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Implementation of The Free Nutritious Meal Program (MBG) in Support of SDGs Points 3 & 4 in Jayapura City

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Abstract: This article analyzes the implementation of the Free Nutritious Meals (MBG) Program to support the achievement of Sustainable Development Goals (SDGs) Points 3 (Healthy and Prosperous Life) and Point 4 (Quality Education) in Jayapura City. The MBG Program is a local government policy focused on meeting the nutritional needs of students to improve health and support the learning process. This study used a qualitative literature review approach, drawing on books, government publications, research findings, and published articles. The results highlight that the MBG program has been well implemented in Jayapura City and has had a positive impact on improving student nutritional status, as well as school attendance and concentration. These results support the achievement of SDGs Points 3 and 4. However, several challenges remain in its implementation, such as budget constraints, uneven food distribution, and a lack of supporting infrastructure. Therefore, improved coordination between sectors, increased resource allocation, and ongoing evaluation are needed to ensure the program's effectiveness.

Keyword: Free Nutritional Meal Program (MBG), SDGs, Health, Education, Jayapura City

INTRODUCTION

The Free Nutritious Meals (MBG) program was launched as a strategic national initiative aimed at addressing nutrition issues and improving the quality of human resources in Indonesia, particularly for school children and toddlers. The program is designed not simply as food aid but also as a crucial investment in human resource development, directly linked to the achievement of the Golden Indonesia 2045 vision (Albaburrahim et al., 2025). The MBG program is a key focus, particularly in areas with complex geographic and socioeconomic conditions, such as Jayapura City, Papua Province. Jayapura City, which serves as a gateway and economic hub for eastern Indonesia, is facing dual nutrition challenges, including chronic undernutrition (stunting) and overnutrition, both of which require a coordinated approach. Careful evaluation of the MBG program in this area is essential to determine how it can be optimized to support the two main focuses of the Sustainable Development Goals (SDGs): Point 3 on Health and Well-Being and Point 4 on Quality Education. The program's success in

Jayapura City will be an important benchmark for the implementation of MBG throughout Eastern Indonesia.

The presence of MBG can address the problem of stunting. Stunting, or poor nutrition, is an issue that occurs in various countries, both in low-income, developing, and developed countries (Amalia et al., 2024). Nutrition plays a crucial role in the growth and development process, contributing to improving the quality of human resources. Providing appropriate nutritional intake will help individuals reach their potential (Rachmadhita et al., 2025). According to data on stunting management based on information from the Jayapura City DP3KB in 2023, 851 children, or 12.10% of the total 7,024 children studied, experienced stunting (Ardiles, 2023). The most cases were found in the Argapura and Ardipura sub-districts of South Jayapura District, which were then designated as the primary focus for stunting management.



Source: DP3KB Jayapura City, 2023 Indonesian Nutritional Status Survey (SSGI)

Figure 1. Comparative Stunting Data in Jayapura City

Based on the comparative chart of stunting prevalence across districts in Jayapura City in 2023, South Jayapura District recorded the highest proportion at 33.3%, indicating that this area is a key location for stunting mitigation. Abepura District ranked second with a proportion of 25.0%. Meanwhile, North Jayapura and Muara Tami Districts each had proportions of 16.7% and were categorized as moderate. Heram District recorded the lowest proportion at 8.3%. This data serves as a reference in determining priority areas for the implementation of the Nutritious Meal Program (MBG) as a nutritional intervention measure that supports the achievement of SDGs points 3 and 4 in Jayapura City. Nutrition issues in Jayapura are further complicated by access and economic factors. The availability of diverse and nutritious foods is often hindered by high transportation costs, which leads to decreased purchasing power for vulnerable communities. It is hoped that the MBG Program can function as a nutritional safety net, so that children from low-income families continue to obtain adequate calories and micronutrients, without being affected by changes in market prices or family economic conditions. Furthermore, increased education on nutrition and healthy eating patterns is still urgently needed in schools and families. The free meal program should be accompanied by a comprehensive behavior change campaign. The implementation of the MBG (National Food Program) should be understood as an opportunity to raise awareness about the importance of a balanced diet, not simply to address hunger. The Jayapura City Government needs to collaborate closely with the health and education offices to identify priority areas. Appropriate targeting, especially in schools in remote areas or those with a low Human Development Index (HDI), will increase the effectiveness of the MBG budget. This collaboration is crucial to ensure that the food provided meets the specific nutritional needs of Papuan children.

