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Development communication for collaborative governance: Empowering women farmers in food independent villages

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Abstract

Tangerang Regency faces food security challenges due to high poverty rates and nutritional insecurity, particularly in rural areas such as Sodong Village, a pilot site for the Food Independent Village Program. Despite its considerable agricultural potential, the village encounters obstacles including limited resources, low community participation, and suboptimal communication strategies in the empowerment of Women Farmers Groups (Kelompok Wanita Tani or KWT in Bahasa Indonesia). This study aims to analyze the collaborative governance model in KWT empowerment, evaluate its impact on food security and village socio-economic welfare, and identify development communication strategies that can strengthen the participation and technical capacity of KWT members. A qualitative approach with a case study design was employed, with data collection techniques including in-depth interviews, participant observation, and document analysis. The study in Sodong Village, Tangerang Regency, shows that cross-actor involvement—including the village government, technical agencies, KWT, the community, and the private sector—plays a crucial role in shaping participatory and inclusive governance in the implementation of the Food Independent Village Program. In this context, KWT has transformed into an agent of social change, contributing to increased consumption of nutritious food, higher household income, and strengthened women's roles in local decision-making processes. Identified development communication strategies include interpersonal, digital, institutional, educational, and multi-sectoral communication, which collectively create a dialogical and collaborative ecosystem to foster active participation and enhance the technical capacity of KWT members.

Keywords: Collaborative governance, Community empowerment, Development communication, Food independent villages, Women farmers groups (KWT).

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1. Introduction

Food security is an increasingly pressing global issue due to climate change, population growth, and unequal food distribution [1]. In developing countries like Indonesia, women play a central role in the food system, particularly in the context of family farming [2]. Women Farmers Groups (Kelompok Wanita Tani or KWT in Bahasa Indonesia) are not only involved in agricultural production but also play a role in household food management and the preservation of local resources [3]. However, this strategic role is often marginalized in agricultural development policies that tend to be top-down and gender-biased [4]. In fact, food security is a major component of sustainable development [5] and of improving community welfare [6].

The Indonesian government has emphasized the importance of food availability, quality, and affordability through Law Number 18 of 2012 [7]. At the village level, food stability is crucial for the success of strengthening the local economy [8]. Instability in the food supply often triggers poverty, nutritional problems, and economic stagnation, especially in vulnerable rural areas [9]. Efforts to ensure inclusive and sustainable food security represent a strategic challenge that must be addressed collaboratively [10].

In the context of rural Indonesia, women farmers face various structural constraints, ranging from limited access to land, information, and technology to low involvement in decision-making processes [11]. Their empowerment cannot rely solely on technical training but requires a collaborative and participatory approach to be more sustainable [12]. Inclusive development governance must be supported by an open and equitable communication system among stakeholders [13].

Tangerang Regency is one of the areas facing serious food security challenges, particularly in villages with high levels of poverty and nutritional vulnerability [14]. Sodong Village, for example, was chosen as a trial location for the Food Independent Village Program (Desa Mandiri Pangan or Demapan in Bahasa Indonesia) because it has significant agricultural potential [15]. This program aims to strengthen local food security through KWT empowerment [16] and supports government initiatives such as the Free Nutritious Meals program (Makan Bergizi Gratis or MBG in Bahasa Indonesia) [15]. However, KWT involvement remains limited due to resource and socio-economic constraints [17], along with uneven distribution of information on training, facility support, and access to modern technology [18].

Although the Food Independent Village Program emphasizes community participation [19] and the efficiency of food distribution [20] its field implementation continues to face obstacles such as inadequate agricultural infrastructure [21] lack of continuous technical assistance [22] weak stakeholder coordination [23] and low adoption of modern agricultural technologies [24]. Furthermore, the top-down policy approach is considered less effective in empowering grassroots groups such as KWT [25]. Therefore, close collaboration among stakeholders is essential to strengthen the role of KWT [26].

In fact, KWT plays a strategic role in supporting household food security and strengthening the local economy through yard farming [27] sustainable agriculture [28], and village entrepreneurship [29]. Unlike Men Farmers Groups, which tend to focus on market-oriented commodities, KWT prioritizes family-based food security [30] and is more effective in improving community nutrition [31]. Thus, their empowerment becomes a key inclusive strategy [32]. Nevertheless, they still face challenges such as limited access to capital [33], low product competitiveness [34] and a lack of digital literacy and technological education [35].

Initial findings in Sodong Village indicate that the local potential of KWT has not been optimally developed due to a lack of effective communication among village development actors [9]. Important information such as training opportunities, agricultural equipment assistance, and technological innovations has not been evenly distributed among KWT members [18] which limits their participation in decision-making, despite their strategic role in building family-based food security [36]. The dominant one-way communication pattern from the government or extension workers to residents also hinders dialogue and the exchange of experiences, thereby reducing the program's effectiveness [37].

In contrast, dialogic two-way communication can foster active participation, shared ownership, and collective learning in sustainable agricultural practices [38]. In this context, the collaborative governance approach becomes relevant—a model that involves the government, local organizations, the community, and the private sector at every stage of policy development [39]. In the practice of empowering women farmers, this model opens participatory spaces in the planning, implementation, and evaluation of village development, particularly in the food sector [40]. Communication serves as the foundation of this model [41]. Without open and equitable communication [42] collaboration risks becoming merely symbolic and administrative [43].

Within the framework of KWT empowerment, development communication functions not only as a tool for conveying messages but also as a means of building critical awareness, strengthening community networks, and fostering trust among stakeholders [44]. Communication synergy among the government, civil society organizations, and the private sector is key to increasing the effectiveness of empowerment programs for women farmers [45]. Collaborative communication can foster stronger connections between women farmers and government institutions [46], while also creating mutually supportive partnerships between women farmers and the private sector [47]. In the context of Sodong Village, open and participatory communication patterns have the potential to expand KWT's access to digital training, agricultural product marketing, and institutional strengthening [48].

