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Fill the Nutrient Gap Indonesia

Summary Report



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Executive Summary

Indonesia has made considerable progress in poverty reduction in recent decades. The proportion of the population living below the national poverty line decreased from more than 19 percent in 2000 to 9.4 percent in 2019. Yet progress has not been equal and equitable, and well over half the population continues to be vulnerable to poverty. Indonesia continues to face serious challenges in food security and nutrition with almost a third of children under 5 years of age stunted (2019) and a rapidly growing threat from the triple burden of malnutrition (undernutrition, micronutrient deficiencies and overweight/obesity).

In line with the 2030 agenda, the Government of Indonesia placed inclusive, transformative and sustainable development at the centre of its national planning framework 2020-2024 (RPJMN), including reducing high levels of stunting among children under 5 and reducing regional inequalities. To help build on the evidence base necessary to meet the Sustainable Development Goals and national development objectives, the World Food Programme (WFP) undertook a Fill the Nutrient Gap (FNG) analysis in close collaboration with the Ministry of National Development Planning (BAPPENAS) and the Ministry of Health, and with support from a wide range of other stakeholders. The objective of the analysis was twofold: 1) to highlight likely dietary inadequacies and identify barriers to adequate nutrient intake and 2) to build consensus on priority interventions and policy options to improve nutrition of population groups across the life cycle through various programmes and sectors such as health, social assistance, education and food systems.

Methodology

The FNG analysis takes a systems approach to identifying context-specific barriers that prevent individuals and households from accessing and selecting healthy, nutritious diets. It comprises two components: a country-specific review of secondary literature and data, and a Cost of the Diet (CotD) assessment. The two components of the analysis are integrated to obtain a better understanding of the specific challenges faced in context, and of potential ways to address them.

The analytical team and multisectoral stakeholders discuss the findings and their implications to create a shared understanding of the issues and possible solutions. Stakeholders then identify and prioritize appropriate nutrition-specific and nutrition-sensitive interventions that can be implemented by different sectors using their existing policy entry points and delivery platforms. These could be social assistance programmes, food processing facilities and markets, food related policies, antenatal care services, school nutrition programmes, etc.

Process

The Indonesia FNG analysis took place from September 2020 to November 2021. It was conducted by WFP's country office with technical assistance from the Systems Analysis for Nutrition team at WFP headquarters, working in close collaboration with BAPPENAS. A wide range of national experts and stakeholders provided inputs throughout the analysis. Finally, on 5 August 2021, a virtual multistakeholder workshop was held to verify and validate the findings of the complete FNG analysis and prioritize actions based on these findings.

Main findings

1. Trends in Indonesia indicate significant progress in the fight against stunting. However, obesity and non-communicable diseases are an increasing problem. Despite limited data evidence confirms that micronutrient deficiencies and their consequences are widespread. Poor dietary quality remains the common factor underlying all forms of malnutrition.
2. The least-cost diet that meets nutritional needs would be between 6,566 Indonesian rupiah (IDR) and IDR 14,182 per capita per day, depending on location, or an average of IDR 8,532. The nutritious diet is at least 2.5 times more expensive than a staple-based diet that meets only energy needs.
3. Across the country, between 4 and 53 percent of the population, depending on location, could not afford the lowest cost nutritious diet, based on SUSENAS 2019 data. A lower cost of the nutritious diet in a geographic area does not necessarily mean that it is more affordable.
4. Numerous underlying drivers across a range of systems are responsible for the significant subnational variation in the cost and non-affordability of a nutritious diet.
5. The impacts of the ongoing COVID-19 pandemic continue to exacerbate vulnerabilities. Lower income households have been disproportionately affected, with more households falling into poverty and nutritious diets pushed even further out of reach for the most vulnerable.
6. Adolescent girls and pregnant and lactating women are the most vulnerable members of the household. They require high levels of nutrients which are expensive to obtain from locally available foods. Targeted interventions and fortification can reduce the burden of meeting their nutrient needs and improving nutrition outcomes.

