

Bridging National Strategies and Local Innovations: A Systematic Literature Review of Stunting Reduction Efforts in Indonesia

Amni Zarkasyi Rahman^{1*}, Nadia Farabi², Farid Agushybana³

¹Department of Public Administration, Faculty of Social and Political Sciences, Universitas Diponegoro, Semarang, Central Java, Indonesia

²Department of International Relations, Faculty of Social and Political Sciences, Universitas Diponegoro, Semarang, Central Java, Indonesia

³Department of Public Health, Faculty of Public Health, Universitas Diponegoro, Semarang, Central Java, Indonesia

Abstract. This research aims to critically examine the alignment between national strategies and local innovations in Indonesia's efforts to reduce stunting. Despite major initiatives such as the National Strategy for Accelerating Stunting Prevention (Stranas P3S), the Stunting Reduction Performance Index (IKPS), and the Public Service Innovation Competition (KIPP), national stunting prevalence remains at 21.5%, highlighting persistent regional disparities. Existing literature has rarely addressed how national frameworks interact with local policy adaptations. Using the Walt and Gilson Policy Triangle, this study analyses the content, context, actors, and processes of key national and subnational policies. The findings reveal some progress in multisectoral integration across health, education, and social protection, yet ongoing fragmentation persists due to limited institutional capacity, rigid funding, and uneven community engagement. Regions that successfully bridged national directives with locally driven innovations demonstrated stronger outcomes in addressing stunting. The study argues for a more adaptive, decentralized policy approach embedded within broader health system reforms to strengthen policy coherence and implementation.

1 Introduction

Indonesia has made significant strides in reducing stunting prevalence from 30.8% in 2018 to 19.8% in 2024, although this remains short of national targets. Stunting, a complex issue with long-term impacts on cognitive function, education, and economic productivity [1], stems from multifaceted causes including inadequate nutrition, poor sanitation, limited healthcare access, and socioeconomic disparities [2]. The Indonesian government's response is primarily through the *Strategi Nasional Percepatan Pencegahan dan Penurunan Stunting* (Stranas P3S) or National Strategy to Accelerate Stunting Prevention and Reduction, reinforced by Presidential Regulation No. 72/2021, emphasizing cross-sectoral convergence across five pillars, along with initiatives like the *Indeks Khusus Penanganan Stunting* (IKPS) or Stunting Reduction Special Index, and the *Kompetisi Inovasi Pelayanan Publik* (KIPP) or Public Service Innovation Competition [3].

* Corresponding amni.rahman@live.undip.ac.id

Despite these efforts, challenges persist in the form of regional disparities and operational inconsistencies [4]. Logistical barriers affect remote areas like Papua, while urban areas grapple with uneven resource allocation. Literature highlights the importance of understanding the convergence between national strategies and local innovations, advocating the need for context-specific approaches [5]. This systematic literature review critically analyzes Indonesia's stunting reduction efforts, focusing on cross-sectoral integration, the interplay between national and local initiatives, and the coordination of interventions, using the Walt and Gilson Policy Triangle Framework [6] to identify strengths, gaps, and policy opportunities to accelerate stunting reduction.

Based on the Indonesian Health Profile, these efforts have yielded a notable decline in stunting rates from 37.2% in 2013 to 24.4% in 2021. However, challenges persist, particularly in remote and rural areas with limited access to healthcare and nutritious food. The government is implementing tailored initiatives and leveraging technology to improve service delivery and monitoring in these hard-to-reach communities.

This comprehensive strategy encompasses various initiatives, including improved maternal and child nutrition programs, enhanced access to clean water and sanitation facilities, and public awareness campaigns about proper nutrition and childcare practices. Collaboration with international organizations, Non-Governmental Organizations (NGOs), and the private sector has further strengthened these efforts. Despite these achievements, geographic isolation, limited infrastructure, and socioeconomic factors continue to create disparities.

Targeted interventions are being developed to address the specific needs of these underserved communities, such as the use of mobile health applications for remote consultations, digital tracking systems for nutritional status, and data analytics to identify high-risk populations and allocate resources effectively. In addition, capacity-building programs aimed at local authorities and community leaders provide the knowledge and tools necessary to implement and sustain stunting prevention efforts. By combining these targeted approaches with ongoing national initiatives, Indonesia seeks to continue its trajectory of reducing stunting rates and ensuring equitable health outcomes for all children across the archipelago.

