

Village Food Barn Transformation Policy Based on Social Capital and Governance for Sustainable Food Security

Ahmad Fajar Adi Pratama¹, Noverman Duadji^{2*}, Novita Tresiana³

^{1,2,3} Master of Administration (Public) Study Program, Faculty of Social and Political Sciences,
University of Lampung

*Corresponding author: noverman.duadji@fisip.unila.ac.id

Abstract

This study introduced a new policy development analysis framework for transforming village food barns to achieve sustainable food security. Dynamic governance resulting from public trust and enhanced government capacity serves as a new adaptive framework, referred to as the agility-genuine model, to address climate change and technological readiness. This study aimed to formulate a policy scenario for village food barn transformation by adopting a social capital mutualism and governance approach to enhance sustainable food security. A qualitative approach with a prospective analysis was employed to explore future scenarios based on several key factors. The study was conducted in Central Lampung Regency, specifically in Pujokerto Village and Rejo Basuki Village. This research successfully formulates a transparent and effective governance strategy model that serves as a foundation for building public trust, optimizing financial resources, ensuring technological readiness, and highlighting the importance of stakeholder collaboration as a crucial element of a sustainable food security system. The findings contribute to strengthening the role of the community and local farmers while also serving as the basis for formulating policy changes in village food barn transformation to achieve national and global food security by 2045.

Keywords: social capital; governance; policy change; food barn, sustainable food security

Introduction

The global food crisis, disasters, and food security reserve fund budget politics have positioned the village as the basis for community food defense, climate change resilience, and achievement of national and global food barns in 2045 (Hulu & Muhammad Husni Thamrin, 2022), (Priss et al., 2023). Food barn transformation planning can be an instrument for disaster mitigation management and village economic institutions and also encourage the development of social mechanisms and local wisdom food as community social capital.

The problem of repeated failures in the development of food barns is marked by the marginalization of community participation, local farmers, and local traditions in the management of food barns, especially the availability of food commodities, both voluntarily and in an organized manner (MacRae & Reuter, 2020). The main issue that

arises is the neglect of the socio-cultural context of the local community, and the creation of uniformity of food barn models has reduced community trust and further reduced the image of the government (Neilson & Wright, 2017); (Mazland, 2020); (Tresiana & Duadji, 2023). Cause: The approach model in achieving food security goals through food barns has shifted the values and social systems that are collected in the community's social capital and replaced with modernization institutions that provide false integrity. The government's perspective sees the existence of village barns as identical to poverty and food insecurity, so village barns are slowly being suppressed so that they are not developed (MacRae & Reuter, 2020); (Neilson & Wright, 2017); (Karyadi, 2021). Empirical studies of policy (Riptanti et al., 2018), (Tarlani et al., 2022) explain the transformation of new development models carried out through the co-optation of new institutions by the government bureaucracy, so that what happens is the crediting/sterilization of village granaries that grow from the internal strength of the community, mobilization, and become an extension of the bureaucracy so that bureaucratic power becomes dominant with the community's dependence on external forces. Moreover, government development programs are inconsistent and tend to be project oriented (Tresiana et al. 2023). As a result, the loss of community participation along with the fading of social relationship patterns, the development of farmer apathy and consumer behavior, and the dominance of the global economy are seen in the development of other financial institutional models, increasingly eroding food wisdom, including those related to the environment (Toiba et al., 2020), (Purnamasari et al., 2023).

This study formulates the problems in developing village food barns as a form of local wisdom, whose existence is becoming increasingly rare due to being eroded by global economic developments and increasingly massive modern lifestyles. The policy of transforming village food barns that are climate-resilient is an effort to plan governance and optimize food security reserve funds by adapting to climate change. This policy utilizes community social mechanisms, develops local rural institutions, and strengthens food security at the community level (MacRae and Reuter, 2020); (Saptutyningsih et al., 2020); (Ihanae et al., 2020); (Muiderman et al., 2020). These efforts are expected to strengthen economic, social, and ecological resilience and become the foundation and commitment of Indonesia in realizing sustainable food security (Neilson & Wright, 2017).

Mutualism of social capital and governance is a framework for policy development analysis (Nugroho et al., 2022; Mergel, 2016). The concept of mutualism proposed in this study refers to a new conceptual lens developed to explain the dynamic and reciprocal strengthening of relationships between social trust, community solidarity, and institutional agility in policy processes. In this context, mutualism is understood as a synergistic interaction in which social capital enhances the quality and responsiveness of governance, while good governance sustains and amplifies social capital through mechanisms of trust-building, inclusive participation, and community empowerment.

This framework offers a novel perspective that integrates social capital and governance as mutually reinforcing forces in shaping adaptive and resilient policy systems. The development of governance studies, especially in the context of agile governance (Mergel, 2016); (Joyce, 2022) in response to the slow change in policy and Fukuyama's study (Fukuyama, 2013) related to the spirit of mutual trust (trust) between the Japanese people, is the main basis for the widespread information revolution, illustrating the importance of social capital in the repositioning of agility governance and the image of governance. The heavily on social network is built autonomously, collaboratively, and genuinely from the community. The VUCA context study demonstrated the need to work more strategically, flexibly, and adaptively to changes that produce better policies and public services. Agility contributes to improving the structure, process, behavior, culture of government bureaucracy (Mergel, 2016), (Joyce, 2022) related to the spirit of mutual trust shown between the Japanese people is the main basis for the widespread information revolution, illustrating the importance of social capital in the repositioning of agility governance and the image of governance actually relies heavily on social energy that is built autonomously, collaboratively and genuinely from the community. The VUCA context study demonstrates the need to work more strategically, flexibly, and adaptively to changes that produce better policies and public services. Agility contributes to improving the structure, process, behavior, and culture of government bureaucracy (Tresiana et al., 2023), (Tresiana, N., & Duadji, 2022), (Tresiana et al., 2022), (Cho & Moon, 2019). Performance of the mutualist framework measured through agility and genuine governance through the working of social concerts (resorsis and networking) resulting from the interaction between social capital and dynamic governance in the analysis and change of policy through: 1) aspects of social capital development and 2) structural aspects (institutional and organizational-management) (Mergel, 2016), (Jain et al., 2020), (Hysing, 2022), (Cheevapattananuwong et al., 2020), (Kaiser et al., 2020).

