

IMPLEMENTATION OF THE FOOD CLUSTER DEVELOPMENT POLICY IN EAST NUSA TENGGARA PROVINCE BY BANK INDONESIA

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Abstract:

The objective of this research is to analyze the implementation of the food security cluster development policy in East Nusa Tenggara Province, as well as the impact of Bank Indonesia's food security cluster development policy on improving food security in East Nusa Tenggara Province. The study used a qualitative approach, with informants selected purposively. The results indicate that the policy's content is strongly oriented towards the interests of the target groups, namely farmers, fishermen, and livestock breeders involved in volatile food commodities. This policy is also designed to generate collective benefits in the form of increased productivity, income, and food price stability. In the context of implementation, the influence of local power, the interests of actors, institutional characteristics, and the level of compliance and responsiveness of implementers also influence the variation in results between clusters. Meanwhile, the impact of the policy on three food clusters in NTT showed positive and significant results. The GS. Organik cluster, which operates in the horticulture sector, has successfully implemented digital farming technology through the Jinawi tool. This tool is used to measure soil pH and nutrient content (N, P, K), thus enabling precise and appropriate fertilization according to plant needs. The implementation of PADG Number 21/51/PADG/INTERN/2019 in East Nusa Tenggara Province has fulfilled the essential elements of an effective policy implementation framework. This policy was not only designed with a strong normative and operational foundation but also implemented with a collaborative and data-driven approach.

Keywords: Policy Implementation, Cluster Development, Food Security.

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INTRODUCTION

Law No. 23 of 1999 concerning Bank Indonesia, as amended by Law No. 6 of 2009, states that one of Bank Indonesia's primary duties as a central bank is to maintain monetary stability by controlling inflation. One of the factors causing inflation stems from fluctuations in the prices of volatile foods, where price pressures are primarily driven by production constraints, weak farmer institutions, inefficient market structures, uneven distribution, lack of infrastructure support, and government policies.

Bank Indonesia's involvement in maintaining the supply side is then realized through the Internal Board of Governors Regulation Policy, Number 21/51/PADG/INTERN/2019, namely the Food Security Cluster Development Policy. According to Bank Indonesia, a Food Security Cluster is a group of MSMEs operating in the same sector or subsector that are interconnected from upstream to downstream, aimed at controlling prices within the framework of controlling inflation in food commodities from the supply side.

The goal of developing the Food Cluster is to support rupiah stability within the framework of controlling both national and regional inflation. The development of food clusters in the regions



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also aims to strengthen coordination and synergy between Bank Indonesia, local governments, and other stakeholders to strive to improve food security jointly.

Since 2006, Bank Indonesia has implemented a cluster development program for MSMEs producing superior regional commodities and export commodities. This program aims to support regional economic development by improving the performance of MSMEs within the clusters. Bank Indonesia has implemented various interventions, covering the upstream and downstream farming process, including cultivation, post-harvest processing, and product marketing. In line with evolving situations and Bank Indonesia's policy direction, since 2014, cluster development has focused more on commodities that support food security, export-oriented commodities, and commodities that are sources of inflationary pressure/volatile foods.

Data from the Bank Indonesia Representative Office for East Nusa Tenggara Province shows that historically, since 2017, commodities that have tended to contribute to inflation have been rice, shallots, cayenne peppers, fish, Chinese cabbage, and broiler chicken. Furthermore, data from the Inflation Review and Prospects, based on conditions as of March 2025, confirms the above historical data regarding the types of commodities contributing to food inflation. Rice, with a total production of 450 tons, while consumption needs are 600,000 tons, still experiences a deficit of 150,000 tons. Shallots, with a total production of 11.4 thousand tons, while consumption needs are 72.8 thousand tons, still experience a deficit of 61.4 thousand tons. Fish, with a total production of 106,000 tons, while consumption needs are 267,000 tons, still experience a deficit of 161,000 tons. Only cayenne pepper experienced a surplus, with total production of 9,000 tons, while consumption needs are 6.8 thousand tons, resulting in a surplus of 2.2 thousand tons.

In February 2025, year-on-year (y-on-y) inflation in East Nusa Tenggara Province was 0.47 percent with a Consumer Price Index (CPI) of 106.50. The highest inflation occurred in Maumere at 1.68 percent with a CPI of 108.35, and the lowest inflation occurred in Kupang City at 0.01 percent with a CPI of 105.61. The y-on-y inflation in February 2025 occurred due to price increases indicated by an increase in 8 of the 11 expenditure group indices, namely: the food, beverage and tobacco group by 4.19 percent; the clothing and footwear group by 0.50 percent; the household equipment, tools and routine maintenance group by 0.28 percent; the health group by 0.64 percent; the recreation, sports and culture group by 0.26 percent; the education group by 1.46 percent; the food and beverage/restaurant provision group by 2.18 percent; and personal care and other services group by 7.53 percent.