Although progress has been made, numerous critical obstacles remain. Regional disparities, particularly between urban and rural areas, along with operational inconsistencies continue to impede the successful implementation of policies [4]. Remote areas like Papua encounter logistical challenges that restrict the impact of national initiatives, whereas urban regions experience uneven resource distribution. Additionally, existing literature provide limited understanding into how top-down national strategies integrate with grassroots innovations, leaving adaptive policy mechanisms unclear [5]. This highlights the need for context-specific strategies, particularly through community empowerment and health promotion efforts. The Walt and Gilson Policy Triangle Framework, which analyzes policy content (design), context (sociopolitical environment), actors (stakeholders), and processes (implementation), offers a useful perspective for assessing these dynamics [6].

This systematic literature review critically examines Indonesia's efforts to reduce stunting, focusing on three principal dimensions: cross-sectoral integration, the integration between national strategies and local innovations, and the coordination of national interventions. Based on a review of reputable international journals and SINTA-accredited publications, this study addresses the following guiding research questions: How effective is cross-sectoral integration in stunting reduction policies, how well are national strategies aligned with local innovations, what barriers exist in coordinating national interventions. The findings offer insights for policymakers to enhance adaptive and decentralized approaches to expedite stunting reduction.

2 Methods

This study adhered to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines [7] and utilized Walt and Gilson Policy Triangle framework [6] to examine the interrelationships among policy content, context, actors, and processes. A comprehensive literature search was conducted across five databases: PubMed, Scopus, ScienceDirect, Google Scholar, and Portal Garuda (with emphasis on SINTA-accredited journals). The search strategy employed a combination of relevant keywords, including “stunting reduction,” “policy analysis,” “Indonesia,” “cross-sectoral integration,” “national strategy,” “local innovation,” “Stranas P3S,” “IKPS,” “KIPP,” and “policy coordination,” using Boolean operators (AND, OR) to refine the search and ensure coverage across multiple thematic intersections. The search was restricted to articles published between 2015 and 2025 to capture developments after major national stunting initiatives.

The inclusion criteria comprised peer-reviewed articles from international journals indexed in Scopus or Web of Science, as well as Indonesian journals accredited at SINTA levels 1-3. Eligible studies analyzed stunting reduction policies in Indonesia, emphasizing cross-sectoral integration, national-local convergence, or policy coordination. The review included only primary research articles (qualitative, quantitative, or mixed-methods) to maintain originality, excluding review articles, secondary analyses, and non-peer-reviewed publications (e.g., grey literature, reports, editorials). Publications in both English and Indonesian qualified for inclusion. Exclusion also applied to articles lacking direct policy relevance, focusing solely on clinical or nutritional aspects without a policy perspective, or unavailable in full-text format.

The initial search yielded 1,320 potentially relevant articles. After removing 340 duplicates, 980 proceeded to title and abstract screening. From these, 90 were selected for full-text review, and 21 ultimately fulfilled all inclusion criteria. This selection process is shown in the PRISMA flow diagram (Figure 1), which illustrates the steps taken to ensure methodological transparency and reproducibility.