7. For children under 2 years old, suboptimal breastfeeding, low dietary diversity and the high consumption of unhealthy snack foods increase the cost of their nutritious diet and their risk of malnutrition, which has lifelong consequences.
8. Social assistance programmes have the potential to bring households within better reach of nutritious diets and other essential needs, and protect the most vulnerable from the worst effects of the pandemic downturn. However, programmes must be made more nutrition-sensitive through improved targeting, ensuring that cash-based transfers are of adequate size, offering a range of nutritious items in the case of food transfers, and stimulating demand for nutritious foods.
9. Agricultural systems have strong potential to provide for affordable, nutritious diets to all households. This will require agricultural transformation driven by policies that align incentives with nutrition outcomes, achieved by promoting diversified production and repurposing agricultural support.
10. Rice fortification can help to deliver micronutrients to households and vulnerable members, with post-harvest fortification adding a wide range and high levels of micronutrients. Biofortification also holds potential to better leverage the agriculture sector to make foods more nutrient-dense.
11. Shifts in dietary patterns towards more nutritious diets may adversely impact the environment and natural resources, increasing greenhouse gas (GHG) emissions. Ways to limit the environmental impacts of producing, delivering and consuming foods for nutritious diets should be optimized to reduce trade-offs.

Stakeholder prioritized interventions

Recognizing that social assistance, health and food systems determine physical and economic access to diverse, healthy and nutritious diets, stakeholders identified priorities for these three systems. This prioritization exercise took place after the review of the FNG results during a virtual workshop held on 5 August 2021. The stakeholder-identified priorities cover a wide range of sectors and are targeted at different actors who would need to coordinate for adequate implementation.

Food systems

- Scale up the Sustainable Food Garden (P2L) programme to increase smallholder income through the production of nutritious foods including fruit, vegetables and animal source foods for sale at the market and for own consumption, and the monetization of other crops.
- Assess and address bottlenecks throughout the supply chain of different foods to ensure more even availability and prices across the country, through

the establishment of a national logistics system that informs and manages regional food stocks, creates regional food hubs, and sets up systems for transporting and distributing food to regions where there is a food deficit.

- Strengthen linkages between the food system and social assistance by including post-harvest fortified (and biofortified) foods (such as rice) with existing social assistance programmes, thus ensuring these interventions reach the most vulnerable.

Health

- Strengthen and promote exclusive breastfeeding practices so that only breastmilk is provided to infants under 6 months, and continued breastfeeding practices so that young children between 6 and 24 months continue to receive breastmilk in addition to nutritious complementary meals. This entails providing adequate support and information to mothers and caretakers during critical breastfeeding periods (such as at birth and during the first week of life), implementing and monitoring compliance of policies and regulations aimed at protecting maternity in the workplace, and ensuring and monitoring compliance with the WHO International Code of Marketing of Breast-milk Substitutes.
- Scale up multiple micronutrient powder (Taburia or MNP) distribution for children aged 6–23 months where non-affordability of the nutritious diet is high.
- Implement and scale up nutrition education components and programmes, especially for vulnerable groups (caretakers of children under 2, adolescent girls, pregnant and lactating women), in clinics, hospitals and schools, and through community health workers.
- Strengthen regulation of processed foods and include regulation of sugar, salt, and fat content in such foods.

Social assistance

- Make social assistance programmes more nutrition-sensitive by reviewing the benefits package, including the size of cash transfers, to ensure it is a substantial enough contribution to bridge the affordability gap and bring the nutritious diet within participant's reach. Take regional variations in the cost of the nutritious diets into consideration.
- Help households optimize the allowances provided by social assistance programmes: through nutrition education components of programmes, guide them on using cash for nutrition, healthy eating and food consumption habits.
- Strengthen local government capacity on nutrition and implementation for nutrition interventions to ensure social assistance programmes are used as a platform for nutrition.

- Enhance the contribution of social assistance programmes to nutrition by including nutritious foods in transfers, such as post-harvest fortified and biofortified rice, and providing nutrition-specific interventions for groups with higher

nutritional needs, such as Taburia and fortified complementary foods for children aged 6–23 months. The latter could also be delivered through the health systems with eligibility determined by social assistance programme participation.





Fill The Nutrient Gap **Indonesia** | SUMMARY REPORT

Introduction

Indonesia has made considerable progress in poverty reduction in the last decades. The proportion of the population living below the national poverty line decreased from more than 19 percent in 2000 to 9 percent in 2019 (1). Yet this reduction has not been equal and equitable across geography, socioeconomic status and other characteristics such as gender, age and disabilities. Socioeconomic vulnerabilities have been exacerbated by the COVID-19 pandemic, which risks reversing some of the progress made in the last two decades.

Indonesia faces serious challenges in food security and nutrition. Diets of middle and lower income levels tend to be low in nutritional value and diversity, and rely heavily on staple foods, especially rice. Regional disparities persist in availability and affordability of nutritious foods (2), and the country is facing a rapidly growing threat from the triple burden of malnutrition (undernutrition, micronutrient deficiencies and overweight/obesity).

