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Local Value Chain Integration in Indonesia's Free Nutritious Meal Program: A Comparative Literature Review on Smallholder Farmer Empowerment and Food System Resilience

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ABSTRACT

Background: Nationally funded school and community meal programs have expanded rapidly worldwide, now reaching 466 million children and channeling an estimated US\$84 billion annually, with documented multiplier effects of up to US\$1 to US\$35 and 7.4 million jobs generated globally (World Food Programme [WFP], 2024). Indonesia's Free Nutritious Meal Program (Program Makan Bergizi Gratis, MBG) represents one of the largest such interventions, serving over 63 million beneficiaries with a disbursed budget of Rp88.15 trillion as of May 2026 (Kementerian Keuangan Republik Indonesia, 2026). However, with more than 60% of Indonesian farming households now classified as smallholders (*petani gurem*), concerns persist that fragmented procurement systems and intermediary (*tengkulak*) dominance may divert local economic multiplier effects away from rural producers (Fauzan, 2024; Sudrajat et al., 2022).

Purpose: This review examines how local value chain integration principles, evidenced in international best practice, most notably Brazil's *Programa Nacional de Alimentação Escolar* (PNAE), which mandates a minimum 30 to 45% direct procurement share from family farmers (Law No. 11,947/2009; Law No. 15,226/2025), and in comparable home-grown school feeding (HGSF) schemes across Sub-Saharan Africa (Andreozzi et al., 2025; Kamau et al., 2025), can inform smallholder-inclusive procurement governance within MBG.

Approach: Employing a narrative/critical literature review method (Grant & Booth, 2009; Snyder, 2019), this paper synthesizes peer-reviewed studies, institutional reports, and policy documents on Short Food Supply Chains (SFSC) and Food System Resilience frameworks, using Indonesia's Cianjur district as an illustrative contextual reference drawn from secondary sources.

Key Themes: The review identifies structural procurement barriers rooted in multi-layer intermediary chains (Fauzan, 2024; Idris et al., 2021), the theoretical case for direct farmer-kitchen partnerships grounded in SFSC theory (Renting et al., 2003; Kneafsey et al., 2013), the institutional role of existing farmer-group (*kelompok tani*) and village-enterprise (BUMDes)

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structures (Nuryanti & Swastika, 2016; Wulandari & Setiawan, 2026), and comparative regulatory lessons from Brazil and Sub-Saharan Africa.

Implications: The paper proposes a conceptual Direct Partnership (Production Cluster) Model to strengthen local agri-food system resilience and smallholder market access within Indonesia's nutrition program architecture.

Keywords: BUMDes; food system resilience; free nutritious meal program; local value chain integration; PNAE; procurement governance; short food supply chains; smallholder farmers

1. INTRODUCTION

Nationally led school and community meal programs have become one of the fastest-expanding social protection instruments in the world. According to WFP's *State of School Feeding Worldwide 2024* report, government-led programs now reach at least 466 million children globally, an increase of roughly 80 million beneficiaries since 2020, bringing global public investment in such programs to approximately US\$84 billion annually, nearly double the 2020 figure of US\$43 billion, with 99% of this funding now sourced from national budgets (World Food Programme [WFP], 2024). The same report documents multiplier returns of up to US\$35 for every dollar invested and estimates that delivering school meals at this scale generates approximately 7.4 million jobs across cooking, logistics, and farming sectors worldwide (WFP, 2024).

Among the most cited models for translating this fiscal scale into rural economic benefit is Brazil's *Programa Nacional de Alimentação Escolar* (PNAE). Since 2009, Law No. 11,947 has required that a minimum share of PNAE's federal transfers be used to directly procure food from family farmers, a mandate since strengthened, with the threshold raised from 30% to 45% effective January 2026 under Law No. 15,226/2025 (REDRAES, 2025). Empirical evaluations of this mandate report substantial income effects: Ipea's 2025 study found that supplying food to PNAE increased participating family farmers' income by 23% to 106%, with the largest gains concentrated among lower-income producers (Instituto de Pesquisa Econômica Aplicada [Ipea], as cited in REDRAES, 2025). Complementary econometric modeling by Oliveira et al. (2025) further confirms that PNAE's family-farming procurement rule generates measurable, if modest, positive effects on national GDP and employment, with the strongest gains accruing to family farming segments. Together, these cases demonstrate that structured, legally mandated local procurement can convert large-scale public feeding budgets into durable smallholder income gains rather than mere aggregate consumption, a pattern also documented across comparable home-grown school

feeding (HGSF) schemes in Sub-Saharan Africa, where farmer-based organizations have similarly functioned as the primary institutional conduit for translating school-feeding demand into smallholder market access (Andreozzi et al., 2025; Kamau et al., 2025).