The implementation of the MBG requires adapting mechanisms to suit the local context, particularly in procurement and distribution. Unlike in western Indonesia, Jayapura faces

challenges in infrastructure and supply chains that can slow or drastically increase program operational costs. Therefore, the implementation strategy needs to emphasize decentralization and local economic empowerment. The first step in the implementation mechanism is establishing nutritional menu standards that align with locally available and nutritious foods, such as sago, cassava, and sea fish. This determination process should involve local nutritionists to ensure that each meal provides sufficient daily calories and contains essential micronutrients necessary for children's cognitive and physical development. Food quality should be prioritized, not just quantity. Another important aspect is the food procurement system. Local governments are advised to prioritize purchasing from Micro, Small, and Medium Enterprises (MSMEs) and local farmers around Jayapura. This approach not only ensures food freshness but also provides an economic boost to the local community, creating a sustainable positive impact. However, the procurement process must be transparent and meet strict hygiene standards, given that the food prepared will be consumed by children. Distribution logistics is a major challenge, especially for schools located in remote areas or those accessible only by difficult land or sea routes. A dedicated logistics team at the village or district level is needed to ensure food is delivered on time and in good condition. Strict temperature and hygiene monitoring systems must be implemented from the central kitchen (if using a centralized catering system) to the students' dining tables.

Achieving Sustainable Development Goal (SDG) Point 4, which emphasizes the importance of inclusive and quality education, is highly dependent on students' physical and mental well-being. In Jayapura City, the MBG program serves as a catalyst that addresses various biological barriers that often hinder children's effective learning. Children who experience hunger or malnutrition are unable to fully absorb lessons, making the MBG program a crucial factor in improving the quality of education. The direct impact of the MBG on education can be seen in increased student attendance. For many low-income families, the assurance of receiving a free, nutritious meal at school can be a strong motivation to regularly send their children to school. This program helps reduce the number of absences caused by nutrition-related health problems or because children have to work to earn a living, thereby increasing effective learning time. From a cognitive perspective, adequate nutritional intake, especially protein and iron, is crucial for brain development and memory. Different studies have shown that children who receive a nutritious breakfast or lunch have better concentration and higher problem-solving skills in the classroom. The MBG program in Jayapura fundamentally supports the learning process, enabling teachers to teach more effectively because students are physically and mentally prepared to receive information. Furthermore, the MBG program creates a more positive and inclusive school environment. When all students receive the same meals, the likelihood of discrimination or shame based on economic circumstances is reduced. This promotes equality in the learning environment, aligning with the principle of inclusivity in SDG Point 4. The program can also be aligned with the school curriculum, used as a practical educational tool to emphasize the importance of hygiene, etiquette, and healthy eating habits, thereby strengthening overall educational outcomes.

Thus, the MBG program in Jayapura is a multifaceted strategic policy effort with significant potential to be a key driver in achieving SDG Points 3 (Health) and 4 (Education) of the Sustainable Development Goals (SDGs). This initiative directly addresses fundamental child health issues, such as malnutrition and anemia, which have been major barriers to improving the quality of human resources in the region. The successful implementation of the MBG in Jayapura depends heavily on adapting logistics mechanisms sensitive to local conditions and strengthening the supply chain, which involves local micro, small, and medium enterprises (MSMEs). By ensuring quality nutrition and timely distribution, the MBG can improve students' learning readiness, reduce absenteeism, and ultimately, improve the overall quality of education. This program serves as a link between good health and optimal educational outcomes. Despite significant challenges in terms of logistics and long-term

financing, the Jayapura City Government has an opportunity to establish the MBG as a model for sustainability through cross-sectoral integration and accurate data monitoring. By prioritizing health and education indicators, the program is expected to have a significant positive impact, ensuring that children in Jayapura receive an equitable and healthy start, in line with global commitments to sustainable development.

Therefore, this paper will analyze the implementation of the MBG program, a national program implemented in Jayapura City, to promote nutritional health and quality education. The implementation of the MBG is a powerful public policy initiative that seeks to address various forms of vulnerability experienced by the community, particularly vulnerable groups. This program is not just providing daily calories, but rather a planned approach that clearly aims to support the achievement of the Sustainable Development Goals (SDGs), especially the third point that focuses on health and well-being, and the fourth point related to quality education. A comprehensive review of the implementation of MBG in the region shows a close relationship between local nutrition interventions and the framework of human security theory. Human security theory emphasizes the eradication of hunger and improving the quality of life to support Sustainable Development Goals point 3 (Good Health and Well-being) and point 4 (Quality Education). This concept of Human Security highlights that security is more than just a state affair, but also focuses on the individual, especially related to the right to food, health, and education.

