



## Original Research

# Examining the Limitations of Translatability in Stunting Policy: An Actor-Network Theory (ANT) Perspective by Bruno Latour

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**Received:** 03/26/2025; **Accepted:** 07/07/2025; **Published:** 10/17/2025

**Abstract:** *San Piisan (Sayangi Dampingi Ibu dan Anak Kota Semarang/Semarang City Program for Maternal and Child Care)* is an innovative policy initiative in Semarang City that addresses stunting through integrated interventions, including medical services and educational outreach. Stunting is a multidimensional issue in Indonesia, shaped by economic, social, and environmental factors. San Piisan has gained international recognition from the United Nations for translating Sustainable Development Goals (SDGs) into local action. However, its implementation reveals challenges in governance and cross-sectoral integration. Drawing on Bruno Latour's Actor-Network Theory (ANT), this study analyzes the policy's strengths and weaknesses. While San Piisan aligns with global development norms, it primarily frames stunting as a health issue, limiting the involvement of economic development, social welfare, and urban planning sectors. This narrow approach undermines the multi-sectoral collaboration needed for a holistic approach, privileging curative over preventive strategies. A broader policy framework that incorporates economic stability, social conditions, and environmental factors is necessary to ensure sustainability. Additionally, weak intersectoral linkages hamper effective governance, in part due to the absence of a binding framework mandating collaboration. Despite international recognition, the program lacks institutionalized multi-sectoral cooperation, resulting in uneven implementation and limited sustainability. Strengthening the actor-network and governance architecture is critical to position San Piisan as a truly integrated intervention. Enhancing cross-sectoral engagement is key to achieving comprehensive and sustainable stunting reduction in Semarang City.

**Keywords:** *Governance, Actor-Network Theory, Translatability, Stunting, San Piisan, Sustainable Development Goals*

## Introduction

Sustainable development, as outlined in the Sustainable Development Goals (SDGs), is a global framework designed to achieve universal well-being and social justice (Deacon 2016). Adopted by member countries of the United Nations, the agenda includes 17 goals, 169 targets, and 300 indicators (García-Peña et al. 2022). Among its core objectives is Goal 2: Zero Hunger, which seeks to end hunger, strengthen food security, and ensure access to proper nutrition (Hiywotu 2025). Specifically, Target 2.2 commits to eliminating all forms of malnutrition, including stunting and wasting in children under five by 2025 (Macmillan et al. 2025). Stunting, a form of chronic malnutrition, impairs physical growth and increases

vulnerability to diseases and mortality (Prendergast and Humphrey 2014). Moreover, maternal stunting heightens the risk of pregnancy complications, contributing to high maternal and infant mortality rates (Rylander et al. 2013).

Recognizing this, SDG Goal 3 prioritizes health and well-being across all age groups (Foroudi et al. 2024). Its key targets include reducing the maternal mortality rate (MMR) to below 70 per 100,000 live births, the infant mortality to 12 per 1,000 live births, and the under-five mortality rate to 25 per 1,000 live births (Raina et al. 2023). These goals underscore the importance of addressing stunting through a comprehensive, multi-sectoral approach, rather than treating it solely as a medical issue (Suhardin et al. 2024).

In Indonesia, stunting remains one of the most pressing nutritional challenges (Herawati et al. 2025). Data from the Nutrition Status Monitoring Survey (*Pemantauan Status Gizi*) from 2019 to 2021 consistently show that stunting prevalence surpasses other nutritional issues such as undernutrition, malnutrition, and obesity (UNICEF Indonesia, n.d.). In 2020, Indonesia had the second-highest stunting rate in Southeast Asia, with 31.8% of children under five affected (Azriani et al. 2024). According to UNICEF, stunting is caused by multiple factors, including unbalanced nutrition intake, low birth weight (LBW), and recurring illness (UNICEF Indonesia, n.d.). Addressing the problem requires ensuring a balanced intake of carbohydrates, proteins, fats, minerals, and vitamins (Yarmaliza et al. 2024).

In Central Java Province, stunting prevalence has fluctuated over the years. Based on SSGI (*Survei Status Gizi Balita Indonesia/Indonesian Toddler Nutritional Status Survey*) and SKI (*Survei Kesehatan Indonesia/Indonesian Health Survey*) data, Central Java was previously among the twelve provinces with the highest stunting rates in the country. The province recorded a prevalence of 28.5% in 2017, rising to 31.3% in 2018, before steadily declining to 22.7% in 2019, 20.9% in 2021, 20.8% in 2022, and 20.7% in 2023.

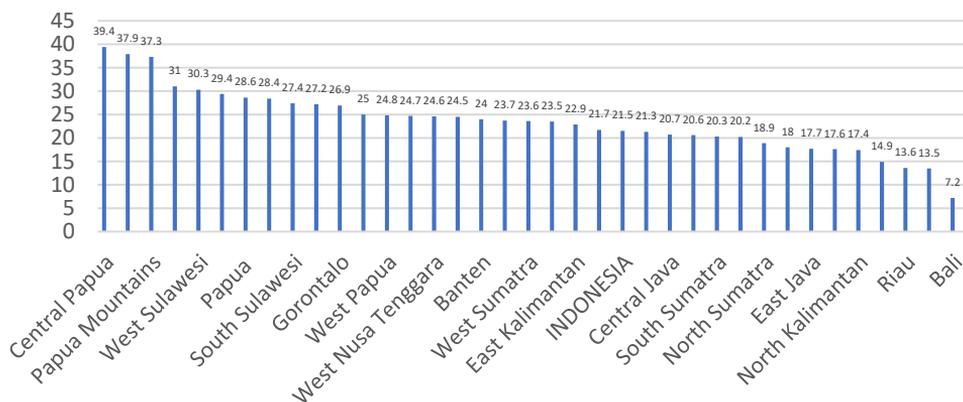


Figure 1: Distribution of Stunting Prevalence Among Children Under Five Across 34 Indonesian Provinces in 2023, Based on Indonesian Health Survey (SKI)

