



CHALLENGES IN IMPLEMENTING STUNTING PREVALENCE REDUCTION POLICIES: INTEGRATING UPSTREAM AND DOWNSTREAM APPROACHES

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Abstract :

Stunting remains a chronic nutritional problem that remains unresolved despite declining national prevalence, as aggregate reductions do not guarantee integrated interventions at the family level. The main problem of this study is the implementation gap between policy design and field outcomes, particularly the weak integration of upstream approaches in the form of sensitive interventions and downstream approaches in the form of specific interventions. The study aims to analyze the challenges of implementing policies to reduce stunting prevalence and the factors inhibiting upstream-downstream convergence in Malang Regency, East Java. The study used a qualitative approach with a case study type. The study population was stakeholders involved in policy implementation, while the sample was determined purposively with twelve informants including actors at the district level, community health centers, villages, field implementers, and target families. Data were collected through in-depth interviews, observation, and documentation, then analyzed using an interactive model of data reduction, data presentation, and conclusion drawing guided by Edwards III and Grindle's implementation theory. The validity was tested through triangulation. The results showed that the main challenge was not the absence of a program, but rather weak data harmonization, limited resources, fragmented bureaucratic structures, and disconnected referrals between downstream services and upstream interventions in target households. It was concluded that stunting reduction requires an integrated case resolution mechanism through a shared target list, a cross-sector follow-up matrix, and local case managers so that each household receives a complete service package.

Keywords : policy implementation, stunting, convergence, upstream-downstream intervention, Malang Regency

INTRODUCTION

Stunting is a disruption in child growth and development due to chronic malnutrition and repeated infections during the first thousand days of life, which has long-term impacts on the quality of human resources and the nation's economic productivity. The impacts of stunting are not limited to short stature, but also include hampered cognitive development, an increased risk of non-communicable diseases in adulthood, and potential long-term economic losses due to low productivity in the future workforce. The Indonesian government has prioritized accelerating stunting reduction through Presidential Regulation No. 72 of 2021 with an ambitious target of reducing prevalence to 14% by 2024 (Presidential Regulation No. 72 of 2021, 2021). Data from the Indonesian



Nutrition Status Survey (SSGI) show a slowing downward trend, from 24.4% in 2021 to 21.6% in 2022, then to 21.5% based on the 2023 Indonesian Health Survey, and to 19.8% in 2024 (Ministry of Health of the Republic of Indonesia, 2024). Despite the continued decline, this figure remains far from the 14% target and above the 20% threshold set by the World Health Organization as an indicator of a public health problem. This slowing decline is also uneven across regions, so the burden of stunting remains concentrated in a number of areas with weak socioeconomic determinants. This gap between policy targets and actual outcomes is the main problem formulation of this research: why the implementation of stunting reduction policies has not been able to bridge the gap between program design on paper and results on the ground.

These issues are not merely technical-medical in nature, but rooted in the dimensions of policy implementation. Previous studies have highlighted weak cross-sectoral convergence, limited resources, and implementer disposition as key obstacles (Nurva & Maharani, 2023; Mutmainnah et al., 2024). However, available studies tend to be fragmented: some focus on specific nutrition interventions in the health sector (downstream), while others separately highlight nutrition-sensitive interventions such as access to clean water and sanitation (upstream) (Hasan et al., 2022; Pakaya et al., 2023). In addition to being sectorally fragmented, most of these studies also use only a single theoretical lens and stop at evaluating program outcomes without exploring the gaps in coordination between upstream determinants and downstream services. Thus, the research gap lies in the lack of analysis that explicitly integrates upstream and downstream implementation challenges within a coherent framework, even though Presidential Regulation Number 72 of 2021 demands integration of both as a prerequisite for success.

The novelty of this research lies in its attempt to bridge this fragmentation. Unlike previous studies, which generally evaluated a single type of intervention or a single administrative area partially, this study offers an integrative upstream-downstream framework to systematically address implementation challenges. The upstream approach refers to nutrition-sensitive interventions that address socioeconomic determinants such as poverty, sanitation, and maternal education, while the downstream approach refers to specific nutrition interventions within the health care sector. The novelty of this research lies not in the discovery of new variables, but rather in a reconfiguration of perspective, namely placing upstream-downstream convergence as the primary unit of analysis, allowing for a clearer mapping of intersectoral coordination barriers compared to previous partial studies.