METHOD

This research uses a qualitative method with a literature study as the data collection method. Qualitative research is a type of research that emphasizes context and a scientific approach and is carried out by researchers who focus on these scientific aspects (Capah et al., 2023). Research methods are always closely related to data collection methods. The data processing process in this article uses a literature study approach. (Arditya, 2024) states that literature study is an analysis of hypotheses, references, and other scientific works related to the norms, culture, and values that emerge in the social context being studied. This research analysis will focus on the implementation of the MBG program in supporting SDGs 3 and 4 in Jayapura City, regarding the increase in stunting rates in children. The literature data collected comes from scientific articles related to the MBG Program, Health and Education in Jayapura City, stunting/malnutrition and SDGs, as well as official documents from mass media/online social media. Thus, the data obtained is analyzed using human security theory.

RESULTS AND DISCUSSION

As part of the planned national development, Jayapura has been selected as the primary city for the implementation of several major projects, one of which is the MBG program. Jayapura City is the primary location for the Free Nutritional Meal Program in Papua, with the goal of reaching tens of thousands of students by the end of 2025. The city's primary goal is to establish nutrition kitchens (SPPG), strengthen intersectoral collaboration, and serve as a model of good practice for other districts in Papua. The establishment of the Nutrition Fulfillment Service Unit (SPPG) in Jayapura City arose in response to the urgent need to consolidate efforts to address nutrition issues previously scattered across various sectoral programs under the Health Office. The primary rationale for establishing the SPPG was based on evaluation findings showing that although immunization coverage and treatment of acute malnutrition had increased, stunting rates among children under five remained at alarming levels, necessitating a dedicated unit with clear responsibilities and focus. Thus, the city government, through internal regulations, designated the SPPG as the institution fully responsible for strategic planning, cross-sectoral coordination, and quality control of all nutrition interventions in its operational area. This establishment aligns with the central

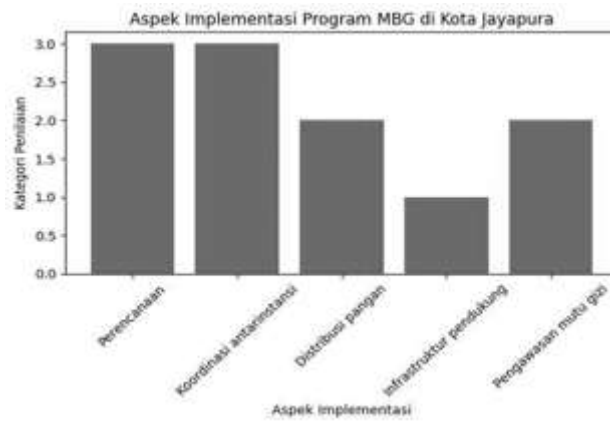
government's efforts to strengthen service units at the regional level to achieve the Sustainable Development Goals (SDGs).

The implementation of a program like this faces numerous geographical and logistical challenges, given the topography and diverse social backgrounds in Papua. Therefore, the implementation process requires careful planning, from policy formulation to community-level food distribution. The program's success is measured not only by the quantity of food distributed, but also by its long-term impact on the health and well-being of beneficiaries. A key focus is the sustainability and transparency of the management of public funds allocated for this crucial activity. The implementation process involves close collaboration between relevant agencies, catering service providers or soup kitchens, and civil society organizations familiar with the social conditions on the ground. An in-depth study of how these mechanisms operate is crucial to understanding how a large city in eastern Indonesia efficiently implements a large-scale food aid program.

Institutionally, the MBG in Jayapura is coordinated by the Jayapura City Government, which involves several Regional Apparatus Organizations (OPDs), particularly the Education Office, the Health Office, and the Social Service Office. Technical implementation in the field is carried out through schools and integrated health posts (Posyandu) which function as food distribution locations. By 2025, this program will reach approximately 161 of the 338 schools in Jayapura, with nearly 33,000 students from early childhood education to vocational high school as beneficiaries (Redaksi, 2025). In addition, this program also targets vulnerable communities through 7 Posyandus serving approximately 479 people, including pregnant women, breastfeeding mothers, and toddlers. The Free Nutritious Meal Program (MBG) is an important initiative of the central government designed to improve the nutritional standards of the community, especially children who are still in school. In Jayapura, this program is implemented in stages by involving various parties, including the Department of Education and Culture, the Papua Regional Police, the Kemala Bhayangkari Foundation, and support from local community leaders, the Head of the Department of Education and Culture of Jayapura City, revealed that the MBG program trial in his area will involve 17,500 students from various educational institutions spread across five districts, namely Abepura, North Jayapura, South Jayapura, Heram, and Muara Tami. Each district will accommodate around 3,500 students, the implementation of this program will begin after the team from the National Nutrition Agency (BGN), with a target launch at the end of February or early March 2025 (Ardiles, 2025).