In line with the 2030 agenda, the Government of Indonesia (GoI) placed inclusive, transformative and

sustainable development at the centre of its national planning framework, the National Medium-Term Development Plan (RPJMN) (3), including reducing high levels of stunting among children under 5, and reducing regional inequalities. To help build on the evidence base necessary to meet the SDGs and national development objectives, the World Food Programme (WFP), in close collaboration with the Ministry of National Development Planning (BAPPENAS) and the Ministry of Health, undertook a Fill the Nutrient Gap (FNG) situation analysis. The objective of the analysis was twofold: 1) to highlight likely dietary inadequacies and identify barriers to adequate nutrient intake in Indonesia and, 2) to build consensus on priority interventions and policy options to improve nutrition across the life cycle through various programmes and sectors such as health, social assistance, education and food systems.

This summary report presents findings from the analysis and a discussion of its process, methodology and limitations. It highlights priorities identified by stakeholders. By identifying and contextualizing new findings, the FNG analysis contributes towards building consensus around a vision and a path forward for improved nutrition in Indonesia in a sustainable way that is integrated across the country's food systems.

FILL THE NUTRIENT GAP: SITUATION ASSESSMENT FOR MULTI-SECTORAL DECISION-MAKING ON THE PREVENTION OF MALNUTRITION

Malnutrition has two direct causes: inadequate dietary intake and disease. The FNG assessment focuses on gaps in dietary intake to inform national policies and actions that can be taken across food, social assistance, and health systems to improve nutrition, with a focus on the most vulnerable populations. The FNG considers whether nutritious foods are available, accessible, and affordable in a specific context, and identifies the barriers that lead to gaps in nutrient intake. The analysis focuses on the extent to which vulnerable people have choices in the foods they consume and how those choices are made. The FNG process identifies and models the impacts of context-appropriate interventions to improve diets and nutrient intake across food, health, education, and social assistance systems. The results are used to identify entry points across systems, to refine programmes, and to make recommendations to policymakers.

The assessment comprises two components:

1. A country-specific review of secondary data and information on factors that reflect or affect dietary intake. This includes malnutrition trends over time, characteristics of the food system and food environment, and population behaviour related to food and feeding.
2. An assessment of the extent to which economic barriers prevent adequate nutrient intake. This uses the Cost of the Diet (CotD) linear programming software developed by Save the Children (UK), and includes modelling of the economic impact of possible interventions to increase nutrient intake and fill nutrient gaps.

Preventing malnutrition, including through improved access to nutritious foods, cannot be achieved by one sector alone. FNG is designed to inform multisectoral decision making and therefore engages stakeholders from all sectors including food, health, agriculture, education, and social protection.

It is the stakeholders who define the scope and focus of the assessment. They contribute data and sources of information for identification of context-specific barriers and entry points and together with the analytical team develop a shared understanding of the issues and possible solutions. They then identify appropriate nutrition-specific and nutrition-sensitive interventions that can be implemented by different sectors using their existing delivery platforms. These could be social assistance, food processing and markets, antenatal care, school nutrition programmes, etc.

The FNG methodology has been developed by WFP with technical support from partners including the University of California Davis, the International Food Policy Research Institute (IFPRI, Washington DC), Epicentre (Paris), Harvard University (Boston), Mahidol University (Bangkok), Save the Children (UK), and UNICEF.

Between 2016 and November 2021, FNG analyses have been conducted or are on-going in 39 countries.

For more information on the concept and the method of the analysis, see Bose I, Baldi G, Kiess L, de Pee S, The 'Fill the Nutrient Gap' Analysis: An approach to strengthen nutrition situation analysis and decision-making toward multisectoral policies and systems change. *Matern Child Nutr* 2019; DOI: 10.1111/mcn.12793



Process and Scope of the Analysis

Process of the FNG Analysis in Indonesia

The FNG analysis was conducted by WFP's country office with technical assistance from the Systems Analysis for Nutrition team at WFP's headquarters, working in close collaboration with BAPPENAS and the Ministry of Health. The FNG process in Indonesia took place from September 2020 to November 2021 (Figure 1). All meetings were conducted virtually because of COVID-19 restrictions.

Methodology

The FNG analysis comprises two components: a country-specific review of secondary literature and data and a CotD analysis (Figure 2). The two components of the analysis are integrated to obtain a better understanding of the specific challenges faced in certain specific contexts and of potential ways to address them.