Meanwhile, the groups that experienced price decreases were: the transportation group by 0.05 percent; the information, communication, and financial services group by 0.48 percent in February 2025. East Nusa Tenggara Province experienced month-to-month (m-to-m) inflation of 0.37 percent in February 2025 and also year-to-date (y-to-d) inflation of 0.09 percent in February 2025.

Law No. 18 of 2012 concerning Food, emphasizes that food is the most important basic human need and its fulfillment is part of human rights guaranteed in the 1945 Constitution of the Republic of Indonesia as a basic component for realizing quality resources; therefore, the state is obliged to realize the availability, affordability, and fulfillment of sufficient, safe, quality, and balanced nutritional food consumption, both at the national and regional levels down to the individual evenly throughout the territory of the Unitary State of the Republic of Indonesia at all times by utilizing local resources, institutions, and culture.

Some problems/obstacles in the implementation of cluster development policies include, first, inadequate infrastructure, such as roads, irrigation, and storage facilities. It can hamper the distribution of food products and farmers' access to markets. Second, Human Resources. Farmers'



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skills and knowledge about modern agricultural techniques and farm management are still limited. Better training and education are needed to increase productivity. Third, Climate Change. Extreme weather, such as drought or flooding, can damage crops and reduce yields. Fourth, Access to Capital: Many farmers struggle to access capital for investment in agriculture. Without financial support, it is difficult for them to expand their agricultural businesses. Fifth, Markets and Marketing. Limited access to wider markets and the lack of marketing networks can hinder farmers' ability to sell their products at good prices. Sixth, Availability of Superior Varieties. Limited access to quality seeds and superior varieties that are resistant to pests and diseases also hinders increasing agricultural output. Seventh, Government Policy and Support. The lack of consistent policy support from the government regarding food cluster development can hinder the growth of this sector.

To overcome the challenges above, collaboration and/or synergy between the government, the community, and the private sector are needed to create sustainable and effective solutions so that the Cluster Approach Policy becomes a role model that can be replicated in various regions, so that food security and inflation remain under control.

In East Nusa Tenggara Province, one of the biggest challenges is the problem of poverty. BPS data shows that (BPS NTT, Summary of Data and Information on Poverty in East Nusa Tenggara Province 2023), the poverty rate, according to trend analysts, in the period March 2022 to March 2023, the poverty line increased from IDR 460,823 to IDR 507,203 per capita per month or by 10.6%. Similar conditions occurred in both rural and urban areas, increasing by 9.97 and 9.89 percent, respectively. The number of poor people in East Nusa Tenggara Province in March 2023 was 1,141.11 thousand people (19.96%), an increase compared to March 2022, which was 1,131.62 thousand people (20.05%).

In addition, data from the Bank Indonesia Representative Office of East Nusa Tenggara Province also shows that (BI NTT, East Nusa Tenggara Province Economic Report, November 2024, pages 6-7)) There are indications that the main determinant of poverty persistence in NTT is low access to education and proper sanitation, where both of these contribute to poverty persistence in NTT through the labor productivity channel, therefore one of the important recommendations in its advisory role is Increasing productivity in the agricultural sector through the adoption of appropriate technology with the help of agricultural machinery (alsintan) and also increasing the ability of relevant human resources to operate more modern agricultural processes is also important to do, considering that the agricultural sector is the main sector in the economy of NTT Province.

METHODS

In this study, researchers used Qualitative research, Creswell (2009), qualitative research allows researchers to understand phenomena comprehensively and comprehensively, as well as explore the complex social context related to changes in urban transportation systems. A qualitative approach is very suitable for the research objective, which is to explore the ongoing transformation process in a person's life. Data were obtained through informant interviews, observations and document research. Informants were selected purposively from informants who have the ability and knowledge of information related to the research problem. Data sources consist of primary data (interview results and direct observation) and secondary data (documents, official reports, and academic literature). To ensure the validity of the findings, triangulation techniques were used, both across sources, techniques, and the time of data collection. Data analysis was carried out through a process of categorization, thematic interpretation, and inductive reasoning, in order to formulate



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collaborative patterns so that the results of this study are presented systematically and can be scientifically accounted for.