In addition, the Papua Regional Police through the Nutrition Fulfillment Service Unit (SPPG) is also actively involved in the implementation of the MBG program in Jayapura City. The inaugural launch of this program was marked by the distribution of 1,499 food boxes to students from early childhood education to vocational high school levels in August 2025. The SPPG kitchen of the Papua Regional Police located in North Jayapura District now provides services to 15 schools with a total of 3,518 students benefiting, from early childhood education to high school levels (PUBLIK, 2025). Support was also provided by local traditional leaders. Ondoafi Kampung Yoka, by inviting the community of Habeybhulu Yoka Village to support and realize the success of the MBG program. He emphasized that this program exists to ensure that every child receives adequate nutritional intake, especially while they are studying at school. In its implementation, the MBG Program in Jayapura City has shown quite satisfactory results, although there are still several obstacles encountered in the field. Overall, this program has gone through a systematic planning process. The quality of this planning can be seen from the determination of target beneficiaries, the preparation of activity agendas, and the clear division of responsibilities among implementers. Research by (Nur et al., 2025) found that the implementation of the MBG in Jayapura has gone well in terms of planning and coordination between sectors, although there are still challenges in the distribution and monitoring of nutritional quality due to geographical and infrastructure constraints, from a human security perspective, these challenges pose a direct threat to food security and individual health and

require systemic handling. The following data shows that there are several obstacles to food distribution in the implementation of the MBG program as follows;



Assessment Category Description on the Y-Axis:

3 = Running well

2 = Still have obstacles/needs improvement

1 = Limited

Source: Journal of Awimbar, Rahmadani, & Ilmidin (2025)

Bar Chart 2. Implementation of the MBG Program in Jayapura City

The bar chart above presents the results of research on the implementation aspects of the MBG program in Jayapura. This visualization shows five key aspects of program implementation: planning, inter-agency collaboration, food distribution, supporting infrastructure, and nutritional quality monitoring. Each aspect is assigned a rating based on the situation on the ground. The planning aspect received the highest score, categorized as "running well." This indicates that the initial phases of the program, such as plan development, target setting, and resource allocation, were carried out systematically and in an organized manner. Good planning is key to successful program implementation because it determines the direction and strategy for subsequent phases. Furthermore, inter-agency collaboration also received the rating of "running well." This indicates effective communication and cooperation between relevant institutions or agencies, including local governments, schools, and other stakeholders. Strong collaboration helps mitigate social challenges in local communities.

However, regarding food distribution, the diagram shows that obstacles remain. This indicates that the process of distributing food to target locations is not yet fully efficient. These obstacles can be caused by geographic factors, transportation limitations, or delays in delivery. This situation requires attention because distribution is a crucial stage that directly impacts beneficiaries. Supporting infrastructure received the lowest rating, with the condition being "limited in some areas." This means that some areas still lack adequate facilities, such as storage facilities, food processing equipment, or good road access. These limitations could hinder the program's overall effectiveness. Finally, nutritional quality monitoring still needs improvement in some schools. This indicates that the nutritional quality monitoring and evaluation system is not yet evenly distributed and requires strengthening, both in terms of the number of experts and oversight procedures. Overall, the diagram shows that program implementation has gone quite well in terms of planning and collaboration, but still requires improvements in technical operational aspects and supervision to ensure the program's objectives are achieved effectively and sustainably.

Accordingly, the Jayapura City Government is collaborating across sectors to support the operation of the MBG program, as its implementation reflects strong collaboration between the central government, local governments, academic institutions, international partners, and the local community. By September 2025, the program had reached 161 schools, involving

approximately 33,000 students as beneficiaries, as well as 7 integrated health posts (posyandu) serving 479 pregnant women, breastfeeding mothers, and toddlers (Korowa, 2025). This achievement is inseparable from strong coordination at various levels of government and support from stakeholders. As the primary coordinator, the National Nutrition Agency (BGN) plays a crucial role in providing funding, verifying the program, and developing an integrated digital-based monitoring system. Through its representatives in Papua, BGN regularly holds coordination meetings with local governments to ensure implementation complies with national standards. The digital system used allows for monitoring down to the village level, allowing for rapid, data-driven evaluations. This synergy between the central and regional governments serves as a crucial foundation for maintaining program quality and accountability.