Source: Badan Kebijakan Pembangunan Kesehatan [Health Policy Development Agency] 2023

Although the 2023 figure (20.7%) was below the national average of 21.5%, it remains a significant concern that warrants further intervention. As the capital of Central Java, Semarang City has undergone rapid urbanization and population growth, leading to emerging public health concerns. The city's MMR dropped significantly from seventeen cases in 2019 to zero in 2020. Similarly, the infant mortality rate (IMR) decreased from 119 cases in 2019 to 109 in 2020. However, in contrast to these positive trends, stunting prevalence in Semarang has fluctuated, as illustrated in the table below:

Table 1: Stunting Trends in Semarang City, Indonesia

<i>Year</i>	<i>Stunting Presentation (%)</i>
2019	2.57
2020	3.13
2021	3.10
2022	1.66
2023	1.66
2024	1.42

Source: Dinas Kesehatan Kota Semarang [Semarang City Public Health Office] 2024a

In 2020, the city recorded its highest number of stunted children, with 3,143 cases out of 97,194. However, by 2022, the city successfully reduced the figure and maintained its progress through 2024. Among the city's sixteen sub-districts, North Semarang has consistently reported the highest number of stunting cases, followed by Pedurungan and Candisari. Several factors contribute to this trend, including early marriage (before age 21) and low parental awareness regarding proper child nutrition.

As part of the global community, Indonesia has committed to stunting prevention by adopting internationally recognized frameworks. The central government established the National Strategy for Stunting Reduction (Stranas Stunting), which is implemented across various regions (Sekretariat Wakil Presiden Republik Indonesia 2024). This commitment is further supported by Presidential Regulation No. 42 of 2013 on the National Movement for Accelerating Nutritional Improvement, which mobilizes government agencies, civil society, and organizations to improve nutritional outcomes during the first 1,000 days of life (*Hari Pertama Kehidupan/HPK*) (Mediani et al. 2022). As a result, regional governments have developed localized stunting reduction programs. In Central Java, this effort is formalized through Governor Regulation No. 34 of 2019, which supports the Semarang City Government's Mayor Regulation No. 76 of 2019 on the Regional Food and Nutrition Action Plan (2020–2024) (Winatasari and Lestari 2024).

As part of this broader framework, the Semarang City Government, through its Public Health Office, launched an innovative initiative titled *San Pisan* (*Sayangi Dampingi Ibu dan Anak Kota Semarang*/Care for and Support Mothers and Children in the City of Semarang)

(Tempo.co 2023). The program aims to improve maternal and child health by incorporating both preventive and curative services. Centered around the #BergerakBersama (#MoveTogether) approach, San Piisan extends beyond clinical interventions by targeting future brides, female workers, and students from elementary to high school levels (*Kementerian Pendayagunaan Aparatur Negara dan Reformasi Birokrasi* 2021). By involving diverse stakeholders, the program promotes collaborative governance as a strategy for achieving its objectives.

The success of San Piisan in stunting reduction garnered global recognition, when the program received the United Nations Public Service Award (UNPSA) in 2024 for its innovative governance (United Nations Department of Economic and Social Affairs 2024). By aligning with the SDGs, the program exemplifies the translation of global norms into localized action through multi-sectoral partnerships and community-driven approaches.

However, despite its achievements, San Piisan has not fully curbed stunting in Semarang. Reports indicate a sharp increase in cases during the last quarter of 2024, with cases rising from 977 in July to 1,086 in August, and further to 1,190 in September. This escalation has been attributed to socio-economic factors and a growing number of teenage pregnancies (Nurikhsan 2024).

Several previous studies have examined the translation of global norms in local policy and the role of collaborative governance. To ensure the novelty and relevance of this study, the author conducted a literature review to identify gaps and differentiate the present research. Two main themes emerged from the literature, namely translation of global norms into local policy and collaborative governance. Explaining the first theme, Park and Park (2024) discusses how institutional fragmentation, definitional ambiguities, and value conflicts in South Korea hinder the effective internalization of the SDGs concepts. These structural barriers complicate stakeholder involvement and create divergent interpretations across government agencies. Similarly, Zimmermann (2017), in a study on the translation of global norms in Guatemala, found that the process of translating norms is non-linear and iterative. Her “interactive Translation Loop” suggests that the promotion of international norms often triggers domestic contestation, with the level of normative precision determining the space for maneuver in local adaptation.

According to Helman (2019), successful policy implementation depends on the adaptability of frameworks to specific local contexts. A study on Israeli employment policy highlights how policy shifts undergo processes of stabilization and destabilization, shaped by the dynamics among key policy actors. Likewise, Afandi et al. (2023) also explains the limitations of collaborative governance, arguing that its implementation is often limited to the participation of non-state actors.

In Indonesia, collaboration between various actors is an important element in handling complex and multidimensional stunting. Lino (2024) highlights that the success of stunting

reduction programs depends on the engagement of multiple sectors such as government, NGO, media, academics, and business. In East Nusa Tenggara (NTT), Indonesia, the implementation of the Penta Helix approach demonstrated the importance of collective participation for ensuring program sustainability. However, the study also found that collaborative policy efforts in NTT did not always run smoothly, including poor intersectoral coordination, limited resource allocation, and community resistance to behavioral changes (Lino 2024).