Indonesia's own flagship nutrition initiative, the Free Nutritious Meal Program (Program Makan Bergizi Gratis, MBG), now operates at comparable scale. As of May 2026, the Ministry of Finance reported cumulative disbursement of Rp88.15 trillion, reaching 63.13 million beneficiaries through 29,679 operational Satuan Pelayanan Pemenuhan Gizi (SPPG) nutrition-fulfillment kitchens nationwide (Kementerian Keuangan Republik Indonesia, 2026). Yet this scale sits atop a structurally fragmented agricultural base: the 2023 Agricultural Census found that the proportion of smallholder (*petani gurem*) households rose from 50.33% in 2013 to 60.84% of all farming households nationally by 2023, underscoring both the demographic weight and the structural vulnerability of Indonesia's smallholder sector (Pusat Data dan Informasi Pertanian, as synthesized in Food and Fertiliser Technology Center, 2023). Preliminary regional evidence is beginning to suggest that MBG's local expenditure is already correlated with improved farmer and fisher terms of trade: a 2026 analysis of Bengkulu Province found that rising MBG contract value between the second and third quarters of 2025 was positively associated with both the regional Farmer Exchange Rate (Nilai Tukar Petani) and Fisher Exchange Rate, although the authors caution that the finding remains exploratory given the limited number of observations available (Mursalin et al., 2026).

Unlike PNAE, MBG's procurement architecture currently lacks a codified, mandatory minimum-share requirement for direct smallholder sourcing. Emerging Indonesian case literature on MBG's early implementation points to a mixed and locally uneven picture. Some district-level studies report that MBG has begun to absorb local commodities and open new market access for smallholders, as documented in Lebak Regency, West Java, where farmers supplying vegetables to a local SPPG

kitchen reported income gains even though, the authors note, farmer involvement remains partial rather than comprehensively integrated into the program's supply chain (Analisis Program Makan Bergizi Gratis Terhadap Pemberdayaan Petani Lokal di Kabupaten Lebak, 2025). Other regional studies caution that local procurement gains coexist with governance risks: in Aceh Tenggara, MBG was found to stimulate absorption of regional commodities such as rice and highland vegetables and to create new employment for village-level cooks and distributors, but vendor-selection mechanisms were also identified as vulnerable to political patronage by village elites, with the authors concluding that durable local economic benefit requires standardized procurement transparency and strengthened Village-Owned Enterprises (Badan Usaha Milik Desa, BUMDes) (Program Makan Bergizi Gratis (MBG) dan Implikasi Sosial, Ekonomi, dan Politik terhadap Masyarakat Kabupaten Aceh Tenggara, 2025). More broadly, Indonesia's smallholder sector continues to face longstanding structural barriers to market integration independent of MBG specifically, including reliance on multi-layered intermediary (*tengkulak*) chains that, while sometimes valued by farmers for the liquidity and convenience they provide, are also associated with price capture and constrained bargaining power (Fauzan, 2024).

This paper does not engage with the political or socio-political dimensions of MBG's rollout, nor does it evaluate program governance at the national policy level. Instead, it undertakes a narrative/critical literature review (Grant & Booth, 2009; Snyder, 2019) to examine how principles of local value chain integration, as theorized through Short Food Supply Chains (SFSC) (Renting et al., 2003; Kneafsey et al., 2013) and Food System Resilience frameworks (Tendall et al., 2015), and as operationalized through PNAE's direct-procurement mandate and comparable HGSP governance instruments, can inform a smallholder-inclusive procurement model for Indonesia's SPPG kitchens. Using secondary, publicly documented conditions in districts such as Cianjur, West Java, as an illustrative contextual reference, this review synthesizes the comparative and theoretical case for a direct farmer-kitchen partnership scheme, channeled through existing farmer-group (*kelompok tani*) and BUMDes institutions, with the aim of proposing a conceptual model to strengthen local food system resilience and smallholder market access within Indonesia's nutrition program architecture.

2. METHODOLOGY

2.1 Research Design

This study employs a narrative/critical literature review design, a method appropriate for synthesizing

heterogeneous bodies of evidence, spanning international institutional reports, peer-reviewed econometric studies, national policy documents, and theoretical literature, around a specific applied problem, rather than testing a single hypothesis through primary data collection (Grant & Booth, 2009; Snyder, 2019). Unlike a systematic literature review, which requires a fully pre-registered protocol and exhaustive database screening against rigid inclusion criteria, a narrative/critical review permits purposive, theoretically guided selection of sources while still requiring transparency in search strategy, source justification, and analytical synthesis (Baumeister & Leary, 1997; Grant & Booth, 2009). Snyder (2019) situates this approach within the broader family of semi-systematic reviews, which are designed for topics that have been conceptualized differently and studied across diverse disciplinary traditions, a description that fits the subject matter of this paper precisely, since local value chain integration in institutional feeding programs draws simultaneously on agricultural economics, public administration, development studies, and food system science. This design was selected because the objective of this paper is conceptual and comparative, namely to build an argument and a proposed governance model, rather than to exhaustively map the entire empirical literature on school or community feeding programs worldwide.

2.2 Search Strategy and Source Selection

Sources were identified through structured searches of Google Scholar, Scopus, and institutional repositories, including the World Food Programme, Brazil's Fundo Nacional de Desenvolvimento da Educação (FNDE) and Instituto de Pesquisa Econômica Aplicada (Ipea), Indonesia's Badan Pusat Statistik (BPS), Kementerian Keuangan Republik Indonesia, and Badan Gizi Nasional (BGN), using combinations of the following keyword clusters:

- "Free Nutritious Meal Program" OR "Makan Bergizi Gratis" AND "supply chain" OR "procurement"
- "Programa Nacional de Alimentação Escolar" OR PNAE AND "family farming" OR "smallholder"
- "home-grown school feeding" AND "smallholder farmers" OR "farmer-based organization"
- "short food supply chain" OR "food system resilience" AND "smallholder farmers"
- "tengkulak" OR "middleman" AND "smallholder" AND Indonesia
- "kelompok tani" OR "BUMDes" AND "market access" OR "institutional procurement"