While numerous studies address women's empowerment and food security, there are still limited studies that specifically examine how communication is implemented within a collaborative governance framework to strengthen the position of KWT. This gap is crucial to address, considering that communication is not merely a technical instrument but a strategic element in building equitable, participatory, and sustainable village governance [47].

Based on this background, this study aims to: (1) analyze the collaborative governance model in empowering KWT to support the Food Independent Village Program in Sodong Village, Tangerang Regency; (2) evaluate the impact of

collaboration-based empowerment on food security and the socio-economic welfare of village communities; and (3) identify development communication strategies that strengthen the participation and technical capacity of KWT members.

2. Research Methods

This study employed a qualitative approach with a case study method to explore in depth the practice of strategic communication within the framework of collaborative governance in KWT empowerment in Sodong Village. The research location was chosen purposively because Sodong Village, located in Tigaraksa Sub-district, Tangerang Regency, is one of the pilot villages in the Food Independent Village Program, which demonstrates the active involvement of various actors in a collaborative structure and has KWT that is consistently involved in the empowerment program.

Data collection was conducted through in-depth interviews, focus group discussions (FGDs), participant observation, and documentation. Informants were purposively selected based on their direct involvement in the program, including village heads, KWT chairperson and members, agricultural extension workers, representatives of the Tangerang Regency Agriculture and Food Security Office, community leaders, the Family Welfare Movement team (PKK), and private entities such as PLN involved in corporate social responsibility (CSR) schemes. In-depth interviews were used to explore narratives and communication strategies among actors, while FGDs focused on the dynamics of internal communication and the participation of KWT members. Observations were conducted during field activities such as training sessions, joint harvests, and activity evaluations, while documentation was collected from activity archives, KWT social media, and information displayed on village notice boards.

Data were analyzed using an interactive analysis model developed by Miles, Huberman, and Saldana (2014), which consists of three stages: data reduction, data presentation, and drawing and verifying conclusions. To ensure the validity and credibility of the data, this study employed source and technique triangulation, as well as member checking, involving key informants in the process of clarifying the interpretation of the results. This approach was chosen to ensure the accuracy, analytical clarity, and reliability of the research findings.

3. Research Results and Discussion

This study found that a collaborative governance-based development communication approach has been actively implemented in the development of the Food Independent Village Program through KWT empowerment in Sodong Village, Tigaraksa Sub-district, Tangerang Regency. Sodong Village was chosen as the research location due to its status as one of three pilot sites for the Food Independent Village Program initiated by the Tangerang Regency Agriculture and Food Security Office since May 2024. The village's initial success in integrating local food programs, agricultural education, and active women's participation serves as a foundational basis for examining the dynamics of cross-sector collaboration in building community-based food security.

Referring to the theory of collaborative governance [27] the study results reveal that the success of KWT empowerment in Sodong Village is significantly influenced by the involvement of multiple actors, including the village government, agricultural extension workers, the Tangerang Regency Agriculture and Food Security Office, the private sector (PLN's CSR initiative), and community groups such as the PKK team and local leaders. This collaboration reflects a governance model that is not only participatory but also adaptive to local needs. Dialogic and open communication processes are the foundation for building trust and shared commitment among actors in implementing the program.

The results of the field data analysis focus on three main objectives: first, mapping the forms and mechanisms of collaboration in empowering KWT to support the Food Independent Village Program; second, measuring the impact of collaboration on social, economic, and household food security dimensions; and third, identifying development communication strategies used to increase KWT participation and technical capacity. These results indicate that interpersonal communication, training facilitation, and information dissemination through village social media are the primary instruments driving program effectiveness. All analyses are based on field data collected through observation, documentation, and in-depth interviews with key actors in the field.

3.1. Collaborative Governance Model in Empowering KWT towards Food Independent Villages

The implementation of the collaborative governance model in the Food Independent Village Program in Sodong Village demonstrates the active involvement of various actors in supporting community-based food security and women's empowerment. This collaboration was established through a partnership between the village government, the Tangerang Regency Agriculture and Food Security Office, KWT, the private sector (PLN through its CSR program), and the community as participants. Each actor plays a complementary role, from policy development and implementation to evaluation and technical assistance, as illustrated in Table 1.

Table 1.
Role of Actors in the Implementation of the Collaborative Governance Model.

Actor	Main Role
Village government	Facilitators and budget allocation
Local government	Technical assistance and training
KWT	Field implementation and evaluation
PLN & Private CSR	CSR support and training
Public	Beneficiaries and participants

This collaboration aligns with the five pillars of the collaborative governance model proposed by Asmorowati, et al. [27] which include: starting conditions, institutional design, facilitative leadership, collaborative process, and outcomes and theoretical reflection.

3.1.1. Starting Conditions

Sodong Village was selected as a pilot site for the Food Independent Village Program based on strategic considerations, particularly its remaining productive agricultural land and active community engagement in social activities. The village also has a strong track record in women's empowerment and household food security programs, which served as a key basis for its selection by the Tangerang Regency Agriculture and Food Security Office. The active role of KWT, which has long been involved in household agricultural practices and basic agricultural education, serves as an indicator of institutional readiness. KWT has an established organizational structure, a routine activity agenda, and a strong internal coordination system. Furthermore, the village and sub-district governments have demonstrated strong commitment by supporting the program's integration into village planning documents (RPJMDes) and by providing training, production facilities, and promotional support. All of these conditions reflect the concept of "starting conditions" in the collaborative governance theory of Asmorowati, et al. [27].

