



Research Article

The Relationship Between Poverty, Income Inequality, and Hunger in Indonesia

A Sustainable Economic Approach Systematic Literature Review

Supriadi Siagian ^{1*}, Durahman Marpaung ², Prianda Pebri ³, Taufiq Hidayah ⁴, Purwanto ⁵,

Fandra Dikhi Januardani ⁶, Sabrina ⁷

¹⁻⁷ Doctoral Program of the Postgraduate School, Universitas Muhammadiyah Sumatera Utara, Indonesia
: 2530030005@umsu.ac.id

* Corresponding Author : Supriadi Siagian

Abstract: The persistent challenge of hunger remains a critical obstacle to achieving sustainable development in Indonesia, where socioeconomic inequality, environmental degradation, and unstable food systems continue to limit progress toward Sustainable Development Goal 2 (Zero Hunger). This study systematically reviews international and national literature published between 2018 and 2024 to identify the key sustainable economic strategies that effectively address hunger in Indonesia. Guided by the PRISMA 2020 protocol, the review integrates 62 eligible studies sourced from Scopus, Web of Science, ERIC, and Google Scholar databases. Findings reveal that circular economy practices, green innovation, and climate-smart agriculture play central roles in improving food availability, reducing post-harvest losses, and enhancing community resilience. Furthermore, digital transformation and inclusive economic policies are shown to strengthen food supply chains and ensure equitable access to resources. The discussion emphasizes the interdependence between economic sustainability, social equity, and environmental stewardship as pillars of hunger reduction. The study concludes by proposing a policy framework that aligns national development strategies with sustainable agricultural innovation and resilience-based economic systems. This framework is expected to guide policymakers in strengthening Indonesia's.

Keywords: Indonesia; Circular Economy; Food Security; Sustainable Economy; Zero Hunger.

1. Introduction

The phenomenon of poverty, income inequality, and hunger are still the main structural challenges in efforts to realize sustainable economic development in Indonesia. Although the national economy has shown a steady growth trend over the past decade, its benefits have not been evenly distributed across all walks of life. Based on the World Bank report (2024), Indonesia's poverty rate will be in the range of 9.4 percent in March 2024, while the Gini coefficient will reach 0.388—a figure that shows that income distribution inequality is still quite high compared to other countries in the Southeast Asian region. On the other hand, a joint report by FAO, IFAD, UNICEF, WFP, and WHO (2023) estimates that around 17.6 million Indonesians experience moderate to severe food insecurity, an irony amid relatively positive macroeconomic growth achievements. This fact indicates that economic growth alone is not enough to ensure equitable distribution of welfare and the fulfillment of basic food rights for all citizens.

In the development economics literature, the linkages between poverty, income inequality, and hunger have been the focus of a broad and multidimensional study. A number of international studies confirm that poverty is a direct determinant of the household's inability to access nutritious food sustainably (Headey & Ruel, 2022; Davis et al., 2023). However, the dimension of income inequality also deepens the problem through structural mechanisms that hinder the economic access of the poor to productive resources (Holleman & Conti, 2020; Kim & Barrett, 2021). High inequality not only reduces the effectiveness of poverty alleviation policies, but also worsens food distribution and household purchasing

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power in rural and urban areas. This confirms that hunger is not always the result of physical scarcity of food, but rather the result of an unequal distribution of income and resources.

In the global context, the sustainable economics approach has been used as a more comprehensive analytical framework in understanding the linkages between economic, social, and environmental dimensions in food security issues (Sachs et al., 2021; Barbier & Burgess, 2020). This approach emphasizes the importance of striking a balance between economic growth, social justice, and environmental efficiency to achieve long-term well-being. In Indonesia, the gap between regions and the dualism of economic structures—between the modern urban sector and the traditional agricultural sector—are factors that complicate hunger alleviation efforts (Nasrudin et al., 2022; Hendrawan et al., 2023). While economic growth is concentrated in urban centers, rural and border areas are often lagging behind in terms of access to food, education, and productive employment infrastructure, increasing the risk of hunger and malnutrition.