Design and analysis of the strategy model for policy change based on mutualist social capital and governance (*Figure 1*), directed at strengthening trust and government capacity through: 1) genuine social capital development factors; 2) governance factors, especially agility governance, including institutional (policy), organization, and management; and 3) agility and genuine governance. This approach allows the inclusion of contextual factors, values and local social systems, according to dynamic field conditions, so that the performance of agility governance is genuine on the one hand and on the other hand governance provides the character that social capital can function and synergize to achieve the success of public welfare in the transformation of food barns.

The formulation of the study problem involves how social capital and governance interact through social capital mutualism to support sustainable village food barn transformation.. Research objectives: To produce new findings from theoretical strategy models for developing village food barn transformation policy scenarios within a mutualist framework. to ensure sustainable food security. The findings contribute to

increasing the role of community and local farmers, becoming the basis for formulating changes in village food barn transformation policies to realize national and global food security in 2045.

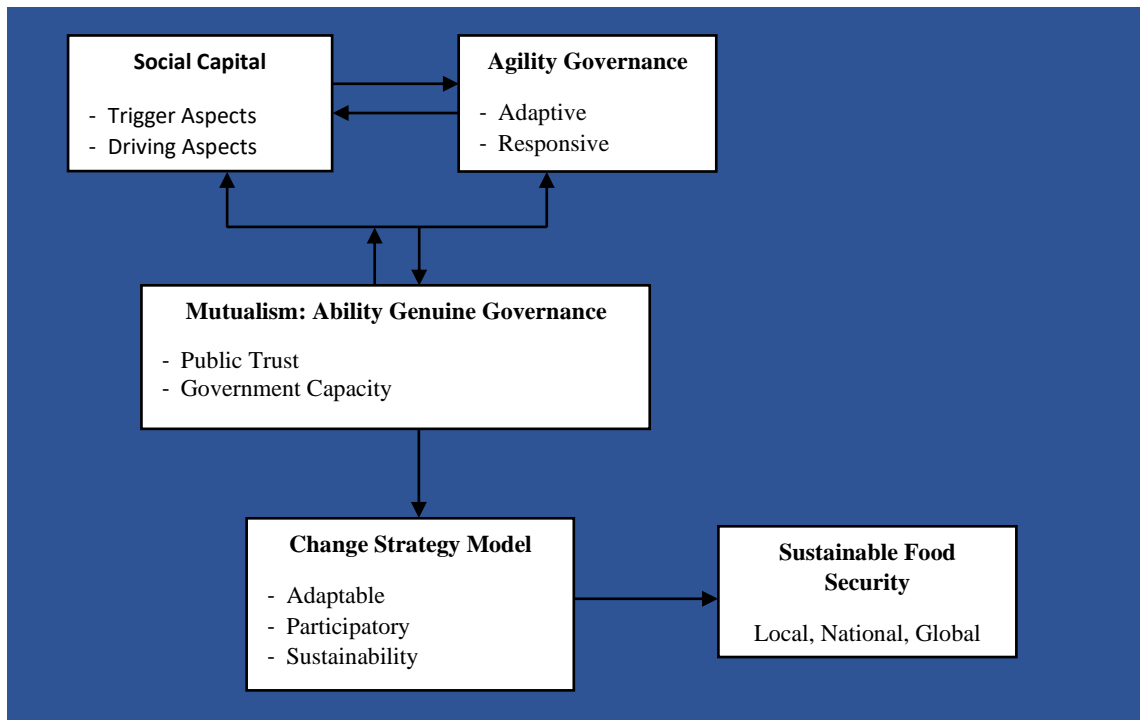


Figure 1.

A Framework for Policy Change Based on Mutualism of Social Capital and Governance

Methods

The study location is in the Central Lampung Regency, especially two villages supporting the food barn: Pujokerto Village and Rejo Basuki Village. Both villages have the potential for millennial farmer communities and food wisdom, but also have issues of private (entrepreneur)community land disputes. Research informants consisted of elements of local government, village government, local community, farming community, private groups, observer and researcher groups, and NGOs. Purposive sampling was used (Miles et al., 2014). The focus of this study is to formulate a policy scenario for transforming village food barns using a social capital and governance mutualism approach to increase sustainable food security. This study uses a qualitative approach (Miles et al., 2014) with prospective analysis (Das et al., 2023) to explore future scenarios based on several key factors, such as trust, mutual cooperation, community participation, and effective governance. Data collection methods were carried out through: 1) surveys and interviews to obtain information from stakeholders; 2) field observations through direct practice of food barn management at the study location; 3)

FGD involving village communities in discussions to identify needs and challenges; and 4) questionnaires to obtain data on community perceptions and preferences.

Prospective analysis is carried out in stages: 1) identification of key factors with a focus on identifying important variables that influence the transformation of village food barns; 2) environmental scanning is an activity to analyze external and internal factors that influence the system using the PESTEL method (politics, economy, social, technology, environment and law) ; 3) stakeholder mapping is the identification of key actors, determining the role and influence of each actor, such as village government, BUMDes, farmers, and the community; 4) scenario building through scenario development based on the main uncertainty factors, namely: optimistic scenario/ best-case scenario (full support between key factors and stakeholders, is the expected condition and is the main objective), moderate scenario (partial engagement with challenges that are realistic and need to be addressed), pessimistic scenario/ worst- case scenario (major obstacles in policy implementation, warning of risks that must be avoided through strategic planning and proactive mitigation); 5) impact analysis using the cross-impact matrix method to analyze the relationship between key factors and estimate the impact of policies on village food security systems; 6) decision making and strategy development that can be implemented based on the resulting scenario (Das et al., 2023).