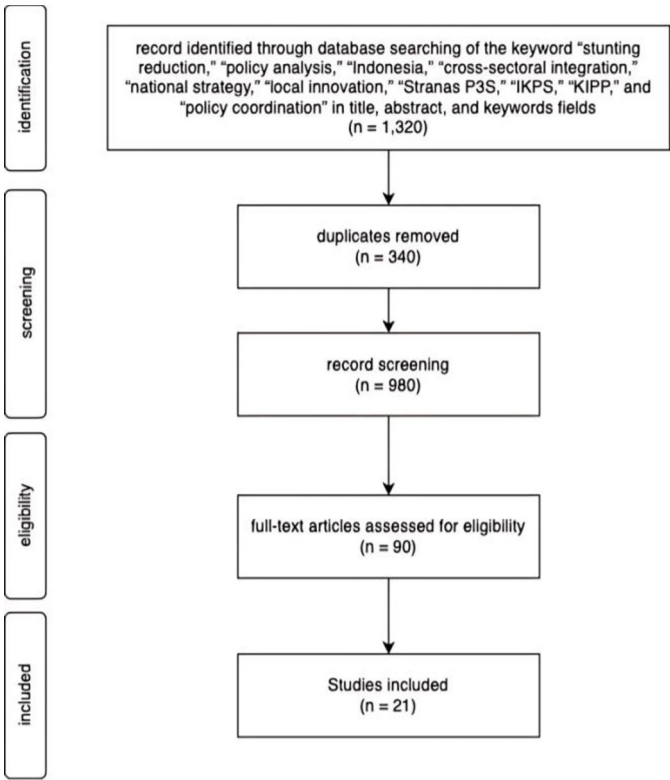


Figure 1. PRISMA Flow Diagram for information search in PubMed, Scopus, ScienceDirect, Google Scholar, and Portal Garuda (specifically for SINTA-accredited journals at level 1-3)

To safeguard the credibility of the review, the selection targeted studies from reputable publication outlets: international journals indexed in Scopus or Web of Science, and Indonesian journals accredited at SINTA levels 1-3. Afterward, a quality appraisal was conducted using the JBI Critical Appraisal Checklist. Through this process, only methodologically rigorous primary research informed the final analysis, thereby strengthening the reliability of the conclusions. Instead of reiterating the scope of inclusion, the quality check emphasized internal rigor and coherence across studies.

Following appraisal, data extraction employed a structured template capturing each study’s objectives, methods, and contributions to four core policy dimensions: content, context, actors, and process. Drawing on the Walt and Gilson Policy Triangle, a narrative synthesis was conducted to identify patterns and divergences across cases. The analysis centered on three central themes emerging from the literature: integration of cross-sectoral efforts, the tension and adaptation between national strategies and local innovation, and institutional mechanisms shaping policy coordination. This thematic approach allowed a focused yet flexible interpretation of how Indonesia’s efforts to reduce stunting unfold across different levels of governance.

3 **Results And Discussion**

This section presents the findings from 21 peer-reviewed studies incorporated in the review. Table 1 summarizes the characteristics of each study, including the authors, year of publication, and main conclusions. This structured presentation ensures transparency and avoids obscuring the contributions of individual studies. Building on these findings, the analysis applies the Walt and Gilson Policy Triangle to examine how stunting reduction policies in Indonesia are shaped and implemented. The synthesis is organized around four key policy dimensions: content, context, actors, and processes, and grouped into three thematic areas: (1) cross-sectoral integration, (2) the relationship between national strategies and local innovations, and (3) coordination across governance levels. These themes are further informed by national policy documents and insights from applied research such as Agushtyana and colleagues.

No	Author (Year)	Article Title	Index	Results
1	Melisa et al (2022)	The Government Policy for Stunting Countermeasure Strategy in Indonesia be preparing for Golden Generation 2045	Scopus Q2	Indonesia’s stunting prevention strategy is embedded in the 2020–2024 National Medium-Term Development Plan and operationalized through RAN-PASTI with nutrition, multi-sectoral, and family-based approaches, focusing on five pillars—leadership commitment, behavior change, intervention convergence, food and nutrition security, and data and innovation strengthening—to achieve the national target of 14% stunting prevalence by 2024 and the 2045 Golden Generation vision.
2	Maulana et al (2023)	Between policy and practice: a qualitative insights into government-led stunting reduction programs in Lhokseumawe, Aceh, Indonesia	SINTA 1	The strategy and efforts to prevent stunting in Indonesia, particularly in Lhokseumawe, emphasize the improvement of screening processes, the provision of more targeted nutritional interventions, and strengthened inter-institutional coordination; however, their implementation remains constrained by inconsistencies in field execution, non-specific supplementary food programs, and weak inter-agency collaboration.
3	Helen et al (2025)	Projecting the impact of a national strategy to accelerate stunting prevention in East Nusa Tenggara, Indonesia, using the Lives Saved Tool Authors	SINTA 1	Stunting prevention strategies in Indonesia emphasize a comprehensive set of interventions, with breastfeeding promotion and appropriate complementary feeding as the most impactful measures, supported by micronutrient supplementation (vitamin A and multiple micronutrients), which together have been shown to significantly reduce stunting prevalence and advance the achievement of the Sustainable Development Goals.
4	Hossain et al (2017)	Resource disparities and stunting reduction in low- and middle-income countries	Scopus Q2	Examines how resource disparities impact stunting reduction efforts in low- and middle-income countries, emphasizing equitable resource allocation.
5	Syafrawati et al (2023)	Bureaucratic challenges in stunting	SINTA 2	Analyzes bureaucratic obstacles in implementing stunting reduction

