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Collaborative governance in stunting interventions at the local level

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Abstract
This study aims to determine and evaluate Collaborative Governance implemented by the government, private sector and the community in handling stunting in Enrekang Regency. The research method used is a descriptive qualitative approach to describe and analyze data obtained through interviews, observations, documentation and literature studies with a purposive sampling method related to the implementation of Collaborative Governance of the Enrekang Regency Government. The data analysis technique used is qualitative analysis through data reduction, data presentation and data verification. The results showed that based on Collaborative Governance by Emerson, it is known that the stakeholders involved have implemented the Dynamics, Actions and Impact and Adaptation of Collaboration well. However, some of the components in it still need to be evaluated and maximized. Among them are the Collaboration Dynamics which still have obstacles in the form of deliberations that have not run optimally and parties who do not know about existing procedures and collective agreements. This certainly affects the Collaborative Action which makes low involvement from several other actors and ultimately also has an impact on the lack of maximum stunting reduction. This study promotes equitable collaboration among all stakeholders to enhance the success of stunting prevention programs and foster active participation from all involved parties.

Keywords
Collaboration, Governance, Collaborative governance, Stunting, Capacity, Government Intervention

1 | INTRODUCTION

Stunting represents a significant form of malnutrition prevalent in contemporary society, necessitating immediate intervention due to its profound implications for brain development and overall growth in children (Yang et al., 2020; Yayuk Sri Rahayu, 2020). Addressing this issue is imperative as it directly impacts the quality of human resources, correlating with health levels and contributing to infant mortality rates (Masters et al., 2018; Poole et al., 2018). Globally, in 2020, approximately 149.2 million children under five years of age—constituting 22.0% of the total— were affected by stunting. Although subsequent years have seen a decline in these figures, the prevalence of stunting remains above the World Health Assembly's target of a 40% reduction by 2025 (Giese et al., 2023). Notably, Asia accounted for nearly half of all stunting cases in 2020, with 53% of affected children in the region. Of the 135.9 million stunted children under five in Asia, over 11% were concentrated in Southeast Asia (Saragih et al., 2023).

A generation that experiences optimal growth, particularly one free from stunting, tends to demonstrate higher levels of intelligence, thereby enhancing competitiveness in the realms of development and the economy (Namirembe et al., 2021; Wu & Qi, 2016). Moreover, optimal growth reduces the risk of stress-induced degenerative diseases originating in the womb. Such diseases, including diabetes, hypertension, heart disease, and kidney disorders, often entail significant medical expenses. Consequently, preventing stunting offers the potential to promote economic growth while alleviating the financial burden associated with treating degenerative conditions (Lestari et al., 2024; Prasetyo et al., 2023).

In Indonesia, stunting prevalence remains alarmingly high. According to the Global Nutrition Report, Indonesia ranks 108th out of 132 countries surveyed (Afandi et al., 2023; Katmawanti et al., 2023). The 2020 Performance Report from the Ministry of Health (LKj) targeted a stunting prevalence rate of 24.1% (equivalent to 5,543,000 toddlers). However, data from the Community-Based Nutrition Recording and Reporting Application (ePPGBM SIGIZI) as of January 20, 2021, revealed that out of 11,499,041 toddlers whose nutritional status was measured based on height-for-age (TB/U), 1,325,298 children (11.6%) were categorized as stunted. South Sulawesi Province ranks among the three regions in Indonesia with the highest prevalence of stunting at 35.7%, exceeding rates in Southeast Sulawesi (28.7%), North Sulawesi (25.5%), and West Sulawesi (32.3%). In South Sulawesi, a total of 318,894 toddlers aged 0–59 months were measured, with an average prevalence rate consistently high across regencies and cities (Balqis et al., 2024).

At the local level, the prevalence of stunting in Enrekang Regency remains a pressing concern. Data from the Nutritional Status Monitoring conducted by the Enrekang Regency Health Office indicates that stunting affected more than 23.7% of children under five, equivalent to approximately 4,206 toddlers. Similarly, according to the Health Office's 2021 report, 3,277 children under five (22.8% of the total 15,275 toddlers in the region) were identified as stunted. These figures were derived from the 2021 Nutritional Status Monitoring, encompassing all health centers within the regency.