The impact analysis in this study used the cross-impact matrix method (Weimer Jehle, 2006) to evaluate the relationship between key factors and estimate the impact of policies on the village food security system. This is carried out by compiling an impact matrix (cross-impact matrix) based on interrelated key factors and containing impact values between factors with an assessment scale:

0 = No impact

1 = Low impact

2 = Moderate impact

3 = High impact

Second, the analysis of interactions and relationships between factors with classification: 1) several factors that have a strong influence on other factors will be identified as the main drivers in the food security system; 2) several factors that have high dependency will be identified as followers that depend on other factors to develop; and 3) elements that have the potential to cause a domino effect in the system will be identified. *Third*, we evaluated the score and impact of the policy to understand the potential impact of the policy implemented on each key factor through: 1) the magnitude of changes in governance that affect social capital; 2) forms of technological readiness that support transparency and efficiency in the management of food barns; and 3) the impact of climate change on village management and adaptive capacity.

Results and Discussion

Results

Using prospective analysis, the process and results related to the important elements of the policy change scenario strategy were obtained.

A. Key Factors in Food Barn Transformation

This study maps five key factors: social capital, governance, climate change, financial resources, and technology readiness. All five had classifications of several aspects of drivers and triggers with different but interrelated roles and functions in supporting the transformation of food barns for sustainable food security.

Table 1.
Key Factors and Driver-Triger Aspects

Key Factor	Driver Aspect	Key Factor	Trigger Aspect
Social capital	Community trust, social solidarity, and mutual cooperation involvement act as pillars that support acceptance and active participation in the village food barn system.	Financial resources	The availability and allocation of Village Funds are the main triggers in the implementation of food barn development projects; The existence of funds can accelerate or hinder planned programs.
Governance	Village regulations and policies are the main drivers in ensuring the sustainability of food barn management; The role of BUMDes in the distribution and transparency of village funds is the foundation for long-term success.	Technology readiness	Digitization of food recording and distribution systems can be a trigger for rapid change, enabling more efficient and transparent management in a relatively short time.
Climate change	As a significant external factor, climate change is a major driver forcing long-term adaptation in village food security systems.	-	-

Source: data processing, 2024

The figure 2. below shows that social capital and coverage are fundamental elements in strengthening community-based policies and good governance. Climate change is a key external factor that must be considered in adaptive policy. Finally, financial resources and technological readiness are key supporting factors that ensure the effectiveness and efficiency of policy implementation.

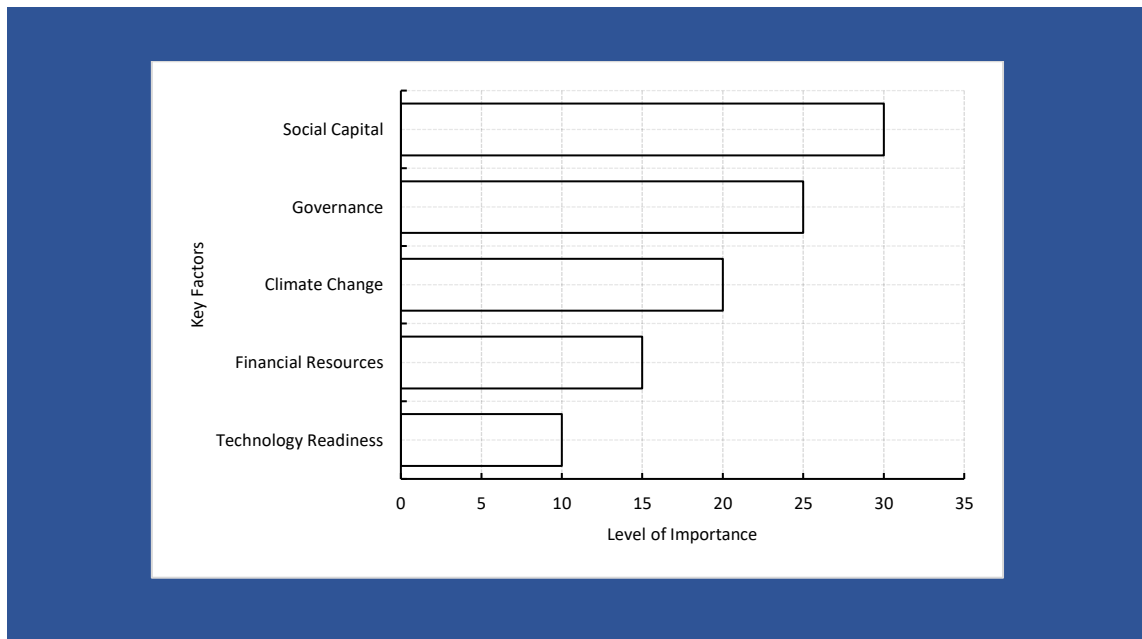


Figure 2.

Key Factors in Prospective Analysis

B. Environmental Scanning

Environmental Scanning was used to ensure that all internal and external aspects were considered in order to achieve sustainable food security. The results obtained are as follows: 1) identifying opportunities and threats to help identify external (political, economic, social, technological, environmental, and legal) and internal factors that can be opportunities or threats to the implementation of village food barn policies; 2) enabling policymakers to take advantage of opportunities such as government policy support and new technologies and anticipate threats such as food price fluctuations and the impact of climate change; 3) ensuring that the policy model prepared is in line with dynamic external and internal conditions, so that policies can be implemented effectively and sustainably; 4) increasing resilience and adaptation to change; and 5) supporting stakeholder collaboration and participation.