No	Author (Year)	Article Tittle	Index	Results
		reduction policy implementation		policies in Indonesia, highlighting inefficiencies and coordination issues.
6	Gani et al (2021)	Cross-sectoral integration in stunting reduction: A case study from Banggai, Central Sulawesi	SINTA 2	Explores successful cross-sectoral collaboration in Banggai, Central Sulawesi, for stunting reduction, emphasizing local governance integration.
7	Soetono & Barokah (2024)	Urban-rural disparities in stunting prevention in Indonesia	SINTA 3	Investigates disparities in stunting prevention between urban and rural areas in Indonesia, identifying access and resource gaps.
8	Daniel et al (2024)	Policy convergence and local innovation in stunting reduction in Indonesia	Scopus Q1	Discusses how policy convergence and local innovations contribute to effective stunting reduction strategies in Indonesia.
9	Agushybana et al (2022)	Community empowerment and health promotion to reduce stunting in Central Java, Indonesia	SINTA 2	Evaluates community-based health promotion and empowerment programs in Central Java for stunting reduction.
10	Walt & Gilson (1994)	Reforming the health sector in developing countries: The central role of policy analysis	Scopus Q1	Highlights the importance of policy analysis in health sector reforms, with implications for stunting reduction in developing countries.
11	Moher et al (2009)	Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement	Scopus Q1	Introduces the PRISMA framework for systematic reviews, relevant for synthesizing evidence on stunting interventions.
12	Siswati et al (2022)	Integrative nutrition packages and stunting reduction in Yogyakarta	SINTA 2	Assesses the impact of integrative nutrition packages on stunting reduction in Yogyakarta, focusing on dietary interventions.
13	Fristiwi et al (2023)	Village budget allocation and stunting prevention: Evidence from rural Indonesia	SINTA 3	Examines how village budget allocations influence stunting prevention efforts in rural Indonesia.
14	Wahyuningsih et al (2022)	Growth monitoring and stunting reduction in urban Indonesia	SINTA 3	Analyzes the role of growth monitoring in reducing stunting in urban Indonesian settings.
15	Siramaneerat et al (2024)	Examining determinants of stunting in Urban and Rural Indonesian: a multilevel analysis using the population-based Indonesian family life survey (IFLS)	Scopus Q1	Uses multilevel analysis to identify urban-rural determinants of stunting in Indonesia based on IFLS data.
16	Suryani et al (2024)	Local food integration and stunting reduction: Evidence from East Lombok	SINTA 3	Explores how integrating local foods into diets contributes to stunting reduction in East Lombok.
17	Milwan & Sunarya (2023)	Scaling up local innovations in stunting prevention: Barriers and opportunities	SINTA 3	Identifies barriers and opportunities for scaling up local innovations in stunting prevention in Indonesia.
18	Yenti et al (2025)	Vertical and horizontal coordination in stunting reduction programs: A case	SINTA 2	Examines vertical and horizontal coordination mechanisms in stunting reduction programs in Riau Province.

No	Author (Year)	Article Tittle	Index	Results
		study from Riau Province		
19	Kurniasih et al (2022)	Coordination and implementation of stunting reduction policies in Indonesia	SINTA 2	Analyzes coordination challenges and successes in implementing stunting reduction policies across Indonesia.
20	Sriwindy & Permana (2025)	Coordination mechanisms in stunting reduction at the village level	SINTA 2	Investigates village-level coordination mechanisms for effective stunting reduction in Indonesia.
21	Kania et al (2024)	Strategic Model For Reducing Stunting Rates Through Parenting Improvement In Indonesia: Supporting Sdg 3 To Promote Good Health And Well-Being	Scopus Q4	The strategy for addressing stunting in Indonesia centres on improving parenting practices through a collaborative Penta Helix model—encompassing communities, universities, media, businesses, and government—aimed at strengthening parental awareness and fostering multi-sectoral synergy in support of stunting prevention.

