

STRENGTHENING THE CONVERGENCE PROGRAM TO ACCELERATE STUNTING REDUCTION IN SIBOLGA CITY

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ARTICLE INFO

Article History:

Received 20 July 2026

Revised 10 August 2026

Accepted 15 September 2026

Available online 30 September 2026

How to cite:

Nurhayati, N., Ulfah, F., Safira, P., Siregar, P. A., Siregar, P. Y., Zali, M., Rezebri, M., Apriliani, A., & Suraya, R. (2026). Strengthening The Convergence Program to Accelerate Stunting Reduction in Sibolga City. *Journal of Gender and Social Inclusion in Muslim Societies*, 7(3), 21–38.

ABSTRACT

Stunting reduction requires coordinated nutrition specific and nutrition sensitive interventions across sectors. This study evaluated the implementation of the stunting reduction convergence program and identified components requiring strengthening in Sibolga City. A descriptive qualitative program evaluation with a formative process focus was conducted in November 2023. Eighteen informants were purposively selected from local government agencies and TPPS, field implementers, and beneficiary families. Data were collected through in depth interviews, focus group discussions, observation, document review, and supporting anthropometric measurement. Data were analyzed through transcription, data reduction, data presentation, and conclusion drawing and verification, supported by source, method, and investigator triangulation. Three main findings were identified. First, TPPS members and frontline implementers generally understood their roles and responsibilities, and various nutrition specific and nutrition sensitive interventions had been implemented. Second, program convergence was constrained by uneven financing and incomplete integration of planning, budgeting, data management, monitoring, and evaluation across sectors. Third, sustained household behavior change remained challenging because of incomplete counseling participation, economic constraints, stigma toward stunting, and sanitation barriers in several coastal areas. The convergence program in Sibolga City has established an important institutional and programmatic foundation, but further strengthening is needed in implementation capacity, financing, cross sector coordination, data quality, family centered assistance, sanitation, and joint monitoring. TPPS and Bappeda should strengthen integrated planning and budgeting, while the Health Office, relevant OPDs, and urban village level actors should improve data quality, family follow up, and nutrition sensitive interventions.

Keywords: *Stunting, Convergence, Governance, Cross-sectoral Collaboration, Sibolga City.*

Introduction

Stunting is a manifestation of impaired linear growth associated with chronic nutritional deprivation, recurrent infection, and broader social and environmental determinants. In Indonesia,

reviews and national analyses consistently identify maternal and child nutrition, socioeconomic conditions, health service access, sanitation, feeding practices, and household environment as interrelated determinants of child growth (Arief et al.,

2025; Beal et al., 2018; Rachmi et al., 2016; Rosiyati et al., 2018). Stunting therefore remains a major public health priority because its determinants extend beyond the health sector to food security, social protection, water and sanitation, maternal and child care, and household practices. National policy consequently emphasizes integrated action rather than isolated nutrition services.

Indonesia has progressively strengthened the policy basis for convergence. Presidential Regulation No. 72 of 2021 places the acceleration of stunting reduction within a coordinated national to local governance structure and emphasizes the convergence of nutrition specific and nutrition sensitive interventions, data, monitoring, and accountability. National technical guidance likewise distinguishes nutrition specific and nutrition sensitive interventions as complementary components of integrated stunting reduction (BAPPENAS, 2020). The Eight Convergence Actions provide a practical process framework for local governments to link situation analysis, planning, coordination, data management, measurement and publication, and annual performance review.

Implementation research from Indonesia shows that having a national convergence policy does not guarantee equivalent implementation quality across

governance levels. In Cirebon, implementation was stronger at the district level than at the subdistrict and village levels, where staff capacity and coordination remained important constraints (Herawati & Sunjaya, 2022). Studies from West Java and Lebak similarly indicate that cross sector collaboration can remain government centered or insufficiently integrated even when formal convergence structures exist (Afandi et al., 2023; Supriyanto & Jannah, 2022). More recent evidence from Pidie, Aceh, also identified variation in implementation across levels and highlighted limitations in coordination, nutrition sensitive intervention coverage, and sustainability (Sufri et al., 2024). These findings make local process evaluation important because convergence depends on how policies are translated into routine planning, service delivery, family support, and monitoring.

