

MBG expansion for vulnerable populations in Indonesia: Risk-based readiness across nutrition, safety, and rural implementation

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ABSTRACT

Indonesia's Free Nutritious Meal Program (Program Makan Bergizi Gratis, MBG) is rapidly expanding in scale, yet evidence on its readiness to serve older adults, persons with disabilities, and rural communities remains limited; this study provides a novel risk-based assessment of expansion readiness across nutritional, disability-specific, food-safety, and rural implementation domains. This study aimed to identify critical implementation gaps and propose a differentiated, phased framework for MBG expansion. A PRISMA-lite literature review was conducted using PubMed and Google Scholar and supplemented by national regulations, government guidelines, Badan Gizi Nasional technical documents, epidemiological surveillance data, and credible media monitoring. Thematic synthesis was undertaken using a risk-based policy framework. Since implementation began in January 2025, 16,109 MBG beneficiaries were reportedly affected by food-borne illness across 70 documented incidents by November 2025, indicating substantial food-safety vulnerabilities. Older adults comprise approximately 12% of Indonesia's population, with frailty affecting 26.8% in community settings, while approximately 6 million persons with moderate-to-severe disabilities require heterogeneous feeding adaptations. Rural communities face additional barriers involving cold-chain limitations and shortages of certified food handlers. MBG expansion therefore represents a high-consequence policy undertaking requiring beneficiary stratification, condition-specific nutritional and texture standards, strengthened food-safety systems, and outcome-based monitoring. A "Quality First, Scale Later" phased approach is essential to minimize preventable harm.

ABSTRAK

Program Makan Bergizi Gratis (MBG) di Indonesia berkembang dengan cepat dalam skala pelaksanaannya, namun bukti mengenai kesiapan program ini untuk melayani lanjut usia, penyandang disabilitas, dan masyarakat pedesaan masih terbatas; penelitian ini memberikan penilaian berbasis risiko yang baru mengenai kesiapan perluasan program pada aspek gizi, kebutuhan khusus disabilitas, keamanan pangan, dan implementasi di wilayah pedesaan. Penelitian ini bertujuan untuk mengidentifikasi kesenjangan kritis dalam pelaksanaan dan mengusulkan kerangka perluasan MBG yang terdiferensiasi dan bertahap. Tinjauan pustaka dengan pendekatan PRISMA-lite dilakukan menggunakan PubMed dan Google Scholar serta dilengkapi dengan peraturan nasional, pedoman pemerintah, dokumen teknis Badan Gizi Nasional, data surveilans epidemiologi, dan pemantauan media yang kredibel. Sintesis tematik dilakukan menggunakan kerangka kebijakan berbasis risiko. Sejak pelaksanaan dimulai pada Januari 2025, sebanyak 16.109 penerima manfaat MBG dilaporkan terdampak penyakit bawaan makanan dalam 70 insiden yang terdokumentasi hingga November 2025, yang menunjukkan adanya kerentanan yang cukup besar dalam aspek keamanan pangan. Lanjut usia mencakup sekitar 12% populasi Indonesia, dengan prevalensi frailty sebesar 26,8% pada kelompok yang tinggal di masyarakat, sementara sekitar 6 juta penyandang disabilitas sedang hingga berat memerlukan adaptasi pemberian makan yang beragam. Masyarakat pedesaan menghadapi hambatan tambahan berupa keterbatasan rantai dingin dan kekurangan penjamah makanan bersertifikat. Oleh karena itu, perluasan MBG merupakan kebijakan dengan konsekuensi besar yang memerlukan stratifikasi penerima manfaat, standar gizi dan tekstur makanan yang disesuaikan dengan kondisi, penguatan sistem keamanan pangan, serta pemantauan berbasis luaran. Pendekatan bertahap "Quality First, Scale Later" atau "Utamakan Mutu, Perluas Kemudian" sangat penting untuk meminimalkan dampak buruk yang dapat dicegah.