3.1.2. Institutional Design

The institutional structure of the Food Independent Village Program in Sodong Village was built through a multi-actor partnership, including KWT, the village government, the Tangerang Regency Agriculture and Food Security Office, the Village-Owned Enterprise (BUMDes), and external partners such as PLN and private CSR. The division of roles was carried out fairly and transparently: KWT acted as the technical implementer, the village acted as the policy director, and the Tangerang Regency Agriculture and Food Security Office acted as the technical provider. The principles of equality and mutual support underpinned the relationships between the actors. This collaboration stood out for its combination of formal and informal structures. On the one hand, the program was integrated into official documents such as the RPJMDes and financial reports; on the other hand, informal communication through WhatsApp groups and informal meetings among members strengthened social ties. This adaptive institutional design reflected the institutional design principles suggested by Emerson, et al. [49] namely a structure that is flexible to local dynamics while maintaining sustainability and legitimacy.

3.1.3. Facilitative Leadership

The Village Head and KWT Chairperson in Sodong Village play a crucial role as transformative leaders. They not only provide policy direction but also engage directly in the field, motivating members and facilitating communication between the community and stakeholders. The KWT Chairperson, in particular, serves as the driving force behind the community, maintaining morale and solidarity among members. Facilitative leadership manifests itself in open deliberations, regular evaluation sessions, and group discussions. The Village Head actively invites external parties, such as NGOs or government agencies, to participate in the dialogue process, while the KWT Chairperson ensures all members are involved and understand the direction of the program. Other strategies, such as rotating task assignments and providing social incentives, demonstrate leadership that maintains a balance between program productivity and members' domestic circumstances, reflecting the inclusive and adaptive characteristics of facilitative leadership.

3.1.4. Collaborative Process

The collaborative process in program implementation is carried out systematically through weekly meetings that serve as a forum for planning, task allocation, and evaluation. These meetings involve representatives of KWT, the village government, and technical partners from the Tangerang Regency Agriculture and Food Security Office. In addition to official forums, informal coordination is also actively carried out through social media and direct interaction between members. Field activities reflect the integration of various sectors, such as training in hydroponics, mushroom cultivation, and utilization of harvests to support nutrition programs. Harvests are distributed proportionally to support KWT cash and are distributed as food for families affected by stunting. The level of community involvement in all stages of the program demonstrates that this process is not top-down, but rather based on the real needs of the community—reinforcing the principle of collaborative processes in participatory governance practices.

3.1.5. Outcomes and Theoretical Reflection

The implementation of the Food Independent Village Program in Sodong Village has had significant social, economic, and food security impacts. Socially, a stronger solidarity network has been formed among members and villagers. Economically, KWT members have earned additional income through harvests and processed products. In terms of food security, there has been an increase in local food consumption and contributions to stunting management efforts in the village. From a theoretical perspective, the applied approach aligns with the Collaborative Governance model of Ansell and Gash [50] which emphasizes the importance of initial conditions, institutional design, facilitative leadership, and collaborative processes. The approach of Emerson, et al. [49] also appears relevant, with its emphasis on collective capacity and adaptive leadership. With appropriate policy support and the strengthening of local capacity, this model can be replicated in other villages as an example of sustainable, participatory village development practices.

Table 2.

Summary of Collaborative Governance Model in KWT Empowerment.

Model Components	Description
Starting Conditions	KWT institutional readiness, government support, and history of empowerment
Institutional Design	Formal and informal structures based on inclusivity and flexibility
Facilitative Leadership	Transformative leadership of the Village Head and KWT Chairperson
Collaborative Process	Regular meetings, agricultural training, distribution of harvest results
Outcomes & Theoretical Reflection	Socio-economic impacts, food security, and conformity with theory

3.2. The Impact of Collaborative Governance Implementation on Food Security and Socio-Economic Welfare

This section outlines the study results regarding the direct and indirect impacts of implementing collaborative governance within the context of empowering KWT in Sodong Village. The primary focus is on how cross-actor collaboration through a participatory approach can improve household food security and create community-based socio-economic well-being. The observed impacts encompass not only the food consumption dimension but also women's economic transformation, social leadership, program sustainability, and potential replication in other areas. Each aspect is structured to demonstrate how collaborative strategies significantly contribute to building resilient and inclusive village food security.

3.2.1. Food Security and Household Nutritional Impacts

KWT empowerment in Sodong Village contributes significantly to family food security through home-based farming and hydroponic cultivation, which support the availability of nutritious food. In addition to household consumption, the harvest is sold to supplement income and fund social programs such as stunting reduction. With training support from the Tangerang Regency Agriculture and Food Security Office and the involvement of the Community Health Centers (Puskesmas), KWT members have become more aware of the importance of healthy eating habits, enabling them to play active roles as producers and agents of change in the local food system.

3.2.2. Economic Empowerment and Income Diversification

The agricultural and processing activities by KWT have successfully increased household income and opened up new economic opportunities for village women. Business diversification, such as producing herbal products and participating in educational tourism, has also expanded income sources. CSR support and private sector partnerships have helped reduce production costs, while a transparent financial management system encourages women's participation and independence in family economic decision-making.

3.2.3. Social Transformation and Women's Leadership

Women's involvement in KWT has brought about significant social change, as they are now active in village planning and collective decision-making. Participatory organizational structures and collaboration with institutions such as the PKK team and Puskesmas strengthen women's roles as community leaders. While communication challenges and generational differences persist, inclusive communication strategies have successfully maintained social cohesion and reinforced the value of gender equality at the village level.

3.2.4. Sustainability of Empowerment Initiatives

The KWT program in Sodong Village demonstrates potential for sustainability through a structured institutional system, regular reporting, and a cadre development strategy. The involvement of various stakeholders and the program's integration into village and sub-district policies strengthen KWT's position in local development. While challenges such as external dependency and budget constraints persist, initiatives like women's cooperatives and independent businesses are being pursued to maintain the program's sustainability through self-reliance.

Table 3.

Impact of Implementing Collaborative Governance on Socio-Economic Welfare and Food Security.