Table 2.

Environmental Scanning

Environmental Aspects	Prospective Value of Environmental Scanning
Political	National policies related to food security that can influence the management of village food barns, include: regulations on local food management, agricultural subsidies, and government involvement in supporting village-based food infrastructure.
Economy	Includes: food price fluctuations influenced by global and local market dynamics, as well as the availability of market access for

	village agricultural products. Increases in staple food prices, transportation costs, and community purchasing power have a direct impact on the performance of village food barns and the level of community food security.
Social	Community preferences for local food systems, the level of awareness of healthy food, and consumption patterns that develop in villages are reflected in social norms such as mutual cooperation and trust in food barn managers, which are key to maintaining the sustainability of community-based food systems.
Environment	Covers disaster mitigation such as drought, floods and climate change which can impact agricultural productivity and food stock availability.
Legality	Including regulations governing the use of agricultural land, local food protection, and rules related to the management of Village Funds for the development of food infrastructure, this can maintain the legitimacy and sustainability of village food barn operations.
Technology	Play a role in utilizing digital platforms to improve the efficiency of food stock management, data recording, and distribution transparency, thereby helping to make faster and more accurate decisions in managing food barns.
Internal Factors	Covering the institutional capacity of the village in managing the food barn, community support for the initiatives taken, and financial sustainability through the use of local resources. The performance of managers, transparency, and accountability in managing the food barn are the determinants of long-term success.

Source: data processing, 2024

C. Mapping of Actors and Stakeholders Using Stakeholder Mapping

The mapping of actors in the management of village food barns shows the relationship between various key stakeholders, who have different roles and influences in this system (See: figure 3). The key actors identified included the Village Government, BUMDes (Village-Owned Enterprises), Farmer Groups (farmers), communities, financial institutions, and district governments. The Village Government acts as the main regulator, providing policies and supervision in the management of food barns. The village government has a close relationship with BUMDes, which act as operational implementers of food stock management and distribution. BUMDes also interact with farmer groups (farmers) as the main commodity providers that are processed and stored in village food barns. Meanwhile, the Community as a service user has a direct relationship with BUMDes in terms of food availability and actively participates in the management process. Financial institutions, such as banks and cooperatives, support the provision of funds and the infrastructure needed to maintain the sustainability of the food barn system. The district Government plays a supervisory role at a higher level by

providing strategic directions and policy support to ensure the sustainability of food security programs at the village level.

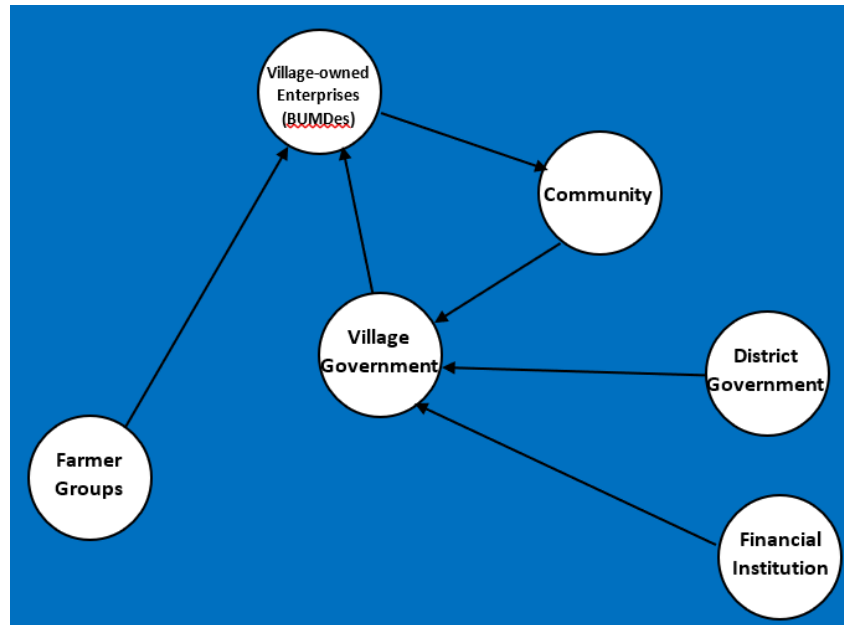


Figure 3.

Mapping and Actor Relationships in Prospective Analysis

The relationship between these actors is mutually supportive, as the involvement of the village and district governments in setting regulations greatly influences the effectiveness of food barn management. Collaboration among BUMDes, farmers, and the community creates a community-based and sustainable food ecosystem. In addition, financial support from financial institutions is a key factor in increasing the capacity for infrastructure and food business development in villages.

D. Formulating Future Scenarios (Scenario Building)

This study illustrates how key factors and stakeholders interact in different scenarios to shape the future of village food barns. Based on the formulation of three future scenarios for the transformation of village food barns, there are 3 scenarios were built (See: Figure 4.). The optimistic scenario describes a condition in which five key factors and six key actors run optimally so that the transformation of village food barns will develop into an independent, inclusive, and sustainable system. For this purpose, the following are obtained: 1) guaranteed village food security with a stable food supply; 2) high technology adoption increases the efficiency of stock management and distribution; and 3) mutual community cooperation is getting stronger, increasing the economic and social resilience of the village. The moderate scenario shows that there are still several challenges, even though management efforts are running quite well. The constraints that

may arise are related to limited community participation, limited funds, and delays in technology adoption. This situation will have an impact on 1) food availability is relatively maintained, but not yet completely stable; 2) BUMDes and the Village Government still need more support in transparent and accountable governance; and 3) the risk of dependence on external assistance still exists in emergency situations. The pessimistic scenario describes that key factors are not running well, support from stakeholders is minimal, and the village food barn has the potential to face a crisis. Factors contributing to this scenario include low public trust, weak governance, lack of operational funds, and unanticipated climate change impacts. This condition will result in: 1) the sustainability of the food barn is threatened due to a lack of support from the government and the community; 2) dependence on external assistance increases, causing the village to lose independence in food management.