Despite annual reductions in the stunting rate, the prevalence in Enrekang Regency has yet to meet the targeted levels. According to the Enrekang News Portal (2023), Regent Muslimin Bando emphasized that the stunting rate remains above the target of 14% set for 2024. This sentiment was echoed by Dr. Sri Siswaty Zaenal, Head of Public Health at the Enrekang Health Office, in an interview with *Detik* South Sulawesi. She stated that while progress has been made each year, vigilance is required as the current prevalence rate remains high. Furthermore, Acting Regional Secretary Andi Sappada, during a coordination meeting with the Stunting Reduction Acceleration Team (TPPS) in Enrekang, expressed hope that the region could eventually achieve a state of zero new stunting cases (detikSulsel, 2023).

Addressing stunting requires comprehensive and sustainable efforts, particularly in identifying, optimizing, and implementing effective and efficient intervention strategies. Periodic evaluations are crucial to assess program effectiveness and to identify areas requiring improvement. Additionally, the positive impacts of such initiatives can

be amplified by maximizing the use of available resources and potentials from government, community, and private sectors. Collaborative governance has emerged as a strategic approach in response to the shortcomings or delays in effectively addressing the stunting issue (Bach et al., 2020; Hasriadi et al., 2024; Nandini et al., 2024; Yayuk Sri Rahayu, 2020).

This study aims to explore the stunting problem in greater depth, focusing specifically on the role of collaborative governance. The research examines the factors influencing collaborative governance and its impact on stunting reduction efforts implemented by the Enrekang Regency government.

2 | LITERATURE REVIEW

2.1 | Collaborative governance

Collaborative governance represents a governance model that emphasizes egalitarian and democratic engagement between the government, civil society, and the private sector (Afandi et al., 2023; Lino et al., 2024). This approach seeks to enhance the effectiveness of government roles in public policy implementation and community service delivery by ensuring the active participation of all relevant stakeholders. According to Ansell & Gash (2008), this model relies on consensus-building and negotiation to accommodate diverse public interests, improve decision-making quality, and minimize conflict. Katmawanti et al., (2023) further elaborated that collaborative governance involves repeated interactions based on three fundamental principles: engagement, mutual motivation, and collective capacity for action.

Emerson, Nabatchi, and Balogh's Collaborative Governance Regime (CGR) theory conceptualizes this governance model as a dynamic and cyclical process comprising three interrelated elements (Emerson et al., 2012). The first element, collaboration dynamics, includes the mobilization of shared principles, fostering mutual motivation, and building collective capacity for action. This foundational stage enables all stakeholders to work cohesively toward common objectives through open dialogue, a commitment to shared goals, and efficient management of resources (Hasriadi et al., 2024; Lino et al., 2024; Namirembe et al., 2021).

The second element, collaborative actions, encompasses activities that align with the shared purpose of the collaboration. These actions can vary in scale and complexity, ranging from strategic initiatives, such as the formulation of health policies, to technical activities like data collection. The effectiveness of these actions depends on the resources and capacities of the participating actors, tailored to specific needs and goals. Importantly, successful collaborative actions not only achieve direct results but also reinforce the underlying dynamics of collaboration (Biadgilign et al., 2019; Gillespie et al., 2018).

The final element is the impact and adaptation phase, which reflects the outcomes of the collaborative process. These impacts may include anticipated achievements, unexpected challenges, or unplanned consequences, all of which influence future strategies (Kallis et al., 2009). The adaptation process plays a critical role in ensuring the sustainability and effectiveness of the collaboration, as stakeholders refine their approaches to address obstacles and embrace opportunities. Effective adaptation requires a strong orientation toward shared objectives, avoiding the dominance of individual or organizational interests, and ensuring the collective benefit of all parties involved (Mitchell & Shortell, 2000).

Collaborative governance emerges as a dynamic and responsive model, capable of bridging differences and fostering shared solutions to complex societal problems. By prioritizing mutual engagement, collective action, and adaptive processes, collaborative governance enhances public policy outcomes and strengthens the capacity for inclusive and cooperative problem-solving.