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INTRODUCTION

Indonesia is entering a critical phase of demographic and nutritional transition, characterized by rapid population ageing alongside persistent undernutrition, non-communicable diseases, and inequalities in access to health and nutrition services. In 2024, older adults accounted for approximately 12% of Indonesia's population, equivalent to around 34.5 million people, and this proportion is projected to increase substantially by 2050 (BPS-Statistics Indonesia, 2024; Asian Development Bank et al., 2024). This demographic transition has major implications for social protection and food-assistance policies because ageing is frequently accompanied by multimorbidity, frailty, declining functional capacity, reduced appetite, and increased vulnerability to malnutrition (Setiati et al., 2023; World Health Organization [WHO], 2015). Clinical nutrition guidelines therefore emphasize nutritional screening, adequate energy and protein intake, hydration, and individualized dietary management rather than uniform food provision for older populations (Bauer et al., 2013; Volkert et al., 2019).

Against this demographic transition, the Indonesian government introduced the Free Nutritious Meal Program (*Program Makan Bergizi Gratis* [MBG]), which began national implementation on 6 January 2025. The National Nutrition Agency (*Badan Gizi Nasional* [BGN]), established under Presidential Regulation No. 83 of 2024, provides the institutional foundation for the national implementation of the programme (Presiden Republik Indonesia, 2024). MBG was initially directed primarily toward school-age children, pregnant women, and breastfeeding mothers and implemented through *Satuan Pelayanan Pemenuhan Gizi* (SPPG) units on an unprecedented national scale (Center for Indonesia's Strategic Development Initiatives [CISDI], 2024; Pusat Data Ekonomi Pembangunan Indonesia [Bappenas], 2025). The continuing expansion of SPPG infrastructure demonstrates the programme's substantial operational reach (Tribatanews POLRI, 2026). Although this scale provides considerable potential for improving nutritional equity, expansion beyond the original target populations requires careful consideration of whether existing nutritional standards, food-production systems, distribution mechanisms, and safety safeguards are appropriate for beneficiaries with substantially different physiological and clinical needs.

Recent policy developments indicate a movement toward extending MBG-related nutrition assistance to older adults and persons with disabilities. In early 2026, the Ministry of Social Affairs and BGN discussed integrating existing food-assistance programmes for these groups into MBG (Liputan6.com, 2026). Subsequent reports indicated plans to reach approximately 300,000–400,000 older adults and around 36,000 persons with disabilities (Beritajatim.id, 2026; JakartaTerkini.id, 2026). Priority was expected to include particularly vulnerable older adults, especially individuals aged 75 years or older and those living alone (Tempo, 2026). Such expansion should not be regarded merely as an increase in programme coverage. Rather, it requires differentiated nutritional standards, beneficiary risk stratification, disability-responsive feeding mechanisms, stronger food-safety safeguards, and delivery systems adapted to geographic and health-service constraints.

Older adults require particularly careful nutritional planning because ageing is associated with heterogeneous energy requirements, declining muscle mass, chronic disease, medication use, reduced sensory function, dehydration, frailty, and increased risk of malnutrition. Evidence-based geriatric nutrition guidelines emphasize individualized nutritional assessment, adequate protein and energy intake, hydration, and modification of food consistency when functional limitations affect eating (Kementerian Kesehatan Republik Indonesia, 2020; Volkert et al., 2019). Adequate protein intake is particularly important for maintaining muscle mass and physical function in older populations (Bauer et al., 2013). These considerations are especially relevant in Indonesia, where frailty represents an important health concern among older adults (Setiati et al., 2023).

Persons with disabilities similarly constitute a highly heterogeneous population whose nutritional needs cannot be addressed through a uniform meal-delivery model. Depending on the nature and severity of disability, individuals may face barriers related to food access, communication, self-feeding, meal preparation, caregiver dependence, and health-service utilization (Marlina et al., 2024; United Nations in Indonesia, 2021). Neurological and physical impairments may also affect

chewing or swallowing and require feeding assistance or modification of food texture and consistency. Consequently, standardized meal packages designed primarily for healthy school-age populations cannot automatically be assumed to be nutritionally, functionally, or clinically appropriate for older adults and persons with disabilities. A differentiated approach is therefore required to ensure that programme expansion does not unintentionally increase nutritional or feeding-related risks.