This study explores San Piisan as a case of global norm translation into local governance, focusing on the limitations of policy translatability through the lens of Actor-Network Theory (ANT). It examines how the program navigates institutional barriers, engages with diverse actors, and addresses policy recommendations for strengthening governance mechanisms. Although San Piisan aligns with SDG principles and demonstrates local adaptability, its long-term effectiveness depends on strengthening intersectoral collaboration and governance structures to address stunting holistically.

## Theoretical Framework

### Politics of Translation

The politics of translation is a multifaceted concept that interrogates how political, cultural, and ideological factors influence the translation processes (Aydin 2024; Laaksonen 2022). Historically, translation has served as a tool of political dominance. For instance, the Roman Empire's translation of Greek Works into Latin functioned as a means to assert intellectual and cultural supremacy (Donthula 2020). Similarly, the translation of the Mahabharata into Telugu under royal patronage served as an instrument in reinforcing cultural legitimacy and political consolidation (Kumar 2017). In contemporary contexts, translation remains central to shaping political narratives and international relations. Media translations during diplomatic crises, for example, play a critical role in influencing public perception and policy decisions (Roig-Sanz et al. 2025).

Bruno Latour, a foundational figure in Science and Technology Studies (STS) and the architect of ANT, redefines translation as a political process involving negotiation and mediation across different social discontinuities (Muecke 2024). Latour challenges traditional distinctions between nature and society, advocating for a more inclusive perspective that accounts for non-human actors in political representation (Adloff 2025). His concept of "cosmopolitics" underscores the interconnectedness of human and non-human actors and the necessity for innovative governance procedures to manage complex systems effectively (Latour 2011).

In Latour's theory of translation, the process is not merely linguistic but involves the transformation and adaptation of ideas and practices to fit distinct social and cultural contexts (Piekkari et al. 2019). This expanded perspective positions translation as a conduit for transferring knowledge, norms, and technological systems across domains (Valler and

Blumczynski 2024). In an era of the Anthropocene marked by urgent environmental crises, scientific knowledge must be effectively translated into policy and practice, making translation an essential site of negotiation among diverse stakeholders (Verburg et al. 2016).

ANT offers a valuable framework for understanding these dynamics by treating human and non-human entities symmetrically (Nishimura-Sahi 2025). This approach facilitates a more nuanced analysis of how ideas, technologies, and institutional practices are translated across governance networks. As Liu (2023) suggests, translation is an embedded social practice shaped by various actors, including translators, institutions, and technological infrastructures. This view aligns with ANT's broader perspective that asserts translation as a dynamic process shaped by multiple forces, rather than a linear transfer of meaning (Sapiro 2014).

By extending translation theory beyond linguistic boundaries, Latour's work sheds light on how governance, power dynamics, and social structures are shaped through translation. His interdisciplinary approach enables a deeper understanding of how knowledge is legitimized, contested, and operationalized across political contexts. This theoretical lens is particularly relevant in examining policy implementation, where translating global norms into local governance structures involves complex negotiations among diverse actors (Esguerra 2023; Sher-Hadar 2023).

### Actor-Network Theory

Developed in the early 1980s within STS, ANT has since expanded into multiple domains across the social sciences (Baron and Gomez 2016; Crawford 2020). Pioneered by Bruno Latour, Michel Callon, and John Law, ANT challenges anthropocentric models of social networks by incorporating both human and non-human actors into the analysis of social systems (Potapova 2024). Rather than viewing social structures as solely human constructs, ANT suggests that these structures emerge from dynamic interactions among people, technologies, institutions, and material objects (Spöhrer and Ochsner 2016).

Latour's "Reassembling the Social: An Introduction to Actor-Network Theory," is one of the foundational texts in ANT. It provides a detailed methodological approach for analyzing the autonomous contributions of various actors in shaping social assemblages (Potapova 2024). By emphasizing the role of material and non-human elements, ANT enables a broader, more fluid conceptualization of governance networks.

### *Key Contributions of ANT to Social Theory*

1. **Decentering Human Agency:** Unlike traditional social theories that prioritize human decision-making, ANT argues that objects, technologies, and infrastructures actively shape social relations (Wei 2024). This perspective has reshaped fields such as economic sociology, urban studies, and environmental governance.

2. Network-Based Analysis: Rather than treating social processes as linear or hierarchical, ANT conceptualizes social processes as constantly evolving networks of interdependent actors, each wielding degrees of influence (Ungar-Sargon 2025).
3. Bridging Micro and Macro Levels: Rather than distinguishing between macro- and micro-level interactions, ANT sees all social phenomena as outcomes of interwoven networks (Latour et al. 2012).

ANT radically critiques conventional dichotomies of social science such as nature-society, human-non-human, subject-object, micro-macro, structure-agency, as analytically restrictive. For ANT, these dichotomies are rigid and hinder complex analysis of natural and social phenomena (Schneider-Kamp et al. 2024). At its core, ANT contends that actor-networks are achievements that must be explained, rather than promised (Baiocchi et al. 2013).

ANT conceptualizes networks in an ontologically distinct way compared to other frameworks. In ANT, actors—or actants—are not just nodes in a network; they are defined by their capacity to act through their interactions within the network (Puteri 2021). Networks are not static structures but are constantly produced through the interactions of actors, and actors themselves emerge as products of those very interactions. ANT, therefore, defines actors as the result of heterogeneous material networks that interact with each other as hybrid entities (Nimmo 2011). As actorhood is not something exclusive and inherent to an entity, it is possible for non-humans to become actors through their relational activities.

Although ANT has faced criticism for its lack of a normative stance, it remains a powerful analytical tool in governance studies. Critics argue that ANT's radical symmetry between human and non-human actors risks downplaying issues of power and agency (Alcadipani and Hassard 2010; Pisarev et al. 2017).

