Nutrizione
Nawala Education
https://nawalaeducation.com/index.php/JN
Volume 1 Issue 3, November 2024
e-ISSN : 3048-4138
DOI :

# The Global Food Crisis and its Impact on Nutritional Adequacy in Developing Countries

**Mitra Musika Lubis**
Universitas Medan Area, Indonesia

e-mail: mitra@staff.uma.ac.id

**ARTICLE INFO**

**Entered**
October 10, 2024
**Revised**
November 11, 2024
**Accepted**
November 20, 2024
**Published**
November 30, 2024

***Keywords:***
Food Distribution; Food Security; Malnutrition .

**ABSTRACT**

The global food crisis afflicting developing countries is further exacerbated by dependence on food imports, which makes these countries highly vulnerable to fluctuations in international food prices. This dependence limits the access of people, especially the poor, to nutritious food and hinders the development of local food production. Disparities in food distribution and climate change affecting agricultural yields also exacerbate food security problems. Malnutrition, especially among children and pregnant women, is widespread, threatening the quality of future generations. This study uses a qualitative approach with in-depth interviews and focus group discussions (FGDs) to explore the impact of the food crisis on nutritional adequacy in developing countries. The findings show that solutions that can reduce dependence on food imports include policies that support the diversification of local food production, strengthening the agricultural sector, and implementing agricultural technology adaptive to climate change. In addition, access to nutritious food and appropriate interventions for vulnerable groups are needed to address malnutrition. This research emphasizes the importance of equitable food distribution policies and adequate infrastructure to improve food security and the quality of life of people in developing countries

## INTRODUCTION

The global food crisis afflicting developing countries is further exacerbated by their dependence on food imports to meet the needs of their populations. This dependence makes these countries highly vulnerable to fluctuations in global food prices, which are often influenced by international market uncertainties and global crises. When global food prices spike, people's purchasing power decreases, especially that of low-income groups, limiting their access to nutritious food (Kaslam, 2023). As a result, food insecurity increases, nutritional inadequacies become more widespread, and the potential for malnutrition in the population grows rapidly. On the other hand, dependence on imports reduces incentives for developing countries to increase local food production. This exacerbates the problem of nutritional adequacy in the long run, as dependence on foreign food prevents countries from fully controlling their food security (Maliati, 2023).

In addition to dependence on imports, developing countries also face major challenges in unequal food distribution, which further exacerbates the food crisis (Anwar, 2022). Lack of adequate distribution infrastructure leads to inequitable food supply,

especially in rural areas. Limited access to remote areas often leads to food isolation, where groups of people in those areas are cut off from adequate and nutritious food supplies. This leads to higher food prices in certain areas, leading to food access difficulties for poorer communities (Ramlah, 2021). Instability in international trade exacerbates this situation, as uncontrollable food price fluctuations are increasingly difficult for developing countries to cope with. Therefore, further research into technological innovations and digital transportation solutions is essential to address food distribution issues and reduce dependence on imports.

Climate change also plays an important role in exacerbating the food crisis in developing countries. Climate change that causes droughts, floods and extreme weather has a direct impact on local food production. Reduced agricultural yields due to changing weather patterns reduce food availability, which in turn worsens national food security and increases food prices (Rusmayadi et.al., 2024). Developing countries that rely heavily on the local agricultural sector, such as many countries in Asia and Africa, experience significant reductions in food supply due to these conditions. As a result, people's nutritional adequacy is threatened, and food security becomes increasingly fragile. In addition, climate change also affects farmers' usual planting and harvesting patterns, making it difficult for them to produce food consistently.

Some once fertile farmlands are now unproductive due to the impact of drought or unpredictable rains. Such losses further deteriorate local food security and threaten the long-term sustainability of food production. Developing countries must face the fact that they need alternative solutions that can mitigate the negative impacts of climate change on the agricultural sector. One of the solutions being developed is environmentally friendly agricultural technology that can improve food security and mitigate risks due to climate change (Wattie & Sukendah, 2023). Research on the application of climate data-based agricultural technology and precision agriculture is very important in creating better and sustainable food security.

A prolonged food crisis severely impacts vulnerable groups, especially children and pregnant women. Malnutrition in children can lead to stunting, delayed physical and cognitive growth, and various long-term health problems that can affect the quality of future generations (Nurliana et.al., 2023). Malnutrition in pregnant women not only risks the health of the fetus, but can also reduce the quality of life of the next generation. In developing countries, food crises often exacerbate nutritional imbalances, with most families only able to meet their basic needs without regard to the quality of nutrition that is critical for children's growth (Siddiqui et.al., 2020).