Optimistic Scenario High collaboration target from all stakeholders and effective governance ensures sustainable food security.
Moderate Scenario Good management efforts (moderate progress) but still facing some challenges in funding and technology adoption; realistic conditions but still need improvement
Pesimistic Scenario Key factors are not running optimally, and there are various obstacles that threaten village food security in the form of low trust, governance failure, and climate impacts causing a food crisis; proactive and comprehensive policies.

Figure 4.

Scenario Building Optimistic, Moderate and Pessimistic

Overall, the results of this study show that the future of village food barns is highly dependent on the level of stakeholder engagement, good fund management, technological readiness, and adaptation to climate change. The optimistic scenario is a goal that must be achieved by strengthening governance and community participation, whereas the moderate scenario represents realistic challenges that need to be overcome. The pessimistic scenario must be avoided through responsive and data-based policies to ensure that village food security is maintained.

E. Impact Analysis

Using the cross-impact matrix, the evaluation results of the interactions between interrelated key factors and the analysis of how changes in one factor affect the others within the entire system were obtained. Based on cross-impact matrix analysis: 1) Governance and financial resources emerged as the main drivers within the system. Governance had a strong influence on social capital (score 3), climate change (score 2), financial resources (score 3), and technology readiness (score 3). This indicates that

governance is a critical determinant in shaping the transformation of village food barns. Similarly, financial resources also have high influence scores for governance (3), social capital (2), climate change (1), and technology readiness (2), emphasizing the crucial role of financial availability and management in supporting systemic resilience; 2) Social capital demonstrates a high dependency on governance and financial resources. This is reflected in the strong impact of governance on social capital (score 3) and the moderate impact of financial resources on social capital (score 2). This indicates that the strengthening of social capital is highly dependent on the quality of governance practices and sustainability of financial support mechanisms. Therefore, collaborative and participatory approaches must be fostered continuously to build durable social capital in the community. 3) Climate change is a significant external pressure factor within the system. Although its direct influence on other factors is moderate (scores 1–2), climate change can substantially disrupt food security by affecting the agricultural cycles and production patterns. The matrix shows that climate change influences governance (2), social capital (1), financial resources (1), and technological readiness (2). This underlines the urgency of developing solid adaptation strategies at the local level to maintain food barn stability amidst environmental uncertainties; 4) Technology readiness serves as a reinforcing factor that enhances the system’s efficiency. Technology readiness has a moderate impact on social capital (2), governance (3), climate change (2) and financial resources (2). This indicates that technological solutions, when properly implemented, can optimize operational processes, improve information transparency, and accelerate decision making in food barn management. However, successful technology integration requires addressing rural digital infrastructure limitations and improving the digital literacy among stakeholders.

Table 3
Cross-Impact Matrix

	Social Capital	Governance	Climate Change	Financial Resources	Technology readiness
Social Capital	0	3	1	2	2
Governance	3	0	2	3	3
Climate Change	1	2	0	1	2
Financial Resources	2	3	1	0	2
Technology readiness	2	3	2	2	0

Source: data processing, 2024

F. Strategies to Improve Village Food Security

Based on scenario analysis (optimistic, moderate, and pessimistic) and the results of the impact analysis using the cross-impact matrix, the strategy developed to improve village food security incorporates several key aspects focused on effective governance,

adaptation to environmental and economic changes, and strengthening community capacity. These elements were designed to ensure that the village food barn system became more resilient, independent, and sustainable. The authors formulated the strategic framework based on the empirical findings of this study, particularly the scenario analysis and cross-impact matrix results (Table 3), while drawing conceptual insights from agile governance principles (Mergel, 2016; Joyce, 2022) and social capital theory (Fukuyama, 2013) to strengthen community-based resilience approaches. Figure 5. illustrates the strategy structure, starting from effective and transparent governance and stakeholder collaboration as foundations, leading to public trust, optimization of financial resources, and community participation, which subsequently supports the allocation of resources, mitigation of food security risks, and adaptation to climate change and technology development.

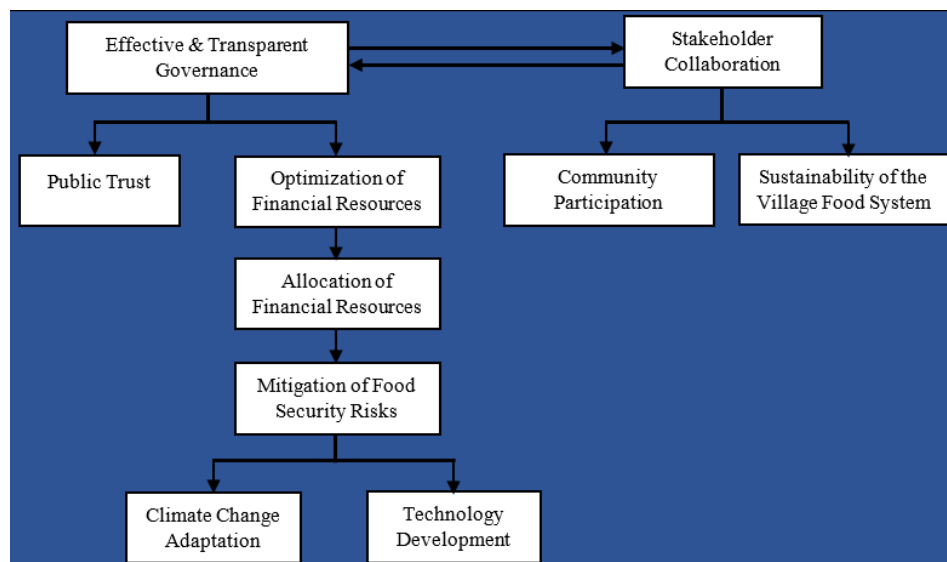


Figure 5.