However, its focus on the material dimensions of social networks has opened new interdisciplinary conversations, particularly in policy studies, environmental governance, and science diplomacy (Başar and Çıtak 2018; Rheingantz et al. 2019).

The relevance of ANT in this study lies in its ability to map how governance networks translate global norms into local policy frameworks. The San Piisan program in Semarang represents an effort to operationalize global stunting reduction goals within a localized governance structure. Applying ANT enables this research to examine:

- How different actors—including government agencies, NGOs, and community organizations—negotiate their roles within the governance network.
- The extent to which policy translation is constrained by existing power dynamics and institutional inertia.
- The material and technological infrastructures that facilitate or hinder policy implementation.

By analyzing stunting governance through the actor-network perspective, this study provides a dynamic, process-oriented understanding of policy development. Rather than treating governance as a static institutional arrangement, ANT enables a detailed examination of how policies are continuously shaped, contested, and transformed through interactions with diverse human and non-human actors (Mifsud 2023).

Both Latour’s Politics of Translation and ANT provide a comprehensive lens for understanding policy translatability (Balen and Leyton 2015). While the Politics of Translation highlights how governance norms are negotiated and adapted across contexts, ANT provides a methodological framework for tracing how actor-networks influence policy formation and execution (Mifsud 2023). Applying these frameworks, this study situates stunting governance within a broader analysis of how global policy norms are translated, institutionalized, and contested in practice.

The conceptual model below synthesizes these theoretical insights. It illustrates how a holistic understanding of stunting enables the construction of dynamics and inclusive governance networks. These networks, mobilized through a contextual, inclusive, and communicative translation approach, engage diverse sectors across health, economy, education, and environmental actors in a cohesive governance structure:

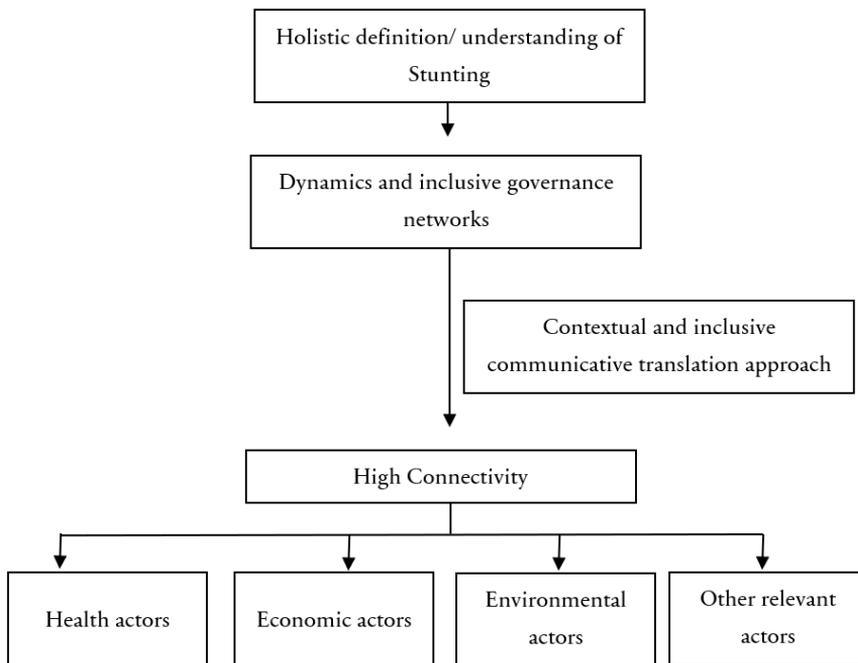


Figure 2: Conceptual Model of Policy Translation in Stunting Governance

## Methodology

### Research Design

The research adopts an interpretive paradigm, informed by ANT and the Politics of Translation, to explore how global norms are translated into local governance practices. This study aims to trace the interaction among actors within policy networks and examine how these interactions shape governance outcomes (Hay 2024).

### Data Collection

To comprehensively address the research questions, this study employs a qualitative narrative approach by integrating field data, literature review, and expert interviews (Kempen 2025). According to Cresswell, this research utilizes literature-based analysis and purposive sampling techniques to collect and interpret data from various sources, including academic publications, policy documents, news reports, and interviews with key informants who possess direct experience and expertise in stunting governance in Semarang City through the San Piisan program (Takona 2024).

Primary data were obtained through interviews with individuals directly involved in stunting reduction efforts, particularly those associated with the Semarang City Public Health Office and KRMT Wongsonegoro Regional General Hospital. These institutions serve as the structural and cultural focal points of the study, given their direct roles in implementing stunting intervention strategies within the San Piisan program.

To supplement field data, this study also incorporates secondary sources by analyzing government regulations, academic journal articles, books, reports, newspapers, official websites, and other relevant publications. The literature review focuses on previous studies on stunting governance, the Politics of Translation, and ANT, ensuring the research is grounded in both empirical evidence and theoretical frameworks. By combining primary and secondary data, the study aims to construct a comprehensive understanding of how the San Piisan program operates, the challenges it faces in translatability, and the extent to which governance networks facilitate or hinder its implementation.

### Data Analysis

The data analysis followed several structured stages to ensure rigor and validity. The first stage involved transcribing interviews with key informants and applying the documentary method by systematically recording all relevant data in the form of field notes, policy documents, and institutional reports. This process ensured that the research was built upon direct insights from practitioners and policymakers.

Once transcribed, the data were categorized and classified according to their relevance and utility for the study. The classification was guided by emerging themes related to

governance, policy translation, and actor-network relationships. These themes were then mapped against key indicators derived from Bruno Latour's Politics of Translation and ANT. This step involved identifying governance patterns, actor relations, and challenges in translating global stunting policies into local frameworks.