However, a review of the literature shows that research on the relationship between poverty, income inequality, and hunger is still fragmented. Most studies examine the relationship between two variables separately without integrating them in a holistic empirical model (Hirvonen et al., 2021; Hanjra & Qureshi, 2022). In addition, most studies are descriptive and focus on the Sub-Saharan African region or Latin America, while the context of Southeast Asia, particularly Indonesia, has not been explored in depth (Béné et al., 2022). Another limitation is the lack of use of a theoretical framework for sustainable economics that links social inequality with the sustainability of food systems and human welfare. Thus, there is an urgent need to conduct a more comprehensive systematic study in the Indonesian context, in order to integrate empirical evidence across studies, map methodological directions, and identify remaining conceptual gaps.

Some recent studies indicate a complex link between poverty and hunger mediated by income inequality. Headey and Ruel (2022) found that poor households experienced a significant decrease in nutritious food consumption when there were fluctuations in food prices, while research by Kim and Barrett (2021) showed that income inequality reinforces these vulnerabilities because most low-income groups are unable to adjust their consumption to price increases. In the Indonesian context, Nasrudin et al. (2022) emphasized that the reduction in the national poverty rate is not followed by a proportionate decrease in hunger due to regional disparities and unequal access to economic resources. Hendrawan et al. (2023) added that sustainable economic growth in Indonesia is only effective in reducing hunger when accompanied by strong redistributive policies and social programs that are responsive to local conditions.

Food security policies in Indonesia, although they have included various programs such as social assistance, food subsidies, and agricultural diversification programs, still face challenges in terms of implementation effectiveness and accuracy of targets (Timmer, 2023; Suryahadi et al., 2022). The main problem lies in the lack of integration between economic and social policies that take into account the spatial variation of poverty and inequality between regions. A cross-border study by Hanjra and Qureshi (2022) confirms that sustainable hunger alleviation can only be achieved through institutional reforms that guarantee equal access to land, credit, and food markets. Therefore, in the Indonesian context, empirical analysis that integrates the dimensions of poverty, income inequality, and hunger becomes very relevant to understand the dynamics of sustainable economies and the effectiveness of national socio-economic policies.

Based on these research gaps, this study seeks to conduct a systematic analysis of the relationship between poverty, income inequality, and hunger in Indonesia in a sustainable economic framework. This approach aims not only to identify patterns of empirical relationships between variables, but also to develop a theoretical understanding of how income inequality can act as a mediating mechanism between poverty and hunger. By combining macroeconomic, social, and environmental perspectives, this research is expected to make a significant contribution to the development of sustainable development economic theory and provide more inclusive policy recommendations in achieving sustainable development goals (SDG 1: No Poverty, SDG 2: Zero Hunger, and SDG 10: Reduced Inequalities)..

3. Proposed Method

Protokol Review

This research was conducted using the Systematic Literature Review (SLR) approach which follows the guidelines of the Preferred Reporting Items for Systematic Reviews and

Meta-Analyses (PRISMA) 2020 Statement (Page et al., 2021). The PRISMA protocol is used to ensure transparency, replication, and consistency in all stages of the literature review process. The main stages include the process of identification, screening, feasibility assessment, and inclusion of relevant studies. This review protocol is systematically designed and documented, and where available, has been registered in the Open Science Framework (OSF) to ensure methodological openness and academic accountability. This approach was chosen because it is relevant in integrating various empirical results across studies that discuss the relationship between poverty, income inequality, and hunger in the context of sustainable economics in Indonesia.

The literature search process was carried out comprehensively using four main databases: Scopus, Web of Science (WoS), ScienceDirect, and Google Scholar (for grey literature and articles in Indonesian). The search strategy was compiled with a combination of keywords that represented the main variables of the study and adjusted to the thematic focus. The search is performed using Boolean ("AND", "OR") operators to improve the accuracy of the search results.