The review studies reveal diverse approaches to tackling stunting in Indonesia, ranging from national frameworks such as *Rencana Aksi Nasional Percepatan Penurunan Stunting* (RAN-PASTI) or National Action Plan for The Acceleration of Stunting Reduction, and Stranas P3S to community-driven initiatives like empowerment programs in Central Java, local food integration in East Lombok, and village-level coordination in Riau. Several common themes emerge: the importance of cross-sectoral collaboration, persistent urban-rural disparities in access and outcomes, bureaucratic and coordination challenges, and the opportunities and limitations in scaling grassroots innovations. While progress is evident, the evidence also underscores gaps in aligning national priorities with varied local contexts. The following sections synthesize these findings across three thematic areas, beginning with cross-sectoral integration in stunting reduction policy.

3.1 Cross-Sectoral Integration for Stunting Reduction Policy

Cross-sectoral integration is central to Stranas P3S, Indonesia’s flagship strategy to address the multifaceted causes of stunting. It aligns efforts across health, education, agriculture, and social protection sectors and is operationalized through five pillars: (1) national and local leadership commitment and vision, (2) behavior change and community empowerment, (3) convergence of specific and sensitive interventions, (4) food and nutrition security, and (5) system and data strengthening. These pillars frame programmatic initiatives such as supplementary feeding, sanitation, and conditional cash transfers for nutritionally vulnerable groups. At the subnational level, policies like Central Java’s regional regulation reinforce engagement through health education and workforce development. Integration of these pillars has also been institutionalized within Indonesia’s medium- and long-term planning. As noted by previous study, the 2020–2024 National Medium-Term Development Plan embeds stunting prevention into the broader Golden Generation 2045 vision, with RAN-PASTI providing a family-based, nutrition-sensitive, and multi-sectoral framework to accelerate reductions [8].

Content (policy design): National strategies such as Stranas P3S, IKPS, and RAN-PASTI prescribe standardized interventions, notably supplementary feeding and maternal nutrition programs [8,9]. Helen et al. [10] model that breastfeeding promotion and micronutrient supplementation are the most impactful measures, substantially lowering stunting prevalence and advancing Indonesia’s Sustainable Development Goal targets.

Context (sociopolitical environment): Decentralized governance shapes implementation, with geographic disparities, particularly in Papua and East Nusa Tenggara, exacerbated by logistical challenges like inadequate cold chains. Fiscal limitations persist, with some regions allocating only 12% of village funds to stunting prevention [11]. Consequently, outcomes remain uneven across provinces despite standardized national policies.

Actors (stakeholders): Integration efforts involve diverse stakeholders, from central ministries and district governments to NGOs, and grassroots health workers. Local actors—village heads, health cadres, and midwives—adapt interventions to community needs. Initiatives such as the *Emo-Demos* program in Surabaya and the *Pesut Mahakam* or Mahakam River Dolphin program in Samarinda demonstrate the role of grassroots actors in translating national frameworks into culturally relevant solutions. In Yogyakarta and Central Java, cadres have been pivotal in promoting nutrition awareness and conducting early stunting detection [12].

Process (implementation): Localized initiatives have yielded measurable gains. In Banggai, Central Sulawesi, convergent sanitation and health interventions cut stunting by 6% in two years [4], while in Yogyakarta, integrative nutrition and education packages reduced prevalence by 5% in three years [12]. In East Lombok, West Nusa Tenggara, *Pos Pelayanan Terpadu* (Posyandu) or Integrated Service Post programs combining food distribution and nutrition education lowered stunting by 7% in Setanggor Village [13]. Yet, scaling up remains constrained by rigid funding and insufficient national policy support [14]. As previous study show in Aceh, weak inter-agency collaboration and inconsistent field implementation often threaten sustainability [15].

3.2 National Strategies vs. Local Innovation

Content (policy design): National policies emphasize uniform interventions across the archipelago. Stranas P3S and RAN-PASTI converge around nutrition-sensitive, cross-sectoral measures, while IKPS monitors convergence [8, 9]. Modeling by Helen et al. [10] underscores breastfeeding promotion, appropriate complementary feeding, and supplementation with vitamin A and multiple micronutrients as the most effective measures to accelerate progress toward national targets.

Context (sociopolitical environment): Implementation is significantly shaped by geographic disparities and logistical constraints. Remote and rural regions, particularly Papua and East Nusa Tenggara, struggle with inadequate cold chain systems, limited infrastructure, and socioeconomic inequalities that restrict access to essential health services. As Siramaneerat et al. [16] found, children in rural areas are more likely to experience stunting than those in urban centers, underscoring the importance of tailoring strategies to diverse local contexts.

