

Analysis of Co-Production in the Implementation of the Healthy Kitchen Service to Combat Stunting (DASHAT): Community Empowerment Through Social Entrepreneurship for Family Nutritional Security at the Ministry of Population and Family Development/National Population and Family Planning Board

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Keywords:

co-production; stunting; community empowerment; *sociopreneurship*; public service innovation; New Public Governance; BKKBN; nutrition security; community participation

Abstract

Stunting remains a major public health challenge in Indonesia, with a national prevalence of 19.8% as of 2024. The *Dapur Sehat Atasi Stunting* (DASHAT), or Healthy Kitchen to Combat Stunting program, launched by the Ministry of Population and Family Development (Kementerian Kependudukan dan Pembangunan Keluarga/BKKBN), is a co-production-based public service innovation that integrates community empowerment with a *sociopreneurship* approach. This study aims to analyze the implementation of co-production within the DASHAT program and its implications for community empowerment in achieving household nutritional security. This study employs a descriptive qualitative approach within the New Public Governance (NPG) framework, examining four dimensions of co-production (co-commissioning, co-design, co-delivery, and co-assessment) through document analysis and descriptive-analytical techniques. The findings reveal that DASHAT has succeeded in shifting the paradigm from passive service recipients to active co-producers through mechanisms of local food processing training, the establishment of family business groups (*kelompok usaha keluarga*), and participatory evaluation. The *sociopreneurship* approach reinforces the sustainability of the program by simultaneously generating economic and social value. Key challenges include the limited facilitative capacity of implementing officials, disparities in participation levels across community groups, and the sustainability of program funding. This study recommends strengthening facilitative leadership capacity, developing digital platforms for participatory monitoring and evaluation, and institutionalizing co-production mechanisms within an appropriate regulatory framework to accelerate stunting reduction. This research contributes to the co-production literature by demonstrating its application in the context of community-based nutrition interventions in developing countries.

INTRODUCTION

Stunting is a condition of failure to grow in children under five due to chronic malnutrition in the first 1000 days of life (HPK), which consists of 270 days of pregnancy and 730 days in the first 2 years of life (Kementerian Kesehatan RI, 2021). The prevalence of stunting in Indonesia shows a downward trend from 21.5% in 2023 to 19.8% in 2024 based on the 2024 Indonesian Nutrition Status Survey (SSGI) (Badan Kebijakan Pembangunan Kesehatan, 2025). Although this achievement exceeded the 2024 RPJMN target of 20.1%,

Indonesia still faces a major challenge to achieve the target of 14.2% in 2029 and 5% in 2045.

The geographical distribution of stunting cases shows significant concentrations in six provinces: West Java (638,000 children under five), Central Java (485,893 children under five), East Java (430,780 children under five), North Sumatra (316,456 children under five), East Nusa Tenggara (214,143 children under five), and Banten (209,600 children under five) (Tim Percepatan Penurunan Stunting, 2025). The concentration of cases in densely populated areas indicates the complexity of problems involving structural aspects including poverty, access to health services, nutrition education, and family food security.

Based on Presidential Regulation Number 72 of 2021 concerning the Acceleration of Stunting Reduction, BKKBN was appointed as the chief executive of the Stunting Reduction Acceleration Team with a mandate to carry out specific and sensitive interventions in an integrated manner (BKKBN, 2021). In this context, the Healthy Kitchen to Overcome Stunting (DASHAT) program was launched as a nutrition intervention strategy oriented towards community empowerment through the use of local food (Khusna & Sumanto, 2024; Mutiara et al., 2024; Setiawan et al., 2025).

DASHAT is a response to several crucial empirical phenomena. First, the high prevalence of stunting in at-risk families who do not have adequate access to nutritious balanced food due to economic limitations. Second, the family's low knowledge and skills in processing local food into nutritious menus that suit the needs of pregnant women, breastfeeding mothers, and toddlers. Third, the weak active participation of the community in stunting prevention programs which tend to be top-down and do not involve the community as co-producers.