The epidemiological context must be interpreted carefully because different data systems use different measurement frames. At the national level, Riskesdas 2018 estimated a stunting prevalence of 30.8% among children under five (Kementerian Kesehatan RI, 2018). For Sibolga City, SSGI values reported in the study materials were 25.8% in 2021 and 14.5% in 2022. By contrast, routine local records in the full report include 235

stunted children among 5,734 measured children in 2022, 245 EPPGBM cases from July 2023, and a separate 2023 routine account of 225 stunted children among 7,215 measured children. These figures should not be merged because their reporting periods and measurement frames differ. The full report also contains a separate figure of 5.10% or 292 cases for 2022 and 3.62% or 261 cases for 2023, but the cited source is unclear and the values conflict with other routine counts. These figures are therefore excluded from quantitative comparison in this revised article.

Sibolga City is a relevant setting for examining the implementation of convergence because all 17 urban villages were identified as loci for integrated stunting intervention during the study period, and the city had established TPPS and multiple sectoral programs. The scientific gap is not simply whether programs existed, but how the post 2021 convergence policy operated as a structures coordinated process: whether responsible actors understood and carried out their roles, whether financing and data systems supported integration, whether services were accepted and translated into family practices, and which implementation barriers persisted at the community level. This study therefore used the Eight Convergence Actions as a process oriented

organizing framework and addressed three questions: (1) How was the stunting reduction convergence program implemented in Sibolga City across planning, service delivery, coordination, data use, monitoring, and related nutrition specific and nutrition sensitive interventions? (2) What implementation strengths and barriers were experienced by TPPS and local agencies, field implementers, and beneficiary families? and (3) What process level changes are needed to strengthen governance, financing, data use, family support, behavior change, and sanitation? The study aimed to evaluate implementation in 2023 and identify priorities for strengthening the convergence process without attributing changes in stunting prevalence causally to the program.

Method

This study used a descriptive qualitative approach with a program evaluation design and a formative process focus to examine the implementation of the convergence program for accelerating stunting reduction in Sibolga City. The unit of analysis was the program implementation process. Evaluation focused on three dimensions, namely source or input, process, and target or output. These dimensions covered human resources and financing, planning and implementation, coordination, data

management, monitoring and evaluation, service coverage, program benefits, and beneficiary experiences. The Eight Convergence Actions were used as an organizing framework to examine the implementation of specific and sensitive nutrition interventions.

The study was conducted in November 2023 in Sibolga City, North Sumatra, Indonesia, which consists of four districts and 17 urban villages. A total of 18 informants were selected purposively based on their involvement in and knowledge of the program. They consisted of 11 representatives of local government agencies and the Stunting Reduction Acceleration Team (TPPS), three field implementers comprising a nutrition officer, Family Planning Field Officer (PLKB), and a family planning cadre, and four beneficiary mothers. Beneficiary informants were mothers of children aged 1 to 5 years with stunting status recorded in EPPGBM who had received program services.

Primary data were collected through in depth interviews, Focus Group Discussions, observation, documentation, and supporting anthropometric measurements. Interviews and FGDs explored program implementation, actor roles, specific and sensitive nutrition interventions, service coverage, collaboration, financing, monitoring and

evaluation, program benefits, and implementation barriers. FGDs were used to complement and confirm interview findings. Observation examined program implementation in the field, while documentation included program reports, regulations, planning documents, and institutional records. Anthropometric measurements were used as supporting information on beneficiary growth status. Secondary data were obtained from the Sibolga City Health Office, Bappeda, the Village Community Empowerment Office, and other relevant government agencies to complement and confirm the primary findings.