Actors (stakeholders): National frameworks are operationalized and implemented by a diverse array of stakeholders. At the local level, governments, village heads, health cadres, and midwives help fill the gaps left by top-down policies. Earlier initiatives such as *Emo-Demos* in Surabaya and the *Pesut Mahakam* program in Samarinda exemplify this role, while in Central Java, training for health workers and nutrition promotion for prospective brides and grooms, further demonstrate how local actors adapt national directives into meaningful local action.

Process (implementation): Local innovations differ from standardized national programs by embedding participatory and culturally rooted practices. For example, community-led *Posyandu* in East Lombok combined food distribution with interactive nutrition education, while Yogyakarta integrated nutrition messages into local education systems. These approaches illustrate how bottom-up initiatives can complement national frameworks, yet they remain difficult to scale up due to rigid funding and weak inter-agency collaboration [12,13,14,15]. Evidence suggests that when local innovations are aligned with national

strategies through participatory planning, outcomes are stronger, echoing global findings that context-sensitive approaches are most effective when backed by robust national support [2,4,17].

3.3 Coordination between National Interventions

Effective coordination is key to turning policy into action at the local level. Stranas P3S recognizes that stunting is a multifaceted issue requiring synchronized actions across nutrition, healthcare, sanitation, education, and social welfare. By emphasizing convergence, the strategy seeks to pool resources, expertise, and data from both government agencies and NGOs, enhancing efficiency and impact [18]. The third pillar focused on coordination and consolidation, plays a central role in adapting national directives to local realities, ensuring interventions are tailored to regional challenges and leverage local strengths [19].

Content (policy design): Stranas P3S explicitly identifies coordination and convergence as core mechanisms for stunting reduction. These principles are institutionalized through frameworks such as the *Tim Percepatan Penurunan Stunting* (TPPS) or Acceleration of Stunting Prevention, which functions across multiple administrative levels to align data, planning, and monitoring processes [18,19,20].

Context (sociopolitical environment): The effectiveness of these coordination mechanisms is influenced by the broader institutional environment. Weak governance structures in certain provinces, such as Riau, have impeded convergence efforts due to unclear regulations and insufficient inter-sectoral forums [18]. These institutional limitations exacerbate regional disparities, constraining the full localization of national policies.

Actors (stakeholders): Successful coordination relies on active engagement among ministries, district health offices, village governments, and NGOs. TPPS teams are often composed of representatives from health offices, social agencies, education departments, and local leaders [20]. However, as Maulana et al. [15] observe in Aceh, these representatives often work in silos, with weak inter-agency collaboration hinders the potential synergies envisioned by national policy.

Process (implementation): When coordination mechanisms function well, such as through structured district-level TPPS teams, data sharing and program planning are aligned, enabling coherent implementation across sectors. In contrast, limited human resources, inadequate infrastructure, and poor communication channels result in fragmented program delivery, [19] showing that Stranas P3S's effectiveness heavily depends on local institutional and human resource capacity [20].

4 Conclusion

This systematic review of 21 articles demonstrates that Indonesia's stunting reduction agenda is shaped by national strategies and local adaptations across three dimensions. First, cross-sectoral integration is essential to address stunting's multifactorial causes, yet progress is constrained by resource disparities, limited budget allocations, and bureaucratic silos. Second, while national frameworks such as Stranas P3S, IKPS, and RAN-PASTI provide guidance, their effectiveness varies by context. Local innovations, including Posyandu integration, Emo-Demos, and Pesut Mahakam—effectively fill policy and service gaps, although their scalability is limited by rigid funding and insufficient policy support.

Third, coordination between national interventions is a decisive factor in translating policies into action. The establishment of coordination teams such as TPPS has improved vertical and horizontal alignment in some districts; however weak institutional capacity,

fragmented communication, and inconsistent inter-agency collaboration continue to undermine program convergence in many regions.

Taken together, the findings highlight that effective stunting control in Indonesia requires combining strong national policy direction with adaptive, context-sensitive local implementation. To advance further progress, policy efforts should prioritize enhancing cross-sectoral collaboration, enabling the scalability of local innovations, and strengthening coordination mechanisms through clearer regulations, increased resource allocation, and capacity building at the subnational level.

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