2.2 | Stunting interventions and policies

The government employs two main strategies to address the issue of stunting, namely specific nutrition interventions and sensitive nutrition interventions. Specific nutrition interventions focus on direct and immediate efforts to improve the nutritional status of children, particularly during the critical first 1,000 days of life (HPK). These interventions are estimated to contribute approximately 30% to the reduction in stunting prevalence and are typically executed within the health sector, delivering measurable results over a relatively short timeframe. Examples of these activities include providing supplementary feeding for malnourished children, administering vitamin A supplements, distributing iron tablets to pregnant women, fortifying food with essential micronutrients, promoting exclusive breastfeeding, and offering immunizations for pregnant women. Additional measures, such as providing zinc and oral supplements to children with diarrhea and folic acid for pregnant women, are designed to directly address nutritional deficits and mitigate health risks during pregnancy and early childhood development (Hasriadi et al., 2024; Masters et al., 2018; Osei et al., 2024).

In contrast, sensitive nutrition interventions aim to address the broader environmental determinants of health and nutrition that affect communities at large (Katmawanti et al., 2023). This approach accounts for 70% of the overall stunting prevention effort and involves cross-sectoral collaboration beyond the health sector, including education, economic development, and environmental management. Key initiatives include improving access to clean water and sanitation, promoting food diversification through household agriculture, and empowering women via economic programs (Mara, 2017). Complementary efforts, such as implementing healthy school programs to enhance nutrition education, running community hygiene campaigns, and providing psychosocial support for vulnerable pregnant and breastfeeding women, are geared toward fostering long-term improvements in societal health and well-being. Through this multisectoral engagement, the government envisions creating sustainable socio-economic conditions that will effectively reduce stunting rates. The integration of specific and sensitive interventions is expected to serve as a comprehensive solution to combat stunting in Indonesia.

In Enrekang Regency, the direction of development policy aligns with the framework established by *Permendagri No. 86 of 2017*, which provides strategic guidelines for planning, prioritizing, and implementing five-year development initiatives. Stunting is recognized as a critical issue in the Regional Medium-Term Development Plan (RPJMD) through Mission 2, which emphasizes "Improving the quality of human resources who are competitive, moral, faithful, and devout." This mission explicitly targets a reduction in stunting prevalence and is operationalized through Enrekang Regent Decree No. 141/KEP/III/2022, which mandates the establishment of the Stunting Reduction Acceleration Team (*TPPS*). The TPPS is tasked with coordinating and evaluating stunting reduction initiatives while strengthening institutional capacities down to the village level (Balqis et al., 2024).

The TPPS structure integrates various stakeholders, including the Regent and Regional Legislative Council (DPRD) as directors, with implementation led by the Deputy Regent, Regional Secretary, and relevant agency heads. The TPPS focuses on areas such as stunting intervention, behavioral change, coordination, and data management and evaluation. Additionally, *Regency Law of Enrekang No. 56 of 2023* outlines the role of villages in accelerating stunting reduction by establishing Village Stunting Reduction Acceleration Teams (*TPPS Desa*). These teams conduct data collection, provide family assistance, and deliver direct services to target households. By coordinating through sub-district levels, the implementation of stunting reduction policies is streamlined and integrated at every level of government.

The Village TPPS incorporates health workers (including midwives and nutritionists), family planning officers, community volunteers, and other local actors to ensure interinstitutional synergy and sustainable outreach efforts. This integrated approach reflects Enrekang Regency's commitment to significantly reducing stunting prevalence by implementing collaborative strategies and fostering community empowerment. By addressing stunting as a priority development issue, the Regency aims to enhance the overall quality of life for its residents and achieve measurable progress in human resource development.

3 | METHODS

3.1 | Conceptual framework

Figure 1 illustrates the conceptual framework for the collaborative governance process in addressing stunting. Emerson and Nabatchi (2015) define collaborative governance as a comprehensive process and organizational structure for public policy formulation, decision-making, and public management. This approach integrates the participation of communities, public agencies, government bodies, private entities, and various public sectors with the goal of achieving shared public welfare objectives that cannot be resolved independently by any single entity.