The analytical team and different stakeholders discuss the findings and their implications to create a shared understanding of the issues and possible solutions. Stakeholders then identify and prioritize appropriate nutrition-specific and nutrition-sensitive interventions that can be implemented by different sectors using their existing policy entry points and delivery platforms. These could be social assistance programmes, food processing facilities and markets, food related policies, antenatal care services, school nutrition programmes, etc.

Secondary data analysis

FNG secondary data analysis identifies barriers to accessing healthy diets, platforms for reaching nutritionally vulnerable groups, and opportunities for policy and programme interventions to improve access to nutritious foods through multiple sectors, including agriculture and the food system, health, and social protection through social assistance programmes.

Figure 1: The Fill the Nutrient Gap (FNG) process followed in Indonesia

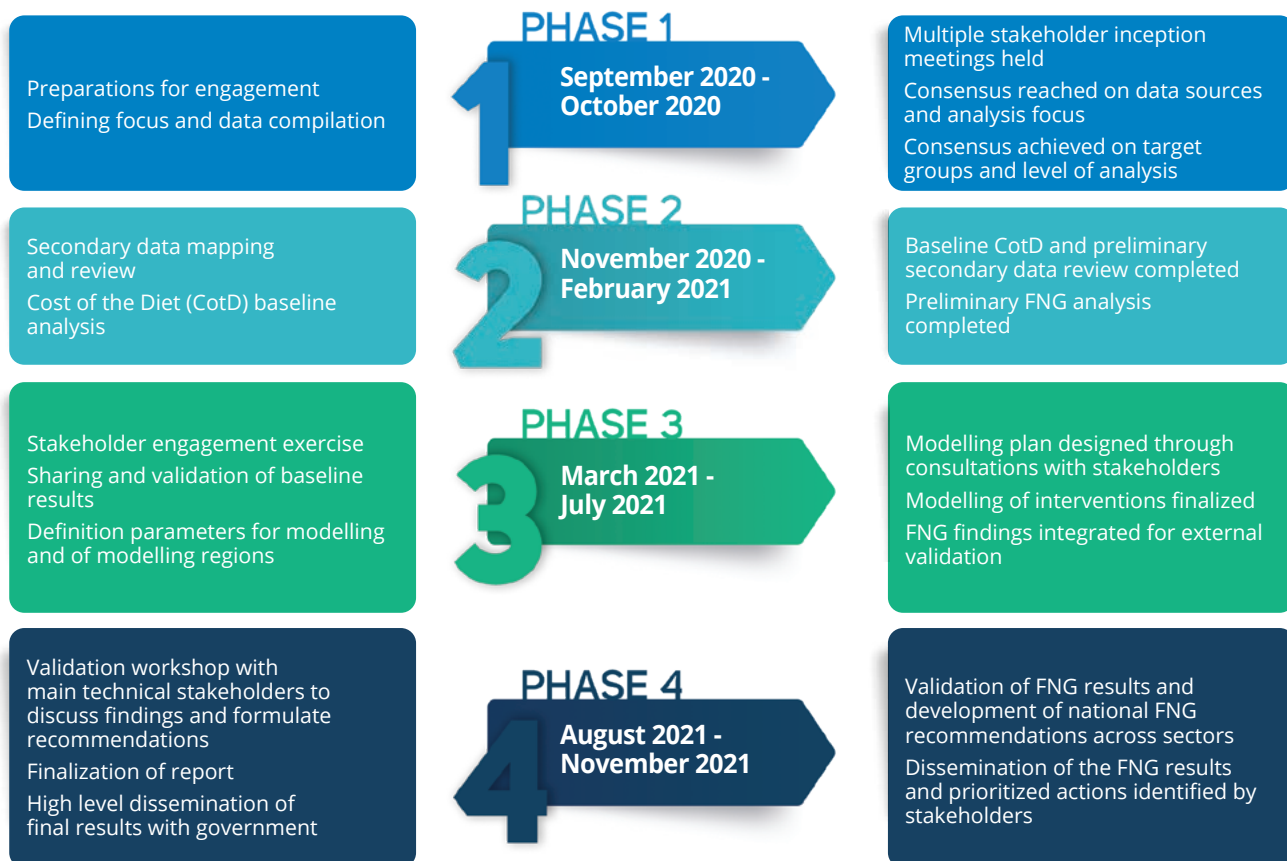
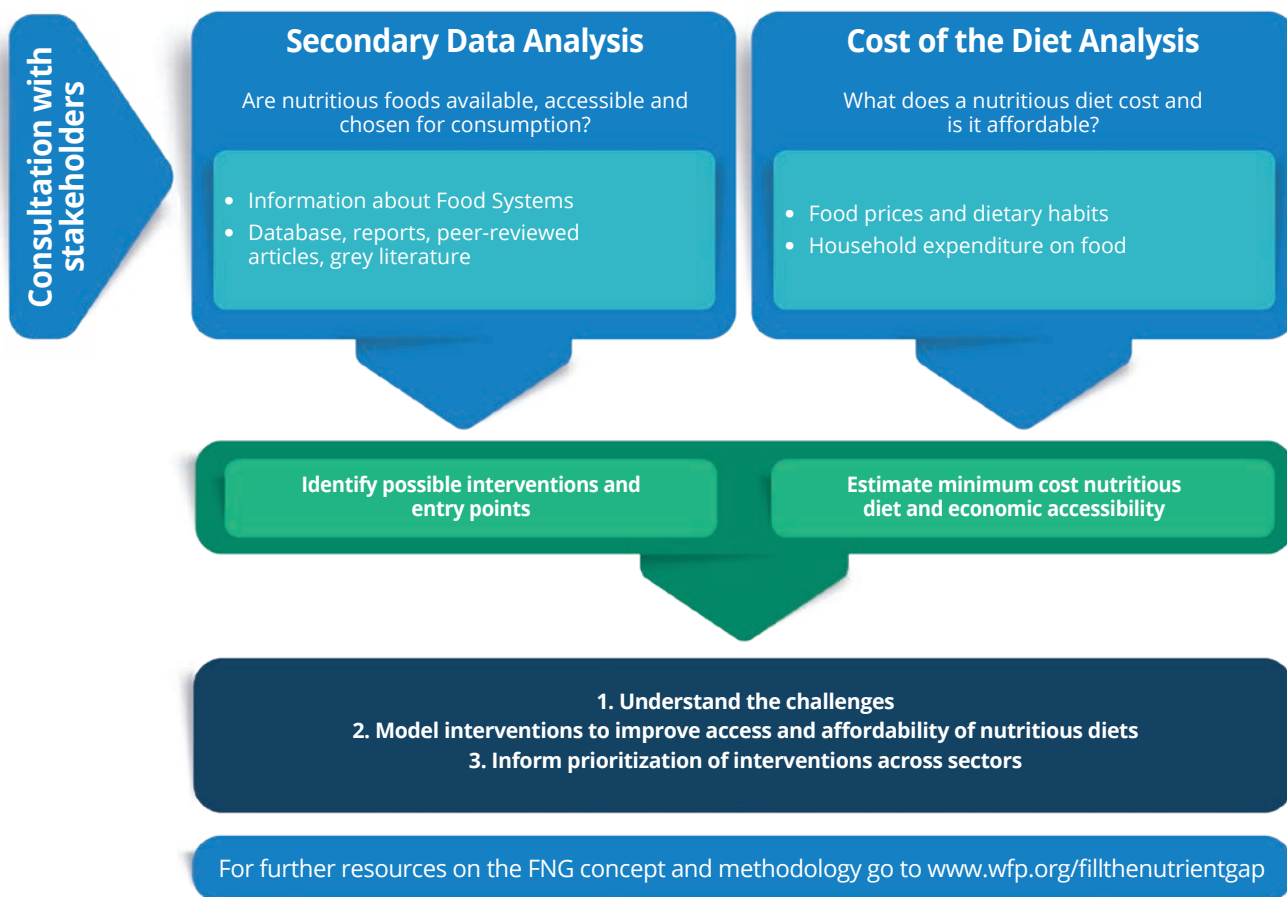