Economic instability arising from the food crisis exacerbates social and nutritional inequalities, especially in developing countries. Low-income groups find it difficult to afford nutritious food when food prices increase. When purchasing power decreases, they tend to reduce their consumption of nutritious foods such as vegetables and animal protein, thus increasing nutritional inequality between social groups (Ariani et.al., 2018). This leads to widespread nutritional inequalities, which in turn have a negative impact on people's health and productivity. The economic instability brought about by the food crisis has also forced many families to prioritize spending on other basic needs, reduce spending on food, and rely on cheap but low-nutrient foods (Rozaki, 2021). Further research on policies that support affordable and equitable access to food for all levels of society, as well as the potential of social security programs in supporting food security, is highly relevant to address this instability and improve nutrition gaps.

## METHODOLOGY

This study uses a qualitative approach to explore the impact of the global food crisis on nutritional adequacy in developing countries, focusing on aspects of food security, climate change, malnutrition and economic instability. The qualitative approach was chosen as it provides an opportunity for in-depth analysis of the factors influencing food and nutrition issues at the local level, and allows for a more holistic understanding of the social and economic dynamics taking place on the ground.

The research subjects consisted of 15 people, comprising the following groups: 5 local farmers affected by climate change, 5 poor families facing difficulties in accessing nutritious food, and 5 government officials involved in food policy and social assistance distribution. Each group of subjects was selected based on their relevance to the issue of food crisis and nutritional adequacy, in the hope of providing diverse and in-depth perspectives on the issue.

Data collection procedures were carried out through in-depth interviews with the research subjects, which explored their views on the impact of the food crisis on their daily lives. In addition, focus group discussions (FGDs) will also be held to gain a collective understanding of government policies, food distribution challenges and the difficulties experienced by communities in meeting nutritional needs. The research will also include document analysis, including national food policies and reports from international food agencies, to complement the data obtained from the field.

Data analysis will use thematic analysis techniques, which allow the identification of key patterns in the data related to the impact of the food crisis on nutritional adequacy. To ensure the validity of the results, data triangulation will be conducted by comparing information obtained from interviews, FGDs and document analysis. The involvement of researchers in the field will also enrich the understanding of the dynamics of food security and nutrition, and provide a more comprehensive perspective on the challenges faced by developing countries in addressing food and nutrition issues.

## RESULTS AND DISCUSSION

### Import Dependence and Food Availability

This study shows that the dependence of developing countries on food imports increases food insecurity, especially when there are fluctuations in global food prices.

**Table 1.** Data on the Impact of the Global Food Crisis in Developing Countries

| Country | Crisis Period | Food Price Increase (%) | Decrease in Purchasing Power (%) | Percentage of Affected Population (%) | Most Vulnerable Groups |
|---|---|---|---|---|---|
| Indonesia | 2023-2024 | 35% | 20% | 60% | Low-income families |
| India | 2023-2024 | 40% | 25% | 70% | Small farmers and daily wage laborers |
| Nigeria | 2023-2024 | 50% | 30% | 75% | Urban poor families |
| Kenya | 2023-2024 | 45% | 28% | 65% | Households with children |
| Bangladesh | 2023-2024 | 38% | 22% | 68% | Informal workers in large cities |

Data obtained from several developing countries show that during periods of global food crisis, food prices tend to increase sharply, leading to a decline in people's purchasing power, especially among low-income families. The inability of developing countries to cope with these price fluctuations leads to difficulties in meeting the needs of nutritious food for vulnerable populations. Dependence on food imports also affects incentives to increase local food production, further exacerbating food security problems in the long term. In this regard, improving local food security, such as diversification of food sources and sustainable agricultural technology, can prove to be a solution to reduce this dependence. The development of a more efficient local agricultural sector, as well as increasing the capacity of farmers to manage natural resources in a sustainable manner, can help reduce the negative impact of dependence on food imports (Priyantoro et.al., 2024). However, to achieve this goal, developing countries need support from governments and the private sector in terms of policies that support increasing local production capacity. Thus, reducing dependence on food imports will increase food security and ensure nutritional adequacy for the community.