The collaborative governance framework encompasses several interrelated dimensions, including the system context, the Collaborative Governance Regime (CGR), and the dynamics of collaboration. This study adopts a theoretical framework grounded in the work of Emerson, Nabatchi, and Balogh, which conceptualizes the collaboration process through three key components: (1) the dynamics of collaboration, (2) collaborative actions, and (3) the temporary impacts and adaptive responses that emerge during collaboration. These components provide a systematic approach to uncover and analyze the collaborative phenomena underlying governance processes, enabling a deeper understanding of their mechanisms and outcomes.
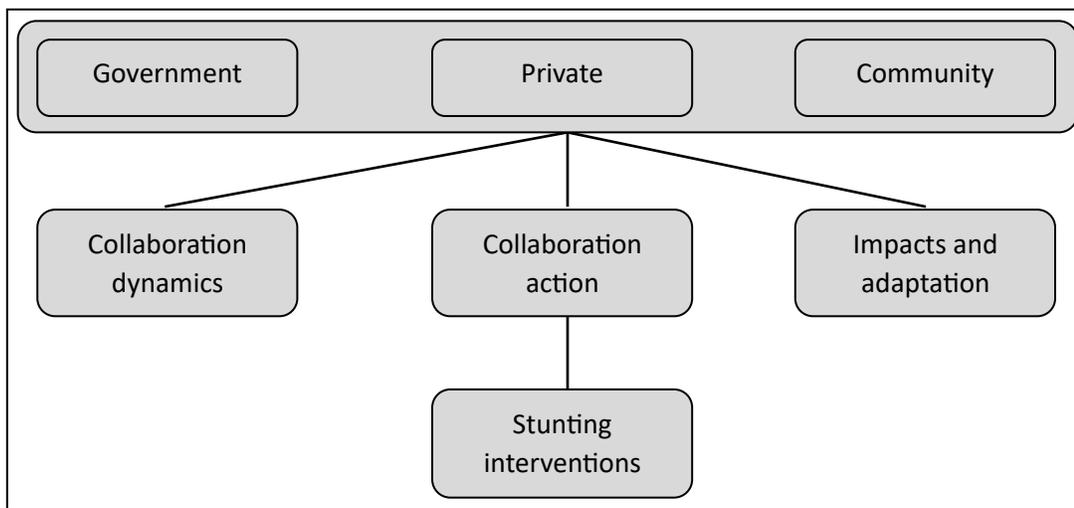

Fig. 1. Conceptual framework.

3.2 | Research Design

This research adopts an observational approach with qualitative descriptive analysis and employs a case study design focused on Enrekang Regency. The study utilizes two types of data sources: primary data and secondary data. Primary data were collected directly through observations, interviews, and the distribution of questionnaires to selected informants using a purposive sampling technique. The informants comprised representatives from various sectors, including private, governmental, and non-governmental organizations, such as the Health Office, the Food Security and Family Security Office, the Family Planning Office, the Enrekang Branch of Bank Sulselbar, PDAM Enrekang, BAZNAS Enrekang Regency, and members of the Village Stunting Reduction Acceleration Teams (*TPPS Desa*) involved in stunting prevention efforts.

Secondary data, on the other hand, were sourced from relevant documents and literature, including official reports, scientific journals, and books that address the concepts of Collaborative Governance and stunting-related issues. These secondary sources served to complement primary data by providing contextual and theoretical insights, thereby enriching the research's analytical framework. The integration of primary data gathered directly from field informants with secondary data from documented literature ensures a robust foundation for exploring and analyzing institutional collaboration in addressing stunting in Enrekang Regency. By employing this mixed-

method approach, the study aims to present a comprehensive understanding of the effectiveness and dynamics of collaborative governance in tackling stunting within the region.

3.3 | Data collection

This study employs a qualitative descriptive approach, with data collection conducted through interviews and literature reviews. Data were gathered using four primary methods: field studies, literature reviews, documentation, and media analysis. Field studies involved direct observations and interviews, with informants purposively selected based on their representativeness and relevance to the research topic.