In the final stage, the data were analyzed within the broader research context using ANT and the Politics of Translation as interpretive lenses. This enabled the researcher to trace how stunting policies are translated, mediated, and adapted across different governance networks. The analysis also examined power dynamics, institutional fragmentation, and actor connectivity, helping to identify both structural limitations and potential reforms in stunting governance.

### Data Validation

To ensure the validity and reliability of the findings, this study employs triangulation, where insights from interviews are cross-referenced with documentary analysis and literature reviews (Carter et al. 2014). This multisource verification enhances the study's credibility by preventing biases that may arise from relying on a single data collection method.

Additionally, by analyzing policy implementation across multiple governance levels, this study develops a more dynamic, networked understanding of how stunting policies are shaped, translated, and contested in Semarang City. These findings contribute to broader debates on governance reform, policy translation, and intersectoral collaboration in addressing complex social challenges such as stunting.

Through a structured, theory-driven approach, this study provides an in-depth exploration of how San Piisan translates global stunting reduction goals into local governance frameworks, while identifying the key obstacles that limit its effectiveness. The integration of qualitative methodologies, actor-network analysis, and translation theory facilitates a comprehensive examination of governance processes, ensuring that the study contributes both empirical insights and theoretical advancements to the field of public policy and governance.

## Discussion and Analysis

### The Failure of Translatability in Stunting Policy

Within the framework of ANT, translatability refers to the capacity of a policy or innovation to be interpreted, adapted, and disseminated across diverse actors within a governance network (Shiga 2007). When translatability fails, policy fragmentation occurs, weakening its effectiveness. In the context of stunting governance, this failure manifests in three key areas: the medicalization of stunting, weak intersectoral connectivity, and the absence of effective policy translation mechanisms. These limitations prevent the San Piisan program from evolving into a holistic, multi-sectoral governance model, thereby restricting its long-term impact.

A key limitation lies in the reduction of stunting to a narrowly defined medical issue. The San Piisan program, while innovative, remains primarily focused on medical interventions, such as maternal and child healthcare, and nutritional supplementation (Purnamasari 2025). This framing sidelines non-health actors—including social welfare agencies, educational institutions, and economic development bodies—in the program’s execution. This reinforces an institutional bias that prioritizes health-centric interventions over comprehensive socio-economic and environmental strategies.

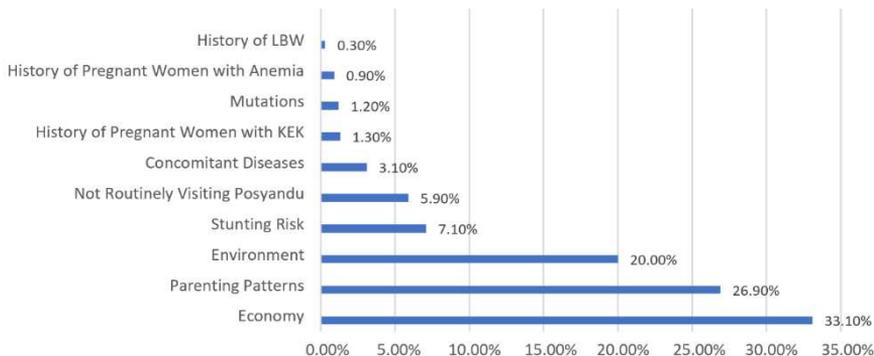


Figure 3: Analysis of Multidimensional Risk Factors Contributing to Stunting in Semarang City, 2024  
 Source: Dinas Kesehatan Kota Semarang [Semarang City Public Health Office] 2024a

Data from the Semarang City Public Health Office (2024a) underscore the multidimensional nature of stunting. According to an analysis of local stunting risk factors, economic conditions account for the largest contribution to stunting in the city (33.1%), followed by parenting (26.9%), and environment (20%). This shows that economic problems, such as poverty, low family income, and difficulty in accessing nutritious food, play a bigger role than health factors in the context of stunting in Semarang.

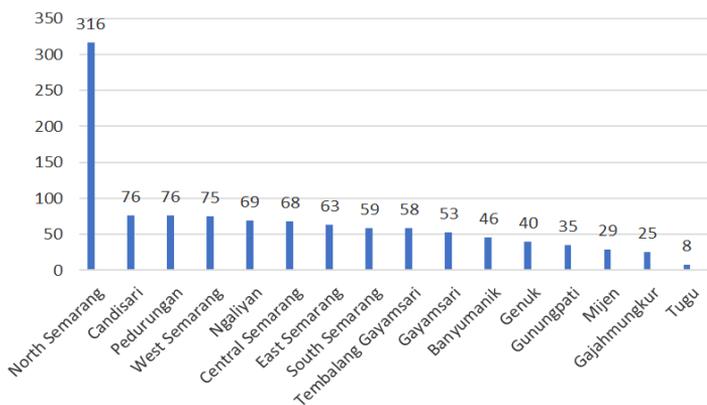


Figure 4: Number of Stunting Cases by Sub-District in Semarang City 2024  
 Source: Dinas Kesehatan Kota Semarang [Semarang City Public Health Office] 2024b

According to spatial data from the Semarang City Public Health Office (2024b), North Semarang has the highest stunting cases (316), followed by Pedurungan and Candisari (76 cases each). This can be attributed to economic factors, where people with low incomes struggle to meet the nutritional needs of their children, even with access to healthcare facilities.