Food safety represents another critical dimension of MBG expansion readiness. During the rapid scale-up of the programme in 2025, multiple food-poisoning incidents affecting large numbers of beneficiaries were reported across Indonesia (Food Safety News, 2025; Kompas.id, 2025; Universitas Gadjah Mada, 2025a, 2025b). Reports from BGN indicated that some incidents were associated with failures of SPPG units to comply adequately with established standard operating procedures (ANTARA News, 2025). Subsequent analyses also raised concerns regarding whether food-safety requirements were being implemented substantively rather than merely fulfilled administratively (Nugroho et al., 2026). These incidents indicate that food safety must be considered a central component of programme quality rather than a secondary operational issue.

The consequences of food-safety failures may become substantially more serious when MBG is expanded to older adults, persons with disabilities, and individuals with chronic illnesses. Vulnerable populations may experience more severe outcomes from foodborne diseases because of reduced physiological reserve, underlying disease, and compromised immune function (Food and Agriculture Organization of the United Nations & WHO, 2020; WHO, 2023). The global burden of foodborne illness further demonstrates that bacterial, viral, and protozoal foodborne diseases remain important causes of morbidity and mortality (Kirk et al., 2015). Indonesian food-service guidelines likewise emphasize hygienic food preparation, appropriate storage, transportation, temperature control, and prevention of contamination throughout the food-service chain (Kementerian Kesehatan Republik Indonesia, 2022). These requirements may be particularly challenging in rural and remote settings where long transport distances, limited cold-chain capacity, inadequate water and sanitation infrastructure, workforce constraints, and delayed access to health services can amplify both the probability and consequences of food-safety failures.

Despite the rapid development of MBG, much of the public and policy discussion has focused on programme coverage, infrastructure, beneficiary numbers, budgetary requirements, and logistical expansion (Bappenas, 2025; CISDI, 2024). Comparatively less attention has been directed toward whether a common operational model can safely accommodate the distinct nutritional, functional, and clinical profiles of older adults, persons with disabilities, and geographically underserved populations. Recent food-poisoning incidents and concerns regarding programme oversight further demonstrate that expansion readiness should be evaluated not only according to the number of SPPG units or beneficiaries served, but also according to food-safety compliance, nutritional appropriateness, beneficiary vulnerability, and the capacity to prevent serious adverse outcomes (ANTARA News, 2025; Universitas Muhammadiyah Surakarta, 2025; Universitas Gadjah Mada, 2025b).

This study addresses this gap through a risk-based policy analysis integrating nutritional complexity, disability-specific feeding requirements, food-safety risks, and rural implementation constraints. Its novelty lies in conceptualizing MBG expansion not simply as a logistical challenge, but as a differentiated public health intervention in which beneficiary vulnerability modifies both the likelihood and consequences of implementation failure. Accordingly, this study aimed to assess the readiness of MBG expansion from an evidence-based and risk-informed perspective, identify critical nutritional, operational, and food-safety gaps, and propose a differentiated and phased framework for expanding MBG to older adults, persons with disabilities, and rural communities in Indonesia.

METHODS

Study Design

This study employed a conceptual policy analysis framework, integrating a PRISMA-lite systematic literature review with real-world surveillance data and policy document analysis (see [Table 1](#)). The framework is structured along a risk-based policy lens to assess both the potential benefits and foreseeable harms of MBG expansion.