The DASHAT program was first launched simultaneously in 10 provinces in 2021 through the Quality Family Village (KB Village) as an operational base (Dinas Pemberdayaan Masyarakat Desa, Pemberdayaan Perempuan dan Keluarga Berencana Kabupaten Kulon Progo, 2021). Until 2025, DASHAT has been implemented in all provinces of Indonesia with a focus on urban villages with a high prevalence of stunting.

DASHAT has four interrelated strategic objectives. First, reducing stunting rates through the fulfillment of balanced nutrition for at-risk families. Second, increasing people's understanding and skills in processing nutritious food based on local food. Third, empowering the community through the formation of sustainable family business groups in healthy food production. Fourth, building a participatory community support system in stunting prevention (Pemerintah Kabupaten Maluku Tengah, 2025).

The urgency of DASHAT's innovation lies in the co-production approach that shifts the paradigm from a passive social assistance model to an active empowerment model. In contrast to conventional food assistance programs that create dependence, DASHAT positions the community as co-producers who have agency in designing, implementing, and evaluating nutrition interventions in their own communities. This approach is in line with the principles of New Public Governance which emphasizes horizontal collaboration between the government and citizens in the provision of public services (Sorrentino et al., 2016).

The implementation of DASHAT as a co-production-based public service innovation presents significant theoretical and practical questions. Although the concept of co-production has developed in the public administration literature, its application in the context

of community nutrition interventions in developing countries is still limited. In addition, the integration of the *sociopreneurship* approach in the framework of co-production opens up new dimensions that have not been explored much.

Several studies have examined stunting prevention programs from various perspectives. Haldane et al. (2019) in their systematic review found that community participation in the development, implementation, and evaluation of health services resulted in better and sustainable outcomes. Research by Palumbo et al. (2022) examines the concepts of co-creation, co-design, and co-production for public health, confirming that collaborative approaches increase the effectiveness of interventions. At the national level, Tyarini et al. (2024) emphasize that effective community empowerment requires a transformative approach that involves fundamental changes in the way societies understand and deal with stunting issues.

Amaliyah et al. (2020) demonstrated the effectiveness of community empowerment-based health education and nutrition rehabilitation in increasing community knowledge and participation in malnutrition prevention efforts in children under five. Carminati et al. (2025) found that co-production develops through crisis stages with different interaction characteristics between voluntary and coordinated actions of citizens and governments. Amelia et al. (2025) emphasize the importance of community-based innovation in addressing child malnutrition, which includes nutrition education, empowerment, adequate supplementation, and effective screening and monitoring.

Although these studies have made important contributions, there is still a **research gap**. Most studies on *co-production* in public health are conducted in developed countries with different institutional contexts. In Indonesia, research on the implementation of *co-production* in community empowerment-based nutrition intervention programs is still very limited. In particular, there has not been a study that comprehensively analyzes the four dimensions of *co-production* (co-commissioning, co-design, co-delivery, co-assessment) simultaneously in the DASHAT program, as well as how the integration of *the sociopreneurship approach* strengthens the sustainability of the program. This study is here to fill this gap by providing empirical evidence of the implementation of DASHAT in Indonesia.

Based on this context, this research is formulated in the main question: How is the co-production mechanism implemented in the DASHAT program and what are its implications for the effectiveness of community empowerment for family nutrition security? This question is elaborated into sub-questions: (1) How are the four dimensions of co-production (co-commissioning, co-design, co-delivery, and co-assessment) realized in the practice of DASHAT? (2) How does the *sociopreneurship* approach strengthen the sustainability of co-production in DASHAT? (3) What are the challenges and obstacles in the implementation of co-production at the community level? (4) What are the strategic recommendations for the development of co-production models in stunting prevention public service innovation?