The Jayapura City Government serves as a facilitator in the region, coordinating various Regional Apparatus Organizations (OPD). The Education Office is responsible for registering beneficiary students and arranging meal distribution schedules in schools. The Health Office oversees nutritional quality, monitors student health, and ensures all MBG kitchens have a Healthy Meal Home Certificate. The Social Service registers vulnerable groups outside of schools, while the Women's Empowerment, Child Protection, and Family Planning Office (DP3A-KB) expands services through the 3B Program, which targets pregnant women, breastfeeding mothers, and toddlers who have not yet received early education. This inter-agency collaboration ensures the program runs smoothly and is on target. In the academic field, Cenderawasih University (Uncen) plays a role by establishing a Regional Center of Excellence (RCEO) as a multidisciplinary research center related to MBG implementation. Using an approach that encompasses nutrition, development, gender, and anthropology studies, Uncen strives to ensure that the program not only meets health standards but also aligns with local Papuan culture. This research is crucial to avoid social rejection and increase community acceptance of the menu provided. This academic support also strengthens the evidence-based policy aspect of program development. International partnerships also contributed significantly to the implementation of the MBG program in Jayapura. UNICEF supported the MBG modeling program in 75 schools as a pilot project. Furthermore, Australia provided assistance in the establishment of the Regional Leadership Council (RCEO) at Uncen. This collaboration demonstrates that the MBG program is gaining global attention and is part of efforts to improve the quality of human resources in Papua. Technical assistance and funding from international partners strengthen local capacity in managing the program. Technical implementation in the field is carried out by the Nutrition Program Implementation Unit (SPPG), which manages the MBG kitchen, involving 47 local volunteers. Most of the workforce is Papuan women, as an effort to empower the economy and strengthen community ownership of the program. Community involvement not only increases family income but also creates strong social support for the program's sustainability. The use of local foods such as fish, moringa, and tubers further supports the local economy while maintaining cultural relevance. The results of this intersectoral collaboration are clearly visible in the reduction of stunting rates in Jayapura City. Furthermore, the increased service coverage reflects the commitment to cover all 338 schools within the region.

In this context, the MBG Program has made a real contribution to supporting the achievement of SDGs points 3 & 4, particularly in improving health, fulfilling children's nutritional needs, and strengthening access to more inclusive education. The implementation of MBG in Jayapura City can be seen in the decline in stunting cases. According to data from the Health Office, the prevalence of stunting fell from 21.3 percent in 2023 to around 15.15 percent in September 2025. This decline of more than six percent in two years demonstrates the success of regular nutrition interventions, both through educational channels and community-based approaches. This program not only focuses on students from elementary to secondary levels, but also includes pregnant women, breastfeeding mothers, and toddlers as priority groups in stunting prevention (Murib et al., 2024). By October 2025, the total

beneficiaries in the Jayapura area reached around 34,000 people, including nearly 500 pregnant women, breastfeeding mothers, and toddlers. The MBG Program applies standardized food portions based on age groups and nutritional needs. There are small portions for toddlers and elementary school students, and larger portions for high school students and pregnant women. This adjustment is important because energy and nutrient needs vary at each stage of development. This standardization ensures that nutritional interventions are more precise and measurable. Furthermore, regarding the education aspect, SDG 4 emphasizes the importance of ensuring inclusive, equitable, and quality education for all children. Through the MBG program, students receive nutritional support that can help improve learning concentration, school attendance, and participation in the learning process. In Jayapura City, it is also connected to the development of digital literacy. During several visits by relevant ministries to schools, such as SDN Inpres Kotaraja, technology support in the form of laptops was provided to support digital learning. This action reinforces Target 4.4 of the SDGs, which relates to improving relevant skills, including technical and digital skills. The combination of nutritional fulfillment and improving digital literacy forms a holistic approach: a healthy body and a skilled mind. Furthermore, strengthening educational infrastructure supports Target 4.a, which concerns the provision of child-friendly and effective educational facilities. Another equally important impact is the development of character and clean and healthy living habits. Through collaboration with various institutions, including UNICEF, the MBG program has been implemented in an integrated manner in dozens of schools as a pilot model. The schools not only serve meals but also educate students on the importance of handwashing, maintaining a clean environment, and understanding balanced nutrition.