The search was bounded to sources published between 2003, the year Renting et al.'s foundational SFSC framework was published, and 2026, with priority given to sources published from 2020 onward to ensure currency, given the rapid year-on-year evolution of both MBG's and PNAE's regulatory frameworks. Sources were included if they met at least one of the following criteria: (a) peer-reviewed empirical or theoretical work on institutional food procurement, smallholder market integration, or food system resilience; (b) official government or multilateral institutional reports containing primary statistical data, such as WFP, BPS, Kementerian Keuangan RI, or FNDE; or (c) theoretically foundational works establishing the SFSC or food system resilience frameworks central to this review's analytical lens. Sources were excluded if they were opinion pieces without an identifiable evidentiary basis, non-peer-reviewed blog commentary, or could not be independently verified against a traceable publication or institutional record, consistent with the journal's requirement that all in-text citations be traceable via Google Scholar and free of ghost referencing.

2.3 Analytical Approach: Thematic Synthesis

Given the qualitative and interpretive nature of a literature review, this paper adapts the interactive analysis logic of Miles and Huberman (1994), originally developed for primary qualitative fieldwork, as a structuring device for secondary source synthesis, rather than as a primary-data coding procedure. Three iterative stages were applied to the literature corpus:

1. **Data and source reduction.** Screening and narrowing the initial pool of retrieved sources to those directly relevant to local value chain integration, smallholder procurement governance, and food system resilience in the context of large-scale nutrition programs.
2. **Data and theme display.** Organizing retained sources into thematic clusters: (i) global school and community feeding scale and multiplier evidence, (ii) PNAE's and comparable HGSP programs' regulatory and socioeconomic evidence base, (iii) MBG's operational and structural procurement context, including district-level Indonesian case studies, and (iv) SFSC and food resilience theory, together with the institutional literature on farmer groups and BUMDes, to enable structured cross-case comparison.
3. **Conclusion drawing and verification.** Cross-checking emergent thematic patterns and comparative claims against multiple independent

sources per theme, triangulating institutional reports against peer-reviewed econometric studies and district-level qualitative case reports, before incorporating them into the comparative and discussion sections. This functions as a source-triangulation safeguard analogous to respondent triangulation in primary qualitative research, and it was applied with particular care to the emerging Indonesian MBG literature, where district-level findings (for example, from Lebak Regency and Aceh Tenggara) sometimes point in different directions regarding the consistency of local procurement benefit, a divergence that is itself treated as a substantive finding rather than resolved by selective citation.

2.4 Use of the Cianjur Context

Conditions in Cianjur Regency, West Java, where a substantial concentration of operational SPPG kitchens serves as a nationally representative node of MBG's rural procurement architecture, are used throughout this paper as an illustrative contextual reference drawn from secondary, publicly available sources, including government statistical releases, ministry press statements, and verifiable news reporting, rather than as a site of primary fieldwork, interviews, or direct observation. This distinction is stated explicitly and maintained consistently: no claims in this paper are attributed to original interview data, and no named individual informants are represented. This scope decision reflects the paper's design as a literature-based conceptual and comparative analysis rather than an empirical case study, and it is revisited explicitly in the Limitations section.

2.5 Methodological Limitations of the Review Design

As with any narrative review, source selection retains an element of researcher judgment, and the absence of a fully systematic, protocol-registered search process means this review does not claim exhaustive coverage of all existing literature on the subject. A further limitation specific to this topic is the asymmetry in evidentiary maturity between the Brazilian and Indonesian literatures: PNAE has been subject to over a decade of peer-reviewed econometric evaluation, whereas MBG, launched only in January 2025, is at the time of writing represented predominantly by descriptive, qualitative, or exploratory quantitative studies at the district level. This asymmetry is treated transparently throughout the Findings and Discussion sections rather than concealed, and its implications for the strength of the paper's

conclusions are revisited in the Limitations and Future Research section.

3. FINDINGS

Applying the thematic synthesis described in the Methods section, four recurring patterns emerged from the corpus of secondary sources: the scale and multiplier logic of large nutrition programs globally, PNAE's and comparable home-grown school feeding (HGSF) programs' regulatory mechanisms and documented socioeconomic outcomes, MBG's own procurement structure as reflected in emerging district-level Indonesian case evidence, and the comparative governance gap between systems with and without a codified direct-procurement instrument. These are presented below through three comparative tables and one structural figure.

3.1 Global Scale and Investment Patterns

Table 1 situates MBG within the global landscape of large-scale, government-led feeding programs, drawing on WFP's institutional reporting alongside Brazil's and Kenya's national and sub-national program data.

The table highlights a structural asymmetry: while MBG now operates at a scale comparable to or exceeding PNAE in absolute beneficiary count, and while sub-national Indonesian evidence is beginning to show positive correlation between MBG expenditure and farmer welfare indicators, the program still lacks the codified procurement mandate that PNAE has used since 2009, and just strengthened in 2026, to convert program scale into systematically measured smallholder income gains.