The literature review method provided foundational material from scientific journals, academic literature, and other pertinent publications, which served as key references for the study. The documentation method was used to compile concrete data, including stunting prevalence over the past five years, local government strategies and work plans, as well as intervention sites in villages and sub-districts targeted for stunting mitigation efforts. To complement these methods, media analysis was conducted by examining news coverage in both print and online media regarding government collaborations in addressing stunting. By integrating these four methods, the study aims to produce comprehensive and accurate data to thoroughly depict the implementation and dynamics of government collaboration in tackling stunting in Enrekang Regency.

3.4 | Data analysis

The data analysis in this study utilizes a documentation method consisting of three key stages: data reduction, data presentation, and conclusion drawing. The first stage, data reduction, involves summarizing, selecting pertinent information, and focusing on relevant themes or patterns. This process helps distill the data, making it more manageable and clearer, allowing researchers to add or adjust information as necessary.

Following reduction, the data is structured into a specific format, such as sketches, summaries, or matrices, during the data presentation stage. This step aids in organizing the information for better comprehension and facilitates the process of drawing meaningful conclusions. Finally, conclusions are drawn through careful interpretation of the processed data, supported by verification to ensure accuracy. The conclusion is based on a thorough analysis of each informant's input, ensuring alignment with the existing data and ensuring validity in the interpretation.

4 | RESULTS AND DISCUSSION

4.1 | Collaboration dynamics

This section examines the dynamics of collaboration in the management of stunting in Enrekang Regency, with a particular focus on the shared principles, collective motivations, and capacity to take coordinated actions. The collaborative efforts are structured under the framework established by Presidential Regulation No. 72 of 2021 on the Acceleration of Stunting Reduction, as well as the Decree of the Regent of Enrekang No. 141/KEP/III/2022, which formed the Stunting Reduction Acceleration Team (*TPPS*). The collaborative process engages a range of stakeholders, including local government bodies, private sector actors, and community groups. The research identifies both successes and challenges faced within the collaboration, highlighting the complexities and outcomes of these collective efforts.

Shared Principles

The shared principles in the collaborative process involve the active participation of all stakeholders through inclusive discussions and open communication. The findings of this study reveal that the involvement of stakeholders is shaped by clearly defined responsibilities, as outlined in the Regent's Decree and other related regulations. Stakeholders, such as the Health Office and Baznas, demonstrated a good understanding of the stunting issue and their respective roles. The causes of stunting, as identified in the discussions, are viewed from a broad perspective that includes not only health factors but also social, economic, and behavioral dimensions. Previous

research has emphasized that a collaborative framework involving multiple actors is an effective strategy for tackling multidimensional challenges like stunting (Ansell & Gash, 2008; Emerson et al., 2012).

Nevertheless, the dynamics of deliberation or joint discussions remain a challenge. The discussions that take place are often unidirectional, leaving some stakeholders feeling that they lack sufficient opportunities to voice their perspectives. This limitation affects the full implementation of the deliberation principle in the collaborative process. Although platforms such as stunting workshops and mini-workshops exist, their effectiveness in fostering meaningful discussions and facilitating decision-making processes requires improvement. As noted by Bryson et al. (2015), inclusive deliberation enhances the legitimacy and sustainability of collaborative efforts.

Shared Motivation

Shared motivation is an essential element that reflects the interpersonal relationships and trust among stakeholders. This trust is cultivated through ongoing collaboration as each party fulfills their respective responsibilities. Interviews with several informants revealed a strong mutual confidence in the ability of stakeholders to address the stunting issue. Additionally, the local government has played a crucial role in fostering cooperation by facilitating the signing of a Memorandum of Understanding (MoU), thereby strengthening the commitment of all involved parties.

The existence of a shared understanding of the stunting problem further indicates the effectiveness of collaboration. Stakeholders demonstrated the capacity to engage in discussions about the various factors contributing to stunting, including public ignorance regarding nutrition and health behaviors. While there were differences of opinion, these were manageable through deliberative processes that provided space for all parties to contribute to identifying solutions. As noted by Kenis et al. (2009), trust among actors is a vital component of collaborative networks, essential for achieving effective outcomes.