Referring to the case study studied, the researcher aims to examine the contribution of the MBG program in supporting health and education through a human security perspective, as the MBG aligns with the principle of freedom from want, as it ensures access to safe, healthy, and nutritious food for children, pregnant women, and vulnerable groups without discrimination. From a human security perspective, the Free Nutritional Meal Program (MBG) can be seen as an initiative that supports comprehensive human protection through three main aspects: food security, educational security, and health security. From a food security perspective, this program functions to ensure that students have access to nutritious, safe, and suitable food to meet their daily nutritional needs. Food security is not only related to the general availability of food but also to the access and use of nutrition by each family member at home (Akbar, 2023). The MBG program in Jayapura is an example of a public policy that supports food security, especially for vulnerable groups, namely schoolchildren. The implementation of the MBG through the provision of nutritious food in schools aims to address limited access to quality food for students from low-income families. Research evaluating similar programs, such as school feeding programs, has found that nutritious school meal initiatives can improve children's daily nutritional intake and reduce the prevalence of malnutrition (Maliki et al., 2025). These findings are particularly relevant in the Jayapura context, where the MBG program is a crucial tool for strengthening food security by providing sufficient, balanced meals to support children's growth and development. Availability refers to the quantity of food available, whether from local or imported sources, while access reflects the ability of individuals and households to obtain food economically. The MBG program contributes to the access dimension by providing nutritious food at no cost to students, thereby reducing economic barriers to accessing quality food. Research by (Arif et al., 2020) indicates that limited economic access can be a major factor in household malnutrition in Indonesia. In an effort to reduce the burden of family food costs, the MBG program also strengthens food security for children and households in Jayapura City. In addition to the dimensions of availability and access, food security also encompasses how the body utilizes available nutrients. The meals provided in the MBG program are designed according to the principles of balanced nutrition, providing not only energy but also essential micronutrients necessary for

cognitive development and overall health. A study by (Mandowa, 2022) focusing on children in Southeast Asia found that a varied diet can improve children's nutritional status and learning abilities. This suggests that the MBG program, which offers a balanced menu, contributes to meeting the utilization dimension of food security, as adequate nutrition supports body function and brain development. In Jayapura, several local studies on nutritious food programs have shown that the MBG has contributed to reducing the risk of malnutrition and improving students' learning readiness (Qomarrullah et al., 2025). This study also emphasized that school food interventions not only affect health but also influence the quality of education, which is closely linked to sustainable human development. Overall, the MBG in Jayapura strengthens food security by increasing schoolchildren's access to nutritious food, improving nutrient utilization, and ensuring consistent nutrient intake. These actions align with the goal of food security within the context of human security and also support the SDGs targets related to health and education.

From an educational safety perspective, the availability of nutritious food at school contributes to the smooth learning process by improving students' concentration, attendance, and participation in learning activities. Educational safety not only looks at how many people can attend school, but also at the quality of the learning experience students receive, including their ability to concentrate, engage actively, and achieve high academic achievement. When education is combined with meeting basic needs such as nutrition, students' opportunities for meaningful learning are significantly improved. In this regard, the MBG program in Jayapura can be seen as an effort to improve educational safety by improving children's health, school engagement, and learning readiness (Muh et al., 2025). Educational safety is closely linked to human capital, as students' ability to learn effectively is influenced by their physical and mental health. Research by (Kiftiyah et al., 2025) shows that school meal programs that regularly provide good nutrition can improve student attendance and engagement in learning. When students attend school hungry or with inadequate nutrition, their ability to concentrate, absorb information, and retain information in the short term is impaired. This is evident in numerous studies on education and nutrition worldwide, including in developing countries, which demonstrate a positive relationship between good nutrition in schools and learning outcomes. These findings confirm that MBG plays a role in improving educational safety by creating a better learning environment through meeting basic physiological needs (Ayuni, 2025). In Jayapura City, the MBG program is implemented in several elementary and secondary schools as part of the government's efforts to reduce stunting rates and support quality education. Research by (Syamsu et al., 2025) in Papua found that increasing nutritional intake through a nutritious food program positively impacted student concentration, reduced fatigue in class, and encouraged student engagement in the learning process. This perspective is closely related to educational safety because a good and safe education means not only attending class but also actively and productively participating. By increasing the concentration of students who receive nutritious food, the nutritional intervention not only addresses health issues but also facilitates the achievement of academic competencies. Improving educational safety through MBG also has the potential to reduce school dropout rates, a problem often faced by low-income families in Papua due to economic pressures and children's health conditions. When the economic burden on families to provide school meals is reduced, the likelihood of children dropping out of school due to health issues or daily absences is also reduced. Overall, the MBG program in Jayapura City strengthens educational security as part of human security because this initiative contributes to creating a safer, healthier, and more ideal learning environment by improving students' nutritional status. This leads to increased attendance, focus, participation, and cognitive abilities, resulting in higher quality and sustainable education. Nutrition interventions such as the MBG provide concrete evidence that meeting basic needs, especially nutrition, is a crucial foundation for ensuring every child's right to a safe and quality education, in line with SDG 4.