Table 1
PRISMA-Lite Flow

Stage	Process	Records (n)
Identification	Database search (PubMed, Google Scholar)	85
	Policy documents (BGN, Kemenkes, Kemensos, Bappenas)	18
Screening	After duplicate removal	78
	Screened by title and abstract	78
	Excluded (off-topic or irrelevant scope)	44
Eligibility	Full-text assessed	34
	Excluded (lack of focus on safety, feeding, or vulnerability)	12
Included	Final sources in thematic synthesis	22

Data Sources and Search Strategy

Literature was systematically identified through PubMed and Google Scholar. Keywords included: elderly nutrition, sarcopenia, dysphagia, disability feeding program, food safety vulnerable populations, public feeding programs, foodborne disease elderly, rural food systems, large-scale school feeding programs, and MBG Indonesia. Policy documents reviewed included: Presidential Regulation No. 83 of 2024; BGN Technical Guidelines (Juknis MBG 2025); Kemenkes guidelines on elderly nutrition (2020) and food safety (2022); Kemensos permakanaan programme documentation; and Bappenas MBG programme evaluations. National epidemiological data from BPS Statistics Indonesia 2024, the Indonesian Health Survey (SKI) 2023, and media monitoring from accredited national news sources (Antara, Tempo, Kompas, Liputan6) were incorporated to contextualise implementation realities (see Table 2).

Table 2
Inclusion and Exclusion Criteria

Inclusion Criteria	Exclusion Criteria
Published 2010–2025	Opinion pieces without data
English or Indonesian language	Studies exclusively on paediatric populations
Addresses nutrition, disability, food safety, or public feeding	Grey literature from non-credible sources
Relevant to policy or large-scale implementation contexts	Studies without methodological transparency
Indonesian context or directly transferable international evidence	Duplicate records

Thematic Synthesis

Selected literature was analysed thematically using a risk-based policy lens adapted from the WHO Health Risk Assessment framework. Findings were mapped across four analytic domains: (1) nutritional complexity and stratification; (2) heterogeneity of persons with disabilities; (3) food safety risks; and (4) rural implementation challenges. Each domain was assessed along three axes: evidence of risk, current programme readiness, and mitigation feasibility.

RESULTS AND DISCUSSION

Programme Context and Current Implementation Baseline

Since its national launch in January 2025, the Free Nutritious Meal Program (*Program Makan Bergizi Gratis* [MBG]) has undergone rapid expansion accompanied by substantial operational challenges. By April 2026, approximately 27,000 *Satuan Pelayanan Pemenuhan Gizi* (SPPG) units had reportedly been established nationwide, serving more than 55 million beneficiaries (Tribatanews POLRI, 2026). Although this represents a major administrative achievement, rapid scale-up has also exposed persistent weaknesses in food-safety management that are particularly relevant to future programme expansion.

Food-poisoning incidents emerged shortly after programme implementation and increased substantially throughout 2025. By 30 September 2025, the National Nutrition Agency (*Badan Gizi*

Nasional [BGN]) had recorded 70 incidents involving 6,456 beneficiaries (ANTARA News, 2025). Subsequent reports indicated that the number of affected individuals continued to increase, attracting considerable public and policy concern regarding the safety of large-scale meal production and distribution (Food Safety News, 2025; Wikipedia contributors, 2026). Laboratory investigations of major incidents in Sleman and Lebong identified bacterial contamination involving *Escherichia coli*, *Clostridium* spp., and *Staphylococcus aureus*, highlighting failures in food preparation, storage, or handling processes (Universitas Gadjah Mada, 2025).

BGN identified non-compliance with standard operating procedures as an important contributor to several food-poisoning incidents. Reported problems included purchasing ingredients several days before preparation, prolonged intervals between cooking and distribution, inadequate hand hygiene and personal protective equipment, inappropriate food storage, and improper handling of food ingredients (ANTARA News, 2025). Analyses of MBG food-safety implementation have similarly highlighted weaknesses in basic hygiene practices and inconsistent adherence to established safety requirements (Nugroho et al., 2026).

Concerns regarding regulatory compliance were further reinforced by the incomplete adoption of the required Sanitation Hygiene Feasibility Certificate (*Sertifikat Laik Higiene Sanitasi* [SLHS]) among operational SPPG units. Reports in late 2025 indicated that thousands of SPPG units had not yet completed the certification process despite its importance for ensuring minimum food-service hygiene standards (Kompas.id, 2025). These findings suggest that expansion of programme coverage has progressed more rapidly than standardization of food-safety capacity.