Impact Aspects	Description
Food security	Increased access to vegetables and local foods; diversified consumption; distribution of harvests to prevent stunting.
Economy and Income	Increased household income; development of ecotourism and product processing; CSR funding support.
Social Transformation and Leadership	Women are involved in village deliberations, decision-making, and cross-sector coordination.
Program Sustainability	Institutional support; youth member cadre development; integration into sub-district strategic programs.
Challenges and Potential for Replication	Funding dependency; participation fluctuations; but potential for replication if locally based and adaptive.

3.2.5. Challenges and Potential for Replication of the Collaborative Model

Challenges in implementing the collaborative model include limited funding and fluctuations in participation, but this approach still has the potential to be replicated in other villages with similar characteristics. The key to success lies in the strength of community participation, the capacity of facilitators, and support from local policies. To ensure sustainability, self-help models such as cooperatives and village enterprises are needed, along with adaptive approaches that build community ownership of the program.

3.3. Development Communication Strategies in Increasing Active Participation and Technical Capacity of KWT for Strengthening Community-Based Food Security

3.3.1. Interpersonal Communication and Community Participation

Interpersonal communication is the primary foundation for interactions among KWT members and between KWT and other stakeholders. The Village Head and KWT Chairperson regularly hold open discussions, weekly deliberations, and evaluation forums, enabling the exchange of ideas and participatory problem-solving. This two-way communication model allows members to feel heard, valued, and actively involved in every stage of the program, in line with the principles of participation in development communication. Informal communication also plays a crucial role in building social solidarity. Casual gatherings after gardening activities or discussions in the garden hut provide strategic spaces for strengthening social ties among members. In this informal setting, members are more open about their aspirations and challenges, and they can build trust that forms the foundation for ongoing collaboration. Furthermore, the interpersonal communication approach also provides space for the emergence of informal leaders within the group. These figures typically possess strong social sensitivity and act as drivers of activities without formal positions. Their presence strengthens group dynamics and ensures that the empowerment process is not solely determined top-down but also grows from local initiatives.

3.3.2. Use of Digital Media and Communication Technology

The use of digital media, such as WhatsApp groups and Instagram, has become a strategic tool for expanding information reach and accelerating coordination. Information on planting schedules, harvest sharing, and agricultural education is routinely shared within these groups, enabling flexible and instant communication. Social media also serves as a platform for appreciation and documentation for KWT members. Photos of activities, harvests, and member testimonials are often shared as a reflection of success and shared motivation. This helps improve the group's image and fosters closer communication between members who live far apart. However, limited digital literacy presents a challenge. Not all KWT members have access to or the ability to operate social media. Therefore, ongoing digital literacy training and technological assistance are needed to maximize the potential of digital media in empowering the group.

3.3.3. Institutional Communication and Administrative Capacity Building

Institutional communication is facilitated through written documents, including proposals, activity reports, and official letters to relevant agencies. These documents serve as formal legitimacy tools that strengthen the KWT's position in the eyes of policymakers and development partners. The ability of KWT members to compile and manage activity documents is an important indicator of increased technical and administrative capacity. With guidance from village extension workers and facilitators, KWT members are now able to compile financial reports, record daily activities, and develop group work plans more systematically. In addition to administrative capacity building, institutional communication also includes coordination forums with village officials, the PKK team, and the Tangerang Regency Agriculture and Food Security Office. Active participation in these forums demonstrates that KWT is not only a field implementer but also a strategic partner in village development decision-making.

3.3.4. Communication for Strengthening Technical Capacity and Agricultural Education

Development communication not only aims to share information but also serves as a primary means of strengthening the technical capacity of KWT members. Agricultural training, such as on hydroponics, crop processing, and farm management, is delivered through dialogic and participatory communication methods. The use of field demonstration plots is highly effective in the learning process. Members can directly observe practical farming processes and receive guidance from agricultural extension workers. This mentoring is provided routinely through field visits and weekly evaluations held in the garden pavilion. Information boards in the KWT area, technical leaflets, and training modules serve as visual communication instruments that support the educational process. The materials are written in local languages with engaging illustrations to reach members unfamiliar with agricultural technical terms. This combination of oral, written, and visual communication strengthens the overall transfer of knowledge.

3.3.5. Multi-sector Communication and Strengthening Collaborative Networks

Cross-sector collaboration within the Food Independent Village Program is strengthened through an adaptive and open communication strategy. Quarterly meetings between villages, the Tangerang Regency Agriculture and Food Security Office, CSR partners, and KWT provide a crucial platform for communicating achievements and challenges, as well as designing joint actions. This multi-sectoral communication ensures synchronized agendas and efficient resource allocation across agencies. KWT is also beginning to be involved in planning and evaluation forums at the village and sub-district levels. Through village development planning meetings (Musrenbangdes), KWT members can voice their needs and propose strategic programs. This formal communication channel opens access for village women to become active actors in the development process. The presence of local media and audiovisual documentation from government agencies also

serves as public communication tools that expand the KWT's presence. Videos of activities and testimonials from successful members are used for inter-regional campaigns and training. Thus, development communication serves as a bridge between local communities, government institutions, and the private sector in strengthening community-based food security.

Table 4.
Development Communication Strategies for Strengthening KWT.

Communication Strategy Components	Description
Interpersonal Communication	Weekly meetings, open discussions, evaluation forums with village leaders and KWT members.
Digital and Social Media	WhatsApp Group, Instagram, and educational media from the Tangerang Regency Agriculture and Food Security Office to expand the reach of information.
Institutional Communication	Proposals, activity reports, administrative documentation as tools of legitimacy and accountability.
Education and Technical Capacity	Field demonstrations, technical modules, participatory agricultural training based on dialogic communication.
Cross-Sector Communication	Inter-agency coordination forum, documentation of activities for publication, and participatory advocacy.