RESULT AND DISCUSSION

Implementation of the food security cluster development policy by Bank Indonesia in East Nusa Tenggara Province. Grindle (in Subarsono, 2011) states that public policy implementation is influenced by two major variables: policy content and implementation context. These variables include: the extent to which the interests of the target group are incorporated into the policy content, the types of benefits received by the target group, the extent of the desired changes resulting from a policy, whether a program is appropriately positioned, whether a policy specifically identifies its implementers, and whether adequate resources support a program. The uniqueness of Grindle's model lies in its comprehensive understanding of the policy context, particularly regarding implementers, recipients of implementation, potential conflict areas among implementing actors, and the conditions under which implementation resources are required.

A. Policy Content (PADG No. 21/51/PADG/INTERN/2019.

Interests of the Target Group. Grindle (1980, in Agustino, 2012) states that a policy must provide positive benefits for policymakers, implementers, and policy targets during its implementation. If a policy or program does not produce the desired positive effects or benefits, it can be concluded that the policy's implementation was unsuccessful. During the implementation process of a policy or program, there must be positive benefits for the policy targets.

The priority of this policy is to assist in the availability of volatile food commodities that can contribute to efforts to control food inflation and the welfare of MSMEs. It is in accordance with the hopes of the vision and mission to be achieved by Bank Indonesia, according to Law No. 23 of 1999 concerning Bank Indonesia, as amended by Law No. 6 of 2009, one of Bank Indonesia's main tasks is to maintain monetary stability through inflation control. One of the factors causing inflation stems from fluctuations in volatile food prices, where price pressures are triggered by various obstacles, including those from the production side, weak farmer institutions, inefficient market structures, uneven distribution, lack of infrastructure support, and government policies.

Judging from the intended benefits, the policy implementation has been successful since 2014. Cluster development has focused more on commodities that support food security, export-oriented commodities, and commodities that are sources of inflationary pressure/volatile foods. This program has succeeded in increasing the capacity of MSMEs to narrow the gap between supply and demand, thereby minimizing price pressures that drive inflation. Furthermore, the cluster program also aims to empower Micro, Small, and Medium Enterprises (MSMEs) because it involves many farmers and MSMEs.

Degree of Change. Grindle (1980, in Agustino, 2012) examined the types of changes expected from a policy. Every policy is designed with the goal of achieving the desired degree of change or the desired target for the parties involved in its implementation.

The expected change by the implementers of this policy is that the GS. Organik, Noetnana and Ingin Jaya B food security clusters have prioritized their attention on innovation to increase the production of strategic food commodities such as chili, cattle, and rice, whose knowledge and assistance were obtained through the implementation of the food security cluster development policy by the Provincial Bank Indonesia Representative Office in synergy with local governments and other stakeholders in the pentahelix collaboration. All groups show similar attitudes and strategies, namely focusing on innovation and increasing the productivity of strategic food



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commodities such as chili, cattle, and rice. Their success is inseparable from the training, assistance, and policy synergy provided by the Bank Indonesia Representative Office in collaboration with local governments and other parties in the pentahelix scheme.

It can be said that the GS. Organik, Noetnana, and Ingin Jaya B Food Security Clusters have prioritized innovation as a primary strategy for increasing strategic food production, which is inseparable from the successful implementation of cluster development policies by the Provincial Bank Indonesia Representative Office, together with Pentahelix partners. All three demonstrate that when knowledge, technology, and collaboration are combined in one policy, positive change at the farmer level is not only possible but also can occur comprehensively.

Position of Policymakers. The position and authority of policymakers, and how this influences implementation. One aspect listed by Grindle (1980, in Agustino, 2012) in policy content is the location of decision-making, which refers to or is related to the public policy process. By understanding this process, we can gain insight into each step in policy implementation. In implementing the food security cluster development policy, based on PADG No. 21/51/PADG/INTERN/2019 concerning the Food Security Cluster Development Policy, decision-making is carried out through deliberation between the Governor of Bank Indonesia and members of the Board of Governors of Bank Indonesia. Subsequently, it is implemented by representative offices throughout Indonesia, with progress reported periodically, and human resources and technology are improved according to developments in a participatory and bottom-up manner.

In the context of implementing this policy, Bank Indonesia NTT Province carries out the institutional mandate derived from the decision-making process at the central level, as stipulated in PADG No. 21/51/PADG/INTERN/2019 concerning the Food Security Cluster Development Policy. This implementation reflects the integration between the central and regional levels that aligns with the public policy process framework described by William Dunn (1999), where the stages of policy formulation and adoption are carried out centrally, while the implementation stage takes place at the regional level technically and operationally.