Figure 2: Overview of the Fill the Nutrient Gap methodology



COST OF THE DIET (CotD) ANALYSIS

CotD software uses linear programming to understand the extent to which poverty, food availability and food prices may affect the ability of people to meet their nutrient needs. Using price data collected from markets or from secondary sources, the software calculates the amount, combination, and lowest possible cost of local foods that are required to provide individuals or households with their average needs for energy, and their recommended intake of protein, fat and micronutrients.¹ These diets are calculated within defined constraints to prevent the inclusion of unrealistic types or amounts of food and the provision of excessive amounts of nutrients.

The FNG approach defines the ‘Staple Adjusted Nutritious Diet’ as the lowest cost nutritious diet that includes a typical staple food and excludes foods that are prohibited.² This diet is referred to as the ‘nutritious diet’ throughout this summary. It meets requirements for nutrients, including protein, nine vitamins and four minerals, and does not exceed energy and fat requirements. The nutritious diet is conceptually similar to the ‘nutrient-adequate’ diet estimated as the second level of diet quality in the 2020 State of Food Insecurity (SOFI) report.³

Population expenditure data is compared to the cost of the nutritious diet and is used to estimate the proportion of the population that would not be able to afford it. This non-affordability can be estimated and compared across different regions, seasons or countries. The estimate of non-affordability is a conservative estimate of the share of households unable to afford the lowest cost nutritious diet, assuming optimized selection of nutritious foods. The real cost and non-affordability of a nutritious diet is likely to be higher, as reflected by a healthy diet, which includes foods from several food groups and has greater diversity within food groups.

¹ As defined by the Food and Agricultural Organization (FAO) and the World Health Organization (WHO).

² This diet is not intended to reflect what individuals or households are currently eating nor should it be used to develop food-based recommendations or dietary guidelines. Foods that are prohibited could be for customary or public health reasons, e.g., raw meat during pregnancy in some parts of the world.

³ FAO, IFAD, UNICEF, WFP, WHO. The State of Food Security and Nutrition in the World 2020 [Internet]. 2020. Available from: <http://www.fao.org/3/ca9692en/online/ca9692en.html>

Cost of the Diet (CotD)

The CotD analysis was undertaken for each of the 33 provinces of Indonesia at rural and urban levels, and for DKI Jakarta, making a total of 67 CotD assessment regions. Food price and availability data and food expenditure data used for the CotD and affordability analysis were obtained from the March 2019 National Socio-Economic Survey (SUSENAS). The SUSENAS province disaggregation and urban/rural village classification were used for the analysis.

Modelling regions were chosen in consultation with national stakeholders considering their interest in those provinces and are deemed to represent the geographic and food system diversity of the country. The selection criteria included considerations based on: (i) the Ministry of Health's priority provinces for stunting prevention and complementary feeding programmes, (ii) the inclusion of provinces with high and low non-affordability, (iii) population density and, (iv) geographic diversity. The modelling regions included urban and rural assessments for:

- Aceh
- Lampung
- Jakarta (urban only)
- Jawa Timur
- Kalimantan Barat
- Gorontalo
- Sulawesi Tengah
- Nusa Tenggara Barat (NTB)
- Nusa Tenggara Timur (NTT)
- Maluku
- Papua

The nutritious diet was estimated for a modelled household of five members as follows:

- breastfed child (12–23 months);
- school-age child (6–7 years);
- adolescent girl (14–15 years);
- lactating adult woman; and
- adult man.

As reflected in consumption data and secondary literature and validated by stakeholders, rice was chosen for the staple adjustment of the nutritious diet in all assessments except rural Papua. Two portions of rice per day were included in the nutritious diet to

account for approximately 50 percent of dietary energy for all modelled household members, except for the child aged 12–23 months who received one portion of staple food per day to complement breastfeeding. In the case of Rural Papua where tuber consumption is also high, the staple adjustment was divided equally between rice and sweet potato.

To estimate the proportion of the population that would not be able to afford each diet, food expenditure data were compared to the cost of the energy-only and nutritious diets. Those people whose expenditure was below the cost of the diet are deemed “unable to afford” and make up the percentage of “non-affordability.” The affordability gap is then calculated for those individuals by summing up their individual shortfalls (the additional money they would need to afford the lowest-cost nutritious diet). In the case of Indonesia, the affordability gap was calculated per province and then summed to obtain a national figure.¹