Capacity to Perform Joint Actions

The capacity to take joint action relies heavily on effective governance, resources, and administrative support. Enrekang Regency benefits from a solid legal framework, exemplified by Regent Law of No. 56 of 2023 and the TPPS Decree. However, the study found that not all stakeholders fully comprehend the regulations. Some actors tend to follow leadership guidance without understanding the specific responsibilities outlined within the regulations.

Challenges in human resources and budgeting emerged as key barriers to effective collaboration. Several stakeholders expressed concerns regarding insufficient staff to cover all targeted areas, as well as financial constraints that hindered the full implementation of stunting reduction programs. Addressing these resource limitations is critical for enhancing efforts in more remote or underserved areas. According to Emerson et al. (2012), effective joint action requires a governance structure that is adaptable and adequately resourced.

The collaborative effort in mitigating stunting in Enrekang Regency has made notable strides, marked by a clear governance structure and solid cooperation among stakeholders. However, further improvements are needed in areas such as deliberative discussions, a better understanding of regulatory frameworks by all parties, and the more effective allocation of resources. As the initiator of these efforts, the government must ensure that every collaborative forum promotes inclusive and open dialogue. Furthermore, improved strategic planning is necessary to ensure the equitable and efficient distribution of resources.

Darumurti et al. (2023), Dolifah et al. (2021) and Wu & Qi (2016) supports the idea that cross-sector collaboration can achieve optimal outcomes when coordinated well and supported by a shared understanding among all parties involved. In light of this, capacity building and transparency in collaborative management are crucial elements to effectively achieving sustainable stunting reduction.

4.2 | Collaboration action

In the context of specific nutrition interventions, the Enrekang District Health Office plays a central role in leading several programs, including the provision of supplementary food (PMT) to vulnerable groups such as toddlers and pregnant women. The implementation of PMT is carried out through Posyandu, incorporating additional education on the importance of exclusive breastfeeding and healthy eating habits. This approach aligns with the findings of Bhutta et al. (2013), who demonstrated that locally-based PMT, when conducted consistently, can significantly reduce stunting rates. Moreover, the Health Office provides preventive and curative health services, such as the administration of vitamins, treatment of infectious diseases, and capacity-building for Posyandu cadres to strengthen public health support. Gillespie et al. (2018) similarly affirm the effectiveness of a community-based approach integrated with health services in improving children's nutritional outcomes.

Education represents another critical pillar of specific nutrition interventions. Village cadres, pregnant women, brides-to-be, and young women are trained and counseled on healthy eating, child care, and proper nutrition. These efforts are consistent with Alderman (2014), whose research indicates that increasing community knowledge is essential for enhancing the success of stunting reduction programs through individual empowerment. However, despite positive results, the predominance of government oversight in the program's implementation has posed challenges. This dominance limits the potential involvement of non-governmental sectors, which could play a more significant role in both the implementation and funding of these interventions.

In addition to direct services, sensitive nutrition interventions in Enrekang Regency involve the participation of the non-health sector in supporting stunting reduction. One example is the Sustainable Yard Utilization (P2L) program from the Food Security Service, which focuses on improving local food security by encouraging the use of yard space for vegetable cultivation. The program, which also provides seeds and training to communities, aims to harness local potential. Ruel et al. (2018) highlight the importance of local food diversification in promoting food security and reducing dependency on a single food source, confirming that such initiatives can have a profound impact on community consumption patterns.

Bank Sulselbar contributes to sensitive nutrition interventions by promoting agricultural business loans. These loans provide financial support to farmer groups, strengthening agricultural activities that contribute to stunting reduction. According to Fanzo (2020), access to financing is a critical factor for fostering local economic growth, which indirectly enhances access to nutritious food. Furthermore, Bank Sulselbar is involved in improving sanitation by distributing waste bins and supporting clean water access in partnership with Perumda Tirta Massenrempulu. Improving sanitation and access to clean water is essential in reducing infection-related risks to children's health, which can lead to malnutrition (Spears et al., 2013).