Village Food Security Policy Model Strategy

Source: Authors' analysis (2024) based on scenario analysis, cross-impact matrix, and supported by insights from Mergel (2016), Joyce (2022), and Fukuyama (2013)

First, Effective and transparent governance can increase public trust and optimize financial resources; second, financial resources can be allocated to mitigate food security risks through adaptation to climate change and technology development; third, collaboration between key stakeholders, such as village government, BUMDes, and the community, can increase participation and sustainability of the village food system.

Discussion

The results of the prospective analysis show that social capital and governance play major roles in the configuration of transformation, theoretical experiments, and policy changes. Studies related to the development of governance approaches have entered a new social ecology that is full of cultural, political, and communication value systems, so that formal values that are reproduced hierarchically and rationally are recognized as having helped build the character of governance. However, the more important and strategic aspects lie in the idioms and quadrants of spontaneous and arational values that become the social capital of society (Kim & Yoon, 2018); (Duadji et al., 2022); (Lim et al., 2016). The role of social capital in repositioning genuine agility governance is more substantive. The previous governance model has been criticized. because it places public needs in the hands of the state and bureaucratic instruments. Critical studies describe the fading of globalization issues and the telecommunications revolution, complex environmental issues, and the expansion of the meaning of the public, not just the state, has placed the state as not a single actor (Kim & Yoon, 2018); (Duadji et al., 2022); (Joyce, 2022). The latest studies on agility governance (Mergel, 2016); (Joyce, 2022) emerged in response to the slow change, and Fukuyama's study (Fukuyama, 2013) related to the spirit of mutual trust (trust) shown between the Japanese people is the main basis for the widespread information revolution, illustrating the importance of social capital in repositioning agility governance, and the image of governance actually relies heavily on social energy that is built autonomously, collaboratively, and genuinely from the community. The VUCA study showed the need to work more strategically, flexibly, and adaptively to changes that produce better policies and public services. Agility contributes to improving the structure, process, behavior, and culture of government bureaucracy (Mergel, 2016); (Joyce, 2022).

In this study, the concept of the agility-genuine model is introduced as an original framework developed by the authors to explain how governance should not only be agile, quick, flexible, and adaptive, but also genuine, deeply rooted in community-driven values and public trust. The genuine agility model integrates dynamic responsiveness (agility) with authentic social engagement (genuineness), ensuring that governance systems are not only efficient but also socially sustainable. This model highlights the crucial role of social capital as a foundation that strengthens both agility and authenticity in governance transformation, particularly in the context of rural food security governance.

Meanwhile, studies on the development of social capital are closely associated with comparison, dimensions of management, politics, and policy implementation, namely: 1) the most important public institutional comparison that determines the progress of Japanese industrialization is the cultural character of the Japanese nation, which is different from America; 2) the effectiveness of Taylor's version of management is full of hierarchical levels, not flat, due to weak initiative and inefficient management; 3) Dahl's version of politics related to low social capital in democratic countries can have bad

consequences; and 4) the success of implementing government programs is more *genuine* in several countries (Jain et al., 2020); (Kaiser et al., 2020); (Fukuyama, 2013).

The study of the relationship between social capital and governance is a new lens of the policy development process through strengthening dynamic governance (genuine agility) resulting from public trust and improving government capacity. A study by Linhai Wu (Wu et al., 2024) emphasized that the success of food security policies at the community level is highly dependent on community involvement and good governance. In addition, research by Slater et al. (2024) on global corporate networks in food shows that cross-sector coordination between the government and communities can strengthen food systems at the village level. Thus, the results of this prospective analysis strengthen the existing literature by highlighting the importance of collaborative governance and technological adaptation.

The results of this prospective analysis support the theory of social capital mutualism and governance, which states that the sustainability strategy of the food system depends on the reciprocal relationship between the main actors in the system. In practice, these results are relevant in helping village governments and stakeholders to design policies based on information correctly to strengthen food security. The developed strategy model can be used as a practical tool for identifying the most likely scenarios and mitigation strategies that can be directly applied to the management of village food barns.

Conclusion

Based on a prospective analysis of the food barn transformation strategy model to realize food security, using social capital mutualists and governance that has been carried out, there are several important implications for science and practical applications in village food security governance that can contribute to increasing the participation of local communities and farmers. The scenario-based strategy model developed in this study can be a reference for further research related to community-based food security in various regions. In addition, some of the results of this study provide a framework that can be used by policymakers to evaluate the effectiveness of village food security programs, allowing for more targeted and sustainable improvements. The strategies that have been produced, such as optimizing financial resources and implementing technology, can be directly applied to improve the skills and capacity of farmers and local communities for more efficient food management. This is expected to strengthen the independence of village food.

However, this study had several limitations that need to be considered for further implementation and development. One of the main limitations is the reliance on secondary data that does not fully reflect the local conditions in each village, so further research with a more in-depth quantitative approach is needed to enrich the findings. In addition, this analysis does not fully consider unexpected external factors such as changes in national policies and global market fluctuations, which can impact village food

security. Another challenge is the readiness for technology in rural areas, where limited infrastructure and low digital literacy are obstacles to widespread technology adoption. Therefore, further research is recommended to conduct longitudinal studies to monitor the effectiveness of the implementation of the proposed strategies, as well as to conduct case study-based research in various regions to understand variations in implementation and more specific local challenges. In addition, a more in-depth analysis is needed regarding aspects of financial sustainability and the impact of food policies on the local village economy to design more sustainable and inclusive strategies.