Parents in these areas often lack sufficient knowledge about balanced nutrition or proper feeding methods, especially in economically disadvantaged backgrounds, compounding the risk of stunting. Meanwhile, environmental conditions, such as poor sanitation, contaminated water, and inadequate housing, further worsen the stunting rates. This is more dominant in sub-districts such as West Semarang (seventy-five cases) and Ngaliyan (sixty-nine cases), where public infrastructure and hygiene standards are suboptimal.

Figures 3 and 4 illustrate a key misalignment in the policy network that governs stunting reduction. Drawing from ANT, this misalignment reflects a failure of translatability, especially the inability of the health sector to accommodate economic, environmental, and parenting-related stunting. Policies that rely solely on health sector response, such as expanding integrated health posts or providing nutritional food, often yield limited results when not accompanied by deeper economic policies, parenting education, and environmental improvements. Without increasing family income or economically empowering the community, health policies will not be effective in reducing stunting rates. This was echoed in an interview with key informant:

Stunting is often understood as a health problem that can be resolved through medical interventions, whereas it actually involves economic, environmental, and social factors.

By situating stunting governance exclusively within health departments, the policy fails to attract meaningful participation from other sectors, which in turn prevents the formation of a robust governance network. The dominance of curative measures over preventive strategies results in a governance approach that is reactive rather than systemic, failing to address the structural drivers of malnutrition and child growth deficiencies.

### Fragmentation of Governance Actors

Another major limitation is the fragmentation of governance actors, which hinders the development of a coherent and interconnected network. Effective and sustainable policy requires cross-sectoral collaboration, where key actors—such as economic agencies, housing departments, and social protection institutions—work toward a shared vision. However, San Piisan and other stunting-related policies operate in silos, with each sector working independently rather than as an integrated governance network. As a key informant explained:

At present, cross-sector collaboration is not yet optimal. The health, social, education, and economic sectors still work separately, preventing a holistic approach to tackling stunting.

This weak actor-network connectivity results in several governance challenges. Preventive interventions, such as enhancing family welfare, supporting parental education, and improving access to water and housing are insufficiently prioritized. Non-health actors often lack incentives to participate, leading to a perception that stunting remains the responsibility of public health office alone. Without a binding regulatory mechanism that institutionalizes multi-sectoral collaboration, the governance framework remains highly sectoral, failing to facilitate meaningful inter-agency collaboration.

Moreover, the absence of translatability mechanisms further weakens the governance structure. Effective translatability requires that policies be clearly communicated and adapted across institutional boundaries. Currently, San Piisan lacks structured mechanisms for cross-sector communication and coordination. No unified platform exists for sharing information on stunting prevalence and intervention effectiveness, making it difficult for non-health sectors to integrate the issue into their respective domains. Another key informant noted:

Moving forward, we need stronger cooperation mechanisms between government agencies and institutions to prevent overlapping policies and optimize implementation.

In the absence of such mechanisms, policies risk becoming stagnant, misunderstood, or selectively implemented. Moreover, civil society organizations and community groups remain underutilized. Policy translation, therefore, remains a top-down exercise, with limited grassroots participation. This technocratic approach reduces local ownership and limits the long-term sustainability of interventions.

### Policy Implications and Recommendations

The failure of translatability in stunting governance has significant consequences. Curative interventions may yield short-term reductions in stunting prevalence, but their effects are often unsustainable due to persistent socio-economic disparities. Governance inefficiencies also emerge when funding and resources are channeled into isolated interventions without addressing underlying structural issues. In Semarang City, these challenges are evident. Despite San Piisan's international recognition, stunting rates increased in the last quarter of 2024, from 977 cases in July to 1,190 cases in September. This indicates that while the program has seen partial success, it still lacks the strong governance and sustainability needed for long-term impact.

To overcome these limitations, stunting policies must transition toward a more integrated, multi-actor governance model. A networked governance approach, as conceptualized by Latour's ANT, would require institutionalized mechanisms for intersectoral collaboration, ensuring active participation from economic, social, and environmental actors. Strengthening actor connectivity through regulatory agreements can further enhance policy coherence and cross-sector accountability. Additionally, integrating adaptive governance mechanisms will allow stunting policies to respond dynamically to emerging socio-economic trends, maintaining relevance and effectiveness over time. By addressing these structural gaps, San Piisan and similar initiatives can move beyond sectoral fragmentation toward a governance framework that is preventive, resilient, and sustainable. While San Piisan has successfully localized global norms, its long-term effectiveness depends on building a governance ecosystem that is inclusive, networked, and responsive to complex systemic challenges.

### *Strengthening Translatability in Stunting Policy*

Within the ANT framework, the success of a policy depends on its capacity to be translated across diverse actors and settings. In the case of San Piisan, weak actor connectivity and the dominance of curative, health-based approaches constrain such translatability. Although stunting is inherently a multi-sectoral issue, its governance remains largely confined to the health sector, thus limiting its effectiveness. Strengthening policy translatability requires three key reforms:

1. Building an inclusive actor network for multi-sectoral engagement. Effective stunting prevention demands the participation of stakeholders across sectors, including government agencies, private sector partners, academia, and community organizations. Fatmawati et al. (2024) highlight the need for collaborative, cross-sector action to address stunting in West Java. Their research states that a networking governance model that encourages collaborative leadership and resource management is essential. This approach prioritizes public awareness, healthcare access, and access to clean environments, laying the groundwork for sustained and inclusive prevention efforts.
2. Enhancing mechanisms for cross-sector information exchange. Integrated and data-driven policymaking requires robust channels for information across institutions. The OECD emphasizes that effective data sharing promotes inclusive, transparent governance and facilitates coordinated responses to cross-sector challenges such as illicit trade while enhancing service delivery in transport and migration (Van Ooijen et al. 2019). For instance, automated data exchange between Estonia and Finland is anticipated to boost economic growth, while the European Union's eIDAS standards allow digital identities to be used across borders for member states access (Van Ooijen et al. 2019).

