

Stakeholder Engagement Models for Food Security Programs

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ABSTRACT

This study aims to analyze the stakeholder engagement model in the Food Security Program, particularly the Rice Planting Area Expansion Program (LTT) in Sidoarjo Regency, by identifying the roles, interaction patterns, and implementation challenges. A descriptive qualitative method was employed using purposive sampling involving the Department of Agriculture, Kodim 0816/Sidoarjo, Babinsa, agricultural extension officers, farmer groups, and individual farmers. Data were collected through in-depth interviews, field observations, and documentation, and were analyzed using the Miles, Huberman, and Saldaña model. The findings indicate that stakeholder involvement is collaborative and structured across three layers: policy, facilitation, and implementation. The government provides regulations and agricultural inputs, the military supports mobilization and planting discipline, while extension officers and farmers serve as technical implementers. Although the collaboration functions well, several challenges persist, including overlapping authority, limited technological adoption, land constraints, and suboptimal farmer capacity. The study implies the need for strengthened multisectoral coordination and enhanced human resource capacity in the agricultural sector.

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1. INTRODUCTION

Food security is a strategic global issue that has received serious attention in the 21st century. Population growth, climate change, land degradation, and geopolitical instability pose major challenges to global food availability and distribution (Varzakas & Smaoui, 2024). The FAO report (2022) states that more than 800 million people still suffer from chronic hunger, while 2.3 billion people face food insecurity (Rigillo, Wylie, Barca, Ni, & Sumra, 2022). This shows that even though food production has increased, distribution and access remain global issues. The 2030 SDGs, particularly the Zero Hunger goal, emphasize the importance of collaboration among stakeholders to strengthen sustainable food security (Sporchia et al., 2024).

The government, through the Ministry of Agriculture, implements various strategic programs, one of which is the Rice Planting Area Expansion (LTT) program, to increase national rice production (Sulaiman et al., 2018). The implementation of this program involves the central government, local

governments, and the Indonesian Army through the District Military Command (Kodim) as farmer assistants. The involvement of multiple stakeholders, including the government, the TNI, agricultural agencies, farmer groups, academics, and the community, is an important factor in ensuring that food security programs run effectively and sustainably.

Sidoarjo Regency has a strategic position in supporting food security in East Java. Although known as an industrial area and a buffer zone for Surabaya, Sidoarjo still has around 20,000 hectares of rice fields that play an important role in rice production. However, Sidoarjo faces serious challenges such as land conversion, limited irrigation, and low adoption of modern agricultural technology. Through the LTT program involving Kodim 0816/Sidoarjo, the local government is working to strengthen rice productivity through assistance, mobilization, and capacity building for farmers.

The TNI has a strategic role in food security because food is part of national security. With its territorial structure down to the village level through Babinsa, the TNI is able to encourage mutual cooperation, strengthen planting discipline, and assist in accelerating government programs. The government itself has regulatory authority, budget, and bureaucratic apparatus down to the village level. The synergy between the government and the TNI is a complementary collaboration in addressing food issues, especially in areas with high vulnerability.

Rice was chosen as the focus of this study because it is a staple food for the majority of Indonesia's population. The stability of rice prices and availability greatly affects inflation, economic stability, and even national security. The LTT program is one of the government's key strategies for maximizing land use, reducing dependence on imports, and maintaining food security. In Sidoarjo, land constraints due to industrialization make LTT increasingly relevant to ensure optimal rice production despite shrinking agricultural land.

Research on stakeholder engagement models in the LTT program is important because cross-sectoral synergy is often not optimal. In the field, there are still overlapping roles, weak coordination, differences in interests, and a lack of program sustainability. Through this research, the roles of actors, interaction patterns, and collaboration mechanisms can be comprehensively mapped. The results are expected to contribute theoretically to the literature on multi-stakeholder collaboration and provide practical recommendations for local governments, the TNI, and other stakeholders. Stakeholder involvement is also closely related to Human Resource Development (HRD). Synergy between the government, the TNI, agricultural agencies, and farmer groups is a means of increasing capacity, transferring knowledge, improving work discipline, and promoting agricultural innovation.

2. METHODS

This study uses a descriptive qualitative approach with the aim of describing in depth the patterns of stakeholder involvement in the Food Security Program, particularly the Rice Planting Area Expansion Program (LTT) in Sidoarjo Regency. This approach was chosen because it is able to explain the processes of interaction, roles, and mechanisms of collaboration between actors that cannot be measured quantitatively. Research informants were determined through purposive sampling techniques involving the Agriculture Office, Kodim 0816/Sidoarjo, Babinsa, field agricultural extension workers, farmer groups, and farmers implementing LTT. Research data were collected through in-depth interviews, field observations, and documentation of agricultural reports and program implementation. Data analysis was conducted using the Miles, Huberman & Saldaña model, which includes data reduction, data presentation, and conclusion drawing. Data validity was maintained through source triangulation, technique triangulation, and member checks to ensure the accuracy of the information obtained (Miles, Huberman, & Saldaña, 2014).