With a better understanding of the interaction between social capital and governance in the transformation of village food barns, the results of this study are expected to provide a strong foundation for formulating more adaptive policy changes based on community participation. Thus, the strategies implemented can contribute to achieving village food security that not only supports local needs but also strengthens national food security and contributes to achieving the vision of world food security by 2045.

Acknowledgement

We express our deepest gratitude to the Head of the LPPM Universitas Lampung for their extraordinary administrative services in submitting this research proposal. The support and coordination provided helped facilitate the research process. We also express our deepest appreciation to the Ministry of Education, Culture, Research, and Technology for funding this competitive research through the Master's Thesis Research scheme with Contract Number 574/UN26.21/PN/2024. The assistance provided plays a major role in the implementation of our research to achieve the expected goals; more specifically, it has been able to accelerate a student named Ahmad Fajar Adi Pratama to complete his thesis and his studies. Thank you for all the support and cooperation that has been provided.

References

- Cheevapattananuwong, P., Baldwin, C., Lathouras, A., & Ike, N. (2020). Social capital in community organizing for land protection and food security. *Land*, 9(3), 1–18. <https://doi.org/10.3390/land9030069>
- Cho, B., & Moon, M. J. (2019). The determinants of citizens' preference of policy instruments for environmental policy: do social trust, government capacity, and state-society relations matter? *International Review of Public Administration*, 24(3), 205–224. <https://doi.org/10.1080/12294659.2019.1643101>
- Das, S., Yadav, A., Akhilesh, M., Anil, B., Chandra, N., Kamalakanta, S., & Sunil, M. (2023). *RESEARCH ARTICLE A systematic assessment of multi-dimensional risk factors for sustainable development in food grain supply chains: A business strategic prospective analysis*. April, 5536–5562. <https://doi.org/10.1002/bse.3435>
- Duadji, N., Tresiana, N., Putri, A. M. L. S., & Riniarti, M. (2022). Can the

- Implementation of Conservation Village Increase the Environmental Support in Forest Management in Bukit Barisan Selatan National Park, Lampung, Indonesia? *International Journal of Sustainable Development and Planning*, 17(3), 751–763. <https://doi.org/10.18280/ijstdp.170306>
- Fukuyama, F. (2013). What is governance? *Governance*, 26(3), 347–368. <https://doi.org/10.1111/gove.12035>
- Hulu, L., & Muhammad Husni Thamrin. (2022). Pengelolaan Cadangan Pangan Masyarakat Melalui Lumbung Pangan Di Kabupaten Deli Serdang. *Jurnal Kajian Agraria Dan Kedaulatan Pangan (JKAKP)*, 1(2), 1–7. <https://doi.org/10.32734/jkakp.v1i2.9143>
- Hysing, E. (2022). Designing collaborative governance that is fit for purpose: theorising policy support and voluntary action for road safety in Sweden. *Journal of Public Policy*, 42(2), 201–223.
- ihanae, P., Ludang, Y., & Masliani, M. (2020). SELF-RELIANCE OF COMMUNITY FOOD BARNS IN KAPUAS DISTRICT , CENTRAL. *International Journal of Management*, 11(6), 203–212. <https://doi.org/10.34218/IJM.11.6.2020.019>
- Jain, P. K., Hazenberg, R., Seddon, F., & Denny, S. (2020). Social Value as a Mechanism for Linking Public Administrators with Society: Identifying the Meaning, Forms and Process of Social Value Creation. *International Journal of Public Administration*, 43(10), 876–889. <https://doi.org/10.1080/01900692.2019.1660992>
- Joyce, P. (2022). Challenges, the Strategic State, and Agility in European Public Governance. *Transylvanian Review of Administrative Sciences*, 2022(Special Issue), 118–136. <http://dx.doi.org/10.24193/tras.SI2022.11>
- Kaiser, M., Barnhart, S., & Huber-Krum, S. (2020). Measuring Social Cohesion and Social Capital within the Context of Community Food Security: A Confirmatory Factor Analysis. *Journal of Hunger and Environmental Nutrition*, 15(5), 591–612. <https://doi.org/10.1080/19320248.2019.1640161>
- Karyadi, L. W. (2021). The Existence and Role of Indigenous Food Institution on Strengthening Foods Security of Rural Community. *International Journal Papier Public Review*, 2(1), 54–66. <https://doi.org/10.47667/ijppr.v2i1.73>
- Kim, D. R., & Yoon, J. H. (2018). Decentralization, Government Capacity, and Environmental Policy Performance: A Cross-National Analysis. *International Journal of Public Administration*, 41(13), 1061–1071. <https://doi.org/10.1080/01900692.2017.1318917>
- Lim, D. H., Oh, J. M., & Kwon, G. H. (2016). Mediating effects of public trust in government on national competitiveness: Evidence from Asian countries. *International Review of Public Administration*, 21(2), 125–146. <https://doi.org/10.1080/12294659.2016.1189196>
- MacRae, G., & Reuter, T. (2020). Lumbung Nation: Metaphors of food security in Indonesia. *Indonesia and the Malay World*, 48(142), 338–358. <https://doi.org/10.1080/13639811.2020.1830535>
- Matthew B. Miles, A. Michael Huberman, J. S. (2014). Qualitative Data Analysis . A Methods Sourcebook. *German Journal of Human Resource Management*, 28(4), 485–487. <https://doi.org/https://doi.org/10.1177/239700221402800402>
- Mazland, A. (2020). *Dilema Pangan dan Budaya Lumbung yang Dibenamkan*. The Columnist. <https://thecolumnist.id/artikel/dilema-pangan-dan-budaya-lumbung->