Based on this background, this study aims to analyze the implementation of co-production in the DASHAT program and its implications for community empowerment to achieve family nutrition security, focusing on how the four dimensions of co-production (co-commissioning, co-design, co-delivery, and co-assessment) are realized in the practice of DASHAT, how the *sociopreneurship* approach strengthens the sustainability of co-production in the program, and identifies challenges and obstacles to implementation at the

community level to then formulate strategic recommendations for the development of co-production models in public service innovation for stunting prevention. This research is expected to provide theoretical benefits in the form of enrichment of the literature on New Public Governance (NPG) and co-production through empirical evidence from the context of developing countries, especially in nutrition interventions based on community empowerment, as well as integrating the concept of *sociopreneurship* into the framework of co-production that is still rarely explored. Practically, the results of this research can be an input for the Ministry of Population and Family Development/BKKBN in improving the design and implementation of the DASHAT program, becoming a model for other stunting intervention programs in the regions, providing guidance for local governments on co-production mechanisms that can be adopted to strengthen community participation in accelerating stunting reduction, and offering a framework for communities and empowerment activists to Develop sustainable nutrition intervention programs through a *sociopreneurship* approach.

RESEARCH METHOD

This research used a descriptive qualitative approach with the New Public Governance (NPG) analysis framework to explore the implementation of the DASHAT program as a co-production-based public service innovation. The focus of the analysis is directed at four main dimensions, namely co-commissioning, co-design, co-delivery, and co-assessment, to understand how community participation transforms from passive recipients to active co-producers. Data was collected through a study of documents on regulations to accelerate stunting reduction and program implementation guidelines, as well as an analysis of *sociopreneurship*-based empowerment mechanisms that simultaneously create economic and social value. Through descriptive-analytical analysis techniques, this study aims to identify structural challenges and formulate strategic recommendations for institutional capacity strengthening in the framework of community health services.

RESULTS AND DISCUSSION

1. Paradigm New Public Governance dan Co-Production

New Public Governance (NPG) emerged as an alternative paradigm to Traditional Public Administration (TPA) and New Public Management (NPM) in responding to the complexity of contemporary public problems (Sorrentino et al., 2018). In contrast to TPAs that emphasize bureaucratic hierarchy and NPMs that apply market logic, NPGs advocate a collaborative and participatory approach that involves multiple stakeholders in the governance process.

Co-production is a fundamental element in the NPG paradigm that redefines the relationship between public service providers and citizens. Ostrom (1996) defines co-production as "a process in which inputs used to produce goods or services are contributed by individuals who are not in the same organization." This definition emphasizes the active contribution of citizens in the production cycle of public services, not just as passive recipients.

Brandsen and Pestoff (2006) developed a conceptual framework for co-production by distinguishing between co-production (focusing on the individual relationship of citizens with

service providers) and co-management (focusing on organizational-level relationships). This distinction is important to understand the level and form of citizen participation in public services. Sorrentino et al. (2018) further identify that co-production in the context of contemporary governance is not only a managerial innovation but also a normative framework that promotes democratic values, trust, and equity.

2. Four Dimensions of Co-Production: Co-Commissioning, Co-Design, Co-Delivery, and Co-Assessment

The co-production literature identifies four critical dimensions that make up the comprehensive cycle of participatory public service production. This "Four Co's Model" framework has become a reference in the analysis of co-production implementation in various contexts (Loeffler & Bovaird, 2021).

- a. Co-Commissioning refers to the involvement of citizens in the planning phase and prioritizing public services. At this stage, citizens are not only consulted but have a role in determining resource allocation and strategic design of programs. Co-commissioning ensures that the developed services are truly responsive to the real needs of the community.
- b. Co-Design involves citizens in the design of specific services, including the determination of delivery mechanisms, quality standards, and indicators of success. This phase facilitates the transfer of local knowledge and citizens' life experiences into more contextually relevant service designs. Quesada et al. (2019) emphasize that co-design allows for a more comprehensive understanding of local dynamics that is often overlooked in the top-down approach.
- c. Co-Delivery is the most visible dimension of co-production, where citizens are actively involved in the delivery of services. This can be a contribution of energy, knowledge, or material resources. In the context of community health, co-delivery is often realized through health cadres, peer support groups, or volunteer community health workers.
- b. Co-Assessment involves residents in the evaluation and monitoring of services. This phase creates a more democratic accountability mechanism and allows for adaptive learning based on direct feedback from service users. Bovaird and Loeffler (2012) state that effective co-assessment requires the creation of an accessible and representative participatory space.