A notable innovation in the collaborative effort is the "Fathers and Mothers Foster Stunting Children" program introduced by the Enrekang Regency Government. This program provides direct support to children at risk of stunting, not only in the form of material assistance, such as nutritious food and vitamins, but also through social engagement via regular monitoring and guidance. The involvement of various stakeholders, including regional apparatus organizations (OPDs), the private sector, and local communities, amplifies the impact of this initiative. Mason et al. (2014) underscore the long-term benefits of such comprehensive programs in enhancing the quality of life for vulnerable children.

Additionally, the program includes family education, aiming to foster independence in maintaining a healthy diet and good parenting practices. Nonetheless, several challenges persist in implementing this program, particularly budget constraints and the difficulty of reaching remote areas that require additional attention. This is consistent with the findings of a UNICEF report (2019), which identifies limited resource access and insufficient public education as major barriers to effective stunting reduction in developing countries. The collaborative dynamics in Enrekang Regency highlight the need for a cross-sectoral approach to address complex public health challenges like stunting. Emerson et al. (2012) argue that the success of collaborative governance depends on balancing the roles

of different actors and achieving a shared understanding of the collaboration's goals. In Enrekang, the dominance of the government remains a challenge, underscoring the need for more inclusive and effective collaboration.

To enhance the program's sustainability, several strategic actions should be pursued. First, increased budget allocations from both local governments and the private sector are necessary, as recommended by North et al. (2022). Second, community engagement should be strengthened through more comprehensive education, leveraging mass media and involving community leaders. Third, empowering community-based approaches is essential by offering greater opportunities for the non-governmental sector to contribute actively. With this holistic strategy, Enrekang Regency can ensure that all children have the opportunity to grow up healthy in a supportive environment. The collective commitment of all stakeholders will be crucial in achieving the long-term goal of reducing stunting and improving the quality of life for future generations.

4.3 | Impact and adaptation

In the context of specific nutrition interventions, the Enrekang District Health Office plays a pivotal role in leading several programs, including the provision of supplementary food (PMT) to vulnerable groups such as toddlers and pregnant women. PMT is implemented through Posyandu, which also provides additional education on the importance of exclusive breastfeeding and a healthy diet. This strategy aligns with the findings of Bhutta et al. (2013), indicating that community-based PMT can significantly reduce the prevalence of stunting when implemented consistently. Furthermore, the Health Office provides preventive and curative health services, such as vitamins, treatment for infectious diseases, and training programs to enhance the capacity of Posyandu cadres in supporting public health efforts. Hoddinott et al. (2013) support this by emphasizing that a community-based approach integrated with health services has a positive impact on improving children's nutritional status.

The collaborative effort in addressing stunting in Enrekang Regency has yielded both expected and unexpected outcomes. In response to these outcomes, various adaptation strategies have been implemented by stakeholders to ensure the effectiveness of the program. These dynamic responses illustrate the challenges and opportunities of using a cross-sectoral collaborative approach in addressing complex public health issues like stunting.

Expected Impact

The main anticipated outcome of the collaboration is a reduction in the prevalence of stunting. According to data from the Enrekang Regency Health Office, the stunting rate decreased from 28.9% in 2019 to 19.04% in 2023. This success is largely attributed to the implementation of community-based programs such as nutrition education and monitoring through the EPP-GBM (Community-Based Nutrition Recording and Reporting Electronics) application. This application has facilitated data-driven monitoring and heightened public awareness of stunting issues, particularly through supervision of prospective couples before marriage. The decline in stunting rates demonstrates the positive impact of cross-sector collaboration between the government, community, and private sector, confirming the findings of Bhutta et al. (2013) that community-based interventions, when supported by technology and data, can significantly improve children's nutritional outcomes.