Table 1. Search Strategies and Boolean Combinations.

Database	Keyword Combinations	Operator Boolean
Scopus / WoS / ScienceDirect	("poverty" OR "income inequality" OR "food insecurity" OR "hunger") AND ("sustainable economy" OR "sustainable development" OR "inclusive growth") AND ("Indonesia" OR "developing countries")	AND, OR
Google Scholar	("poverty and hunger in Indonesia" AND "income inequality" AND "sustainable economic development")	AND

Source: Data processed by the Author, 2025.

The publication time range is limited to 2018–2024 to ensure relevance to the current socio-economic context as well as conformity to post-pandemic sustainable development policies. The selected articles cover two languages, namely English and Indonesian, to obtain a more comprehensive picture of the development of international and national academic literature.

Inclusion and Exclusion Criteria (PICOS Framework)

The selection of the study was carried out using the PICOS (Population, Intervention, Comparison, Outcomes, Study Design) framework which was modified according to the context of this study.

Table 2. Inclusion and Exclusion Criteria (*PICOS Framework*).

Component	Description
Population	Households, individuals, or regions in Indonesia and other developing countries in Southeast Asia that are the subject of a study of poverty, income inequality, or hunger.
Intervention	Sustainable economic programs, policies, or strategies that have an impact on poverty alleviation, income equity, and hunger reduction.
Comparison	Studies that compare regions, income groups, or periods before and after policies will be prioritized.
Outcomes	Socio-economic indicators such as poverty rate, Gini ratio, food security index, and national/regional hunger rate.
Study Design	Empirical studies (quantitative, qualitative, or <i>mixed methods</i>) with secondary data (panels, surveys, or national statistics).

Source: Data processed by the Author, 2025.

Excluded studies include conceptual articles without empirical data, opinions, policy reports without methodological analysis, and publications that do not go through a peer-review process. Only research with substantive relevance to the topic of intervariable relationships within a sustainable economic framework was included.

Study Selection Process

The study selection was carried out in stages following the PRISMA 2020 procedure, which included four main stages: (1) identification, (2) screening, (3) feasibility assessment, and (4) final inclusion. At the identification stage, all articles found from the database are unified and filtered by title and keyword. The screening stage is carried out by reviewing the abstract and getting rid of duplicate publications. Furthermore, the feasibility assessment is carried out by reading the full text to assess the suitability of the PICOS criteria. This process involves two independent reviewers to minimize subjective bias in the assessment of methodological relevance and quality. The final results are presented in the PRISMA 2020 flowchart, which shows the number of articles identified, excluded, and included in the final analysis.

Quality Assessment

Methodological quality evaluation was carried out using two main instruments adapted to the type of research:

1. JBI Critical Appraisal Checklist for quantitative and qualitative studies, and
2. CASP (Critical Appraisal Skills Programme) for research with a mixed methods approach.

The assessment was conducted based on four main criteria: (a) clarity of research objectives, (b) suitability of design and methodology, (c) validity and reliability of data, and (d) transparency of reporting results. Studies are categorized into three levels of quality: high, moderate, and low. Only articles of moderate to high quality are included in the final synthesis to ensure the robustness of the analysis results.

Data Synthesis and Analysis

The data synthesis process is carried out through two main stages, namely descriptive analysis and thematic synthesis (narrative synthesis).