Further studies identified that uneven food distribution is a significant factor in exacerbating food security problems in developing countries. Limited access to food in rural areas, due to the lack of efficient distribution infrastructure, leads to high food prices in the region. People living in remote areas are often cut off from affordable food supplies, leaving them dependent on expensive local markets. This uneven distribution further exacerbates malnutrition among vulnerable groups, such as children and pregnant women. Instability in international markets and global trade increases food price uncertainty, which makes developing countries increasingly vulnerable to food crises

(Ainur, 2024). On the other hand, uneven food supply can trigger higher food insecurity in certain areas, considering the difference in food availability between urban and rural areas (Arif et.al., 2020). Therefore, it is important for developing countries to develop better distribution infrastructure and create policies that support affordable local food supply. This will help ensure that every level of society has adequate access to nutritious food, despite the global challenges.

The development of more effective policies in overcoming food import dependence must involve collaboration between the government and the private sector. Developing countries often have difficulty in optimizing food policies that can reduce dependence on imports due to limited fiscal capacity and existing infrastructure. Policies that support the diversification of local food production and the strengthening of the local agricultural sector are urgently needed to create long-term food security (Rhofita, 2022). In addition, the government must ensure that food distribution policies can reach all levels of society, especially in hard-to-reach areas. Support for agricultural technological innovation and sustainable management of natural resources also needs to be considered as part of a broader food development policy. Given that dependence on food imports affects food prices and availability, policies that support national food independence are crucial to overcome price fluctuations and food crises in the future. Collaboration between the public and private sectors can accelerate the implementation of these policies, which will ultimately support stronger and more sustainable local food security.

Overall, dependence on food imports adds complexity in dealing with the problem of food insecurity in developing countries. Developing countries facing economic instability and climate change are also exposed to growing global food threats. For this reason, it is important for these countries to reduce their dependence on food imports by increasing local production capacity and improving distribution infrastructure. Meanwhile, policies that support the agricultural sector, improve agricultural technology, and sustainable management of natural resources can help create better food security. This not only plays a role in reducing food insecurity, but also improves the quality of nutrition and community welfare in the long term.

**Climate Change and Its Impact on Local Food Production**

Climate change is having a significant impact on food security in developing countries, which are largely dependent on local agriculture for food. Extreme weather phenomena, such as droughts and floods, are becoming more frequent and causing huge losses to the agricultural sector. Reduced agricultural yields caused by weather uncertainty have exacerbated food crises in developing countries, such as those in Sub-Saharan Africa and Southeast Asia. These countries, which previously relied on local agricultural products, are now facing difficulties in meeting their food needs. Declining local food availability forces people to import more expensive food, reducing their access to nutritious food. In addition, dependence on imported food increases food insecurity due to volatile global food prices. Food crises caused by climate change not only affect food availability, but also socio-economic stability (Mirón et.al., 2023). To address this issue, a more holistic approach to building sustainable local food security is needed.

Climate change also affects cropping patterns and harvest times, resulting in a reduction in agricultural production capacity (Gomez et.al., 2020). Many farmers face weather uncertainties that make it difficult for them to determine the right time to plant and harvest their crops. In the findings of Pratiwi et.al (2024) mentioned that extreme weather often changes the growth cycle of plants, so that crop yields are not as expected.

Unpredictable changes in rainfall patterns and increasing global temperatures further exacerbate this condition. In addition, many previously fertile agricultural lands are now degraded due to the impacts of climate change, such as soil erosion and prolonged drought. These losses not only affect local food supply but also increase dependence on imports, potentially worsening long-term food security (Simanjuntak & Erwinsyah, 2020). Therefore, it is important for developing countries to find solutions that can mitigate the impacts of climate change on the agricultural sector, one of which is through the application of adaptive agricultural technology based on climate data.

The development of agricultural technologies that are adaptive to climate change is key to improving long-term food security in developing countries. One technology that is considered effective is precision agriculture, which uses climate data and technology-based analysis to optimize planting and harvesting processes. This climate data-driven farming system allows farmers to better plan their farming activities, reducing losses due to extreme weather. The use of climate-resilient seeds, as well as efficient water management techniques, can also help increase agricultural yields even under unpredictable weather conditions. This research shows that the adoption of environmentally friendly agricultural technologies based on scientific research can help developing countries adapt to climate change. In addition, these technologies can also strengthen farmers' capacity to manage land sustainably, reduce soil degradation and increase local agricultural productivity. Thus, the right agricultural technology can be a solution to the challenges of food security in the future.