This discussion integrates the Diffusion of Innovations theory [42] and the Collaborative Governance framework [50] to analyze the dynamics of development communication in empowering KWT through the Food Independent Village Program in Sodong Village. This integration helps explain how the innovation adoption process aligns with intersectoral collaboration, where communication plays a strategic role in creating awareness, encouraging participation, and shaping sustainable collective action.

3.3.5.1. Knowledge Stage and Starting Conditions

In the early stage of innovation diffusion (knowledge), the community is introduced to the concept of household farming and the strengthening of women's roles in the local food system. Facilitation is conducted through village meetings, technical training, and the distribution of local educational media. Supporting factors in the starting conditions—such as the existence of active KWT, cohesive social structures, and progressive village leadership—form a strong foundation for community readiness to accept and respond to innovation [50].

3.3.5.2. Persuasion Stage and Institutional Design

The persuasion process takes place in informal social spaces such as the garden hut, which enables the participatory exchange of ideas. This informal communication fosters a sense of ownership of innovations such as hydroponics and food diversification. An open and flexible institutional design, along with coordination between the government, CSR, and the community, creates space for inclusive collaboration. The use of digital media such as WhatsApp has been shown to accelerate information dissemination and respond to local dynamics in real time [51].

3.3.5.3. Decision Stage and Facilitative Leadership

The decision to adopt an innovation is not imposed in a top-down manner but rather develops through a deliberative process guided by participatory leadership. The Village Head and KWT Chairperson act as facilitative leaders, creating space for equitable discussion, encouraging shared ownership, and fostering community responsibility. This approach aligns with findings [52], which shows that technology-based participatory leadership strengthens the effectiveness of group farming enterprises.

3.3.5.4. Implementation Stage and Multimodal Communication

The implementation of innovation is reflected in concrete activities such as vegetable planting, hydroponic training, agricultural processing, and product marketing. Multimodal communication—involving face-to-face meetings, social media, and printed materials—is used to convey information, improve coordination, and accelerate knowledge transfer. This process enables collaborative learning that combines local wisdom with new technologies [53].

3.3.5.5. Confirmation Stage, Outcomes, and Social Transformation

The confirmation stage occurs when KWT members experience tangible benefits from the program, such as increased household income, reduced stunting risk, and improved family food security. Socially, significant transformations take place: women's roles in the community are strengthened, their bargaining power improves, and the program is successfully integrated into village development plans. These findings reinforce those of Yearwood, et al. [54] regarding the importance of community-based innovation in strengthening socio-economic conditions.

3.3.5.6. Economic Impact and Women's Empowerment

This program encourages economic diversification through the development of herbal products, agricultural educational tourism, and group-based micro-enterprises. A transparent financial management system and collaboration with

CSR partners strengthen women's bargaining power in economic decision-making. This supports the argument [55] that women's access to economic resources is a key pillar in the resilience of households and communities as a whole.

3.3.5.7. Sustainability and Potential for Program Replication

From a long-term perspective, the program's sustainability is supported by strengthening the KWT institutional framework, developing youth cadres, and integrating the program into the RPJMDes and sub-district policies. While challenges remain—such as fluctuating participation and dependency on external support—this model shows potential for replication in other areas with similar social characteristics. Iwuanyanwu, et al. [56] emphasized that successful replication requires adaptive facilitation and the strengthening of community ownership.

3.3.5.8. Strategic Roles of Development Communication

Overall, development communication in the context of KWT empowerment plays five main roles:

1. Interpersonal communication as a bridge of trust and solidarity among members;
2. Digital media to accelerate the dissemination of information and documentation of activities;
3. Institutional communication that strengthens formal legitimacy and policy support;
4. Technical-educational approaches that convert knowledge into practical skills; and
5. Multi-sector communication as a liaison between communities and external actors such as the government, private sector, and media.

These five roles emphasize that communication is not merely a tool for conveying messages, but a mechanism for social transformation that enables the realization of resilient, adaptive, and people-centered collaborative governance in supporting community-based food security.

4. Conclusion and Suggestions

4.1. Conclusion

The collaborative governance model for empowering Women Farmers Groups (Kelompok Wanita Tani or KWT in Bahasa Indonesia) in Sodong Village, Tangerang Regency, demonstrates that the active involvement of various actors—such as the village government, technical agencies, KWT, the community, and the private sector—has successfully created participatory, adaptive, and inclusive governance for the Food Independent Village Program. This cross-sector synergy not only strengthened local capacity and the effectiveness of program implementation but also transformed the role of KWT from a technical implementer into an influential agent of social change. The impact is evident in increased consumption of nutritious food, higher household income, and the strengthening of women's roles in local decision-making. The collaboration also enhanced social solidarity and expanded the economic networks of village communities, making this model relevant for contextual replication in other regions.

Development communication strategies in Sodong Village has proven crucial in increasing the active participation and technical capacity of KWT members in supporting community-based food security. Interpersonal communication and community participation are fundamental to strengthening social solidarity and fostering informal leadership at the local level. The use of digital media such as WhatsApp and Instagram accelerates coordination and expands information reach, despite challenges related to digital literacy. Institutional communication through administrative documents and coordination forums reinforces the KWT's strategic position in village development planning and decision-making. Furthermore, educational communication through technical training, field demonstrations, and local visual media has significantly improved members' agricultural capacity. Multi-sector communication between KWT, the village government, the Tangerang Regency Agriculture and Food Security Office, CSR partners, and local media strengthens the cross-actor collaborative network. These communication strategies create a dialogic and collaborative ecosystem that supports program sustainability and positions KWT as an agent of change in strengthening community food security.