In relation to Grindle's theory (1980, in Agustino, 2012), decision-making is a crucial aspect of policy content. Clear decision-making at the Bank Indonesia Governor and Board of Governors ensures that policy implementation avoids overlapping authority. Once a decision is made, the process continues with socialization based on academic studies and stakeholder input. Bank Indonesia representative offices then implement it in the regions through a bottom-up and participatory approach.

Policy Implementation Attitude. Implementation is a program regulated by law and involves various stakeholders, actors, and organizations in reaching a mutual agreement. The parties involved in implementing the food security cluster development policy based on village development, as outlined in PADG No. 21/51/PADG/INTERN/2019 concerning the Food Security Cluster Development Policy, are Bank Indonesia, regional governments, academics, technology and infrastructure providers, business actors, entrepreneurs, agricultural extension workers, the media, and other parties. Roles, duties, and responsibilities are assigned to each party involved in policy implementation. All actors involved in implementing the food security cluster development policy, as outlined in PADG No. 21/51/PADG/INTERN/2019, have important roles. Each party involved in implementing this policy has its own duties and responsibilities, including the Bank Indonesia Representative Office for NTT Province, regional governments, business actors, technology service providers, and agricultural extension workers in the field. All stakeholders have worked together and carried out their duties according to their respective roles and functions.



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Policy implementers, particularly those from Bank Indonesia, are very open to multi-actor collaboration and view this program as a form of collective responsibility. This aligns with Abdul Wahab's (2012) view that policy implementation will be successful if there is effective collaboration between stakeholders, and that each actor involved must understand their role within the policy implementation structure.

Resources. Availability of resources (human, financial, etc.) needed to implement the policy. Policies that lack sufficient resource support will face implementation challenges. According to Tahir (2014), policy implementation will not be successful without adequate resources. Even if a policy has clear and consistent regulations, its implementation will not run smoothly if those responsible lack adequate resources. Resources are also crucial in policy implementation. Various resources are required to implement village development policies, as outlined in PADG No. 21/51/PADG/INTERN/2019, including mentoring, capacity building, comparative studies, and infrastructure and facilities to increase production in assisted clusters, including GS. Organik, Noetnana, and Ingin Jaya B. Furthermore, Bank Indonesia, through its assessments, has ensured support from business actors in the form of natural resources such as land area and water availability, and facilitated financial resources in collaboration with banks to ensure the sustainability of business implementation.

In the context of implementing the food security cluster development policy, one of the factors that determines the success of the program is the availability of resources, including human, financial, infrastructure, and natural resources. It was emphasized by Reyza Lisemba Budiarjo, Analyst for the Implementation Function of MSME Development, Inclusive Finance, and Sharia at the Bank Indonesia Representative Office in NTT Province. Regarding policy implementation, Bank Indonesia does not only rely on internal funds but also collaborates with banks, technology providers, and other institutions to ensure program sustainability. This approach strengthens the resource factor as the main foundation for policy success, not only in terms of quantity, but also in terms of suitability, sustainability, and connectivity between the involved actors. With such an approach, Bank Indonesia in NTT Province acts not only as a policy implementer but also as an enabler, ensuring each cluster receives resource interventions according to its needs. It proves that the food security cluster development policy has taken into account real conditions on the ground and is designed to be flexible yet targeted.

B. Context of implementation. PADG No. 21/51/PADG/INTERN/2019 concerning the Food Security Cluster Development Policy to address food inflation. According to Merilee S. Grindle, the context of implementation is one of two key variables influencing the success of policy implementation, in addition to policy content. The context of implementation encompasses the environment in which the policy is implemented, encompassing various social, political, economic, and cultural factors that can influence the implementation process and outcomes.

Political Power and Actors. The strategies used to implement the food security cluster development policy based on PADG No. 21/51/PADG/INTERN/2019 in the cluster under the guidance of the Bank Indonesia Representative Office in East Nusa Tenggara Province include intensive outreach, field visits, and comparative studies at other representative offices in Indonesia, such as Bali, West Kalimantan, and Kediri. Furthermore, digital platforms such as WhatsApp groups are utilized for activity progress reporting, innovative program planning, and a focus on transparency and participation by cluster administrators, members, and field facilitators. With these strategies, the policy implementation has achieved the expected benefits.