This operational baseline is particularly important when considering expansion to older adults and other medically vulnerable populations. Older adults frequently experience immunosenescence, multimorbidity, frailty, and reduced physiological reserve, which may increase the severity of adverse outcomes following foodborne illness. Consequently, expansion of MBG to vulnerable populations should be preceded by stronger food-safety compliance, systematic surveillance, and risk-based quality assurance rather than relying primarily on increases in production capacity or beneficiary coverage.

Nutritional Complexity and Stratification for Older Adults

Indonesia's older population is increasing rapidly. In 2024, approximately 34.5 million Indonesians, or around 12% of the population, were aged 60 years or older, and the proportion is expected to increase substantially over the coming decades (BPS-Statistics Indonesia, 2024; Asian Development Bank et al., 2024). This demographic shift is accompanied by a high burden of frailty. A systematic review and meta-analysis reported a pooled frailty prevalence of 26.8% among community-dwelling older Indonesians and 37.9% among nursing-home residents, while pre-frailty affected a substantial proportion of community-dwelling older adults (Setiati et al., 2023). These findings indicate considerable heterogeneity in functional and nutritional requirements within the older population.

Protein requirements illustrate why a uniform meal model may be inappropriate for this group. Evidence-based recommendations generally suggest approximately 1.0–1.2 g of protein/kg body weight/day for healthy older adults and 1.2–1.5 g/kg/day for those with acute or chronic illness or increased nutritional risk. Higher intakes may be required in selected severely ill or injured patients (Bauer et al., 2013; Volkert et al., 2019). Therefore, meal portions developed primarily for school-age populations may not adequately address the protein requirements of frail or nutritionally vulnerable older adults.

Nutritional complexity extends beyond protein. Ageing is associated with reduced appetite, altered sensory perception, chronic disease, medication use, dehydration risk, and changes in gastrointestinal function. Older adults may also require individualized dietary modification according to conditions such as hypertension, diabetes, cardiovascular disease, renal impairment, or malnutrition. Geriatric nutrition guidelines consequently emphasize nutritional screening and individualized provision of energy, protein, fluids, and micronutrients rather than standardized dietary prescriptions (Volkert et al., 2019).

Swallowing impairment represents an additional concern. Dysphagia occurs in a substantial proportion of older adults and is particularly common among individuals living in institutional settings or experiencing neurological and functional impairment (Volkert et al., 2019). For affected beneficiaries, inappropriate food texture may increase the risk of choking, aspiration, inadequate dietary intake, and subsequent malnutrition. MBG expansion to older populations should therefore incorporate screening for feeding and swallowing difficulties and provide appropriate texture-modified meals when clinically indicated.

Taken together, these findings indicate that chronological age alone is insufficient for determining appropriate MBG provision. Older beneficiaries should instead be stratified according to nutritional status, frailty, functional capacity, chronic disease, and feeding ability. Such stratification would allow MBG to move from a uniform food-distribution model toward a differentiated nutritional intervention capable of addressing the heterogeneous health needs of Indonesia's ageing population (see Table 3).

Table 3
Nutritional Risk Profile for MBG Expansion to Older Adults

Nutritional Risk Factor	Prevalence in Indonesian Elderly	MBG Standard Menu Risk	Recommended Mitigation
Sarcopenia / Frailty	Frailty 26.8%; Pre-frailty 55.5% [15]	High (insufficient protein)	Protein-enriched portions (1.0–1.5 g/kg BW/day)
Dysphagia	15–68% depending on setting	Critical (aspiration risk)	IDDSI texture-modified diets
Polypharmacy / drug-nutrient interactions	~80% of elderly on ≥5 medications	Moderate (sodium, potassium, vitamin K)	Menu review by clinical dietitian
Hypertension / cardiovascular disease	>60% among aged ≥60 (Risksdas 2018)	High (sodium content)	Sodium-restricted menu track
Diabetes mellitus	~20% in older adults (SKI 2023)	High (simple carbohydrate load)	Low-glycaemic index menu track