4.2. Suggestion

Recommendations for strengthening KWT empowerment include five complementary strategies. First, local governments should formulate legal frameworks—such as Village Regulations (Perdes) or Regent Regulations (Perbup)—to formalize the status of KWT as a strategic development partner, thereby ensuring sustained budgetary support, training, and mentoring. Second, improving digital literacy and public communication is essential so that KWT members can effectively utilize technology for education, product promotion, and community-based advocacy. Third, diversifying funding sources and developing KWT-based social enterprises—such as women farmers' cooperatives or agro-based village-owned enterprises (BUMDes)—should be strengthened through entrepreneurship training and innovative financing schemes to enhance the groups' economic independence. Fourth, optimizing the potential of community-based agricultural educational tourism can serve as both an income-generating strategy and a cross-regional learning medium involving collaboration between the agricultural, education, and tourism sectors. Fifth, the adaptive replication of this model in other regions must consider the local social, cultural, and geographic contexts, with support from cross-sector facilitators who understand local dynamics to ensure the sustainability and inclusivity of the program.

References

- [1] A. Ghosh, A. Kumar, and G. Biswas, *Exponential population growth and global food security: Challenges and alternatives in bioremediation of emerging contaminants from soils*. Amsterdam, Netherlands: Elsevier, 2024.

- [2] E. Antriyandarti, D. N. Suprihatin, A. W. Pangesti, and P. L. Samputra, "The dual role of women in food security and agriculture in responding to climate change: Empirical evidence from Rural Java," *Environmental Challenges*, vol. 14, p. 100852, 2024. <https://doi.org/10.1016/j.envc.2024.100852>
- [3] T. P. Kanosvamhira, "Sustainable urban agriculture: Unlocking the potential of home gardens in low-income communities," *The Professional Geographer*, vol. 76, no. 5, pp. 587-596, 2024. <https://doi.org/10.1080/00330124.2024.2355179>
- [4] R. Ingutia and J. Sumelius, "Determinants of food security status with reference to women farmers in rural Kenya," *Scientific African*, vol. 15, p. e01114, 2022. <https://doi.org/10.1016/j.sciaf.2022.e01114>
- [5] H. Onyeaka *et al.*, "The intersection of food security and mental health in the pursuit of sustainable development goals," *Nutrients*, vol. 16, no. 13, p. 2036, 2024. <https://doi.org/10.3390/nu16132036>
- [6] S. Oktarina, E. Purwanto, A. Basit, and M. Shahreza, "Communication media types for optimising yards in achieving family food security," *Jurnal Studi Komunikasi*, vol. 7, no. 3, pp. 879-890, 2023. <https://doi.org/10.25139/jsk.v7i3.6605>
- [7] O. Atallah and R. K. Rajib, "Implementation of food estates as a challenge to maintain food security and preserve the environment," *Jurnal Ilmiah Penelitian Mahasiswa*, vol. 2, no. 3, pp. 72-80, 2024. <https://doi.org/10.61722/jipm.v2i3.57>
- [8] T. Sarker, R. Roy, S. Yeasmin, and M. Asaduzzaman, "Enhancing women's empowerment as an effective strategy to improve food security in rural Bangladesh: A pathway to achieving SDG-2," *Frontiers in Sustainable Food Systems*, vol. 8, p. 1436949, 2024. <https://doi.org/10.3389/fsufs.2024.1436949>
- [9] M. Jandaghian-Bidgoli, E. Kazemian, N. Shaterian, and F. Abdi, "Focusing attention on the important association between food insecurity and psychological distress: A systematic review and meta-analysis," *BMC Nutrition*, vol. 10, no. 1, p. 118, 2024. <https://doi.org/10.1186/s40795-024-00922-1>
- [10] C. K. A. Pienaaah and I. Luginaah, "The impact of village savings and loan associations as a financial and climate resilience strategy for mitigating food insecurity in Northern Ghana," *Risks*, vol. 12, no. 4, p. 58, 2024. <https://doi.org/10.3390/risks12040058>
- [11] L. C. Zulu, I. N. S. Djenontin, and P. Grabowski, "From diagnosis to action: Understanding youth strengths and hurdles and using decision-making tools to foster youth-inclusive sustainable agriculture intensification," *Journal of Rural Studies*, vol. 82, pp. 196-209, 2021. <https://doi.org/10.1016/j.jrurstud.2021.01.023>