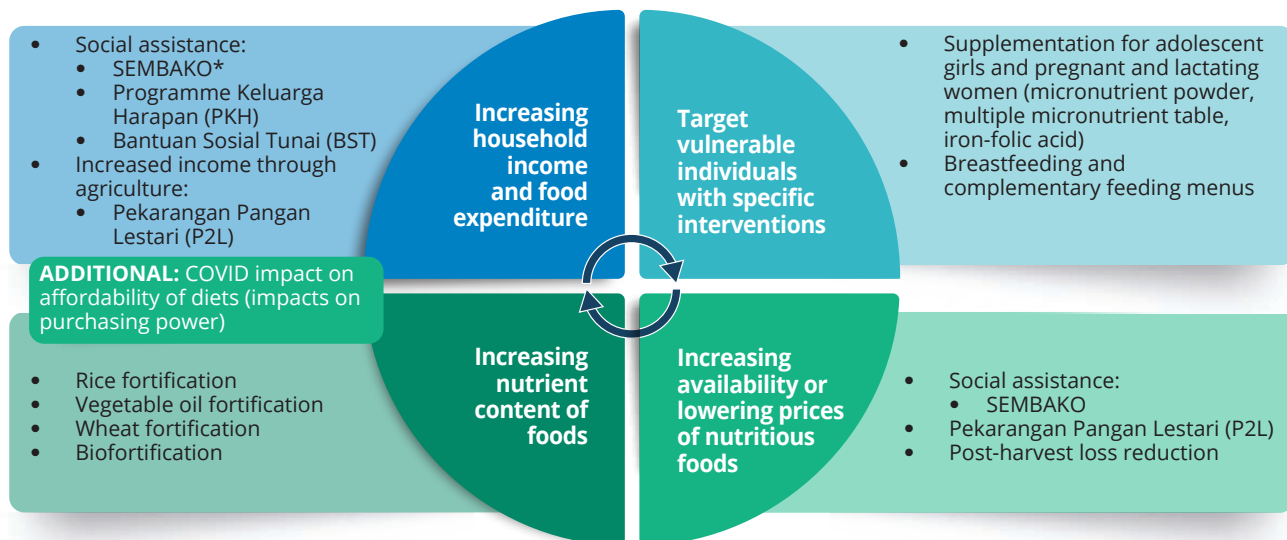
Intervention modelling

The selection of potential interventions for modelling (described in Figure 3) was informed by secondary data review and stakeholder consultations, and included the following:

- Increasing household purchasing power to afford a nutritious diet through social assistance, cash-based transfers or food transfers or vouchers, or through programmes aimed at increasing household income (e.g. agriculture).
- Targeted interventions for vulnerable individuals such as micronutrient supplementation for infants and young children, adolescent girls and pregnant and lactating women, or interventions aimed at improving breastfeeding and complementary feeding practices.
- Increasing the nutrient content of foods through biofortification and post-harvest fortification of staple foods such as rice.
- Increasing the availability of nutritious foods at household level through food transfer schemes provided by social assistance programmes, or by providing support on agricultural practices to improve availability of locally produced nutritious foods and reduce post-harvest losses.

¹ For further details on the methodology to calculate the affordability gap, please refer to the full report for the FNG analysis in Indonesia.

Figure 3: Entry points and interventions modelled for the FNG Indonesia



* SEMBAKO is a voucher-based food assistance programme that increases food purchasing power. It has the potential to also increase the availability of nutritious food at the household level when participants receive a diverse set of foods. For further details, please refer to Main Message 8.



Main Messages

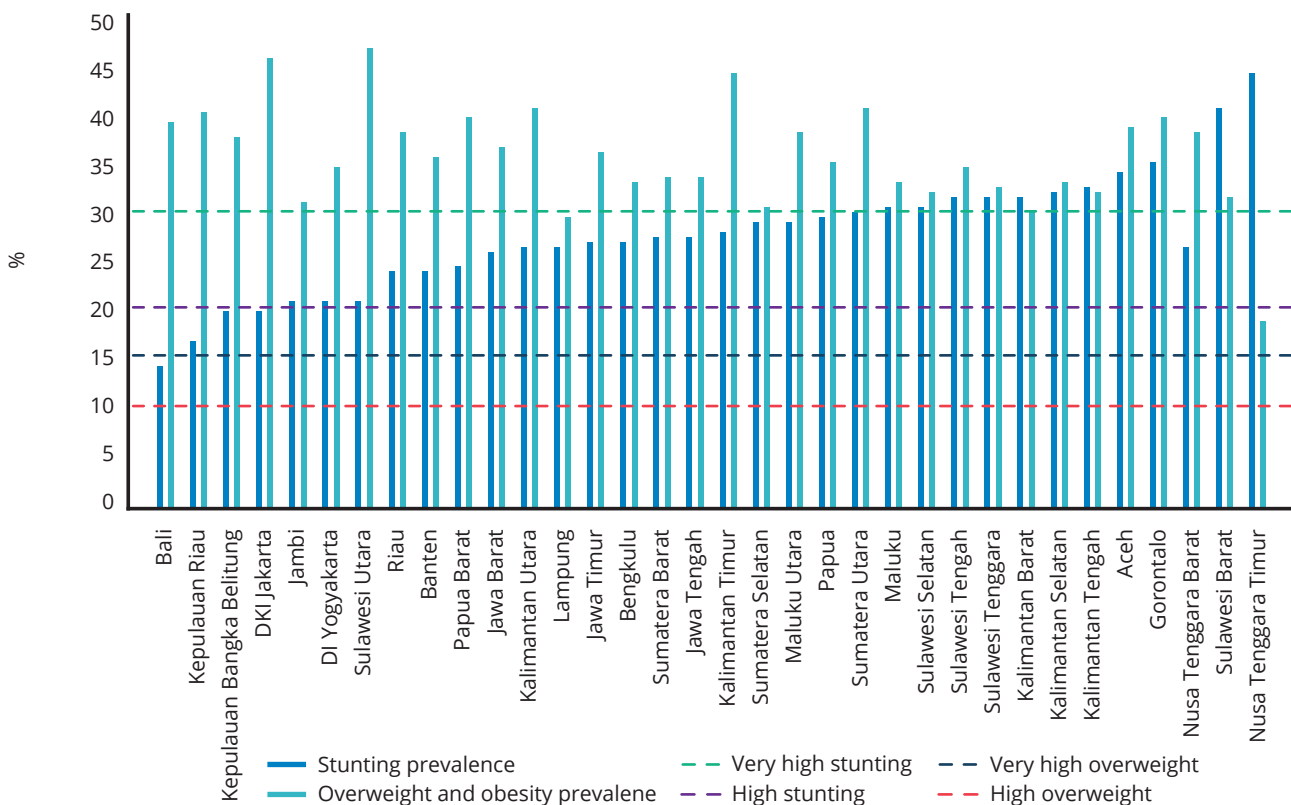
1. Trends in Indonesia indicate significant progress in the fight against stunting. However, obesity and non-communicable diseases are an increasing problem. Despite limited data, evidence confirms that micronutrient deficiencies and their consequences are widespread. Poor dietary quality remains the common factor underlying all forms of malnutrition in Indonesia.

