions (Safdar *et al.*, 2024). Strong institutional structures enable KWTs to access local microfinance institutions or cooperatives to obtain additional credit as needed (Choruma *et al.*, 2024). In addition, inclusive government policies are also important factors in improving KWT productivity

Actor strategies are critical in institutional entrepreneurial networks to address KWT productivity challenges. Empowerment of KWT leaders and collaboration enable members to be motivated, manage internal conflicts, and develop community-based innovations in agricultural practices (Sibanda *et al.*, 2020). In addition,

government support through appropriate policies and mentoring programs is critical in improving KWT sustainability and productivity (Dillon and Barrett, 2017).

Role and performance of extension workers agriculture

Institutional entrepreneurship networks in agricultural extension involve various government agencies, private sector, and non-government organizations working together to provide farmers with training, information, and technical support. The decentralized approach, in extension, allows extension workers to adapt materials and methods to local conditions, effectively increasing farmer acceptance of innovations and sustainable practices (Feder *et al.*, 2001). However, a limited number of extension workers and uneven resource support hamper the effectiveness of extension, especially in remote areas. The institutional entrepreneurship network actor strategy focuses on collaboration with various parties to strengthen the capacity of KWT members and facilitate the use of relevant agricultural technologies. Participatory extension as a strategy has been shown to increase the effectiveness of the adoption of new agricultural practices (Davies, 2022). Participatory extension approaches that prioritize active farmer involvement have been shown to be more effective in increasing the adoption of sustainable farming practices as implemented in sustainable agriculture program in Latin America (Benítez *et al.*, 2020)

Consistency and effectiveness mentoring government

The consistency and effectiveness of government assistance depend on good institutional support, including cross-agency coordination and the provision of adequate resources and technology. A decentralized structure allows local governments to be more responsive in meeting local needs and adjusting agricultural programs to the challenges in their respective areas. Consistency of government assistance helps farmers feel more confident in running their farming businesses, and continuous monitoring and evaluation are critical to the

program's success (Swanson and Rajalahti, 2010). The cross-sector collaboration strategy in government assistance allows program consistency and prevents overlapping policies. This cross-sectoral coordination encourages data-based monitoring and evaluation so that the sustainability of the KWT local food security program can be sustainable. Consistency of government support increases farmers' confidence in running their farming operations, as found in a study in West Africa that showed the sustainability of agricultural programs is closely related to policy stability and continuity of technical support (Dillon and Barrett, 2017).

Internal dynamics and KWT management

The institutional structure of KWT includes the division of roles, responsibilities, and participatory decision-making processes that support organizational effectiveness and the sustainability of local food security. The community-based structure promotes solidarity and responsiveness to local needs and strengthens member involvement in decision-making. This participation increases member commitment to the success of the group. Collaboration between KWT leaders and members is a critical strategy that promotes the integration of individual and group interests and enhances social cohesion (Arif and Lessy, 2019). In addition, inclusive leadership strategies that involve all members in program planning and implementation minimize resistance to change and increase group support. Similar results were also found in studies of women farmer groups in some areas (Kristjanson *et al.*, 2017). In addition, collaboration between leaders and members is key in encouraging community-based innovation and strengthening the economic resilience of the group (Sanginga *et al.*, 2007).

Market access and marketing of agricultural products

Institutional structures that support market access enable farmers to market their products more effectively through collaboration between the government, cooperatives, and the private sector. Adequate infrastructure, policy incentives, and the

development of local marketing networks are essential factors in ensuring that farmers have good market access and improve their bargaining position. Collaboration with cooperatives enables KWT to increase production volume, manage quality, and obtain more competitive prices in the market (Rivera and Sulaiman, 2009). Collaborative strategies in marketing KWT products through digital platforms and product diversification expand market reach and increase product-added value. Digitalization of marketing enables KWT to reach consumers directly, reduces dependence on intermediaries, and makes it easier for farmers to promote their products independently (Reardon and Timmer, 2014). Product diversification and strengthening local marketing networks have also been proven to increase the added value of agricultural products, as applied in the agricultural cooperative business model in Europe (Bijman *et al.*, 2012).

This study has several limitations that should be acknowledged. First, it focuses on two regions in South Sulawesi, which may not fully represent the diverse institutional and socio-economic context of other regions in Indonesia. Second, although this study highlights the role of institutional entrepreneurship networks, it primarily employs qualitative methods, which limit the ability to quantitatively assess the direct causal impact of these networks on food security. Third, this study primarily captures the perspectives of key stakeholders involved in the P2L, particularly KWT, but has not yet thoroughly examined some of the challenges they face. Finally, the dynamic nature of institutional entrepreneurship and food security requires long-term research; therefore, future studies should adopt a longitudinal approach to assess the sustainability of agricultural innovations through the KWT Program and its broader policy implications.

Conclusions

The success of the local food security program through the P2L Program in Indonesia depends on the role of institutional structures and strategies of institutional entrepreneurial network actors. Based

on the theme analysis, there are five main components in the implementation of local food security policies, namely KWT productivity, the role of extension workers, consistency of government assistance, internal dynamics of KWT, and market access. A solid institutional structure that responsive to local needs and collaborative actor strategies are essential in overcoming local food security challenges. Sustainable local food security requires a more integrated and collaborative institutional entrepreneurial network approach.

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Authors' contributions

All authors contributed equally to the conception, design, analysis, and writing of this manuscript. Also they have read and approved the final version of the manuscript and agree to be accountable for all aspects of the work.

Conflict of interest

The authors declare no conflict of interest related to the content, methodology, or publication of this research.

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