This asymmetry is not simply a matter of Indonesia lagging behind Brazil in time. Kenya's HGSFP experience

shows that even without a binding national quota comparable to PNAE's, a market-access effect can emerge organically once school-feeding demand is channeled through farmer-based organizations, although Kamau et al. (2025) also found that local procurement opportunities through these organizations remained substantially underutilized and recommended targeted capacity-building. Read alongside the Bengkulu finding that MBG contract value is already correlated with regional Farmer and Fisher Exchange Rates, albeit on an exploratory basis given limited observations (Mursalin et al., 2026), the comparative picture suggests that MBG possesses the underlying demand-side conditions for a PNAE-style or Kenya-style multiplier effect, but that the strength and consistency of that effect will depend heavily on whether procurement is channeled through organized, accountable intermediating institutions rather than informal ones.

3.2 Procurement Governance: MBG versus PNAE

Table 2 compares the two programs' procurement governance architecture directly, drawing out the specific mechanisms absent from MBG's current national design.

The comparative literature suggests that the core difference between the two systems is not program scale but procurement channel architecture: PNAE closes the gap between institutional demand and smallholder supply through a codified legal instrument, while MBG currently relies on the discretion and institutional maturity of individual SPPG kitchens and district administrations.

That discretion produces uneven outcomes, which the district-level Indonesian literature already documents even at this early stage of MBG's implementation.

Table 1. Comparative Scale and Investment in Large-Scale Public Nutrition Programs

Dimension	Global (WFP aggregate)	Brazil (PNAE)	Kenya (HGSFP)	Indonesia (MBG)
Beneficiaries reached	466 million children (2024)	~40 to 45 million students daily	Sub-national pilot coverage across multiple counties	63.13 million (as of May 2026)
Annual public investment	US\$84 billion	R\$5.5 billion (~US\$1 billion)	Not independently aggregated at national scale	Rp88.15 trillion disbursed YTD (~US\$5.4 billion)
Documented multiplier effect	Up to US\$1 to US\$35	Farmer income +23% to +106% (Ipea, as cited in REDRAES, 2025)	22.8% of smallholders and 37.5% of farmer-based organizations gained market access (Kamau et al., 2025)	Not yet independently studied at national level; regional exploratory evidence positive (Mursalin et al., 2026)
Legally mandated local-farmer procurement share	Not universally mandated	45% minimum (from January 2026; previously 30%)	No uniform national mandate; procurement channeled through farmer-based organizations	No codified minimum share
Employment generated	~7.4 million jobs (cooking, logistics, farming)	Positive but modest net GDP and employment gains (Oliveira et al., 2025)	Not independently quantified	5,704 new jobs and 804 local suppliers recorded in Bengkulu Province alone as of April 2026

Sources: WFP (2024); Oliveira et al. (2025); Ipea, as cited in REDRAES (2025); Kamau et al. (2025); Kementerian Keuangan Republik Indonesia (2026); Mursalin et al. (2026).

Table 2. Procurement Governance Comparison Between MBG (Indonesia) and PNAE (Brazil)

Governance dimension	PNAE (Brazil)	MBG (Indonesia)
Legal basis for local sourcing	Law No. 11,947/2009, amended by Law No. 15,226/2025	No dedicated national procurement law mandating smallholder share
Minimum direct-purchase requirement	45% of federal transfer (from January 2026)	None specified nationally
Priority supplier groups	Family farmers, land-reform settlements, traditional and quilombola communities, women's groups	Not formally differentiated by supplier type at national level
Procurement mechanism	Simplified "Public Call" (<i>Chamada Pública</i>), bidding-exempt for family farmers	Largely informal or ad hoc at SPPG-kitchen level, with district-level variation
Reported structural barrier	Uneven regional compliance (South and Southeast outperform other regions)	Continued reliance on multi-layer <i>tengkulak</i> intermediaries; continuity and quality-standard barriers for smallholders (Fauzan, 2024)
Evidence base on farmer income effect	Multiple peer-reviewed and institutional studies (23% to 106% income gain)	Emerging, geographically uneven district-level case evidence (Lebak, Aceh Tenggara, Bengkulu)

Sources: REDRAES (2025); Oliveira et al. (2025); Ipea, as cited in REDRAES (2025); Fauzan (2024); this review's synthesis of Indonesian district-level MBG case reporting.

Table 3. Summary of District-Level MBG Case Evidence on Local Procurement

Location	Method	Key finding	Source
Lebak Regency, West Java	Qualitative descriptive; key informant interview and secondary data	MBG has involved local vegetable farmers as suppliers and opened market access, though integration remains partial	Analisis Program Makan Bergizi Gratis Terhadap Pemberdayaan Petani Lokal di Kabupaten Lebak (2025)
Aceh Tenggara, Aceh	Qualitative; 10 key-informant interviews plus document review	MBG stimulates absorption of local commodities and employment but vendor selection is exposed to political patronage risk	Program Makan Bergizi Gratis (MBG) dan Implikasi Sosial, Ekonomi, dan Politik terhadap Masyarakat Kabupaten Aceh Tenggara (2025)
Bengkulu Province	Quantitative; monthly time series, OLS regression	MBG contract value positively correlated with Farmer and Fisher Exchange Rates and with MBG's share of regional GDP, though the sample remains exploratory	Mursalin et al. (2026)

Sources: as listed in the table above.