Data were analyzed using descriptive qualitative analysis. Interview data were transcribed, reduced, organized, and presented narratively, followed by conclusion drawing and verification. Findings were compared across informants and data collection methods. The findings were synthesized into three main themes, namely implementation capacity and delivery of convergence actions; financing, coordination, data management, monitoring and evaluation; and family behavior, stigma, economic constraints, and sanitation. Trustworthiness was strengthened through method, source, and investigator triangulation involving government representatives, program implementers, beneficiaries, and

researchers from university, Indonesia's National Population and Family Planning Board (BKKBN), and independent research backgrounds. The study was conducted with permission, collaboration, and coordination with relevant local government agencies and program institutions in Sibolga City.

Results

Table 1. Characteristics of the 18 informants documented in the full study report.

Code	Sex	Affiliation/participant group
BS	Male	Bappeda, local government/TPPS
EA	Female	Bappeda, local government/TPPS
SP	Female	Health Office, local government/TPPS
KL	Female	Health Office, local government/TPPS
ASS	Male	Population Control and Family Planning Office, local government/TPPS
SA	Male	Population Control and Family Planning Office, local government/TPPS
ES	Female	Fisheries, Food Security, and Agriculture Office, local government/TPPS
OM	Male	Fisheries, Food Security, and Agriculture Office, local government/TPPS
BIH	Female	Community and Village Empowerment Office, local government/TPPS
EJH	Female	Community and Village Empowerment Office, local government/TPPS
DA	Female	Social Service, local government/TPPS
DS	Male	Puskesmas Pelabuhan Sambas, nutrition field implementer
SAM	Female	PLKB, field implementer
UK	Female	Family planning cadre, field implementer
TL	Female	Sibolga Sambas, beneficiary mother
HU	Female	Sibolga Sambas, beneficiary mother
RS	Female	Sibolga Sambas, beneficiary mother
DP	Female	Sibolga Sambas, beneficiary mother

Stunting indicators in Sibolga City were derived from different data sources and reporting periods. Table 2 presents SSGI survey estimates separately from

Participant Profile and Contextual Stunting Data

The study involved 18 informants from three broad groups: local government and TPPS representatives, field implementers, and beneficiary mothers. Table 1 presents the characteristics of the informants according to code, sex, and affiliation or participant group.

routine EPPGBM and Health Office data because these indicators have different measurement and reporting frames.

Table 2. Contextual stunting indicators by source, period, and reporting frame

Data source	Period	Value reported in full report	Interpretation
SSGI	2021	25.8%	Survey based prevalence estimate for Sibolga City

Data source	Period	Value reported in full report	Interpretation
SSGI	2022	14.5%	Survey based prevalence estimate for Sibolga City
Sibolga Health Office / EPPGBM	2022	235 stunted children among 5,734 measured children	Routine administrative data from the Health Office and EPPGBM
EPPGBM	July 2023	245 stunting cases	Routine EPPGBM count; Pancuran Bambu recorded 78 cases
Sibolga Health Office / routine data	2023	225 stunted children among 7,215 measured children	Separate routine data reported for 2023

The qualitative findings were organized into three overarching themes: implementation capacity and delivery of convergence actions; financing, coordination, data, and monitoring and

evaluation; and family behavior, stigma, economic constraints, and sanitation. Table 3 summarizes the themes, subthemes, empirical patterns, and process implications.