3. Incentivizing non-health actor participation. Encouraging active involvement from non-health actors requires well-designed incentives. Berdud et al. (2016) highlight that while healthcare professionals are often intrinsically motivated, well-structured economic incentives can enhance rather than undermine their motivation. Extending this logic to other sectors can encourage greater participation and commitment to public health.

A fundamental limitation of San Piisan is the absence of institutionalized multi-sectoral collaboration, which prevents economic, social, and environmental actors from actively contributing to stunting reduction efforts. This finding is echoed in the research of Suratman and colleagues (2023) in Gresik, East Java, which highlights that the success of stunting prevention depends on active engagement across sectors (Goi et al. 2024). These sectors, including healthcare professionals, family planning officers, TP-PKK (Family Welfare and Empowerment Organization) teams, PPKBD (Village Family Planning Assistant), and community health workers, have been recognized as crucial contributors to the effectiveness of such initiatives. However, while local health offices and maternal-child healthcare providers remain central to implementation, other governance institutions remain weakly engaged. A more inclusive governance model must formally integrate economic agencies, education departments, and urban planning authorities into stunting prevention. As one informant noted:

We work with various parties, including universities and companies, because many pregnant women work in factories or offices.

This illustrates existing private-sector engagement, but such collaboration remains fragmented and unregulated. Stronger policy mandates are needed to institutionalize intersectoral responsibility and ensure shared accountability for addressing the root causes of stunting.

Similarly, the education sector must be systematically integrated into San Piisan's governance. Early childhood programs should include components on nutrition and health awareness. While outreach to students is one of the program's strengths, such interventions must be expanded into formal policy structures. As stated by another informant:

We also have a program to increase the capacity of women's groups because health cannot only be handled by the Public Health Office alone.

This underscores the importance of multi-actor engagement, particularly the empowerment of women as primary caregivers in stunting prevention. Collaborative governance mechanisms must be strengthened to ensure the sustainability of such community-based interventions.

*Improving Cross-Sector Information Exchange*

A major governance limitation in San Piisan is the lack of an integrated data-sharing mechanism, preventing seamless coordination between health, education, economic, and social welfare sectors. Stunting-related data is primarily concentrated within health departments, limiting other sectors' ability to assess and address the problem from their respective policy perspectives. As highlighted by one informant:

Every year we conduct an evaluation. For example, the first ANC [Antenatal Care] should be carried out before 10 weeks of pregnancy, but in the field, many are only detected after 20 weeks.

This reveals a critical gap in early intervention, which better cross-sector data integration could address. A centralized database accessible to all relevant stakeholders would enable early detection, ensuring that pregnancy monitoring, nutritional interventions, and socio-economic support services are aligned and effectively coordinated.

Furthermore, community engagement must also be prioritized. One informant emphasized the importance of grassroots participation:

We see that case recording is getting better and community participation is increasing. This shows higher awareness.

Improved reporting and public awareness present an opportunity to strengthen governance structure from the bottom up. The community should not merely be a beneficiary, but also a key actor in prevention efforts. Incorporating lived experiences and local knowledge into policy design will help tailor interventions more effectively to on-the-ground needs.

*Providing Incentives for Non-Health Actors*

For San Piisan to evolve into a multi-sectoral governance model, non-health actors must be incentivized to participate. Currently, businesses, schools, and urban planning authorities lack direct incentives to contribute, resulting in weak participation outside of voluntary initiatives. Introducing structured incentives, such as tax benefits or regulatory rewards can encourage greater participation. For instance, the Netherlands offers businesses up to €2,700 in subsidies per student work placement annually. Similarly, Ontario, Canada, provides tax credits to companies for participating in co-operative education programs (Bell et al. 2025).

Schools that integrate health education into their curriculum should receive funding to reinforce their role in preventive interventions. Pulimeno et al. (2020) emphasize that schools need the backing of both private and public social actors to establish a comprehensive prevention system. Such collaboration is vital for empowering younger generations to take ownership of their health.

Additionally, the housing and urban development sector also has a critical role to play, particularly in districts with high stunting rates in Semarang City, such as North Semarang, Pedurungan, and Candisari. Ensuring access to proper sanitation, clean water, and healthy residential environments would significantly enhance the impact of stunting prevention efforts. As one informant pointed out:

We want to highlight that interventions are not only done on women. Many other factors play a role, such as the environment, economy, and smoking habits at home.

This highlights the interconnected nature of stunting, emphasizing the need for broader environmental and economic interventions that extend beyond medical solutions.

To transition San Piisan from a fragmented, health-focused initiative to a more comprehensive, collaborative, and sustainable governance model, three strategies are essential: expanding the network of actors, strengthening data-sharing mechanisms, and introducing structured incentives for non-health sectors. As one informant aptly summarized:

Stunting is an issue that cannot be solved by one sector alone. Collaboration between agencies is very important to ensure the sustainability of this program.

Stunting is a complex and multidimensional problem. Sustainable solutions require cross-sector collaboration from government, health, education, social, and economic sectors, to ensure that the stunting handling program runs sustainably and effectively. With stronger regulatory mandates, improved coordination, and structured incentives, stunting policies can become truly preventative, networked, and resilient—moving beyond isolated interventions toward a more integrated governance system.

## Conclusion

The failure of stunting policy translatability stems from its reduction to a health-centric problem, fragmentation across actor networks, and the absence of effective translation mechanisms. These limitations prevent the policy from evolving into a holistic, systemic governance framework capable of addressing the root causes of malnutrition and child growth deficiencies. Using ANT as an analytical lens, this study finds that stunting governance must transcend sectoral confinement by embracing multi-actor engagement, integrated policy translation, and structured cross-sector collaboration.