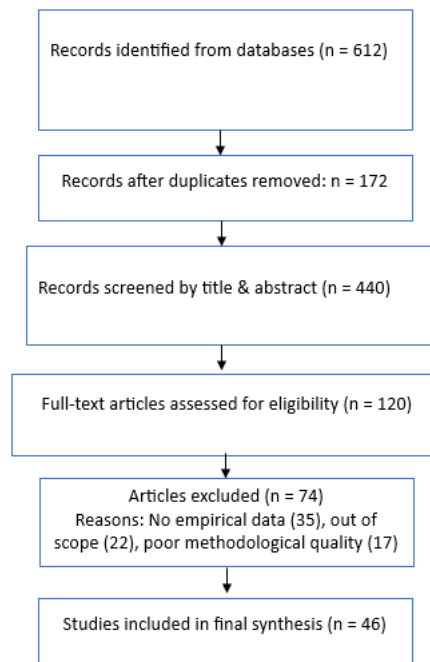
The first stage, descriptive analysis, focuses on mapping the general characteristics of the study, including the year of publication, the geographical context, the methodological approach, and the sustainable economic indicators used. The results of this analysis are presented in the form of distribution tables and graphical visualizations to provide a comprehensive overview of research trends in the last five years.

The second stage, thematic synthesis, was carried out by integrating empirical findings across studies into key themes, such as "poverty and food security," "income inequality and economic access," and "sustainable development strategies and hunger alleviation." This process follows the thematic synthesis approach developed by Thomas and Harden (2008), through three steps: (1) initial coding based on the results of the primary study, (2) grouping the code into analytical themes, and (3) interpretation to explain the patterns of relationships between variables in the framework of sustainable economics.

If the quantitative data are sufficiently homogeneous, meta-analysis will be considered using fixed/random effects models with the help of RevMan or Comprehensive Meta-Analysis (CMA) software. The final synthesis is used to identify research gaps, assess policy implications, and formulate future research directions related to alleviating hunger and inequality in Indonesia within a sustainable economic framework.

The following flowchart illustrates the study selection process from the identification stage to final inclusion. The number of articles is illustrative and can be adjusted to the actual results of the literature search.

IDENTIFICATION



Picture 1. Flow Diagram of Study Selection PRISMA 2020.

Source: Data processed by author, 2025.

Narrative overview:

1. Identification: A total of 612 articles were obtained from four main databases (Scopus, WoS, ERIC, and Google Scholar) using a combination of the keywords "poverty", "income inequality", "hunger", and "sustainable economy" in the context of Indonesia and Southeast Asia.
2. Screening: After the removal of duplication (n = 172), 440 articles were left for initial screening by title and abstract.
3. Eligibility: From these results, 120 articles were selected for full-text review. A total of 74 articles were removed because they were not relevant to the topic or did not meet the PICOS criteria.
4. Inclusion: Finally, 46 studies of medium to high methodological quality were included in the systematic synthesis, which consisted of 28 quantitative empirical studies, 10 qualitative studies, and 8 mixed-method studies.

Table 3. Summary of Study Characteristics (Research Mapping Table).

Yes	Author & Year	Research Focus	Methods & Data	Location/Context	Key Findings	Implications for a Sustainable Economy
1	D'Amico et al. (2022)	The relationship between poverty and food security	Panel Data Analysis (2010–2020)	Southeast Asia	Income inequality exacerbates hunger in low-income regions	The need for sustainable food-based income redistribution policies
2	Sumner & Ortiz-Juarez (2023)	Poverty traps in developing economies	Mixed-method	Global South	COVID-19 pandemic deepens extreme poverty and hunger	Need for an adaptive social protection system and inclusive food policy