Studies in Lebak Regency report that MBG procurement has opened genuine market access for local vegetable farmers, even though farmer involvement remains partial rather than systematically integrated into the program's supply chain. In Aceh Tenggara, MBG was found to stimulate absorption of regional commodities and create new local employment, but the same study identified a governance risk specific to the absence of a standardized procurement mechanism: vendor-selection processes vulnerable to political patronage by village elites, with the authors explicitly recommending standardized procurement transparency and strengthened BUMDes as the remedy. Table 2's contrast between PNAE's *Chamada Pública* and MBG's largely informal, kitchen-level procurement helps explain why these two district cases produce different outcomes from the same national program: without a codified instrument, the quality of local procurement in any given SPPG kitchen depends on local institutional capacity and integrity rather than on a nationally guaranteed floor.

3.3 District-Level Evidence on MBG's Local Procurement Outcomes

Table 3 synthesizes the emerging, still-limited body of Indonesian district-level case evidence on MBG's local economic effects, which this review treats as a distinct evidentiary category from the national-scale figures reported in Table 1.

Read together, these three district cases converge on a cautious but consistent conclusion: where MBG procurement functions well, it functions through some form of organized local intermediation, whether an existing farmer-group relationship in Lebak, a BUMDes-strengthening recommendation in Aceh Tenggara, or the aggregate contract-and-exchange-rate relationship documented in Bengkulu, rather than through unmediated, purely informal market transactions.

At the same time, the Aceh Tenggara finding on patronage risk is a reminder that "local" procurement is not automatically equitable procurement; without a transparent selection mechanism, a formally local

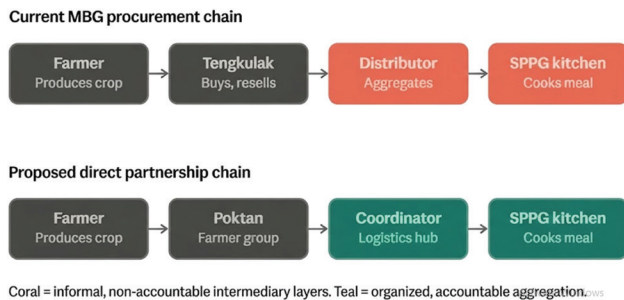


Figure 1. The Structural Gap: Value Chain Configuration

supply chain can still fail to channel benefit to the smallholder producers it is nominally designed to serve. This distinction, between procurement that is merely geographically local and procurement that is structurally accountable to smallholder producers, becomes the organizing concept for the comparative diagnosis developed in the remainder of this paper, and it directly motivates the structural contrast illustrated in Figure 1.

3.4 The Structural Gap: Value Chain Configuration

Figure 1 above illustrates this structural contrast directly, comparing the multi-intermediary chain characteristic of current, unmandated MBG implementation with the organized, accountable aggregation pathway associated with PNAE-style governance and with the better-performing Indonesian district cases described above.

The figure shows that both chains connect the same two endpoints, the smallholder farmer and the SPPG kitchen, but through structurally different intermediate configurations: the current chain routes value through a *tengkulak* and a distributor, two informal, non-accountable layers, while the proposed chain routes it through a Poktan (farmer group) and a coordinator function, both organized and, in principle, auditable. The literature indicates that each additional informal intermediary layer corresponds to documented risks: price capture by non-producer actors, delayed or inconsistent payment cycles reaching the farm level, and reduced traceability of the “smallholder share” of total procurement spending, precisely the risks that PNAE’s Public Call mechanism was designed to close (Oliveira et al., 2025; REDRAES, 2025) and precisely the risk that the Aceh Tenggara case study flags as a live governance concern within MBG today.

Taken together, these four sources of evidence support a consistent interpretation: Indonesia’s MBG possesses the fiscal scale and institutional infrastructure, 29,679 SPPG kitchens nationally serving over 63 million beneficiaries, to generate a PNAE-scale or Kenya-scale rural multiplier effect, and district-level evidence from

Lebak, Aceh Tenggara, and Bengkulu suggests that such effects are already beginning to emerge unevenly across the country. What the program currently lacks is not scale but a codified, nationally consistent procurement architecture capable of converting that scale into predictable, accountable, and broadly distributed smallholder income gains. This gap forms the empirical and theoretical basis for the Discussion section that follows.

4. DISCUSSION

4.1 Reading MBG’s Procurement Gap Through the Short Food Supply Chain Framework

The Short Food Supply Chain (SFSC) framework offers the clearest theoretical lens for interpreting the structural gap identified in the Findings section. Renting et al. (2003) define SFSCs not primarily by geographic distance but by the number of intermediary actors separating producer from consumer, and by the degree to which the product remains “embedded,” carrying traceable information about its origin and production conditions. Applying this lens to Table 2’s comparison, MBG’s current, unmandated procurement pattern of farmer, *tengkulak*, distributor, SPPG kitchen constitutes what Renting et al. (2003) would classify as a conventional, extended chain rather than an SFSC, despite the program’s stated developmental intent. Each intermediary layer in this configuration progressively disembeds the product from its producer-level origin, which, following Kneafsey et al.’s (2013) European Commission Joint Research Centre synthesis of SFSC policy evidence, is precisely the mechanism through which value and price-setting power migrate away from primary producers toward intermediary actors. Widianarko et al.’s (2025) recent institutional-model study of SFSC activation in Semarang City reaches a compatible conclusion from a different empirical setting, finding that successful short-chain activation in urban Indonesia depends on precisely the institutional conditions, farmer-group readiness, defined success parameters, and a clear organizing framework, that MBG’s current ad hoc kitchen-level procurement generally lacks.