3. FINDINGS AND DISCUSSION

The results of the study show that stakeholder involvement in the Food Security Program in Sidoarjo Regency is collaborative, with complementary relationships. This collaboration is reflected in the structured distribution of roles from the central government to the implementing actors in the field.

The local government and the Ministry of Agriculture play a strategic role in providing policies, regulations, and support for agricultural facilities and infrastructure. This support includes the provision of high-quality seeds, subsidized fertilizer assistance, agricultural tools and machinery (alsintan), and the strengthening of farmer group institutions. The role played at the policy level is the initial foundation for the success of the program, as it determines the direction of implementation, the mechanism for distributing assistance, and the production targets to be achieved.

At the operational level, the Sidoarjo District Agriculture Office is responsible for coordinating program implementation through technical units such as field agricultural extension workers (PPL). Extension workers are at the forefront of providing technical assistance to farmers, from variety selection, land management, and fertilization techniques to pest control. In addition, the Agriculture Office also plays an important role in monitoring program implementation, assessing the effectiveness of assistance, and ensuring that the assistance provided is on target. Extension workers serve as a bridge of communication between the government and farmers, so that technical issues and field constraints can be immediately followed up.

The role of the Indonesian Army through Kodim 0816 and Babinsa personnel is one of the key factors that strengthens the implementation of the Special Efforts to Increase Rice, Corn, and Soybean Production (Upsus Pajale) and Additional Planting Area (LTT) programs. With a territorial approach, the Indonesian Army has a close network with rural communities, which makes the mobilization of farmers more effective. Kodim 0816 acts as a strategic actor in encouraging discipline in planting times, optimizing simultaneous planting activities, and anticipating non-technical obstacles often faced by farmers, such as delays in the distribution of production facilities or a lack of labor during the planting season. Babinsa, who interact directly with farmer groups, also strengthen the spirit of togetherness, mutual cooperation, and security in the implementation of the program.

The implementation of the LTT program in Sidoarjo Regency took place in the context of quite complex agricultural challenges. Land conversion is one of the main obstacles, given that the Sidoarjo region is experiencing pressure from industrial, residential, and infrastructure development, which has led to a reduction in productive land. In addition, limited irrigation infrastructure in several subdistricts has forced farmers to rely on alternative water sources, which are not always stable throughout the year. Low adoption of modern technologies such as planting machines, drone sprayers, or drip irrigation systems is also an obstacle to increasing productivity. These conditions show that even though the government program is underway, farmer readiness and infrastructure support are still not optimal (Rikardus, 2025).

The involvement of Babinsa and extension workers in the context of these challenges is relevant because they are not only technical facilitators, but also agents who help overcome social and psychological barriers. Many farmers are still traditional and reluctant to try new innovations. The presence of Babinsa is able to build trust and discipline, while extension workers provide technical arguments to convince farmers of the benefits of innovation. This collaborative approach makes program implementation more effective, especially in rural areas that have strong social characteristics and need motivational figures (Nugroho, Sudrajat, Azmi, Ardiansyah, & Prasetyanti, 2025).

The stakeholder collaboration model in the LTT Program in Sidoarjo Regency can be better understood through the Triple Helix approach, which places three main actors, namely the TNI (government), farmers and farmer groups (organizations), and academics/universities (academia) as elements that interact dynamically in supporting food security. This approach provides a comprehensive picture of how synergy between actors strengthens the implementation of the LTT program, both in terms of policy, technical assistance, and agricultural innovation. The visualization of the Triple Helix relationship is shown in the following figure:

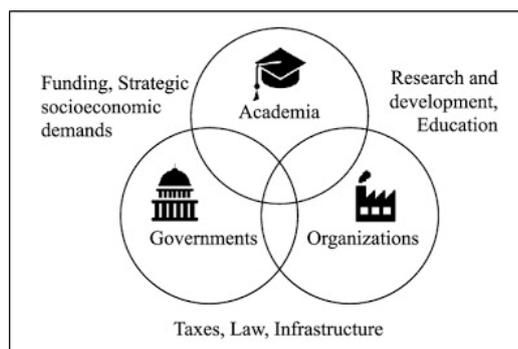


Figure 1. Triple Helix Model in the Implementation of the LTT Program

Based on the figure above, the Indonesian National Armed Forces (TNI) and local governments act as governance actors that set policy directions, strengthen regulatory frameworks, and ensure program implementation at the field level through the involvement of Kodim and Babinsa. In addition, the government provides support in the form of agricultural facilities and infrastructure needed to support cultivation activities. This role is an important foundation for the success of the LTT Program because it is directly related to determining strategies, setting additional planting targets, and mechanisms for mobilizing farmers in various regions. On the other hand, farmer groups and farmers act as organizational actors who are the main implementers of the entire rice cultivation process. They manage the land, plant, fertilize, and harvest based on the instructions of technical assistants in the field. The involvement of farmer organizations reflects their position as key actors in food production. However, several aspects still need to be strengthened, particularly regarding the ability to adopt modern agricultural technologies and maintain consistency in implementing simultaneous planting in accordance with program targets.