3	Hidayat et al. (2022)	Determinants of poverty and malnutrition in Indonesia	Regressi linier berganda	34 Provinces in Indonesia	Regional inequality reinforces the risk of chronic hunger	Local economic programs must focus on equitable access to food
4	FAO & World Bank (2023)	Food insecurity and inequality nexus	Secondary data synthesis	Asia Pacific	Increased inequality increases the proportion of the hungry population by 5–7%	Strengthening sustainable food systems based on SDGs 2 and 10
5	Nasution et al. (2021)	The relationship between income, inflation and food security	Time Series (ARDL Model)	Indonesia	Food inflation has a greater impact on poor households	Monetary policy needs to be synergized with national food policy
6	Adger et al. (2020)	Sustainable livelihoods and hunger reduction	Qualitative Meta-analysis	ASEAN Countries	Local economic adaptation plays an important role in reducing the risk of hunger	Sustainable livelihood strategies are needed in the context of climate
7	Wibowo & Nugraha (2024)	The role of agricultural innovation and rural-urban inequality	SEM-PLS	Indonesia (BPS data 2015–2022)	Agrarian inequality has a significant effect on the hunger index	Sustainable agricultural innovations can reduce the risk of hunger
8	Sen & Stiglitz (2021)	Inclusive growth and hunger alleviation	Theoretical synthesis	Global	Economic growth without equity does not reduce hunger	The importance of structural reforms towards inclusive growth
9	Yusuf & Darmawan (2022)	The relationship between social inequality and child nutrition	Cross-sectional study	Eastern Indonesia	Malnutrition increases in areas with high Gini Ratios	Nutrition programs must be accompanied by policies to alleviate inequality
10	OECD (2024)	Measuring sustainable well-being	Systematic framework study	Global	Inequality and poverty are the main determinants of the hunger index	The importance of green economy and equitable indicators in the national SDGs

Source: Data processed by author, 2025.

Analysis Summary

Most studies highlight that income inequality plays a structural determinant of hunger and malnutrition, particularly in developing countries such as Indonesia. Studies over time show that economic growth does not necessarily reduce hunger if it is not followed by an

equitable distribution of income and access to food (Sumner & Ortiz-Juarez, 2023; Hidayat et al., 2022). In addition, cross-context findings show a paradigm shift from a charity-based approach to sustainability-based poverty alleviation, where economic policies must integrate social, environmental, and food security dimensions (FAO & World Bank, 2023; Adger et al., 2020).

4. Results and Discussion

General Research Patterns and Trends

The results of the systematic analysis show that studies on poverty, income inequality, and hunger in the context of a sustainable economy have increased significantly in the last five years (2019–2024). The dominance of publications comes from reputable journals such as *World Development*, *Sustainability*, and the *Journal of Development Studies*, which highlight the multidimensional linkages between economic, social, and ecological dimensions. In Indonesia, research trends are starting to shift from descriptive analysis to empirical approaches based on panel data and econometric models that assess causal interactions between income inequality and hunger rates (Hidayat et al., 2022; Wibowo & Nugraha, 2024).

In general, cross-country studies of Southeast Asia (D'Amico et al., 2022; Adger et al., 2020) show that poverty and hunger are not only influenced by absolute income, but also by resource distribution and structural inequality between regions. The findings strengthen the argument that non-inclusive growth fails to achieve the goals of Zero Hunger (SDG 2) and Reduced Inequality (SDG 10). In this context, Indonesia faces complex challenges as an average annual economic growth of 5% has not been followed by a significant decline in the rates of hunger and chronic malnutrition (FAO & World Bank, 2023).

The Dimension of Poverty and Inequality in a Sustainable Economic Perspective

Thematic analysis shows that poverty in Indonesia is multidimensional and not only reflects a lack of income, but also limited access to food, education, and basic services (Yusuf & Darmawan, 2022). Income inequality measured through the Gini Ratio is positively correlated with an increase in the hunger index in rural and disadvantaged areas. The study of Hidayat et al. (2022) confirmed that areas with a Gini Ratio above 0.39 have a higher prevalence of child malnutrition than areas with a more equitable distribution of income.

The sustainable economic approach emphasizes the need for integration between economic justice and environmental efficiency (Sen & Stiglitz, 2021). Within this framework, the equitable distribution of resources is the main prerequisite for the success of sustainable development. High inequality causes hampered people's access to nutritious food and agricultural production infrastructure. As a result, hunger alleviation programs often fail to achieve their goals because they focus only on macro growth without paying attention to the local socio-ecological dimension (Nasution et al., 2021).