- [12] R. O. Valverde, P. A. Mesías, and J. Peris-Blanes, "Just transitions through agroecological innovations in family farming in Guatemala: Enablers and barriers towards gender equality," *Environmental Innovation and Societal Transitions*, vol. 45, pp. 228-245, 2022. <https://doi.org/10.1016/j.eist.2022.11.002>
- [13] J. Lee, J. Babcock, T. S. Pham, T. H. Bui, and M. Kang, "Smart city as a social transition towards inclusive development through technology: A tale of four smart cities," *International Journal of Urban Sciences*, vol. 27, no. sup1, pp. 75-100, 2023. <https://doi.org/10.1080/12265934.2022.2074076>
- [14] Banten.now.com, "Building food security in tangerang regency," DPKP Siapkan 3 Desa Mandiri, 2024.
- [15] <https://tvdesanews.id>, "Sodong village becomes a food security pilot project, with kwt the main focus," 2024. <https://tvdesanews.id/desa-sodong-jadi-pilot-project-ketahanan-pangan-kwt-jadi-fokus-utama/>
- [16] Lensametro.com, "Sodong village inaugurated as a pilot project for educational tourism," Menteri PDT Siap Dukung Penuh, 2024.
- [17] F. G. M. Yar and E. U. Sail, "Women's economic empowerment through agriculture: Analyzing barriers and solutions," *Eduvest-Journal of Universal Studies*, vol. 5, no. 1, pp. 284-296, 2025. <https://doi.org/10.59188/eduvest.v5i1.50281>
- [18] K. Mwantimwa and N. Ndege, "Transferring knowledge and innovations through village knowledge center in Tanzania: Approaches, impact and impediments," *VINE Journal of Information and Knowledge Management Systems*, vol. 54, no. 2, pp. 379-397, 2022. <https://doi.org/10.1108/VJIKMS-09-2021-0195>
- [19] Y. U. O. Sabaora, S. H. Priyanto, and T. M. Prihtanti, "Food security of households receiving assistance from the Independent food village program in central sumba regency," *Jurnal Agro Ekonomi*, vol. 38, no. 2, pp. 105-125, 2020.
- [20] T. Gobena, A. Bantider, M. Mulugeta, and E. Teferi, "Scaling up community participation in watershed management for food security improvement: the case of Qarsa woreda, East Haraghe zone, Ethiopia," *F1000Research*, vol. 14, p. 244, 2025. <https://doi.org/10.12688/f1000research.153669.1>
- [21] K. Sanogo, I. Touré, D.-D. A. A. Arinloye, E. R. Dossou-Yovo, and J. Bayala, "Factors affecting the adoption of climate-smart agriculture technologies in rice farming systems in Mali, West Africa," *Smart Agricultural Technology*, vol. 5, p. 100283, 2023. <https://doi.org/10.1016/j.atech.2023.100283>
- [22] M. Slayi, L. Zhou, and I. F. Jaja, "Exploring farmers' perceptions and willingness to tackle drought-related issues in small-holder cattle production systems: A case of rural communities in the eastern cape, South Africa," *Applied Sciences*, vol. 13, no. 13, p. 7524, 2023. <https://doi.org/10.3390/app13137524>
- [23] A. Farrukh, S. Ayubi, and A. Sajjad, "Investigating the barriers and mitigation strategies for biogas adoption in a developing economy: A multi-stakeholder networks perspective," *Process Safety and Environmental Protection*, vol. 188, pp. 559-572, 2024. <https://doi.org/10.1016/j.psep.2024.05.104>
- [24] T. Rasimphi, B. Kilonzo, D. Tinarwo, and P. Nyamukondiwa, "Challenges, opportunities, and possible interventions in the biogas sector in rural areas of Limpopo, South Africa," *Energy Strategy Reviews*, vol. 56, p. 101562, 2024. <https://doi.org/10.1016/j.esr.2024.101562>
- [25] D. Dushkova and O. Ivlieva, "Empowering communities to act for a change: A review of the community empowerment programs towards sustainability and resilience," *Sustainability*, vol. 16, no. 19, p. 8700, 2024. <https://doi.org/10.3390/su16198700>
- [26] R. Windiasih, L. K. Sari, S. Prastyanti, A. I. Sulaiman, and T. Sugito, "Women farmers group participation in empowering local food security," *International Journal Of Community Service*, vol. 3, no. 3, pp. 186-194, 2023. <https://doi.org/10.51601/ijcs.v3i3.200>
- [27] S. Asmorowati *et al.*, "Organizational capacity and women's empowerment: A case study of women farmers' groups in sustainable food garden programs in Indonesia," *Journal of International Women's Studies*, vol. 26, no. 4, p. 9, 2024.
- [28] A. Sunkar, "Socio-economic study on empowering women farmers to support the SDGs," *IOP Conference Series: Earth and Environmental Science*, vol. 905, no. 1, p. 012135, 2021.