This research is grounded in policy implementation theory. George C. Edwards III's (1980) model views implementation success as determined by four interacting variables: communication, resources, disposition, and bureaucratic structure; this classic framework remains relevant and has been operationalized in the context of stunting management in Indonesia (Nurva & Maharani, 2023). This model is complemented by Merilee S. Grindle's (1980) perspective, which emphasizes that implementation success is influenced by the content of policy

and the context of implementation, including the interests of the actors involved and the capacity of implementing institutions (Widayati et al., 2025). Both theoretical frameworks are relevant because the challenge of stunting is multisectoral and requires both horizontal coordination between institutions and vertical coordination between the central and regional governments. Edwards III's communication and bureaucratic structure variables are useful for explaining barriers to convergence, while Grindle's policy content and context dimensions help situate these barriers within the relationship between actors' interests. The integration of the two is used to analyze why normatively mandated upstream-downstream convergence is difficult to achieve at the operational level.

Based on this background, this study aims to, first, identify the challenges of implementing stunting reduction policies on the upstream (sensitive interventions) and downstream (specific interventions) sides; second, analyze the factors that hinder the convergence between the two approaches based on the variables of communication, resources, disposition, and bureaucratic structure; and third, formulate an upstream-downstream integration strategy that can strengthen the effectiveness of stunting reduction policies.

The benefits of this research are both theoretical and practical. Theoretically, the research is expected to enrich the study of public policy implementation, particularly by offering an integrative upstream-downstream analytical framework that has rarely been used in stunting studies. Practically, the research findings can provide input for the central and regional governments, particularly the Stunting Reduction Acceleration Team, in improving cross-sector coordination mechanisms and resource allocation. For the public and academics, this research provides a more holistic understanding that stunting reduction cannot be achieved solely through a single sector, but rather requires continuous synergy between addressing root causes upstream and addressing immediate symptoms downstream. This research also contributes to strengthening cross-sectoral convergence governance going forward.

RESEARCH METHOD

This research employed a qualitative approach with a case study. The case study approach was chosen because it allows researchers to deeply and comprehensively examine a contemporary phenomenon in its real-world context, namely the challenges of implementing policies to reduce stunting prevalence and integrating upstream and downstream interventions in a specific setting (Yin, 2018). The research was conducted in Malang Regency, East Java Province, which was chosen as the location because it is one of the regions implementing a program to accelerate stunting reduction while simultaneously facing the dynamics of cross-sectoral coordination as mandated by Presidential Regulation Number 72 of 2021.

The research subjects were determined purposively, selecting informants deemed to have the most understanding and direct involvement in the implementation of stunting reduction policies in the region. Informants included

stakeholders in the Malang Regency Stunting Reduction Acceleration Team (TPPS), the Regional Development Planning Agency, the Health Office, regional agencies handling sensitive interventions such as drinking water and sanitation provision, health workers at community health centers (Puskesmas), as well as Posyandu (Integrated Service Post) cadres and family support teams at the village level. This cross-level selection of informants was intended to capture the challenges of convergence both horizontally between institutions and vertically between the district and village levels.

Data collection techniques were conducted through three methods: in-depth interviews using a semi-structured interview guide, observations of program implementation in the field, and documentation studies of policy documents, program achievement reports, and regional stunting prevalence data. In this qualitative study, the researcher served as the primary instrument, assisted by interview and observation guidelines.

The collected data were analyzed using an interactive analysis model that includes data reduction, data presentation, and conclusion drawing (Miles et al., 2014). The analysis process was guided by the theoretical framework of policy implementation, namely the four variables of Edwards III (1980) in the form of communication, resources, disposition, and bureaucratic structure, as well as the dimensions of policy content and context according to Grindle (1980). Data validity was maintained through source triangulation and technical triangulation, namely comparing and combining the results of interviews, observations, and documentation so that the findings obtained could be accounted for.

FINDINGS AND DISCUSSION

This study involved twelve purposively selected informants representing actors at the district, sub-district or community health center (Puskesmas), village, field implementer, and target families levels. Informants were intentionally spread across upstream (sensitive interventions), downstream (specific interventions), integration, and beneficiary levels to capture the challenges of convergence from multiple perspectives. The composition of informants is presented in Table 1.