Table 3. Thematic matrix derived from the qualitative findings

Theme	Subthemes	Empirical pattern	Process implication
1. Implementation capacity and delivery of convergence actions	Role clarity; field implementation; nutrition-specific and nutrition-sensitive interventions; family assistance	TPPS and field staff could explain agency roles; health, family planning, food-security, social-assistance, and village-level activities were operating.	Institutional structure and program availability are established, but field capacity must extend from technical knowledge to family-centered communication and follow-up.
2. Financing, coordination, data, and monitoring/evaluation	Uneven funding; dependence on government funding streams; cross-sector planning; data systems; fragmented evaluation	Some agencies reported no dedicated stunting budget; evaluations were often agency-specific; E-PPGBM was used but joint data use and shared indicators needed strengthening.	Convergence requires program-budget alignment, common indicators, interoperable data use, and routine joint review rather than parallel sectoral implementation.
3. Family behavior, stigma, economic constraints, and sanitation	Program acceptance; counseling participation; household food practices; stigma; affordability; coastal sanitation barriers	Beneficiaries reported nutrition knowledge and assistance, but some families did not complete counseling or apply recommendations consistently; stigma and sanitation	Service delivery needs differentiated family support and closer integration with sanitation and other nutrition-sensitive determinants.

	constraints uptake.	reduced
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Theme 1. Implementation Capacity and Delivery of Convergence Actions

TPPS members and field implementers generally demonstrated awareness that stunting reduction was a national priority and were able to describe their respective roles in planning, implementation, monitoring, and evaluation. This role clarity was most visible in descriptions of Bappeda planning functions, Health Office responsibilities for measurement/publication and health interventions, and field-level family assistance.

“The implementation of the acceleration of stunting reduction is a national main program, followed by legal instruments and supporting regulations.” (BS, Bappeda informant, 30 November 2023)

“In 8 Convergence Actions, the Health Office is in Action 7, namely as stunting measurement and publication ... The Health Office itself [acts] as an implementation monitor.” (SP, Health Office informant, 30 November 2023)

The convergence program included multiple nutrition-specific interventions:

iron supplementation for pregnant women, supplementary feeding, infant and young child feeding counseling, nutrition education, anemia-related communication, growth monitoring, immunization, and maternal-child health services. Local foods, including fish and moringa-based supplementary foods, were described as part of feeding support. The Population Control and Family Planning Office implemented Family Assistance Teams, the Elsimil application, Toddler Family Development, Family Planning Village activities, and Dapur Sehat Atasi Stunting (DASHAT). The source manuscript reported 153 TPK members organized into 51 teams.

“Pregnant women are given blood supplementation tablets with at least 90 tablets. The provision of local PMT and manufacturers from the Ministry of Health and village cooperation and the KIA program to target pregnant women who fall into the chronic nutrition category for 90 days. PMPA counseling or feeding to infants and children [is] carried out by nutritionists. Young women also receive nutrition counseling and communication, education and information about anemia.”

(DS, nutrition officer, 30 November 2023)

“Next, local PMT is given for 90 days. Where it is made from fish where the natural resource of Sibolga animals is fish. Giving vitamin A and deworming medicine once every 2 months and PMT moringa leaf biscuits from the Health Office to stunted toddlers for 28 days or one month.” (DS, nutrition officer, 30 November 2023)

Nutrition-sensitive activities were also reported outside the health sector, including sustainable food-yard activities, support for plant and fish cultivation, food assistance, social assistance, provision of posyandu facilities, and community empowerment. These findings indicate that the city had a broad program platform rather than a single-sector intervention. At the same time, field implementation depended heavily on cadres and frontline workers who had to translate program content into household-level support.

The source interviews suggest that cadre knowledge of child growth monitoring was established, but capacity for behavior-change communication and problem-solving remained uneven. This distinction is important: understanding technical tasks did not automatically ensure that families would accept stunting

classification, attend counseling, or adopt recommended feeding and hygiene practices.

“We as family planning cadres are given the task of being TPK in assisting the community ... Especially for toddlers, every day we monitor their food ... And for height monitoring, weight every month. We also give the food given to the toddlers, and we monitor it every day.” (UK, family planning cadre, 30 November 2023)

Theme 2. Financing, Coordination, Data, and Monitoring/Evaluation

Funding emerged as a central process constraint. Informants described financing from APBD and APBN-linked sources, including DAU and DAK, but also reported unequal allocation between agencies and substantial dependence on central-government funding streams. The problem was not simply the total amount of funding; it was the uneven linkage between sectoral responsibilities, identified determinants, and available budgets.