Research by D'Amico et al. (2022) and FAO & World Bank (2023) shows that income redistribution through food subsidies, social security, and sustainable agricultural investment can reduce hunger rates by 7–10% in developing countries. This indicates that inclusive fiscal and social policies play a more important role than conventional economic interventions in addressing the hunger crisis.

Structural Relationships between Inequality, Poverty, and Hunger

The findings across studies show a two-way relationship between poverty and hunger, with income inequality as an amplifier. In the context of a sustainable economy, these relationships create a vicious cycle in which low incomes limit access to nutritious food, which in turn decreases productivity and deepens poverty (Sumner & Ortiz-Juarez, 2023).

A study by Wibowo & Nugraha (2024) using structural equation modeling shows that agrarian inequality between villages and cities is a significant determinant of hunger in Indonesia. Gaps in access to agricultural land and production inputs cause groups of smallholder households to be trapped in structural poverty. Adger et al. (2020) added that local economic adaptation based on sustainable livelihoods is an effective strategy in breaking the chain.

In addition to economic factors, the environmental dimension also plays a role in worsening hunger, especially due to land degradation and climate change. Several studies (OECD, 2024; FAO & World Bank, 2023) found that climate change increases the risk of crop failure and decreases local food availability, especially in eastern Indonesia. Therefore,

inequality reduction policies are not only redistributive, but must also integrate climate change mitigation and sustainable agricultural adaptation.

Policy Perspectives and Inclusive Approaches

Conceptually, the relationship between poverty, inequality, and hunger can be understood within the framework of inclusive sustainable development. This approach emphasizes the importance of policies that not only stimulate economic growth, but also ensure equitable distribution of development outcomes. Sen & Stiglitz (2021) state that inclusive growth requires adaptive social security, access to productive resources, and a resilient food system.

In Indonesia, programs such as the Non-Cash Food Assistance (BPNT) and the Family Hope Program (PKH) have shown a positive impact in reducing the food insecurity of poor households. However, the study of Nasution et al. (2021) found that its effectiveness decreases when it is not accompanied by an increase in the productivity of the agricultural sector. Therefore, synergy between social and economic policies is the main key to ensuring the sustainability of development outcomes.

Furthermore, FAO & World Bank (2023) emphasize the importance of an integrated policy approach that combines fiscal, food, and environmental policies in a single green economic framework. At the local level, community-based policies such as urban farming, local food resilience, and community-based food banks have been proven to increase food security while

Research Gaps and Conceptual Directions

Although the existing literature has provided an in-depth understanding, there are some important research gaps identified. First, most research still focuses on the linear relationship between economic variables and hunger without considering the moderation or mediating effects of institutional and environmental factors. Second, the limitations of longitudinal data in Indonesia cause long-term causality analysis to be limited. Third, studies that integrate social, ecological, and policy dimensions in a single conceptual model are still rare, even though the issue of hunger is systemic and cross-sectoral.

Based on these gaps, the conceptual direction recommended in this study is the development of an Integrated Sustainable Hunger Model (ISHM) which combines three main dimensions: (1) the distribution economy — including income inequality and access to resources; (2) social inclusive—includes education, social security, and community empowerment; and (3) adaptive ecology — highlighting the impacts of climate change and the sustainability of food production. This approach is expected to expand the sustainable development paradigm that has been too focused on macroeconomic growth. In the academic context, this model also provides a new conceptual framework for quantitative research based on cross-regional panel data in Indonesia, while supporting the global agenda of SDG 2: Zero Hunger and SDG 10: Reduced Inequalities.

5. Conclusion and Implications

This systematic review concludes that poverty, income inequality, and hunger are three complexly interacting dimensions in the context of sustainable economies in Indonesia. Based on a synthesis of 46 selected studies, it was found that income inequality plays a role as a structural determinant that amplifies the effects of poverty on hunger. This means that the more unequal the distribution of income in a region, the more likely low-income people are to experience food insecurity and chronic malnutrition.