Table 1. Composition of Research Informants

Code	Informant Group	Main Information	Position
I1	Bappeda/TPPS Regency Secretariat	Planning, coordination, indicators, evaluation, and budgeting across OPDs	Integration
I2	District Health Office	Technical policies, nutritional status data, specific interventions, community health center development	Downstream
I3	DPPKB/TPK Coordinator	Family at risk assistance,	Integration

Code	Informant Group	Main Information	Position
		target verification, and referrals	
I4	Drinking water/sanitation/housing OPD	Planning and implementation of sensitive interventions	Hulu
I5	Head of the health center	Coordination of programs and service coverage at the sub-district level	Downstream
I6	Nutritional staff at the health center	Anthropometric measurements, management, e-PPGBM data, referrals	Downstream
I7	Health center sanitation	Water conditions, sanitation, ODF, hygiene, and behavioral changes	Hulu
I8	Village government	Village funds, target updates, integrated health post coordination, local programs	Integration
I9	Integrated health post cadres	Weighing, education, home visits, and barriers to participation	Downstream
I10	Family Support Team	Accompaniment for prospective brides, pregnant women, postpartum mothers, at-risk families	Integration
I11	Mother/caregiver of stunted toddler	Experiences of receiving services, assistance, and household barriers	Recipient
I12	Pregnant women/at-risk families	Access to ANC, TTD, counseling, food, sanitation, family support	Recipient

In general, the implementation of stunting reduction policies in Malang Regency has been supported by the formal structure of the Stunting Reduction Acceleration Team (TPPS), coordination forums such as stunting case audits and stunting discussions, maternal and child health services, family assistance, and sensitive intervention programs. However, the existence of these programs has not yet fully resulted in integration at the target family level. Data from the 2024 Indonesian Nutrition Status Survey (SSGI) estimated the total stunting prevalence in Malang Regency at 23.3%, consisting of 4.3% severely stunted and 19.0% stunted (Health Development Policy Agency, 2025). This figure is higher than the national prevalence of 19.8%, making Malang Regency a relevant locus

for exploring why formally implemented programs still face challenges at the target level. This context is reinforced by the still strong upstream determinants, namely the poor population of Malang Regency, which was recorded at 240.14 thousand people or 8.98% in March 2024 and decreased slightly to 8.78% in March 2025 (Central Statistics Agency of Malang Regency, 2024, 2025).

The reduction and coding of informant statements yielded six dominant themes. The frequency of theme occurrence was used not as a statistical test, but rather as a pattern marker prior to in-depth interpretation. The themes of coordination, data harmonization, and cross-sector follow-up were the most frequently encountered (10 of 12 informants), followed by resource limitations (9 of 12 informants), referral issues and continuity of mentoring (8 of 12 informants), inconsistencies in upstream-downstream planning and budgeting (7 of 12 informants), and family participation and the context of poverty, each mentioned by six informants.

Communication

Policy communication has taken place through the TPPS (Stunting Task Force), stunting discussions, coordination meetings, and sub-district-level forums. However, this communication tends to be strongest at the program delivery and report preparation stages, while follow-up monitoring has not yet fully utilized a common matrix. Informants I1 and I2 indicated differences in indicators, report formats, and sources of prevalence figures used by implementing organizations. From Edwards III's (1980) perspective, communication is not solely measured by the presence of meetings, but by the consistent, clear, and consistent transmission of information. The striking difference between the 2024 SSGI estimate of 23.3% and the regional Bulan Timbang data of 6.7% in February 2025 and 5.85% in February 2026 underscores this issue; the two figures cannot be directly compared due to their different designs and scopes, but the lack of metadata and official explanations has the potential to create ambiguity in determining the locus, targets, and measures of success (Malang Regency Government, 2026). This finding is in line with Nurva and Maharani (2023) who positioned cross-sector communication as a critical node in the implementation of stunting policies in the regions.

Resource

Resource constraints emerge at both the organizational and frontline levels. Informants I3, I6, and I9 described the workload of Family Support Teams and Posyandu cadres, the need for regular training, limited incentives, and the importance of standardized anthropometric tools. Errors in measurement position or data entry can alter nutritional status, necessitating tool calibration, measuring competence, and adequate data validation. Information resources are also a constraint because data systems are not yet fully connected to sensitive intervention recipient data; as a result, families identified as at-risk may not immediately receive support for clean water, sanitation, social protection, or food security. This situation reinforces the findings of Widayati et al. (2025) and Mutmainnah et al. (2024) that implementation capacity is determined not by the number of programs, but by the adequacy and integration of implementing

resources.

Disposition of Executor and Beneficiary

In general, implementers demonstrate a commitment to reducing stunting. However, implementation disposition is influenced by workload, the perception that stunting is solely a health sector issue, and the tendency to choose activities that are easiest to implement, as illustrated by informant I8's statement. At the family level, stigma and shame when called at risk of stunting (I10), side effects of iron tablets, limited work time, and the perception that children look healthy (I9, I12) can reduce participation. According to Edwards III (1980), the attitude of implementers determines the extent to which policies are implemented according to their original intent. These findings suggest that policy success requires interpersonal communication and a non-blaming approach to families, not simply the availability of services.