A fundamental weakness in San Piisan and similar initiatives is their tendency to frame stunting as a purely medical condition. It restricts interventions to curative approaches rather than preventive, structural solutions. The exclusion of economic, social, and environmental actors from governance networks results in fragmented implementation, where each sector operates independently rather than within an interconnected system. Without a shared vision

that aligns public health priorities with broader socio-economic policies, efforts to combat stunting remain reactive, unsustainable, and limited in scope.

### Practical Implication

To enhance policy effectiveness, a networked governance model must be adopted—one that incorporates diverse stakeholders into an inclusive policy ecosystem. The health sector must transition from being the sole custodian of stunting interventions to functioning as a coordinating entity within a larger governance structure. A key reform strategy is to institutionalize multi-sectoral participation, ensuring that economic development agencies, education institutions, and urban planning authorities actively contribute to stunting reduction. Policies must be designed with explicit regulatory mandates that clearly define the roles and responsibilities of each sector, preventing the dominance of health-focused interventions while reinforcing collective accountability.

Furthermore, cross-sector information exchange must be strengthened to improve coordination and enable real-time policy adaptation. The current lack of integrated data-sharing mechanisms prevents actors from understanding how stunting intersects with their respective domains. A centralized, accessible database would allow for better policy alignment, improved early detection, and adaptive intervention strategies.

Incentive structures should also be introduced to encourage non-health actors to participate in stunting governance. Businesses that support nutritional programs for workers, schools that integrate nutrition and health education, and housing sectors that prioritize improved living conditions should receive regulatory benefits or financial support. Without clear incentives, non-health actors will continue to perceive stunting as outside their domain of responsibility, weakening the overall governance framework.

By expanding the actor network, integrating cross-sector data mechanisms, and embedding structured incentives, stunting policies can evolve beyond fragmented interventions into a comprehensive governance model. This transformation is essential in ensuring that stunting prevention becomes a sustained, collective effort, rather than an isolated health-sector initiative.

As this study shows, the effectiveness of stunting governance is not solely determined by policy content but by its ability to be translated, adapted, and sustained across multiple governance actors. The failure of translatability limits the scalability and sustainability of interventions, whereas a well-networked, adaptive governance model enhances long-term policy resilience. Future policy reforms must prioritize governance mechanisms that foster intersectoral collaboration, ensure continuous policy adaptation, and promote shared responsibility among diverse stakeholders. Only through a truly integrated, networked governance system can stunting policies achieve their intended impact, reducing malnutrition rates and improving child health outcomes in a sustainable, systemic manner. While San Piisan

remains context-specific, its experience offers valuable lessons for other ASEAN and other third world countries facing similar stunting challenges (Azriani et al. 2024; Tan et al. 2024). The integration of ANT into policy design also provides a transferable framework for analyzing and improving policy translatability across diverse institutional landscapes.

### Theoretical Contribution

This study contributes theoretically by extending the application of ANT beyond its traditional use in STS (as mirrored in Latour’s original works), into governance and policy studies. It demonstrates that ANT offers a robust analytical lens for understanding the complex interplay between international policy norms—such as SDGs—and their localization within municipal governance systems in developing countries. By examining San Piisan initiative as a case study, this research illustrates that effective policy translation requires the construction of dynamic, inclusive, and materially supported actor-networks—not just “ordinary” networks.

These networks must be built upon a holistic understanding of stunting that transcends its narrow medical framing and incorporates economic, social, environmental, and cultural dimensions. Only through such an expansive conceptualization can San Piisan attract and enroll a plurality of actors—including health institutions, economic development agencies, educational bodies, housing authorities, and community organizations. Moreover, these networks must be structurally robust and governed by binding mechanisms that ensure continuity and shared accountability.

### Acknowledgment

The author gratefully acknowledges the support of Nuruddin Al Akbar and Pamela Setya Miliyasi, who served as research assistants. Their involvement was limited to non-substantive tasks, including linguistic refinement, journal-specific formatting, and proofreading. All conceptual development, data collection and analysis, analytical design, manuscript development, and interpretation of findings were independently undertaken and completed by the author.

### AI Acknowledgment

I acknowledge the use of ChatGPT and Scopus AI to assist in translating portions of this article from Indonesian to English, refinement of grammar and clarity. I also acknowledge their role in supporting the discovery of relevant academic sources during the literature review process. Additionally, AI tools were used to assist in data interpretation and to provide definitions for key terms or concepts. The prompts used included: “Please translate this paragraph from Indonesian to English.” “Can you help improve the grammar and clarity of this paragraph?” “Rephrase this sentence to make it clearer in academic English.” “Simplify

this sentence for better readability.” “Find academic sources related to [stunting phenomenon and policy] in the context of [Indonesia/ASEAN/Third world],” and “Find academic sources related to [Actor Network Theory] in the context of [governance studies].” The output from these prompts were used to refine the English expression of the manuscript and to identify relevant sources, which were then reviewed and paraphrased by the author. AI tools were also used to analyze data or review literature included in the article; and to provide definitions to key terms or concepts. While the author acknowledges the usage of AI, the author, Teguh Yuwono, affirms sole authorship and full responsibility for the content, as outlined in COPE recommendations.

## Informed Consent

The author has obtained informed consent from all participants. Due to the sensitivity of the stunting issue, particularly as some participants discussed critical shortcomings in policy implementation, the identities of informants have been anonymized in the article. However, the profiles and roles of the informants are described in the methodology section to ensure transparency and contextual understanding.

## Conflict of Interest

The authors declare that there is no conflict of interest.

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