Meanwhile, in the context of health security, adequate nutritional intake plays a role in maintaining health, strengthening the immune system, and preventing nutritional problems such as stunting, energy deficiency, and growth disorders. This aspect includes meeting nutritional needs, preventing disease, and access to an environment that supports sustainable health. When children's nutritional needs are not met, health risks such as growth retardation, decreased immunity, and impaired thinking skills will increase, which in turn can threaten the individual's physical safety and long-term well-being. Therefore, a balanced nutritional intake is a crucial element of health a state in which everyone has the opportunity to live a healthy life and avoid health threats that can be prevented through adequate nutritional interventions and health services (Barrett & Upton, 2013). The Free Nutritious Meal Program (MBG) in Jayapura City is a nutritional intervention effort that directly supports the health dimension by providing nutritious food to students free of charge during school hours. This is relevant in the context of the MBG in Jayapura City, where the provision of nutritious food is designed to meet the macronutrient and micronutrient needs essential for children's growth and bodily function. Based on this description, the MBG program not only serves to meet energy needs but also serves as a preventative measure against chronic diseases that arise from malnutrition.

From a health security perspective, good nutritional status is closely related to the body's ability to fight infection and disease. In Jayapura City, where some communities still face challenges in accessing health services and sanitation, the MBG program plays a role in improving the nutritional status of schoolchildren, thereby increasing their resilience to various health problems. By improving nutritional status through nutritious food, children are better protected from the threat of diseases that often occur in school-age groups. Furthermore, improving nutritional status through the MBG program also contributes to developmental outcomes such as physical growth and cognitive abilities. When children regularly receive nutritious food, their brains' ability to process information, learn, and respond to learning improves all of which are related to health outcomes within the health security dimension. From a human security perspective, nutritional interventions such as the MBG program function not only to reduce the threat of disease but also to improve the overall quality of life. Furthermore, research by (Nasution et al., 2024) shows that children with better nutritional status tend to experience more optimal growth and development from early childhood through school. In this way, MBG plays a role in improving health security by helping to mitigate the long-term impact of malnutrition on children's development, which can affect their future productivity and well-being. Providing good nutrition through MBG also serves to reduce the burden of disease that can burden local health care systems, making this preventative measure proactive and sustainable. Research examining school meal programs in various countries notes that the success of such programs depends on nutritional standards, efficiency in food provision, and regular evaluation systems to ensure that the intake provided truly meets children's health needs (Fatimah et al., 2024). Overall, the MBG program in Jayapura City strengthens health security as part of human security by ensuring access to nutritious food that is essential for children's growth, increasing resistance to disease, and supporting optimal growth potential and cognitive function. Thus, MBG is not merely a social initiative, but also a crucial health prevention strategy to improve the quality of life and the ability of individuals to live healthily and productively. Therefore, implementing MBG goes beyond providing food; it is also an integral part of efforts to improve children's quality of life and support sustainable human development.

In the long term, the MBG program offers a strategic opportunity to strengthen human security, particularly in health and education security, which are directly linked to achieving SDGs Points 3 and 4. In the context of human security (Leaning & Arie, 2000), this includes not only protection from conflict but also the fulfillment of basic needs such as food, health, and education. By providing nutritious meals regularly to students, the MBG has the potential to serve as a tool for sustainable human development in Jayapura City. In terms of SDG 3