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In implementing the food security cluster development policy in East Nusa Tenggara Province, the main authority rests with the Bank Indonesia Representative Office as the implementer of the central policy mandate, while still actively involving various stakeholders. The Analyst of the Implementation Function of MSME Development, Inclusive Finance, and Sharia at the Bank Indonesia Representative Office in NTT Province, who explained how the power structure and interaction patterns were strategically built during the implementation process. Bank Indonesia not only carries out its authoritative function but also builds dynamic horizontal relationships with actors at the local level. The decision-making process remains structural and measurable, but its implementation is carried out collaboratively and contextually, where input from clusters, facilitators, and other partners is part of the ongoing evaluation.

This model demonstrates that policy implementation is not simply about who holds power, but how that power is managed to ensure effective, transparent, and productive interactions between actors. Strategies such as field visits, comparative studies, online communication, and innovative programming have been crucial in ensuring that these policies are implemented not simply based on instructions, but also through shared understanding and a spirit of participation.

Institutional Characteristics. The characteristics of the farmer groups GS. Organik, Noetnan, and Ingin Jaya B, in implementing the food security cluster development policy based on PADG No. 21/51/PADG/INTERN/2019, indicate that not all members have implemented the cultivation SOPs for cattle fattening, rice cultivation, and horticulture. However, on average, 90% of members have implemented the SOPs according to the guidance provided. Implementing the food security cluster development policy based on PADG No. 21/51/PADG/INTERN/2019 is a complex process involving many actors. The efficiency, capacity, and commitment of the implementing institutions are crucial for ensuring that this policy is not only implemented but also targeted (Heykal et al., 2024).

Bank Indonesia's approach demonstrates that an adaptive and efficient bureaucratic structure has been established to support real-time policy implementation and respond to changes on the ground. However, implementation challenges stem not only from bureaucracy but also from the level of policy adoption by farmer groups as the direct implementers. Internal capacity development in groups continues, although significant progress has been made. Changing group members' behavior requires time and consistent support. The commitment of institutions like Bank Indonesia to a continuous field presence is a key factor in long-term success.

Compliance and Responsiveness. The success and smoothness of policy implementation depend heavily on the level of compliance and responsiveness demonstrated by policy implementers. Grindle (1980, in Agustino, 2012) emphasized the importance of evaluating the extent to which policy implementers comply with and respond to the policy. The level of compliance and responsiveness of implementers in implementing the GS.Organik, Noetnan, and Ingin Jaya B food security cluster development policies overall showed significant results in terms of increased production due to the adoption of Jinawi digital farming technology and production cost efficiency, as well as mindsets and behavior patterns due to intensive mentoring throughout the implementation process. This situation is possible because both cluster management and cluster actors demonstrate compliance in implementation and responsiveness to the use of digital technology and innovations in cattle health posts.

The level of compliance and responsiveness of implementers and beneficiaries is a key indicator of successful policy implementation. In the context of the food security cluster development policy based on PADG No. 21/51/PADG/INTERN/2019, research results indicate



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that field actors, both management and group members, generally demonstrate a fairly high level of compliance and responsiveness to policy directives and assistance.

C. Impact of Implementing the Food Security Cluster Policy Development in East Nusa Tenggara Province. The policy's impact on three food clusters in NTT has shown positive and significant results. The GS. Organik cluster, which operates in the horticulture sector, has successfully implemented digital farming technology through the Jinawi tool. This tool is used to measure soil pH and nutrient content (N, P, K), allowing for precise and tailored fertilization according to plant needs. After implementing interventions according to Jinawi's recommendations, cayenne pepper productivity increased from 0.5 kg to 1.5 kg per plant. Production costs decreased due to the use of local organic fertilizer, and revenue increased from IDR 17.5 million to over IDR 20 million. Furthermore, the pentahelix approach opened up new markets for GS. Organik's products now reach mid-scale hotels and restaurants in Kupang City. The macroeconomic impact of this program is also evident in its contribution to inflation control. In October 2023, Kupang City's inflation rate was recorded at 1.98% (YoY), lower than the average inflation rate in NTT Province of 2.37% (YoY).