“The APBD in Sibolga City is very low in handling stunting reduction ... Funds in reducing stunting are uneven in each agency.” (BS, 30 November 2023)

“There is no special fund for stunting reduction in 2023.” (ES,

food-security sector informant, 30 November 2023)

Planning began with situation analysis, program mapping, preparation of activity plans, and locus-based targeting. Cross-sector communication occurred through TPPS, and agencies reported internal evaluation of their own activities. However, the findings also showed that evaluation was still more often conducted within individual agencies than through a shared cross-sector framework. Informants identified a need for common indicators that could be reviewed jointly across sectors.

“The plan to reduce stunting is 9% of the 2024 target of Sibolga City. The role of BAPPEDA has 4 actions: 1) Situation analysis 2) Program mapping 3) Program planning 4) Activity Plan ... Actions 1, 2 and 3 are the role of Bappeda.” (BS, Bappeda informant, 30 November 2023)

Data management was another area requiring strengthening. EPPGBM and Health Office records were used for routine monitoring, while SSGI provided survey based prevalence estimates. Routine records included 235 stunted children among 5,734 measured children in 2022, 245 EPPGBM cases in July 2023, and another 2023 record of 225 stunted children among 7,215 measured children. These

figures were reported separately because the reporting periods and measurement frames differed.

SSGI values of 25.8% in 2021 and 14.5% in 2022 are presented only as contextual survey estimates. The qualitative design cannot determine how much of any observed change was attributable to the convergence program rather than broader socioeconomic, health-system, or measurement factors.

Theme 3. Family Behavior, Stigma, Economic Constraints, and Sanitation

Beneficiary informants described practical benefits from program participation, particularly nutrition information and assistance. This indicates that the program reached families with both material and educational support. However, program availability did not consistently translate into sustained participation or household practice.

“From this program, I feel helped ... in terms of knowledge and understanding of nutrition and a good diet for our children.” (TL, beneficiary, 2 December 2023)

“Yesterday from the posyandu I participated in nutrition counseling and DASHAT activities.” (HU, beneficiary, 2 December 2023)

Some mothers reportedly attended weighing and immunization but did not

remain for counseling, while recommended food practices were difficult to apply consistently because of household economic limitations and food preferences. Stigma also affected engagement: some parents felt embarrassed when a child was categorized as stunted or interpreted the label as an accusation of severe malnutrition. These reactions could reduce acceptance of measurement, counseling, and home follow-up.

“The obstacle is that sometimes some parents are embarrassed ... stunting [is] equated with malnutrition ... sometimes people are angry, also embarrassed ... Many ... refuse and do not want to.” (UK, family planning cadre, 30 November 2023)

Environmental sanitation compounded these challenges. In several coastal locations, informants reported use of latrines outside the home or defecation into the river. Latrine provision was constrained by limited land, rental-house status, and resistance to proposed facilities. These conditions place sanitation within the convergence problem rather than outside it because they require action by non-health sectors and local government alongside nutrition services.

“In some villages there are still people who use latrines outside the house, such as in coastal areas ... [and] some residents do not

agree because there is not enough land ... [or because of] rented houses.” (DKS, nutrition implementation personnel, 30 November 2023).

Discussion

Strengthening Implementation Capacity for Effective Convergence

The first major finding is that the city already had institutional actors, role awareness, and a portfolio of specific and sensitive interventions. This is an important implementation asset because convergence depends on actors understanding how their functions connect across planning, service delivery, family assistance, and monitoring. Nevertheless, the findings also show a gap between technical role knowledge and the ability to produce consistent household participation and behavior change. Similar Indonesian implementation studies emphasize that convergence depends not only on formal structures but also on operational capacity, coordination, and the ability of local actors to translate policy into routine practice (Herawati & Sunjaya, 2022; Prasetyo et al., 2023; Sufri et al., 2024). Evidence syntheses also indicate that sustained stunting reduction is more likely when nutrition-specific services are combined with nutrition-sensitive and community-based measures rather than delivered as isolated activities (Hossain et al., 2017; Keats et al., 2021).