Unexpected Impact

Despite a noticeable decline in stunting rates, the program faces unexpected challenges that hinder its optimal implementation. One significant obstacle is budget constraints. Although the program receives funding from the Enrekang Regency Budget, the allocation is often insufficient to support the strengthening of priority villages. An informant from the Health Office noted that the allocated budget is frequently limited to covering coordination meetings, while efforts to strengthen village-level capacity remain unmet. This financial limitation negatively impacts the effectiveness of the program at the grassroots level, aligning with North et al. (2022), who emphasize that inadequate resource allocation is a major obstacle in the successful implementation of stunting reduction programs in developing nations. Additionally, reports indicate occasional spikes in stunting prevalence at the end of the year,

despite the overall downward trend. These fluctuations may result from inconsistent program continuity or difficulties in sustaining long-term results.

Unforeseen Impact

The implementation of the program has also faced unforeseen impacts, including both positive and negative consequences. The COVID-19 pandemic, for example, hindered stunting data collection and monitoring due to social restrictions and lockdown measures. This disruption complicates the planning and implementation of evidence-based interventions, as noted by Cardarelli et al. (2024), who found that the pandemic heightened nutritional vulnerabilities due to disruptions in food supply chains and health services. Furthermore, certain diseases in children with stunting have proven to be unexpected barriers. Despite medical and nutritional interventions, some cases have been difficult to manage due to congenital conditions that exacerbate the nutritional challenges. This underscores the need for a multidisciplinary approach to stunting, as emphasized by Christian et al. (2015), who highlight the intricate relationship between nutrition, health, and environmental factors in influencing child growth.

Adaptation to Impact

In response to these challenges, adaptation has been crucial for sustaining the program. A key adaptation strategy involved focusing on villages with the highest stunting rates. Based on evaluations, the Enrekang Regency government decided to allocate additional resources to the three priority villages, hoping that targeted interventions would yield significant results. This approach is consistent with the recommendations of Emerson et al. (2012), which stress the importance of data-driven decision-making in cross-sector collaboration. Additionally, adaptation has included adjustments in budget allocation. For instance, Baraka District, a region with high stunting rates, reallocated funding from posyandu honorarium to more direct stunting reduction programs. This shift reflects an effort to optimize resource use and enhance program effectiveness. However, not all stakeholders demonstrated similar adaptability, with some relying heavily on leadership instructions rather than taking proactive measures. This highlights the need for capacity building at the local decision-making level, as Ruel et al. (2018) suggest, in order to empower local actors and improve the sustainability of the program.

5 | CONCLUSION

This study emphasizes the critical role of Collaborative Governance in addressing stunting in Enrekang Regency. Through the lens of the theoretical framework developed by Emerson, Nabatchi, and Balogh, the study demonstrates that the collaboration of the government, private sector, and community has successfully reduced the stunting rate from 28.9% in 2019 to 19.04% in 2023. Initiatives such as the EPP-GBM application and the provision of supplementary feeding (PMT) have proven effective in enhancing public awareness and facilitating data-driven nutritional management. Despite these successes, the study identifies several challenges in optimizing collaboration dynamics, including limited inclusive deliberation and imbalanced resource allocation, which hinder the full engagement of all involved actors.

In addition to the anticipated outcomes, the study highlights unintended and unforeseen impacts, such as budget constraints, data collection errors, and the disruption caused by the COVID-19 pandemic, which all affected program implementation. These challenges underscore the need for strategic adaptations to strengthen cross-sector collaboration. Local government responses, including focusing interventions on high-priority villages and reallocating budgets, reflect flexibility in addressing obstacles. However, there remains a need for improvements in local capacity management and inter-agency coordination to enhance the program's efficiency.

In conclusion, while Collaborative Governance has yielded notable progress in combating stunting, its continued success depends on efforts to further enhance collaboration dynamics and increase the capacity of all stakeholders. Strengthening data collection systems, broadening community education, and ensuring more equitable resource allocation will be pivotal to the program's sustainability. By fostering inclusive stakeholder

participation and ensuring a fair distribution of responsibilities, Enrekang Regency has the potential to eliminate new cases of stunting and improve the overall quality of life for its community.

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Disclosure Statement

The authors declare that has no relevant or material financial interests that relate to the research described in this paper.

Data Availability Statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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