Kneafsey et al. (2013) further note that SFSC-oriented policy interventions, such as PNAE’s Public Call mechanism, function best when they simultaneously address three conditions: a codified minimum-procurement obligation, simplified bureaucratic entry for smallholder suppliers, and an institutional buyer with predictable, recurring demand. MBG structurally satisfies the third condition already: SPPG kitchens represent exactly the kind of stable, high-frequency institutional demand that SFSC theory identifies as necessary for smallholder market integration, and the Bengkulu

evidence that MBG contract value correlates with regional Farmer Exchange Rates (Mursalin et al., 2026) suggests this demand effect is already materializing in at least some locations. What MBG currently lacks are the first two conditions, a codified obligation and simplified entry, a diagnostic gap rather than any deficiency in program scale or funding, which is exactly what Figure 1 visually contrasts: the same institutional endpoint, the SPPG kitchen, reached through structurally different chain configurations, and exactly what the Aceh Tenggara case study's patronage-risk finding illustrates in practice when that gap is left unaddressed at the district level.

4.2 Food System Resilience Implications

Tendall et al. (2015) define food system resilience as the capacity of a food system and its constituent units, across multiple scales, to continue providing sufficient and accessible food in the face of disturbance. Read through this framework, MBG's current reliance on multi-layer intermediary chains introduces a specific resilience vulnerability: because *tengkulak*-mediated procurement is typically informal, price-volatile, and non-contractual, even when farmers themselves report the relationship as convenient and low-cost in the short run (Sudrajat et al., 2023), SPPG kitchens' access to fresh ingredients remains exposed to localized shocks, seasonal price spikes, transport disruption, or opportunistic withdrawal of individual intermediaries, without the buffering effect that a formally contracted, cluster-based smallholder supplier base would provide. This diagnosis is consistent with the broader value chain governance literature on resilience in the Global South, which identifies formal coordination mechanisms and reduced power asymmetries between chain actors as the structural conditions under which agricultural value chains absorb external shocks without disrupting downstream food security (Building Resilient Agricultural Value Chains in the Global South Post COVID-19, 2025).

This is consistent with the broader finding from Brazil's experience: Oliveira et al. (2025) attribute part of PNAE's measured socioeconomic stability to the "institutional market" effect of guaranteed, legally mandated demand, which renders local agricultural production more predictable and investment-worthy for family farmers. A parallel institutional-market effect appears to be forming in Malawi's home-grown school feeding program, where Mainje et al. (2026) find that participating smallholders gain not only farm revenue but also significantly more extension advice and a higher farm-income share, evidence that a stable institutional buyer can generate resilience benefits that extend beyond the income channel alone. Applied to the Indonesian

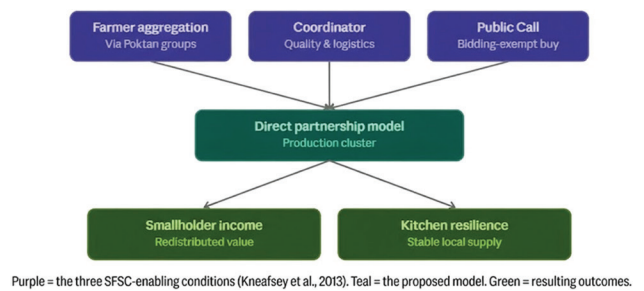


Figure 2. Conceptual Direct Partnership (Production Cluster) Model

case, a codified direct-procurement mechanism would not only redistribute income toward smallholders, the equity dimension emphasized in the Findings section, but would also strengthen MBG's own operational resilience as a program, reducing SPPG kitchens' exposure to intermediary-driven supply disruption. This reframes local value chain integration not merely as a rural-development side benefit of MBG, but as a food-system resilience requirement for the program's own continuity at scale.

4.3 Toward a Direct Partnership (Production Cluster) Model

Synthesizing the SFSC and food system resilience literatures with the comparative PNAE, Kenyan, and Malawian evidence and the district-level Indonesian case findings, this paper proposes a conceptual Direct Partnership (Production Cluster) Model, illustrated in the figure above.

The model rests on three components, each addressing one of the three SFSC-enabling conditions identified by Kneafsey et al. (2013) and each grounded in an existing Indonesian institutional form rather than requiring a new bureaucratic layer. The first component is farmer aggregation through existing *kelompok tani* (Poktan) structures. Rather than requiring SPPG kitchens to contract with individual smallholders, an administratively unrealistic proposition given typical smallholder landholding fragmentation, the model channels procurement through already-existing farmer group structures, mirroring PNAE's reliance on organized family-farming cooperatives and consistent with recent Indonesian evidence that farmer-group participation, while not transformative on its own, meaningfully improves productivity and market access when institutional support is adequate (Cogent Economics & Finance study on farmer-based organizations, 2026). The second component is a cluster coordinator function bridging quality, logistics, and payment. This function, which could be fulfilled by Poktan leadership, village-owned enterprises (BUMDes), or a dedicated regional

coordination body, absorbs the aggregation, quality-standardization, and logistics functions currently performed informally, and extractively, by *tengkulak* intermediaries, but under a transparent, accountable structure with documented pricing; a recent normative-juridical analysis of BUMDes and village-cooperative synergy specifically within MBG's supply chain concludes that local governments already possess the constitutional authority to establish exactly this kind of institutional linkage between state procurement demand and village production capacity without new national legislation. The third component is a simplified, bidding-exempt procurement instrument at the SPPG level, analogous to PNAE's *Chamada Pública* (Public Call) mechanism, which would allow SPPG kitchen managers to contract directly with the cluster coordinator without the bureaucratic tendering burden that currently favors established, better-documented distributors over informal smallholder suppliers, and which would directly address the vendor-selection patronage risk documented in the Aceh Tenggara case.