yang-dibenamkan-722

- Mergel, I. (2016). Agile innovation management in government: A research agenda. *Government Information Quarterly*, 33(3), 516–523. <https://doi.org/10.1016/j.giq.2016.07.004>
- Muiderman, K., Gupta, A., Vervoort, J., & Biermann, F. (2020). Four approaches to anticipatory climate governance: Different conceptions of the future and implications for the present. *Wiley Interdisciplinary Reviews: Climate Change*, 11(6), 1–20. <https://doi.org/10.1002/wcc.673>
- Neilson, J., & Wright, J. (2017). The state and food security discourses of Indonesia: feeding the bangsa. *Geographical Research*, 55(2), 131–143. <https://doi.org/10.1111/1745-5871.12210>
- Nugroho, T. W., Hanani, N., Toiba, H., & Sujarwo, S. (2022). Does Social Capital Improve Food Security? Evidence From the Indonesian Family Life Survey. *Asian Journal of Agriculture and Rural Development*, 12(2), 138–147. <https://doi.org/10.55493/5005.v12i2.4502>
- Priss, O., Pugachov, M., Pugachov, V., Yaremko, I., & Shchabelska, V. (2023). The Development of the World Economy and the Impact of the Global Food Crisis 2022–2023. *Economic Affairs (New Delhi)*, 68(1), 35–42. <https://doi.org/10.46852/0424-2513.1s.2023.5>
- Purnamasari, M., Huang, W. C., & Priyanto, B. (2023). The Impact of Government Food Policy on Farm Efficiency of Beneficiary Small-Scale Farmers in Indonesia. *Agriculture (Switzerland)*, 13(6), 1–14. <https://doi.org/10.3390/agriculture13061257>
- Riptanti, E. W., Qonita, A., & S. (2018). Revitalization of food barns in supporting sustainable food security in Central Java Revitalization of food barns in supporting sustainable food security in Central Java. *Conference Series: Earth and Environmental Science*, 122. <https://doi.org/https://doi.org/10.1088/1755-1315/122/1/012002>
- Saptutyningsih, E., Diswandi, D., & Jaung, W. (2020). Land Use Policy Does social capital matter in climate change adaptation ? A lesson from agricultural sector in Yogyakarta , Indonesia. *Land Use Policy*, 95(September 2018), 104189. <https://doi.org/10.1016/j.landusepol.2019.104189>
- Slater, S., Lawrence, M., Wood, B., Serodio, P., & Baker, P. (2024). *Corporate interest groups and their implications for global food governance : mapping and analysing the global corporate influence network of the transnational ultra- processed food industry*. 1–15.
- T, W. W. (2006). *Cross-impact balances : A system-theoretical approach to cross-impact analysis*. 73(4), 334–361. <https://doi.org/10.1016/j.techfore.2005.06.005>
- Tarlani, T., Dariah, A. R., & Rani, A. M. (2022). Transforming Rural Economy Through Community-Based Tourism with Village-Owned Enterprise (BUMDES, Badan Usaha Milik Desa) - A Case Study: Cibiru Wetan, Pagerwangi and Cipamekar Villages, Indonesia. *International Journal of Sustainable Development and Planning*, 17(5), 1535–1542. <https://doi.org/10.18280/ijstdp.170517>
- Toiba, H., Nugroho, T. W., Retnoningsih, D., & Rahman, M. S. (2020). Food system transformation and its impact on smallholder farmers' income and food security in Indonesia. *Cogent Economics and Finance*, 8(1).

- <https://doi.org/https://doi.org/10.1080/23322039.2020.1854412>
- Tresiana, N., & Duadji, N. (2022). Developing Forest Coffe Cultural Tourism and Historical Heritage Megalitic Sites in Social Innovation Governance: How Does it Work in a Sustainable Way? *Journal of Environmental Management and Tourism*, 13(4), 1036–1046. [https://doi.org/https://doi.org/10.14505/jemt.v13.4\(60\).10](https://doi.org/https://doi.org/10.14505/jemt.v13.4(60).10)
- Tresiana, N., Duadji, N., Pairulsyah, Suwarno, & Damayantie, A. (2023). Deliberative Democracy Innovations at Citizen Level: Challenges of Local Government in Indonesia. *Lex Localis*, 21(4), 807–832. [https://doi.org/https://doi.org/10.4335/21.4.807-832\(2023\)](https://doi.org/https://doi.org/10.4335/21.4.807-832(2023))
- Tresiana, N., & Duadji, N. (2023). Can the Policy Environment Improve the Policy Implementation Practice? *Public Administration Issues*, 5, 69–90. <https://doi.org/10.17323/1999-5431-2023-0-5-69-90>
- Tresiana, N., Duadji, N., Febryano, I. G., & Zenitha, S. A. (2022). Saving Mangrove Forest Extinction in Urban Areas: Will Government Interventions Help? *International Journal of Sustainable Development and Planning*, 17(2), 375–384. <https://doi.org/10.18280/ijstdp.170203>
- Tresiana, N., Rahmat Sanjaya, & Noverman Duadji. (2023). Indigenous Community-Friendly Tourism Development Strategy Through Governance Approach. *Jurnal Ilmu Administrasi: Media Pengembangan Ilmu Dan Praktek Administrasi*, 20(2), 169–177. <https://doi.org/10.31113/jia.v20i2.955>
- Wu, L., Wu, L., & Dai, X. (2024). Using Logistics Companies to Regulate Online Food Safety : Feasibility and Impacts Based on Social Cogovernance in China. *Journal of Food Protection*, 87(9), 100341. <https://doi.org/10.1016/j.jfp.2024.100341>