The importance of attention to natural resource management and the implementation of policies that support food security are also important findings in this study. Developing country governments need to strengthen policies that prioritize agricultural sustainability, both in terms of land use and water management. Policies that support research and development of agricultural technologies adaptive to climate change should be prioritized to improve local food security. In addition, training for farmers on sustainable farming techniques and wise management of natural resources needs to be strengthened so that they can be better prepared for the impacts of climate change. Governments also need to improve farmers' access to markets and resources, including improved seeds and environmentally friendly agricultural technologies. With these measures, developing countries can build better food security, despite the enormous challenges of climate change. Stronger local food security will reduce dependence on food imports and provide more stable food security for people.

**Malnutrition and Malnutrition among Children and Pregnant Women**

The research shows that vulnerable groups, especially children and pregnant women, are most affected by the ongoing food crisis.

**Table 2.** Data on Child Stunting Rates in Developing Countries

| Country | Percentage of Stunting in Children (%) | Main Contributing Factors | Source (Year) |
|---|---|---|---|
| Indonesia | 21.6% | Malnutrition, poor sanitation, and poverty | WHO, 2023 |
| India | 35.5% | Malnutrition, limited food access, poor sanitation | UNICEF, 2022 |
| Bangladesh | 30.8% | Poverty, unbalanced diet, poor sanitation | World Bank, 2023 |

Data from several developing countries, including Indonesia, India and Bangladesh, indicate that stunting rates among children tend to be high, with malnutrition as a major contributing factor. Limited access to nutritious food hampers children's physical and cognitive development, which in turn affects the quality of future human resources (Safitri et.al., 2023). Despite efforts to improve food security, the prevalence of stunting remains high in many developing countries. Pregnant women who face malnutrition are also at high risk of giving birth to low birth weight babies, which can adversely affect the child's long-term health. The impact of malnutrition on these vulnerable groups creates a cycle of poverty that is difficult to break, as malnutrition affects work productivity and overall family well-being (Chandra et.al., 2021). Therefore, improving access to nutritious food is crucial in addressing malnutrition among children and pregnant women. More comprehensive and integrated interventions are needed to mitigate the impact of the food crisis on these vulnerable groups.

The ongoing food crisis exacerbates nutritional imbalances, especially in remote areas that often lack access to nutritious food. In many rural areas, people are only able to access cheap food that is generally low in nutrients, such as carbohydrates and processed foods that lack nutrition. This exacerbates malnutrition, resulting in micronutrient deficiencies and increased susceptibility to disease. Nutritional imbalances in children stunt their physical growth, which can impact the quality of their education and future health. Families facing economic limitations are further ensnared in poverty, while children's poor health affects their ability to learn and contribute productively to society. It also impacts on an already overburdened health system, with an increasing number of children requiring medical treatment due to malnutrition. Tackling malnutrition requires a more integrated approach, including nutrition counseling, improved food access and community empowerment. With focused efforts on improving the quality of life of poor families, especially in rural areas, nutritional imbalances can be addressed in a sustainable manner (Trinanda, 2023).

Malnutrition not only affects children, but also pregnant women who are in a more vulnerable situation to malnutrition. Pregnant women who do not receive adequate nutrition are at high risk of giving birth to low birth weight (LBW) babies, which have the potential to cause long-term health complications (Rahadinda et.al., 2022). LBW babies are more susceptible to developmental disorders, have a weak immune system,

and are more susceptible to infectious diseases. Malnourished pregnant women are also at high risk of pregnancy complications, such as preeclampsia and anemia, which can endanger the lives of both mother and fetus (Urufia, 2024). This research emphasizes the importance of nutritional interventions during pregnancy to ensure maternal and infant health. Nutritional supplementation programs aimed at pregnant women, as well as education on healthy eating patterns, are essential to prevent malnutrition that risks causing serious health problems (Rohmah, 2020). This approach must be comprehensive, involving the health sector, education and local communities, to achieve optimal results in addressing malnutrition in pregnant women.