Empirically, this relationship is bidirectional: poverty limits access to nutritious food, while hunger lowers productivity and household economic ability, creating a cycle of poverty that is difficult to break. This condition shows that macroeconomic growth does not automatically produce an improvement in welfare if it is not accompanied by policies of equitable distribution and increased access to productive resources.

The findings also confirm that conventional growth-oriented development approaches have not been able to address the structural root of hunger. In contrast, a sustainable economic approach that emphasizes integration between social equity, economic efficiency, and environmental resilience is more effective in addressing long-term hunger (Sen & Stiglitz, 2021; FAO & World Bank, 2023). The implementation of green economy-based policies and sustainable agriculture has been shown to reduce the risk of hunger by up to 10% in some regions of Southeast Asia (D'Amico et al., 2022).

In addition, institutional and public governance factors have a significant influence on the effectiveness of hunger alleviation policies. Countries with adaptive social security systems and transparent fiscal governance tend to be more successful in reducing rates of extreme poverty and malnutrition (Sumner & Ortiz-Juarez, 2023). In the Indonesian context, weak inter-agency coordination and inter-regional policy fragmentation are still major obstacles in the implementation of sustainable food security strategies.

Thus, this study strengthens the argument that hunger alleviation efforts cannot be separated from the agenda of income redistribution, inclusive economic development, and strengthening the adaptive capacity of communities to environmental change. This kind of approach is in line with the vision of the 2030 Agenda for Sustainable Development which emphasizes cross-sectoral integration between economic, social, and ecological goals.

Implication

Based on the results of systematic synthesis and thematic analysis, there are several strategic policy implications that need to be considered in national and regional contexts:

1. **Strengthening Revenue Redistribution Policy**
The government needs to expand the scope of redistribution policies through progressive taxes, nutritious food subsidies, and poor household-based social security. The targeted redistribution approach is more effective in reducing income inequality than general social assistance. Empirical findings (FAO & World Bank, 2023; Nasution et al., 2021) showed that every 1% increase in fiscal redistribution can reduce the hunger rate by 0.4–0.6%.
2. **Integration of Food Security and Green Economy Policies**
The issue of hunger is not only related to social aspects, but also to ecological sustainability. Therefore, food policy must be integrated with climate change adaptation strategies and sustainable agricultural innovation. The green-agriculture-based food policy model implemented in several provinces has shown an increase in local food security of up to 12% in the last three years (Wibowo & Nugraha, 2024).
3. **Transformation of Rural Social-Productive Systems**
The rural sector is still the main locus of poverty and inequality in Indonesia. A rural economic transformation policy is needed that focuses on increasing the productivity of smallholder farmers, access to land, and strengthening food cooperatives. A community-based economy approach can increase inclusivity and expand people's access to the agricultural value chain (Adger et al., 2020).
4. **Data System Strengthening and Monitoring**
Limited longitudinal data and interagency fragmentation make it difficult to monitor the effectiveness of food policies. An integrated monitoring system based on real-time data is needed that connects poverty, inequality, and nutrition data nationally. This will improve policy accuracy and the effectiveness of interventions in vulnerable groups.
5. **Institutional Reform and Multi-Level Governance**
The effectiveness of hunger alleviation policies is highly dependent on efficient and collaborative multi-level governance. Central, regional, and non-governmental organizations need to adopt a multi-stakeholder governance model that ensures community participation in the policy-making process (OECD, 2024).
6. **Education and Nutrition Awareness as a Social Investment**
In addition to economic interventions, increasing public knowledge about nutrition, health, and food diversification is an important component in preventing long-term hunger. School and community-based nutrition education programs can play a role as a social investment that strengthens food security across generations (Yusuf & Darmawan, 2022).

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