This pattern is consistent with implementation evidence from Indonesia. Convergence policy implementation was stronger at the district level than at lower administrative levels, where staff capacity and coordination were weaker (Herawati & Sunjaya, 2022). Implementation also varied across levels, while inadequate operational capacity and cross sector coordination constrained intervention coverage and sustainability (Sufri et al., 2024). Program-level evidence from other Indonesian settings also identifies coordination, budget adequacy, stakeholder capability, and cross-sector execution as interacting determinants of implementation performance (Askar et al., 2023; Daniel et al., 2023; Novasetianie et al., 2023). These comparisons suggest that strengthening Sibolga's program should focus not only on explaining stunting or assigning roles, but on practical capabilities for counseling, home follow-up, referral, problem-solving, and interagency action.

Cadres are particularly important at the interface between policy and households. Short training linked to home visits improved cadre knowledge and confidence in growth monitoring and infant/young-child feeding support (Siswati et al., 2022). Other Indonesian studies report that cadre training can improve knowledge, self-efficacy, and preventive practice (Purnamasari et al., 2020), specific

nutrition assistance can strengthen maternal caregiving behavior (Simbolon et al., 2022), and counseling delivered by Posyandu cadres can improve infant and young-child feeding practices (Rahmawati et al., 2019). Nutrition education delivered through empowered youth Posyandu cadres has also improved nutrition-related knowledge, attitudes, and behaviors among adolescents (Rasmaniar et al., 2022). In Sibolga, a comparable implication is to make capacity-building competency-based: communication with resistant families, identification of barriers, follow-up planning, and use of simple case-management information should complement technical nutrition knowledge. Indonesian studies also highlight the importance of strengthening cadres and community-level implementation in stunting prevention programs (Gurning, 2021; Saragih, 2023).

Strengthening Financing and Governance for Program Convergence

The second major finding is that the presence of many programs did not automatically mean that planning, budgets, data, and evaluation were integrated. Uneven financing across agencies and agency-specific evaluation can produce parallel activity rather than convergence. This is especially important for stunting because determinants such as food security, social protection, sanitation, and household

economic constraints sit outside the Health Office. Evidence from Indonesian convergence studies similarly shows that multisectoral coordination, policy integration, shared ownership, and governance arrangements influence whether sectoral activities function as a genuinely integrated program (Afandi et al., 2023; Permanasari et al., 2020; Prasetyo et al., 2023; Supriyanto & Jannah, 2022). Case-based studies further show that budget availability, stakeholder cooperation, implementation capacity, regulation, and cross-sector communication are closely connected in local stunting-reduction performance (Askar et al., 2023; Daniel et al., 2023; Novasetianie et al., 2023).

Sectoral barriers and coordination problems can weaken the implementation of stunting convergence in priority areas (Permanasari et al., 2020). Formal convergence also does not necessarily indicate strong policy integration when programs remain fragmented across sectors (Supriyanto & Jannah, 2022). Mandated collaboration may become overly government centered when ownership and participation from other stakeholders are limited (Afandi et al., 2023). Stronger system integration and regional service governance are therefore important for improving convergence management (Prasetyo et al., 2023). Together with the Sibolga findings, this suggests that program

strengthening should focus not simply on adding new activities, but on integrating existing activities through common target populations, shared process indicators, aligned budgets, and joint review.