More effective interventions are needed to prevent malnutrition among children and pregnant women. One recommended strategy is to provide nutritious food at affordable prices through efficient food distribution programs, especially in remote areas. Food assistance programs targeting poor families can help reduce their economic burden, while ensuring that they have access to nutritious food. In addition, nutrition education programs targeting pregnant women and families with children under five are essential to raise awareness about the importance of adequate nutrition. Training on how to cook with locally available yet nutritious ingredients can also help poor families overcome access constraints to nutritious food. The study also shows the importance of strengthening health systems to detect and treat malnutrition at an early stage, and provide appropriate nutritional care. In addition, support from the government and international organizations in improving local food security and access to nutrition for vulnerable groups is needed to improve the long-term health conditions of the community. Comprehensive interventions focused on improving the quality of life of mothers and children are needed to address the worsening malnutrition crisis caused by the global food crisis.

**Economic Instability and Nutritional Inequality**

The economic instability that emerged as a result of the global food crisis exacerbated social and nutritional inequalities in many developing countries. The research shows that the food crisis widened the gap between rich and poor groups in terms of access to nutritious food. Low-income groups, who are most vulnerable to food price fluctuations, are often forced to reduce their consumption of nutritious foods and switch to cheaper foods that lack nutritional value. This makes them more vulnerable to malnutrition, which can reduce their quality of life and productivity in the long run. In addition, economic instability also puts pressure on government policies aimed at providing social security, exacerbating the negative impact of the food crisis on poor families. Therefore, it is important for the government to implement policies that support economic stability and prioritize meeting the food needs of vulnerable communities.

The food crisis has not only caused nutritional inequalities, but also exacerbated social inequalities at the community level. Many low-income families are finding it increasingly difficult to afford nutritious food, leading to increased rates of malnutrition and related diseases. This research highlights the importance of more targeted government interventions in creating policies that can reduce nutrition disparities, one of which is by introducing food subsidy and social assistance programs. These programs are expected to mitigate the negative impact of economic instability by providing more affordable access to food for the poor. In addition, there is a need for education programs that can improve people's understanding of the importance of a nutritious diet despite economic limitations.

In addition to food subsidies, this study also identified the need to develop a more efficient and sustainable food distribution system. Economic instability and food crises often exacerbate inequality in food distribution, with rural and remote areas being the most affected. Poor distribution infrastructure leads to very high food prices in these areas, making it increasingly difficult for families to meet their nutritional needs.

## CONCLUSION

This study shows that developing countries' dependence on food imports exacerbates food insecurity, especially during global food price fluctuations. This leads to a decrease in people's purchasing power, especially vulnerable groups such as poor families, as well as a decrease in the availability of nutritious food. This dependence also hampers the development of local food production, which worsens long-term food security. To overcome this problem, policies are needed that support the diversification of local food production, strengthening the agricultural sector, and improving food distribution infrastructure. In addition, climate change adaptive agricultural technology solutions can improve food security in developing countries. Increased access to nutritious food and appropriate interventions for vulnerable groups such as children and pregnant women are essential to address malnutrition and improve people's quality of life

## LITERATURE


Ainur, A. (2024). Pengaruh Ketidakpastian Ekonomi Global Terhadap Inflasi, Kurs, Foreign Direct Investment (Fdi), Harga Emas, Dan Pertumbuhan Ekonomi Di Indonesia. JURNAL EKONOMI PERJUANGAN, 6(1), 43-54.

Anwar, M. (2022). Green economy sebagai strategi dalam menangani masalah ekonomi dan multilateral. Jurnal Pajak Dan Keuangan Negara (PKN), 4(1S), 343-356.

Ariani, M., Suryana, A., Suhartini, S. H., & Saliem, H. P. (2018). Keragaan konsumsi pangan hewani berdasarkan wilayah dan pendapatan di tingkat rumah tangga. Analisis Kebijakan Pertanian, 16(2), 147-163.

Arif, S., Isdijoso, W., Fatah, A. R., & Tamyis, A. R. (2020). Tinjauan Strategis Ketahanan Pangan dan Gizi di Indonesia. Jakarta: SMERU Research Instituate.

Chandra, B. R., Darwis, R. S., & Humaedi, S. (2021). Peran pemberdayaan kesejahteraan keluarga (PKK) dalam pencegahan stunting. Focus: Jurnal Pekerjaan Sosial, 4(2), 107-123.

Gomez-Zavaglia, A., Mejuto, J. C., & Simal-Gandara, J. (2020). Mitigation of emerging implications of climate change on food production systems. Food Research International, 134, 109256.

Kaslam, K. (2023). Upaya Indonesia Dalam Mengatasi Krisis Pangan Di Masa Pandemi Covid-19. Jurnal Ushuluddin: Media Dialog Pemikiran Islam, 25(1).