3. Co-Production in the Context of Crisis and Public Health

Research on co-production in the context of public health shows significant potential to improve the effectiveness of interventions and the sustainability of programs. Palumbo et al. (2022) in their study on co-creation, co-design, and co-production for public health affirm that co-creation is a guiding principle that includes co-design and co-production, with important distinctions regarding the role of stakeholders and the timing of their engagement.

In the context of the health crisis, Carminati et al. (2025) found that co-production evolved through crisis stages with different interaction characteristics between voluntary and coordinated actions of citizens and the government. These findings are relevant to understand the dynamics of co-production in stunting prevention programs which are often implemented in resource-constrained conditions and high urgency.

The study of co-production in health services also identified four critical elements, namely citizen-government dialogue, replenishment of resources by citizens, community empowerment by various levels of government, and the impact of citizens on rules and

regulations (Carminati et al., 2025). These elements form a governance structure that is resilient and able to adapt to the complex dynamics of crisis situations or public health challenges.

4. Community Empowerment and Participatory Approaches in Nutrition Interventions

Community empowerment is a process that allows communities to increase control over their health determinants and thus improve their health status. Haldane et al. (2019) in their systematic review found that community participation in the development, implementation, and evaluation of health services resulted in better and sustainable outcomes.

In the context of stunting prevention, Tyarini et al. (2024) emphasize that effective community empowerment requires a transformative approach that involves fundamental changes in the way communities understand and deal with their problems. Participatory approaches involving the community in the planning and implementation of child health programs have been shown to strengthen community commitment and awareness.

Amaliyah et al. (2020) demonstrated the effectiveness of community empowerment-based health education and nutrition rehabilitation in increasing community knowledge and participation in malnutrition prevention efforts in toddlers. The study identified four key elements: education, shared supplementary feeding, health checks and micronutrient feeding, and fostering community participation to contribute in the form of food, manpower and other resources.

Amelia et al. (2025) further emphasized the importance of community-based innovation in addressing child malnutrition, which includes improving nutrition education, empowerment, adequate supplementation, and effective screening and monitoring to ensure the sustainability and effectiveness of community-based nutrition interventions.

5. Sociopreneurship and Social Capital in Community Development

Sociopreneurship or social entrepreneurship is an approach that fuses business strategy with a mission of positive and sustainable social change. In contrast to conventional business models that focus solely on profit, *sociopreneurship* creates economic and social value simultaneously (Dees, 1998). Key characteristics of social entrepreneurs include solution innovation, resource mobilization, and a focus on long-term social impact.

In the context of community development, social entrepreneurship acts as a catalyst for sustainable development driven by grassroots. A study by Daskalopoulou et al. (2023) shows that social entrepreneurship contributes to community well-being through job creation, poverty reduction, and handling unemployment and exclusion issues, especially in marginalized areas.

Social capital, which includes structural (network), relational (trust), and cognitive (shared norm) dimensions, plays a crucial role in the success of social entrepreneurship for community development. Research in Oman shows that trust, networks, and shared norms help entrepreneurs access resources, while sustainable enterprise development mediates the impact of social capital on community outcomes (Al-Abri et al., 2025).

In the context of public health, Eftekhari et al. (2013) identified that community-based participatory health programs result in community empowerment, absorption of community assistance, the presence of local volunteers, and the creation of social prestige. The integration of sociopreneurship approaches in community health programs can strengthen the financial and social sustainability of interventions.

Studies on social capital and population health outcomes show that economic connectedness (economic connections between different social groups) is significantly correlated with better health outcomes, including a decrease in the prevalence of diabetes and hypertension (Chetty et al., 2022). These findings indicate that programs like DASHAT that facilitate economic connections through joint ventures can have a dual impact: increasing economic resilience and improving community health.

6. Synthesis of Theoretical Framework for DASHAT Analysis

Based on the literature review above, the conceptual framework for analyzing co-production in DASHAT is built on the integration of four theoretical pillars, namely (1) the NPG Paradigm and the Four Co's Model as the main framework to understand the mechanism of co-production; (2) Community empowerment and participatory approaches as operational principles in nutrition interventions; (3) *Sociopreneurship* as a sustainability strategy that creates economic and social value; (4) Social capital as a mediation mechanism that connects community participation with health and economic outcomes.