- [29] S. Masona, N. Ulfah, A. S. Nasution, H. Rosadi, D. R. Sari, and I. Ripandi, "Analysis of independent agriculture program for Empowered Village Women (Permata) from CSR PT Pertamina EP Adera Field," *Indonesian Journal of Multidisciplinary Science*, vol. 3, no. 10, 2024.
- [30] F. M. Dzanku, D. Tsikata, and D. A. Ankrah, "The gender and geography of agricultural commercialisation: What implications for the food security of Ghana's smallholder farmers?," *The Journal of Peasant Studies*, vol. 48, no. 7, pp. 1507-1536, 2021. <https://doi.org/10.1080/03066150.2021.1945584>
- [31] F. Amalia and E. C. Mayndarto, "The role of women's farmer groups as an alternative solution to food insecurity during the covid-19 pandemic," *Hasanuddin Economics and Business Review*, vol. 6, no. 2, pp. 72-78, 2022. <https://doi.org/10.26487/hebr.v6i2.5095>
- [32] J. Nunoo, M. Abdullah, D. Adeabah, E. J. A. Abakah, and Z. Sulong, *Reinvigorating sustainable rural development with financial inclusion: a case of women's empowerment*. Singapore: Springer Nature Singapore, 2024, pp. 257-278. https://doi.org/10.1007/978-981-97-6132-6_11
- [33] A. A. Mulema, B. Boonabaana, L. Debevec, L. Nigussie, M. Alemu, and S. Kaaria, "Spiraling up and down: Mapping women's empowerment through agricultural interventions using the community capitals framework in rural Ethiopia," *Community Development*, vol. 52, no. 1, pp. 113-130, 2021. <https://doi.org/10.1080/15575330.2020.1838589>
- [34] S. Kalogiannidis and D. Syndoukas, "The impact of agricultural extension services on farm output: A worldwide viewpoint," *Research on World Agricultural Economy*, vol. 5, no. 1, pp. 96-114, 2024. <https://doi.org/10.36956/rwae.v5i1.999>
- [35] E. Purwanto, U. Farisal, M. Shahreza, A. Rahmah, and F. S. Isbandi, "Development communication model in strengthening sustainable food security in rural areas," *Interaction Communication Studies Journal*, vol. 2, no. 1, pp. 16-16, 2025. <https://doi.org/10.47134/interaction.v2i1.3849>
- [36] D. Nabuuma, B. Ekesa, M. Faber, and X. Mbhenyane, "Designing a contextualized food-based strategy to improve the dietary diversity of children in rural farming households in central Uganda," *Food and Nutrition Bulletin*, vol. 45, no. 1, pp. 24-37, 2024. <https://doi.org/10.1177/03795721241240854>
- [37] I. Indardi and J. Marla, "Dynamics of the samberembe young mina farmer group in mina rice farming in Pakem, Yogyakarta," *E3S Web of Conferences*, vol. 361, p. 03014, 2022. <https://doi.org/10.1051/e3sconf/202236103014>
- [38] A. M. Tesfaye and S. M. Tyali, "Unpacking power dynamics in participatory communication among agricultural sector stakeholders," *Information Development*, vol. 0, no. 0, p. 02666669251314853, 2025. <https://doi.org/10.1177/02666669251314853>
- [39] J. K. Clark, "Public values and public participation: A case of collaborative governance of a planning process," *The American Review of Public Administration*, vol. 51, no. 3, pp. 199-212, 2021. <https://doi.org/10.1177/0275074020956397>
- [40] S. De Smet and S. Boroş, "Revisiting women empowerment through a cultural lens a in-depth analysis of empowerment methodologies in horticulture in rural Ethiopia," *Frontiers in Psychology*, vol. 12, p. 536656, 2021. <https://doi.org/10.3389/fpsyg.2021.536656>
- [41] J. Agbodzakey, *Communication in collaborative governance*. Cham: Springer International Publishing, 2024, pp. 103-110. https://doi.org/10.1007/978-3-031-57373-6_10
- [42] R. Roos and J. van der Sluijs, "Bridging different ways of knowing in climate change adaptation requires solution-oriented cross-cultural dialogue," *Frontiers in Climate*, vol. 7, p. 1544029, 2025. <https://doi.org/10.3389/fclim.2025.1544029>
- [43] M. Huda, "Trust as a key element for quality communication and information management: Insights into developing safe cyber-organisational sustainability," *International Journal of Organizational Analysis*, vol. 32, no. 8, pp. 1539-1558, 2023. <https://doi.org/10.1108/IJOA-12-2022-3532>
- [44] A. Ullah, F. Adams, and M. Bavorova, "Empowering young farmers' voices in climate change extension programs: An in-depth analysis of decision-making dynamics and social media engagement," *International Journal of Disaster Risk Reduction*, vol. 111, p. 104713, 2024. <https://doi.org/10.1016/j.ijdr.2024.104713>
- [45] I. Imaniah, E. Purwanto, and M. Shahreza, "Bojong renged village government development communication strategy in empowering entrepreneurship through thematic Village Program," *Jurnal Ilmu Sosial Mamangan*, vol. 12, no. 2, pp. 216-232, 2023. <https://doi.org/10.22202/mamangan.v12i2.7531>
- [46] M. Zheleva, C. R. Anderson, M. Aksoy, J. T. Johnson, H. Affinnih, and C. G. DePree, "Radio dynamic zones: Motivations, challenges, and opportunities to catalyze spectrum coexistence," *IEEE Communications Magazine*, vol. 61, no. 6, pp. 156-162, 2023. <https://doi.org/10.1109/MCOM.005.2200389>
- [47] A. Shamsuzzoha, J. Nieminen, S. Piya, and K. Rutledge, "Smart city for sustainable environment: A comparison of participatory strategies from Helsinki, Singapore and London," *Cities*, vol. 114, p. 103194, 2021. <https://doi.org/10.1016/j.cities.2021.103194>
- [48] O. Mapiye, G. Makombe, A. Molotsi, K. Dzama, and C. Mapiye, "Information and communication technologies (ICTs): The potential for enhancing the dissemination of agricultural information and services to smallholder farmers in sub-Saharan Africa," *Information Development*, vol. 39, no. 3, pp. 638-658, 2023. <https://doi.org/10.1177/02666669211064847>
- [49] K. Emerson, T. Nabatchi, and S. Balogh, "An integrative framework for collaborative governance," *Journal of Public Administration Research and Theory*, vol. 22, no. 1, pp. 1-29, 2012.
- [50] C. Ansell and A. Gash, "Collaborative governance in theory and practice," *Journal of Public Administration Research and Theory*, vol. 18, no. 4, pp. 543-571, 2008.
- [51] S. Ahuja, Y. E. Chan, and R. Krishnamurthy, "Responsible innovation with digital platforms: Cases in India and Canada," *Information Systems Journal*, vol. 33, no. 1, pp. 76-129, 2023. <https://doi.org/10.1111/isj.12378>
- [52] D. Siregar, Z. Lubis, V. Rahmadani, M. Aulia, and M. Sinulingga, "Determine the appropriate leadership style for supporting sustainable agriculture in PT. Perkebunan Nusantara III," *IOP Conference Series: Earth and Environmental Science*, vol. 1297, no. 1, p. 012028, 2024. <https://doi.org/10.1088/1755-1315/1297/1/012028>
- [53] A. Gardeazabal, T. Lunt, M. M. Jahn, N. Verhulst, J. Hellin, and B. Govaerts, "Knowledge management for innovation in agri-food systems: A conceptual framework," *Knowledge Management Research & Practice*, vol. 21, no. 2, pp. 303-315, 2023. <https://doi.org/10.1080/14778238.2021.1884010>
- [54] J. Yearwood, N. Akseer, G. Kandru, and Z. A. Bhutta, "Food security lessons from exemplars in stunting reduction." Cheltenham, UK: Edward Elgar Publishing, 2023, pp. 183-201.

- [55] B. P. Bastakoti and N. S. Paudel, "An inquiry into the forest based enterprises managed by women through group based enterprise operation model and empowerment outcome in nepal: Cases from sindhupalchowk and nawalpur districts," *Journal of Forest and Livelihood*, vol. 24, p. 1, 2024.
- [56] O. Iwuanyanwu, I. Gil-Ozoudeh, A. C. Okwandu, and C. S. Ike, "Cultural and social dimensions of green architecture: Designing for sustainability and community well-being," *International Journal of Applied Research in Social Sciences*, vol. 6, no. 8, pp. 1951-1968, 2024. <https://doi.org/10.51594/ijarss.v6i8.1477>