Disability-Specific Nutritional and Feeding Requirements

Persons with disabilities represent a substantial and heterogeneous population in Indonesia. Approximately 2.1% of the national population, or around 6 million people, are estimated to have moderate-to-severe disabilities, with mobility and visual impairments among the most commonly reported categories (Marlina et al., 2024). When broader functional limitations are considered using Washington Group-based criteria, the proportion of people experiencing some form of functional difficulty is considerably higher (United Nations in Indonesia, 2021). These figures indicate that disability-related nutritional assistance must accommodate a wide range of functional capacities rather than apply a single standardized approach.

Disability is not a homogeneous condition. Individuals with cerebral palsy, post-stroke conditions, or progressive neurological disorders may experience impaired chewing or swallowing and require assisted feeding. Persons with intellectual or developmental disabilities may have difficulty communicating food preferences, discomfort, or adverse reactions, while those with sensory impairments may require additional assistance during meal provision. Dependence on caregivers may therefore substantially influence whether food can be consumed safely and adequately.

The proposed MBG expansion targeting approximately 36,000 persons with disabilities and incorporating caregiver assistance represents an initial recognition of these differentiated needs (JakartaTerkini.id, 2026). However, the effectiveness of caregiver-assisted feeding depends on appropriate competency, particularly for beneficiaries with swallowing or functional limitations. Guidance for vulnerable populations emphasizes the importance of individualized assessment and appropriate food-handling and feeding practices rather than assuming that identical food provision is suitable for all recipients (Food and Agriculture Organization of the United Nations & World Health Organization [WHO], 2020).

Accordingly, MBG expansion to persons with disabilities should incorporate functional assessment before enrolment, including classification of feeding independence and assistance

requirements. Beneficiaries may be categorized as independently feeding, requiring partial assistance, or fully dependent on caregiver support. For individuals with swallowing impairment, additional assessment and appropriately modified food consistency may also be required. Without such stratification and caregiver preparation, standardized food distribution may increase the risks of inadequate intake, choking, aspiration, or failure to meet individual nutritional needs.

Food-Safety Risks and Differential Vulnerability of Expansion Populations

Food-safety risk is not distributed equally across population groups. Older adults and individuals with chronic illness or impaired immune function are particularly vulnerable to severe outcomes from foodborne disease because ageing and underlying health conditions can reduce physiological and immune resilience (WHO, 2023). Consequently, an exposure that produces self-limiting gastrointestinal illness in a healthy younger person may result in more serious complications, hospitalization, or death among vulnerable beneficiaries.

The global burden of foodborne disease demonstrates the importance of considering both exposure and host vulnerability. Foodborne bacterial, viral, and protozoal infections contribute substantially to morbidity and mortality worldwide, with severe disease occurring disproportionately among vulnerable population groups (Kirk et al., 2015). WHO similarly identifies older adults and immunocompromised individuals as groups requiring particular attention in food-safety prevention and risk communication (WHO, 2023).

This vulnerability is especially important in the context of the MBG food-safety problems. Reported incidents have involved bacterial contamination and operational failures related to food preparation, storage, distribution time, and hygiene practices. Such failures may have more serious consequences when meals are distributed to older adults, persons with disabilities, and individuals with chronic diseases than when they occur among generally healthy school-age populations.

Temperature control, prevention of cross-contamination, appropriate ingredient storage, personal hygiene, and timely distribution are therefore critical safeguards for programme expansion. Food-safety guidance for vulnerable populations emphasizes the need for stricter preventive measures throughout the food chain because these groups have less physiological capacity to tolerate foodborne infection (Food and Agriculture Organization of the United Nations & WHO, 2020; WHO, 2023).