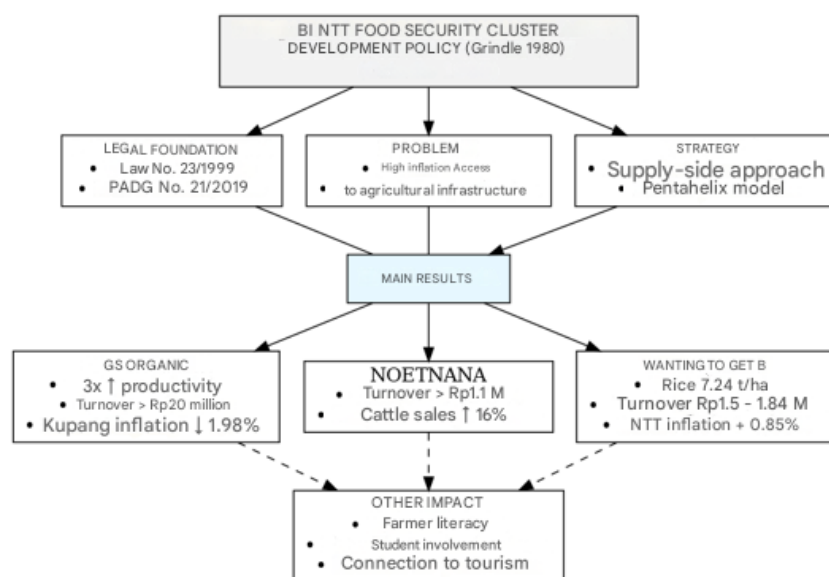
The Noetnana Cluster, which combines cattle farming with horticulture, demonstrates that innovations in feed management have a significant impact on production performance. The feed area has increased, feed types have been diversified, and cattle sales have increased by 16% in one year. Sales turnover has reached over IDR 1.1 billion. The cluster has also become a learning center for millennial farmers and university students, demonstrating spillover effects in the form of increased agribusiness literacy and human resource capacity. This success has helped maintain stable animal food prices in Kupang City.

Meanwhile, the Ingin Jaya B Cluster, which focuses on rice cultivation, successfully increased productivity through a combination of digital farming and the Jajar Legowo 2:1 planting technique. Rice productivity increased from 6.5 tons to 7.24 tons per hectare, production costs decreased significantly, and turnover increased from IDR 1.5 billion to IDR 1.84 billion. Along with increased production, this cluster also expanded its market to the local tourism sector in Labuan Bajo. Its impact on inflation is also evident in BPS data, which recorded inflation in NTT Province in July 2024 at only 0.85% (YoY), reflecting controlled food prices in the region. This empirical finding reinforces the results of previous studies, such as those conducted by Yunita Resmi Sari et al. (2017), which confirmed that the development of food clusters by Bank Indonesia can increase farmer incomes, strengthen institutions, and expand market and financing access. This cluster business model has also proven capable of being replicated and integrated within the Regional Inflation Control Team (TPID) framework, thus becoming a strategic instrument in supporting sustainable local economic stability.

Thus, the implementation of Regional Development Planning (PADG) Number 21/51/PADG/INTERN/2019 in East Nusa Tenggara Province has fulfilled the essential elements of an effective policy implementation framework. This policy was not only designed with a strong normative and operational foundation, but also implemented with a collaborative and data-driven approach. The successful implementation of this policy demonstrates that planned and measured supply-side interventions can be an effective instrument in maintaining price stability, strengthening food security, and improving the welfare of local communities.



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Source: Researcher Processed 2025
Figure 1. Research Results Chart

CONCLUSION

The Food Cluster Productivity Improvement Program initiated by Bank Indonesia, particularly through the BI Representative Office of East Nusa Tenggara Province, has had a very significant impact on improving the performance of fostered clusters such as GS. Organik, Noetnana, and Ingin Jaya B. This impact is not only felt directly by the fostered farmer groups but also has a positive influence on external parties related to the supply chain of strategic food commodities. Through a digital technology-based approach, continuous training, and strengthening production capacity, this program contributes directly to supporting the National Movement for Food Inflation Control (GNPIP), which is a national strategy to maintain food price stability and public purchasing power.

Upstream production is a key foundation that needs to be continuously strengthened to ensure food clusters maintain the resilience and diversity of their agricultural products. Therefore, technical support and social programs from Bank Indonesia and other collaborators, such as training centers, universities, and the private sector, must continue to be provided. This support includes cultivation training, technical assistance, the provision of digital farming tools such as Jinawi, and assistance with other production facilities and infrastructure.

Collaboration and synergy among stakeholders are crucial prerequisites for achieving effective implementation of the food cluster program. Local governments, academics, training institutions, technology companies, agricultural extension workers, and business associations such as the Indonesian Hotel and Restaurant Association (PHRI) have proven to be strategic partners in accelerating program outcomes. Through this synergy, each party can contribute according to its role—whether through regulations, funding, technical training, market access, or strengthening farmer institutions.

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