The analysis model developed positions DASHAT as a multi-level co-production system that operates through four phases, namely participatory planning (co-commissioning), local knowledge-based intervention design (co-design), implementation with active community involvement (co-delivery), and participatory evaluation (co-assessment) In each phase, the *sociopreneurship* approach acts as an enabler that transforms community participation into economic sustainability, while social capital functions as a lubricant that facilitates collaboration and trust between stakeholders.

Discussion: Exploration and Analysis of Co-Production in DASHAT

1. Co-Commissioning: Participatory Planning and Local Needs Identification

The co-commissioning phase in DASHAT is realized through a participatory planning mechanism involving multiple stakeholders at the KB Village level. Based on implementation data, this process begins with the identification of families at risk of stunting through collaboration between the Village Head/Village Head, Puskesmas, PKK, posyandu cadres, and the Family Assistance Team (TPK) (Dinas Pemberdayaan, Perlindungan Anak, dan Pengendalian Penduduk DKI Jakarta, 2024).

An analysis of the co-commissioning mechanism reveals several key characteristics. First, the prioritization of targets is not completely determined top-down by the BKKBN, but through a deliberation process at the village level involving anthropometric data from posyandu and input from health cadres who understand the real condition of the family. Second, the determination of the type of intervention (food menu, frequency of administration, and training model) is consulted with potential beneficiaries, especially mothers who will be the main target of the program.

However, the implementation of co-commissioning in DASHAT also faces limitations. The level of citizen participation in determining the allocation of resources is still limited to the level of consultation, not yet reaching the level of full delegation of authority as idealized in the co-production literature (Bovaird, 2007). The planning structure is still dominated by the program framework that has been established nationally, so the room for local adaptation is limited to the technical aspects of implementation, not to the strategic design of the program.

2. Co-Design: Integration of Local Knowledge in Intervention Design

The co-design dimension in DASHAT is realized through the process of designing a nutritious food menu based on local food that is accessible and affordable for families at risk

of stunting. This phase involves collaboration between nutritionists from the Health Office, chefs/culinary practitioners, and mothers who are the target of the program (BKKBN, 2022).

An analysis of the co-design process reveals a significant two-way knowledge transfer. From the professional side, nutritionists provide a scientific framework on the nutritional needs of pregnant women, breastfeeding mothers, and toddlers, including the necessary macronutrient and micronutrient composition. From the community side, mothers contribute with knowledge about the availability of local food, children's taste preferences, family budget limitations, and cooking skills.

This co-design process produces a "Healthy Menu Variety Book" that not only meets scientific nutrition standards but is also contextually relevant to local conditions. The menus are designed to utilize local protein sources such as fish, tempeh, tofu, eggs, and affordable nuts, as well as local vegetables and fruits that are easily accessible in traditional markets.

However, participation in co-design is uneven across community groups. Mothers from families with higher levels of education and economy tend to be more active in providing input, while the most vulnerable groups (who are supposed to be the main beneficiaries) are often less vocal in the design process. This confirms the findings of the literature on the risk of exclusion in co-production that can reinforce rather than reduce inequalities (Loeffler & Bovaird, 2021).

3. Co-Delivery: Active Participation in Service Delivery

Co-delivery is the most visible dimension of co-production in DASHAT. This program operates co-delivery through several concrete mechanisms as follows:

- a. A Shared Kitchen model in which the target mothers of the program gather regularly to cook together nutritious meals for their children. This model is not only about food provision, but also about collective learning, peer support, and the formation of social capital through regular interactions.
- b. A cadre system in which several mothers who have mastered nutritious food processing techniques are trained to become "DASHAT Cadres" who then facilitate learning for other mothers in their environment. This mechanism creates a multiplier effect of the knowledge and skills transferred.
- c. Contribution of community resources in the form of providing local foodstuffs, shared kitchen facilities, or personnel for program operationalization. In some implementation sites, communities even contributed by providing land for organic vegetable gardening, the proceeds of which were used for the DASHAT program.