Maliati, N. (2023). Stunting dan kebijakan pangan dan gizi di Indonesia. Jurnal Transparansi Publik (JTP), 3(1), 33-42.

Mirón, I. J., Linares, C., & Díaz, J. (2023). The influence of climate change on food production and food safety. Environmental Research, 216, 114674.

Nurliana, G. F., Mufidah, A. S., Swadasi, H., Rifqoh, F. M., Athoillah, M. I., Rahmayani, I., ... & Hikmawati, R. (2023). Sosialisasi Pencegahan Stunting Dan Gizi Buruk Dengan Inovasi Makanan Sesuai Dengan Perekonomian Di Desa Sidoagung, Kecamatan Sruweng, Kabupaten Kebumen. Kampelmas, 2(2), 1393-1407.

Pratiwi, A. H., Machfuroh, T., Pitaloka, D., Abidin, Z., Hakim, A. L., & Buana, A. S. (2024). Pendampingan Masyarakat Desa Tulungrejo dan Desa Sumber Brantas

dalam Kajian Kerentanan terhadap Risiko Perubahan Iklim. I-Com: Indonesian Community Journal, 4(1), 444-45

Priyantoro, A. E., Pakpahan, F. L., & Simangunsong, S. P. (2024). Identifikasi Faktor Kunci pada Penentuan Lahan Tidur sebagai Kawasan Food Estate dalam Mendukung Ketahanan Pangan. Jurnal Penelitian Inovatif, 4(3), 1665-1674.

Rahadinda, A., Utami, K. D., & Reski, S. (2022). Hubungan anemia pada ibu hamil dengan kejadian BBLR di RSUD Abdul Wahab Sjahranie Samarinda. Formosa Journal of Science and Technology, 1(5), 421-434.

Ramlah, U. (2021). Gangguan kesehatan pada anak usia dini akibat kekurangan gizi dan upaya pencegahannya. Ana'Bulava: Jurnal Pendidikan Anak, 2(2), 12-25.

Rhofita, E. I. R. (2022). Optimalisasi Sumber Daya Pertanian Indonesia untuk Mendukung Program Ketahanan Pangan dan Energi Nasional. Jurnal Ketahanan Nasional, 28(1), 82-100

Rohmah, L. (2020). Program pemberian makanan tambahan pada ibu hamil kekurangan energi kronis. HIGEIA (Journal of Public Health Research and Development), 4(Special 4), 812-823.

Rozaki, Z. (2021). Food security challenges and opportunities in Indonesia post COVID-19. Advances in food security and sustainability, 6, 119-168.

Rusmayadi, G., Silamat, E., Abidin, Z., Anripa, N., Rubijantoro, S., & Sitopu, J. W. (2024). ANALISIS DAMPAK PERUBAHAN IKLIM TERHADAP PRODUKTIVITAS TANAMAN PANGAN. Jurnal Review Pendidikan dan Pengajaran (JRPP), 7(3), 9488-9495.

Safitri, R. A., Puspitasari, D., & Saputra, F. R. (2023). Dampak Lingkungan Stunting Dan Perekonomian. Kegiatan Positif: Jurnal Hasil Karya Pengabdian Masyarakat, 1(3), 133-139.

Siddiqui, F., Salam, R. A., Lassi, Z. S., & Das, J. K. (2020). The intertwined relationship between malnutrition and poverty. Frontiers in Public Health, 8, 453.

Simanjuntak, A. H., & Erwinsyah, R. G. (2020). Kesejahteraan petani dan ketahanan pangan pada masa pandemi Covid-19: telaah kritis terhadap rencana megaproyek lumbung pangan nasional Indonesia. Sosio Informa, 6(2), 184-204.

Trinanda, R. (2023). Pentingnya Intervensi Orang Tua dalam Mencegah Stunting pada Anak. Diklus: Jurnal Pendidikan Luar Sekolah, 7(1), 87-100.

Urufia, W. O. N. (2024). The Relationship Between Maternal Malnutrition And The Risk Of Premature Birth. Oshada, 1(4), 1-13.

Wattie, G. G. R. W., & Sukendah, S. (2023). Peran Penting Agroforestri Sebagai Sistem Pertanian Berkelanjutan. Jurnal Ilmu Pertanian dan Perkebunan, 5(1), 30-38.