The data issue is part of the same governance problem. Survey-based prevalence estimates (SSGI/SKI) and routine program records (E-PPGBM/local weighing) have different purposes and denominators. Treating them as interchangeable can create apparent inconsistencies and weaken planning. A practical response is a data dictionary and routine data-quality review specifying for each indicator the source, unit, denominator, period, responsible agency, validation procedure, and intended decision use. National analyses that combine socioeconomic and nutritional-status survey data also demonstrate the importance of interpreting stunting indicators within their population, denominator, and contextual frame rather than as isolated numbers (Amirul et al., 2023). This emphasis on integrated information systems and routine use of implementation data is consistent with evidence that stronger convergence requires connected governance, monitoring, and service-delivery systems (Herawati & Sunjaya, 2022; Prasetyo et al., 2023)

Strengthening Family Engagement and Sanitation

The third major finding is that the implementation bottleneck extended beyond service availability. Families could receive counseling and food support yet still have difficulty changing practices because of affordability, preferences, stigma, participation patterns, and living conditions. This finding argues against using the number of counseling sessions or distributed food packages as the sole marker of implementation success. Process monitoring should also ask whether priority families were reached repeatedly, understood the advice, could act on it, and received follow-up when barriers persisted. This interpretation is consistent with evidence describing stunting as a multidimensional condition shaped by socioeconomic, maternal, health-service, infectious, dietary, and environmental determinants that operate simultaneously (Vaivada et al., 2020; Yenita et al., 2021). Indonesian analyses further show that stunting determinants and disparities differ by socioeconomic and rural-urban context (Widyaningsih et al., 2022), that maternal education, income, environment, social support, and health services are important social determinants (Nugroho et al., 2023), and that the nutrient quality of complementary diets is associated with

linear growth and stunting risk (Haszard et al., 2019).

Stigma requires careful interpersonal communication. Families who perceive a stunting label as blame or as synonymous with severe malnutrition may avoid monitoring or assistance. The program therefore needs non-stigmatizing risk communication that explains growth assessment, separates clinical classification from moral judgment, and uses supportive household problem-solving. Home-based follow-up may be particularly useful for families who do not complete group counseling or who face mobility, work, or caregiving constraints. Evidence from Indonesia supports the use of strengthened cadre capacity, home visits, and community-based implementation to improve follow-up and family engagement (Gurning, 2021; Saragih, 2023; Siswati et al., 2022).

The sanitation findings reinforce the need for convergence. Evidence from Indonesia has linked inadequate sanitation and household water conditions with stunting risk (Torlesse et al., 2016), and household access to improved sanitation has been associated with lower odds of stunting among Indonesian children (Rah et al., 2020). Broader reviews describe plausible pathways connecting poor water, sanitation, and hygiene conditions with impaired child growth (Cumming &

Cairncross, 2016), while comparative risk assessment across low- and middle-income countries identifies poor sanitation, together with fetal growth restriction and other exposures, as an important population-level risk for childhood stunting (Danaei et al., 2016). In Sibolga's coastal context, land constraints and rental housing mean that sanitation solutions may need to be adapted rather than limited to standard household-latrines construction. Population-level stunting reduction is generally associated with multiple simultaneous improvements in health services, socioeconomic conditions, education, nutrition, and supportive policy rather than one isolated intervention (Huicho et al., 2020; Roediger et al., 2020; Vaivada et al., 2020). Consistent with this, stunting is best interpreted as a marker of accumulated adverse conditions rather than evidence of a single causal pathway (Leroy & Frongillo, 2019).

Conclusions

This study found that the stunting reduction convergence program in Sibolga City had established important implementation foundations, including TPPS structures, frontline implementers, and a range of specific and sensitive nutrition interventions. Program actors generally understood their roles and responsibilities, but implementation still required stronger financing, cross sector

coordination, alignment between programs and budgets, and more integrated data management and monitoring. Service availability also did not always translate into sustained household practices because of incomplete participation in counseling, economic constraints, stigma, and sanitation barriers.

The findings indicate that strengthening the convergence program should focus on improving the integration and continuity of existing interventions rather than simply adding new programs. TPPS and Bappeda should strengthen joint planning, coordination, budgeting, monitoring, and accountability, while the Health Office and other relevant agencies should improve data quality, family follow up, food security, social protection, and sanitation support. At the community level, follow up should be family centered and responsive to household barriers. Further mixed methods research using standardized process indicators is needed to examine the relationship between implementation strength, service coverage, and nutrition outcomes.

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