This model does not require MBG's national budget architecture to change; rather, it proposes a procurement-channel reconfiguration within existing fiscal parameters, consistent with this paper's scope, which brackets political and macro-budgetary questions in favor of supply-chain governance design. It is also, notably, not a purely theoretical proposal transplanted from Brazil: each of its three components already exists in some form in Indonesian rural institutions today, Poktan, BUMDes, and district-level procurement discretion, which suggests that the primary barrier to implementation is coordination and codification rather than the absence of foundational institutional capacity.

5. CONCLUSION

5.1 Conclusion

This review set out to examine, through a synthesis of international and national literature, how principles of local value chain integration can inform smallholder-inclusive procurement governance within Indonesia's Free Nutritious Meal Program (MBG). The evidence assembled across the Findings and Discussion sections converges on a consistent conclusion: MBG possesses the fiscal scale, institutional infrastructure, and recurring institutional demand, expressed through 29,679 operational SPPG kitchens serving over 63 million beneficiaries, to generate a rural economic multiplier comparable to, or exceeding, that documented for Brazil's PNAE and for comparable home-grown school feeding programs in Kenya and Malawi. What the program currently lacks is not scale but architecture. The comparative evidence

from PNAE demonstrates that a codified minimum direct-procurement mandate, a simplified bidding-exempt contracting mechanism, and organized farmer-group aggregation are the specific structural conditions under which large public feeding budgets translate into measurable smallholder income gains, of the magnitude documented by Ipea's finding of 23% to 106% farmer income increases attributable to PNAE participation (Ipea, as cited in REDRAES, 2025), and the Malawian evidence extends this by showing that a stable institutional buyer also generates resilience benefits, extension access and farm-income share, that extend beyond income alone (Mainje et al., 2026).

In the absence of comparable structural conditions at the national level, MBG's procurement architecture remains unevenly effective, as the district-level evidence from Lebak, Aceh Tenggara, and Bengkulu demonstrates: genuine but partial farmer inclusion in one district, a documented patronage risk in another, and an encouraging but still exploratory positive correlation between MBG spending and farmer welfare indicators in a third. This unevenness is itself the central empirical finding of this review. It indicates that MBG's local economic multiplier is neither absent nor yet reliably realized; it is present in a form that varies with local institutional quality rather than being guaranteed by program design, a pattern this review has represented structurally through the contrast between the current fragmented chain and the proposed Direct Partnership (Production Cluster) Model. The central contribution of this paper, therefore, is not a claim about what is empirically occurring inside any single SPPG kitchen, but a literature-grounded conceptual diagnosis and design proposal: local value chain integration in MBG should be understood as a governance and procurement-channel problem, addressable within existing fiscal parameters and largely through institutions Indonesia already has, Poktan and BUMDes, rather than as a byproduct requiring additional budget allocation or entirely new bureaucratic structures.

5.2 Implications of the Study

Theoretically, this review contributes to the Short Food Supply Chain and food system resilience literatures by extending their application beyond the European and Latin American contexts in which they have predominantly been developed and tested, into the distinctive institutional setting of a rapidly scaling Southeast Asian public nutrition program. Where Renting et al. (2003) and Kneafsey et al. (2013) originally theorized SFSCs primarily in relation to consumer-facing alternative food networks and European rural development policy,

this paper demonstrates that the same analytical logic, the number and function of intermediary actors, and the degree of product-origin embeddedness, applies with equal explanatory power to institutional, business-to-government procurement contexts such as school and community feeding programs. This suggests that SFSC theory's utility is not confined to voluntary, consumer-driven alternative food movements but extends naturally to mandated or quasi-mandated institutional procurement, a context in which the short chain is not a niche market choice but a deliberate governance design decision imposed on a large-scale public buyer. Similarly, this review extends Tendall et al.'s (2015) food system resilience framework by illustrating that resilience at the level of a single institutional buyer, an individual SPPG kitchen's exposure to supply disruption, can be meaningfully theorized as a microcosm of the broader food system resilience concept, linking household- and unit-level operational continuity to the macro-level goal of national food security infrastructure. The district-level Indonesian evidence surveyed in this review, particularly the Aceh Tenggara finding that geographic locality alone does not guarantee equitable procurement, further suggests a refinement worth pursuing in future theoretical work: that SFSC theory's embeddedness criterion may need to be disaggregated into a geographic dimension, is the supplier local, and a governance dimension, is the selection process accountable, since the evidence assembled here shows these two dimensions can diverge within a single program. Future theoretical work could productively formalize this link between institutional-buyer-level resilience and national food system resilience as a distinct analytical layer within the broader Tendall et al. framework, particularly in contexts where a single public program constitutes as large and as geographically distributed a demand shock as MBG does within Indonesia's domestic food economy.