This analysis of the co-delivery mechanism confirms Ostrom's (1996) argument about the importance of the input contribution of multiple actors in the production of public services. However, the sustainability of co-delivery is highly dependent on the intrinsic motivation of the participants. The findings are in line with Lee et al. (2024) who found that public service motivation driven by normative motivation (values of altruism, commitment to child welfare) is more sustainable than extrinsic motivation (material rewards).

4. Co-Assessment: Participatory Evaluation and Adaptive Learning

The co-assessment dimension in DASHAT is realized through the "Interactive Discussion" mechanism that brings together community members, working groups (Pokja), village organizations, and sub-district officials to conduct an analysis of program implementation (Wibowo & Nugroho, 2023). This evaluation model facilitates direct

feedback from beneficiaries and allows for learning-based program adjustments from field experience.

The co-assessment mechanism includes several components. First, periodic anthropometric monitoring of the program's target toddlers to measure changes in nutritional status. Second, a focus group discussion (FGD) with the women participants of the program to explore their perspectives on the effectiveness, challenges, and suggestions for improvement of the program. Third, participatory documentation where program participants document their experiences in the form of photos of activities, testimonials, or diaries of children's diets.

Analysis of the co-assessment process revealed that citizen participation in the evaluation did increase the relevance and responsiveness of the program. For example, based on feedback from participants, the frequency of meetings is adjusted to the availability of mothers' time, or certain menus are modified to accommodate different children's preferences.

However, the challenge in co-assessment is the limited technical capacity of community participants in data analysis and interpretation of health indicators. This requires intensive facilitation from healthcare professionals, who are not always adequately available. In addition, the accountability mechanism in co-assessment still needs to be strengthened so that the results of participatory evaluation are really followed up in program improvement, not just as a formal ritual.

5. *Sociopreneurship* as an Enabler of Co-Production Sustainability

One of the innovative advantages of DASHAT is the integration of a *sociopreneurship* approach that transforms the program from a charity model to a productive economic model. This mechanism is realized through the formation of family business groups (KUB) that produce healthy and nutritious food to be sold to the wider community, not only for internal consumption of the program.

An analysis of the *sociopreneurship* dimension reveals some key characteristics as follows:

a. Value Creation Hybrid

The DASHAT business group creates economic value (income for the participant's family) and social value (provision of access to nutritious food for the community, public nutrition education, stunting prevention) simultaneously. This model is in line with the concept of social entrepreneurship defined by Dees (1998) as the use of innovative business approaches to address community problems with a sustainability orientation.

b. Resource Mobilization

The *sociopreneurship* approach allows for a wider mobilization of resources. In addition to initial assistance from the government (kitchen equipment capital, training), business groups can access microcredit from microfinance institutions, CSR assistance from the private sector, or investment from MSME partnership programs.

c. Capacity Building

The process of building and running social enterprises develops the multidimensional capacity of participants through healthy food production skills, financial management, marketing, quality control, and networking. This capacity has spillover effects on the wider aspect of family life.

d. Community Ownership

The transformation from an aid program to a community-owned enterprise increases a sense of ownership and long-term commitment. Communities are no longer dependent on external assistance but have agencies for their own sustainability programs.

These findings confirm the argument in the literature that social entrepreneurship serves as a catalyst for sustainable enterprise development which in turn contributes to community development (Al-Abri et al., 2025). In the context of DASHAT, *sociopreneurship* is not only an add-on but also a core strategy that integrates public health goals with economic empowerment.

6. The Role of Social Capital in Mediating Co-Production Outcomes

Social capital, manifested in the form of trusts, networks, and shared norms, plays a crucial role as a mediation mechanism that links participation in co-production with expected health and economic outcomes.