(Good Health and Well-Being), the long-term potential of the MBG is seen in reducing stunting, anemia, and malnutrition among schoolchildren. Research in *The Lancet* revealed that consistent nutritional interventions in children can improve growth and reduce the risk of health problems later in life. If this program is implemented sustainably in Jayapura, it can improve the nutritional status of the younger generation and strengthen community health resilience. Good nutritional health during the school years plays a vital role in increasing immunity, reducing the risk of infectious diseases, and improving the quality of life as children reach adulthood. Furthermore, another long-term potential is reducing the burden of healthcare costs for families and local governments. Research (Rosyidah, n.d.) shows that investing in improving child nutrition provides significant economic benefits through increased productivity and reduced future medical costs. In the context of Jayapura City, MBG can be a social investment that has an impact on increasing the Human Development Index (HDI) and improving overall community health. This shows that MBG is not merely a temporary social assistance program, but also a preventative strategy to strengthen long-term health security. Regarding SDG 4 (Quality Education), the long-term potential of MBG lies in improving the quality of learning through increased concentration, attendance, and cognitive abilities of students. Research (Nurulaini & Afifah, 2025) in the Cochrane Review shows that school meal programs have a positive impact on students' thinking skills and engagement in the learning process. Children who receive adequate nutrition tend to have better concentration, stronger memory, and active participation in class. With consistent implementation, MBG in Jayapura City has the potential to improve students' academic achievement in the long term. Furthermore, research by (Issue, 2025) in *Food Policy* shows that school meal programs can improve attendance rates and reduce the risk of children dropping out of school, especially among vulnerable groups. In the context of Jayapura City, where geographic and economic challenges can impact student attendance, MBG can serve as an incentive for families to ensure their children remain in school. This strengthens educational security by ensuring that education is not only accessible but also effectively attended by students.

From a human security perspective, the long-term potential of the MBG program lies in its integration of health and education security. When children are healthy and have access to quality education, the likelihood of future social vulnerabilities such as unemployment, poverty, and injustice can be minimized. Research by (Agustini, 2025) in the report "Rethinking School Feeding" emphasizes that school meal programs integrated with education and health policies can be the foundation for sustainable human development. However, this long-term opportunity can only be realized with policy consistency, ongoing budget support, regular monitoring, and local community participation in food provision. If managed well, the MBG program in Jayapura City can serve as an example of a policy focused on human security, not only addressing immediate nutrition issues but also shaping a healthy, intelligent, and productive generation in line with the 2030 SDGs.

Thus, while the MBG program in Jayapura City has significant potential to help achieve SDGs 3 (Good Health and Well-Being) and 4 (Quality Education), several obstacles could hinder its long-term success. One of the main challenges is the lack of supporting infrastructure, such as substandard cooking facilities and uneven distribution, especially in geographically difficult-to-reach areas. Furthermore, reliance on inconsistent food supplies risks impacting the sustainability and quality of the nutritional menus served to students. From an institutional perspective, the lack of coordination between sectors and the limited number of professional nutritionists also pose obstacles to maintaining service quality. Unsustainable financing also poses a threat to the program's sustainability or a decline in its implementation in the future. Furthermore, there is still resistance from some communities who do not fully understand the program's benefits, which can affect participation rates. Unless these obstacles are addressed in a planned and sustainable manner, the MBG's effectiveness in improving children's health and education for the achievement of the SDGs will be difficult to achieve.

CONCLUSION

Based on the analysis, it can be concluded that the implementation of the Free Nutritious Meal Program (MBG) in Jayapura City is a crucial public policy to support the achievement of the Sustainable Development Goals (SDGs), particularly Point 3 (Good Health and Well-Being) and Point 4 (Quality Education), through a human security theory approach. This program not only focuses on meeting students' nutritional needs but also forms part of a human development strategy that emphasizes the individual as the center of well-being. Within the context of human security, the MBG serves to strengthen health by improving nutritional status, reducing the risk of malnutrition and stunting, and enhancing children's resilience. On the educational side, the program has also been shown to stimulate increased student attendance, concentration, and participation in teaching and learning activities, contributing to improved educational quality. Therefore, the MBG plays a crucial role in answering the research objective, which is to analyze the program's contribution to achieving SDGs Points 3 and 4 in Jayapura City.

However, several challenges can impact the program's effectiveness and long-term sustainability, such as a lack of supporting infrastructure, uneven distribution of logistics due to geographic location, limited number of nutrition professionals, and ineffective intersectoral coordination. Furthermore, unstable food supplies and a lack of sustainable funding can also hinder consistent program implementation. Therefore, the success of the MBG depends not only on the program itself but also requires strengthening its management, monitoring and evaluation systems, and ongoing intersectoral collaboration. If these obstacles can be effectively addressed, the MBG holds significant potential as a strategic tool for strengthening human security and supporting the sustainable achievement of the SDGs in Jayapura City.

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