For policymakers within Badan Gizi Nasional (BGN) and affiliated ministries, this review's findings suggest that closing MBG's procurement governance gap need not await a comprehensive national budget restructuring; rather, the PNAE comparison indicates that a targeted regulatory instrument, a minimum smallholder direct-procurement share, paired with a simplified, bidding-exempt contracting mechanism analogous to Brazil's Public Call, could be piloted within the existing SPPG operational structure without requiring new appropriations. The scale of MBG's current kitchen network, already comparable in reach to PNAE's decades-mature system, suggests that Indonesia is not starting from an infrastructural deficit but from a governance-design deficit, which is a materially faster and less costly gap to close than a capacity-building one. For provincial and district-level agricultural agencies,

particularly in smallholder-dense regions such as Cianjur, the proposed Direct Partnership Model implies a practical role for existing *kelompok tani* institutions as the primary organizing unit for MBG engagement, suggesting that capacity-building investments would be more efficiently directed toward strengthening Poktan-level aggregation, quality-standardization, and logistics coordination capacity than toward parallel new institutional structures, consistent with recent Indonesian evidence that farmer-group participation improves productivity most reliably where institutional support is already present rather than absent. For SPPG kitchen managers themselves, the model implies that current informal reliance on intermediary suppliers, while operationally convenient in the short term, represents an unaddressed continuity risk that a formalized cluster-coordination arrangement would mitigate, aligning the interests of kitchen-level operational stability with the program's broader rural development objectives. The Aceh Tenggara evidence adds a further, more urgent policy implication: absent a standardized procurement mechanism, MBG's local sourcing is exposed not only to informal-intermediary risk but to political-capture risk at the vendor-selection stage, which strengthens the case for BUMDes-mediated procurement as a transparency safeguard rather than merely an efficiency measure. Finally, for the design of MBG's ongoing monitoring and evaluation architecture, this review's finding that no independently published national-level evidence yet quantifies MBG's own smallholder income or multiplier effects, in contrast to the multiple peer-reviewed and institutional studies available for PNAE and to Kenya's and Malawi's more established HGSF evaluation literatures, points to an immediate and low-cost policy opportunity: commissioning a structured impact evaluation modeled on the Ipea (2025) and Oliveira et al. (2025) methodologies, and informed by the exploratory regression approach already piloted in Bengkulu (Mursalin et al., 2026), would allow Indonesian policymakers to establish an evidentiary baseline against which future procurement-governance reforms, including the model proposed in this paper, could be rigorously assessed.

5.3 Limitations and Recommendations for Future Research

This review is subject to several limitations inherent to its narrative/critical literature review design. First, because the search and source-selection process was purposive rather than exhaustively systematic, this review does not claim comprehensive coverage of all existing literature on institutional food procurement or smallholder market integration; a formally protocol-registered systematic review would provide a more exhaustive evidentiary base,

though at the cost of the interpretive and comparative flexibility this design required. Second, the analysis relies substantially on secondary institutional, journalistic, and early-stage academic reporting for MBG-specific procurement conditions, given the program's launch in January 2025 and the correspondingly nascent state of peer-reviewed empirical research on its supply chain; this asymmetry, a rich, decade-deep empirical literature for PNAE against a rapidly growing but still predominantly descriptive and district-level literature for MBG, necessarily constrains the strength of direct causal claims this review can make about MBG's actual national-level procurement outcomes, and the discussion in the Findings and Discussion sections should accordingly be read as a theoretically and comparatively grounded diagnosis rather than a confirmed empirical finding. Third, the use of Cianjur as an illustrative contextual reference, drawn exclusively from secondary sources, means this review cannot speak to the specific operational variation that likely exists across MBG's nearly thirty thousand SPPG kitchens nationally; the district-level contrasts already visible between Lebak, Aceh Tenggara, and Bengkulu in this review's own corpus confirm that procurement conditions plausibly differ substantially between regions in ways this literature-based approach cannot fully capture or reconcile into a single national estimate.

Future research should therefore prioritize primary qualitative fieldwork, structured interviews and direct observation with SPPG kitchen managers, *kelompok tani* leadership, and intermediary actors across a purposively sampled set of districts including Cianjur, to empirically test the structural diagnosis this review has proposed on theoretical and comparative grounds. Complementary quantitative and spatial research, employing input-output or econometric modeling approaches comparable to Oliveira et al. (2025) and extending the exploratory regression framework piloted by Mursalin et al. (2026) to a nationally representative sample of provinces, would further allow Indonesian researchers to quantify MBG's actual smallholder income and employment multiplier effects, providing the missing empirical counterpart to the extensive PNAE evidence base surveyed in this review. Given the divergent district-level findings on procurement governance quality specifically, future work should also prioritize comparative case designs that pair a district with documented governance vulnerabilities, such as Aceh Tenggara, against one with documented institutional strength, in order to isolate which BUMDes and Poktan capacity factors most reliably predict equitable local procurement outcomes. Finally, future research could productively pilot and formally evaluate the proposed Direct Partnership (Production Cluster) Model in a small number of SPPG sites, generating the kind of before-after

or comparative evidence that would allow policymakers to assess the model's feasibility and impact prior to any broader national rollout.

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Declaration of Generative AI and AI-assisted Technologies in the Writing Process

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