The analysis of the implementation of DASHAT identified several social capital mechanisms as follows:

a. Bonding Social Capital

Regular interaction in Dapur Bersama activities creates strong ties between mothers in the group. This bond facilitates peer support, knowledge sharing, and mutual accountability in the practice of feeding children. These findings are in line with the literature on the importance of bonding social capital in community health programs (Eftekhari et al., 2013).

b. Bridging Social Capital

DASHAT facilitates connections between different social groups, namely between poor and non-poor families, between low- and highly educated mothers, between villagers and health professionals. Economic connectedness created through joint ventures has been shown to correlate with better health outcomes, confirming the findings of Chetty et al. (2022) on the impact of bridging social capital on population health.

c. Linking Social Capital

This program also builds vertical connections between the community and formal institutions (Puskesmas, Health Office, BKKBN, and village government). Linking social capital is important for access to the resources, information, and institutional support needed for sustainability programs.

However, the formation of social capital in co-production is not automatic and uneven. In some cases, the program actually reinforces social segregation if participation is dominated only by certain groups. This underscores the importance of deliberate efforts to ensure inclusive participation that transcends social, economic, and educational boundaries.

7. Challenges and Obstacles in the Implementation of Co-Production

Although DASHAT demonstrates the significant potential of co-production in community nutrition interventions, its implementation faces a number of structural and operational challenges as follows:

a. Limited facilitative capacity of the apparatus

Effective co-production implementation requires facilitative leadership that is able to shift the role from provider to enabler, from director to facilitator (Sorrentino et al., 2018). However, many apparatus at the sub-district/village level are still trapped in the traditional mindset of bureaucracy that is hierarchical and top-down. Mindset transformation and

capacity building for facilitative leadership is a crucial prerequisite that has not been fully met.

b. Participation gap and risk of exclusion

As identified in the literature, co-production risks reinforcing rather than reducing inequalities if it is not deliberately designed to be inclusive (Loeffler & Bovaird, 2021). The most vulnerable groups (poor, poorly educated, and marginalized) are often less likely to participate in the co-commissioning and co-design process. This creates a paradox where programs aimed at vulnerable groups are more shaped by more privileged groups.

c. Funding sustainability

Although the *sociopreneurship* approach aims to create financial sustainability, the initial phase requires significant investment in intensive training, equipment, and mentoring. Reliance on limited and unstable government budgets threatens program continuity.

d. The complexity of multi-stakeholder coordination

DASHAT involves multiple actors (BKKBN, Health Office, village government, health centers, PKK, cadres, and communities) with different agendas, capacities, and incentives. Effective coordination requires clear governance mechanisms and strong political commitments, which are not always available.

e. The trade-off between standardization and local flexibility

As a national program, DASHAT requires certain standards for quality assurance and accountability. However, co-production requires flexibility for local adaptation. Finding the optimal balance between these two imperatives is a challenge that is being faced.

CONCLUSION

The analysis of co-production implementation in the DASHAT program demonstrates that all four dimensions of co-production co-commissioning, co-design, co-delivery, and co-assessment were successfully operationalized within a community nutrition intervention context, albeit with varying levels of maturity, with co-delivery emerging as the strongest dimension and co-commissioning remaining at a consultative level. The integration of a *sociopreneurship* approach proved instrumental in sustaining co-production by simultaneously generating economic and social value, effectively transforming beneficiaries from passive recipients into active economic agents with genuine program ownership, a process mediated by social capital as a crucial linking mechanism between participation and health and economic outcomes. Nevertheless, implementation faces persistent structural challenges, including limited facilitative capacity among officials, risks of exclusion of vulnerable groups, funding sustainability, and the complexity of multi-stakeholder coordination underscoring that co-production is not merely a managerial technique but a transformative governance paradigm that shifts authority from state-centric to society-centric models. To address these challenges, the study recommends investing in sustained capacity-building for facilitative leadership, designing deliberate inclusion mechanisms for vulnerable populations, leveraging digital platforms for real-time participatory monitoring, diversifying funding through microcredit, CSR partnerships, and social impact bonds, and institutionalizing co-production principles within a national and regional regulatory framework that incorporates minimum participation standards and accountability mechanisms. Future research should prioritize longitudinal studies that examine the long-

term effects of co-production on community resilience and household nutritional security, as well as the development of comprehensive monitoring and evaluation frameworks that capture not only health outcomes such as stunting prevalence reduction, but also the quality of participation, social capital formation, community empowerment processes, and the economic performance of program-based social enterprises.

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