Table 4
Comparative Food Safety Risk Between Current and Proposed MBG Beneficiary Populations

Risk Parameter	Current MBG (Children)	Proposed Expansion (Elderly / PwD / Rural)
Immune competence	Intact; low mortality risk	Significantly impaired; high mortality risk
Listeria case-fatality rate	<1%	20–30% in elderly [22]
Salmonella bacteraemia risk	Baseline	3–10x elevated in elderly [21]
Co-morbidity interaction with infection	Rare	Common (diabetes, heart failure, CKD)
Access to emergency healthcare	School clinic or nearby hospital	Frequently limited, especially in rural areas
Aspiration / choking risk from temperature-abused food	Low	High (dysphagia prevalence in elderly and PwD)

Accordingly, MBG expansion should not rely solely on the same food-safety controls applied to lower-risk beneficiaries (see Table 4). A risk-based model should classify older adults, medically vulnerable persons, and selected persons with disabilities as priority groups requiring strengthened food-safety monitoring, stricter temperature and distribution controls, validated hygiene compliance,

and rapid response mechanisms when suspected foodborne illness occurs. The implications of food-safety failure are potentially greater in these groups; therefore, expansion readiness should be evaluated not only by production capacity but also by the ability of SPPG units to consistently protect high-risk beneficiaries.

Implementation Challenges in Rural Communities

Rural communities in Indonesia face structural barriers that may complicate safe and equitable MBG delivery. The current model relies largely on centralized food production through *Satuan Pelayanan Pemenuhan Gizi* (SPPG) units serving multiple delivery points. Although this approach may function efficiently in densely populated areas, longer travel distances, limited road infrastructure, and dispersed settlements can create additional challenges in rural settings.

Extended transportation time may increase the risk of food being held outside safe temperature ranges before consumption. This concern is particularly important where insulated transport, refrigeration, or reheating facilities are unavailable. Previous MBG food-safety incidents have demonstrated the consequences of prolonged intervals between food preparation and distribution and inadequate adherence to established food-handling procedures (ANTARA News, 2025; Nugroho et al., 2026). In rural areas, such risks may be compounded by slower access to emergency medical services when foodborne illness occurs.

Food-handler competency and local oversight represent additional challenges. Analyses of MBG implementation have identified weaknesses in hygiene practices, food storage, and compliance with safety procedures, while also highlighting limited involvement of local health authorities in programme planning and monitoring in some regions (Nugroho et al., 2026). These gaps are particularly important in rural settings, where trained personnel, food-safety certification, laboratory support, and routine supervision may be less readily available.

For older adults and persons with disabilities, rural implementation creates an additional layer of vulnerability because nutritional and food-safety risks intersect with geographic barriers to health care. A foodborne illness affecting an older person with multimorbidity or reduced physiological reserve may become more difficult to manage when referral facilities are distant or emergency transportation is limited.

International experience with school-feeding programmes suggests that locally adapted and community-based food-service models can strengthen programme feasibility by shortening supply chains, supporting local food systems, and improving responsiveness to community conditions (Bundy et al., 2018). For rural MBG expansion, decentralized or community-level food preparation may therefore warrant consideration where centralized distribution cannot consistently meet food-safety and delivery requirements.

Accordingly, rural MBG expansion should be adapted to local geographic and infrastructure conditions rather than applying a uniform national delivery model. Potential safeguards include shorter delivery distances, stronger involvement of district health offices, improved food-handler training and certification, appropriate temperature-control systems, and contingency mechanisms for foodborne illness. Such adaptations are essential to ensure that geographic expansion does not increase health risks among already vulnerable rural beneficiaries.

Critical Policy Gaps Identified

The synthesis above reveals several structured policy gaps that must be addressed before expanding the MBG program. First, the current MBG framework does not yet include beneficiary stratification based on functional capacity, dysphagia screening, classification of dietary needs, or condition-specific menu pathways for older adults and persons with disabilities. Second, existing food-safety standards remain insufficient for vulnerable populations because current SPPG standard operating procedures were primarily developed with school-age children as the reference population, requiring pathogen risk thresholds, temperature standards, and contamination control protocols to be adjusted for immunocompromised beneficiaries. Third, the proposed caregiver-assisted delivery model is not yet supported by standardized competency requirements, particularly

in dysphagia management, safe feeding positions, and recognition of adverse events. Fourth, rural areas continue to face infrastructure limitations, including inadequate cold-chain logistics, shortages of certified food handlers, and weak integration with local health offices. Finally, the current MBG monitoring framework remains focused largely on administrative outputs, such as the number of SPPGs established and portions distributed, rather than health outcomes such as improvements in nutritional status, incidence of food-borne illness, and hospitalization rates.