Meanwhile, academics play a role as knowledge actors who provide a scientific basis for program development through research, technological innovation, and implementable recommendations for local governments and the Indonesian National Armed Forces. The contributions of academics include the development of superior varieties, water resource management, optimization of agricultural machinery use, and evaluation of food security policies. The presence of academic actors ensures that programs are not only implemented administratively, but also based on scientific evidence and adaptable to the dynamics of the agricultural environment. The integration of these three elements of the Triple Helix shows that the success of the LTT Program is not only determined by the presence of policies or the intensity of assistance, but also by the quality of interaction and information flow among the actors. This approach emphasizes the importance of continuous collaboration, clear division of roles, and strengthening innovation capacity so that the food security program in Sidoarjo Regency can run more effectively, adaptively, and sustainably.

Interactions between stakeholders take place through a tiered coordination mechanism (Maulana & Haning, 2025). One such mechanism is regular inter-agency meetings to discuss planting progress, field constraints, and intervention plans. Joint field monitoring between the Agriculture Office, the District Military Command, and the sub-district government serves as a means of aligning perceptions and evaluating achievements. Informal coordination between extension workers, Babinsa, and farmer groups also contributes significantly to maintaining flexible communication. However, this study found that the coordination process still faces several obstacles. These obstacles include overlapping authorities between extension workers, agricultural assistants, and Babinsa, especially in providing guidance to farmers. Differences in institutional interests also pose a challenge, for example when production targets differ from land capacity. In addition, supporting resources such as the number of extension workers, which is not proportional to the number of villages under their guidance, make it impossible to provide intensive technical assistance. The low level of understanding among some farmers regarding the objectives of the LTT program, including the importance of simultaneous planting, also means that implementation in the field does not always go according to plan.

The stakeholder engagement model identified in this study consists of three main layers. The first layer is the policy layer, which involves the central government, provincial government, and district government as policy makers and providers of supporting facilities. The second layer is the assistance layer, which involves the Indonesian Army, agricultural extension workers, village officials, and sub-district government. This layer serves to ensure that policies are properly translated at the farmer level. The third layer is the implementation layer, which consists of farmers and farmer groups as the main actors in increasing production. The relationship between these layers is vertical through command and reporting mechanisms, as well as horizontal through inter-agency coordination at the district level.

The LTT program not only contributes to the achievement of production targets, but also serves as an important means of developing farmer capacity (Putri, Widiyanto, & Ismail, 2025). Collaboration between extension workers and Babinsa creates a more effective learning dynamic. Not only does it add technical skills, but it also fosters a disciplined attitude and cooperation among farmers. Intensive assistance encourages farmers to improve their understanding of modern cultivation techniques, efficient crop management, and the use of more productive agricultural tools. However, this study confirms that this capacity building has not been evenly distributed across all regions and still requires continuous strengthening.

The implementation of the program also requires strengthening in terms of supervision, especially regarding the utilization of production assistance and the fulfillment of planting targets. After the intensive assistance period ended, there was a potential decline in farmers' discipline in maintaining the established planting patterns. This shows that the sustainability of the program must be designed not only to depend on government and TNI intervention, but also on strengthening farmer institutions so that they can be independent in managing production.

Overall, the discussion shows that the success of food security programs is not only determined by government policies, but also by the quality of coordination between stakeholders and the readiness of farmers as the main implementers. Strong collaboration between local government, the Indonesian National Armed Forces (TNI), extension workers, and farmers is a determining factor in addressing food security challenges in Sidoarjo Regency. However, the effectiveness of the program may still be reduced if roles are not clearly defined, capacity building is not sustainable, and agricultural technology is not optimized. The LTT program in Sidoarjo is an example that a multi-actor approach to agricultural development can yield significant results when implemented in a structured and communicative manner. Strengthening coordination, policy consistency, and technological adaptation will be key to creating sustainable food security in the future (Ayunda & Purwaningsih, 2024; Izdori, Mkwambisi, Karuaihe, & Papargyropoulou, 2025).

4. CONCLUSION

This study concludes that stakeholder involvement in the Food Security Program, particularly the LTT Program in Sidoarjo Regency, takes place through a collaborative mechanism involving the government, the Indonesian National Armed Forces (TNI), agricultural extension workers, and farmer groups. Each actor has a complementary role and contributes to the success of the program. However, cross-sector coordination is not yet fully optimal due to overlapping roles, limited land, irrigation, and minimal adoption of modern technology. Strong synergy and intensive communication between stakeholders are determining factors in maintaining the effectiveness of food security programs in the region.

The implications of this study include the need to strengthen cross-sectoral coordination, clarify the division of roles in assistance, and increase farmer capacity through training and the adaptation of modern agricultural technology. From a theoretical perspective, this study contributes to the understanding of multi-stakeholder collaboration models in the context of food security. Meanwhile, the limitations of this study include its scope, which is limited to one district, and the use of a qualitative approach that does not measure the quantitative impact of the program. Further research is

recommended to expand the scope of the study and combine quantitative approaches to measure the effectiveness of the program more comprehensively.

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