Bureaucratic Structure

The formal structure of the TPPS (Student Action Plan) and the division of roles across regional agencies are in place, but data indicate potential fragmentation as each sector has its own budget cycle, performance indicators, technical criteria, and reporting channels. Informant I4 emphasized that the list of families at risk of stunting does not always translate directly into sanitation projects within the same fiscal year, while informant I10 highlighted the slowness of intersectoral referrals due to the lack of a single case manager. Thus, the primary issue is not the lack of organization, but rather the weakness of mechanisms linking identification, referral, service delivery, and outcome verification within the same family. These findings align with Mutmainnah et al.'s (2024) findings regarding the weak synchronization between pillars in the national strategy to accelerate stunting reduction.

Content and Context of Policy according to Grindle

The content of stunting reduction policies is broad, encompassing numerous targets, indicators, and implementing organizations. This breadth provides opportunities for convergence, but also increases coordination costs and the risk of overlap. Within Grindle's (1980) framework, successful implementation is determined by both the policy content and the context in which it is implemented. In the context of Malang Regency, poverty, distance to services, diverse village conditions, food affordability, sanitation, and village government capacity influence implementation outcomes. Therefore, a uniform strategy for the entire region is potentially ineffective if not tailored to the problem profile of each village and family. The link between poverty and poor access to water and sanitation as risk factors for stunting is consistent with the findings of Hasan et al. (2022).

Integration of Upstream and Downstream Approaches

Downstream interventions tend to have clearer service pathways through community health centers (Puskesmas), integrated health posts (Posyandu), midwives, nutrition workers, and cadres. In contrast, upstream interventions rely on planning and budgeting across sectors with varying criteria. A breakdown in integration occurs when the results of toddler assessments and

family support do not automatically inform prioritization of food, sanitation, housing, or social protection assistance. This finding extends the study by Pakaya et al. (2023), which examined the implementation of nutrition-sensitive interventions individually, demonstrating that the real problem lies in the interconnectedness between the sensitive and specific aspects. Therefore, the unit of policy analysis needs to shift from the number of sectoral activities to the comprehensiveness of the service packages actually received by each target household.

Synthetic Discussion and Policy Implications

The research findings indicate that the primary implementation challenge is not simply a lack of activities, but rather the lack of a case resolution mechanism that integrates toddler identification, family support, referrals, upstream and downstream interventions, and outcome verification within the same family. To ensure validity, interview findings were triangulated with secondary data and program documents, ensuring that conclusions are not based on a single source. Theoretically, these findings confirm that the four variables of Edwards III (1980) and Grindle's (1980) content-context dimensions do not operate independently, but rather are interconnected at the point of upstream-downstream convergence. Practically, improvements need to be directed toward the use of a single target list, a cross-sectoral follow-up matrix, the appointment of case managers at the local level, and evaluations that measure the comprehensiveness of the service package received by each household, rather than simply the number of activities implemented.

CONCLUSION

This study concludes that the challenge of implementing stunting reduction policies in Malang Regency lies not in the absence of programs, but rather in the weak integration between upstream and downstream interventions at the target family level. Downstream, specific nutrition services through community health centers (Puskesmas), integrated health posts (Posyandu), nutrition workers, and cadres have a relatively clear path, but are hampered by data quality, implementer workload, and referral continuity. Upstream, sensitive interventions such as drinking water, sanitation, social protection, and food security depend on budget cycles and cross-sectoral technical criteria that are not always aligned with the list of at-risk families. Consequently, Malang Regency's prevalence of 23.3% according to the 2024 SSGI remains above the national average.

Based on the Edwards III framework, factors inhibiting convergence are evident in strong communication at the delivery stage but weak follow-up monitoring and data harmonization, limited human resources and measurement tools, a disposition that still views stunting as a health sector issue, and a fragmented bureaucratic structure across sectors. Seen through Grindle's framework, the breadth of policy content increases coordination costs, while the context of poverty, geographic conditions, and village capacity reinforce the need for strategic adjustments in each region. These four variables and two dimensions

do not operate in isolation but rather interlock precisely at the point of upstream-downstream convergence.

As a strategic conclusion, strengthening implementation needs to be directed at the use of a common target list, a cross-sector follow-up matrix, the appointment of case managers at the local level, and evaluations that measure the completeness of the service package actually received by each household, not simply the number of activities implemented. This study was limited to one district and relied on qualitative data. Therefore, further research is recommended to test this upstream-downstream integration model in areas with different characteristics and supported by measurable convergence indicators.

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