Recommendations

The expansion of MBG to older adults, persons with disabilities, and rural communities is a morally legitimate and socially necessary policy direction. However, the evidence reviewed in this analysis demonstrates that such expansion, if conducted under the current operational model without targeted upgrading, risks transitioning MBG from a public health asset to a source of preventable morbidity and mortality in Indonesia's most vulnerable populations.

The programme's existing food-safety trajectory — 16,109 food-poisoning victims in ten months among children, driven by systematic SOP non-compliance — provides a direct and quantitative warning of what an equivalent failure rate would mean in a population for whom *Listeria*, *Salmonella*, and *Staphylococcal* toxins carry 20–30% case-fatality rates. Indonesia cannot scale risk alongside scale of coverage. Five strategic recommendations are showed in [Table 5](#).

Table 5
Strategic recommendations

#	Recommendation	Rationale	Responsible Actor
1	Quality First, Scale Later	Document food-safety compliance in ≥90% of SPPG units before any expansion to new beneficiary groups	BGN, Tim Koordinasi MBG
2	Beneficiary Stratification System	Mandatory functional assessment (dysphagia screening, dietary needs, co-morbidity profiling) for all elderly and disabled beneficiaries prior to enrolment	Kemensos, Kemenkes, BGN
3	Differentiated Menu and Texture Standards	Develop IDDSI-compliant texture-modified diets; condition-specific nutritional tracks (high-protein, low-sodium, low-glycaemic); clinical dietitian oversight at regional level	Kemenkes, BGN Technical Team
4	Caregiver Competency Certification	Standardise caregiver training to include dysphagia management, safe swallowing positioning, adverse event recognition, and food-hygiene handling	Kemensos, Poltekkes, Dinas Sosial
5	Rural-Adapted Decentralised Service Model	Pilot community-based kitchen model (<i>juru masak desa</i>) for rural areas; integrate dinas kesehatan daerah into SPPG oversight; strengthen cold-chain requirements	BGN, Pemda, Kemenkes

Ultimately, the principle of *primum non nocere* — first, do no harm — must guide MBG expansion planning. The ambition to nourish Indonesia's most vulnerable populations is admirable. The obligation is to do so safely.

CONCLUSION

Expansion of the Free Nutritious Meal Program (MBG) to older adults, persons with disabilities, and rural communities is socially justified and potentially transformative. However, this analysis indicates that expansion under the current operational model, without targeted strengthening, could expose vulnerable beneficiaries to preventable nutritional and food-safety risks. Existing food-poisoning incidents within MBG implementation highlight the urgency of improving compliance, surveillance, and accountability before coverage is expanded. A risk-informed approach should therefore prioritize quality before scale, mandatory beneficiary stratification, differentiated menus and texture-modified diets, caregiver competency training, rural-adapted decentralized service models, and outcome-based monitoring. Programme performance indicators should move beyond

administrative coverage toward measurable health outcomes, including nutritional status, foodborne illness incidence, and hospitalization. Future implementation should be phased and supported by stronger coordination among BGN, the Ministry of Health, the Ministry of Social Affairs, local governments, Bappenas, and BPS. Ultimately, the principle of *primum non nocere* should guide MBG expansion so that broader nutritional protection is achieved without increasing preventable harm among Indonesia's most vulnerable populations.

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AUTHORS' CONTRIBUTION

Dicky Budiman conceived and designed the study, developed the research methodology, interpreted the findings, and prepared the original manuscript. Cordia Chu contributed to critically reviewed and revised the manuscript for important intellectual content. Both authors read and approved the final version of the manuscript.

COMPETING INTEREST

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