With almost one out of every three children under 5 stunted (4) and one out of every ten wasted (5), stunting and wasting rates are high as per World Health Organization (WHO) classification (Figure 4). They coexist with other forms of malnutrition and their common cause is inadequate diets. Almost one out

of four people are anaemic (24 percent) (5), and 25 percent are zinc deficient (6). Anaemia prevalence is higher during critical periods of the life cycle; more than a third (39 percent) of all children under 5 and almost half of all pregnant women (49 percent) are anaemic (5). Overweight and obesity rates for adults have increased dramatically in the last decades in Indonesia, rising from 19 percent in 2007 (7) to 35 percent in 2018 (5). The triple burden of malnutrition is observed in all provinces in the country and has severe implications for human capital development, translating to economic losses measured as lost productive potential and increased healthcare costs.

Investing in the prevention and treatment of malnutrition in all its forms, whether undernutrition, micronutrient deficiencies or overweight/obesity prevention, can help Indonesians reach their full potential and live healthy and productive lives.

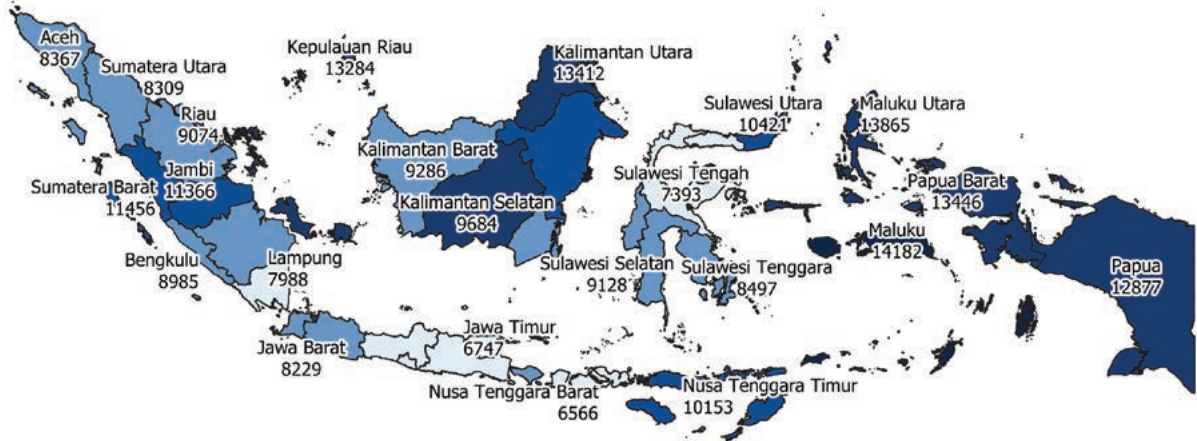
Figure 4: Prevalence of overweight and obesity in adults and of stunting in children <5 by province, and cut-off values for public health significance (high and very high) (RISKESDAS 2018)



2. The least-cost diet that meets nutritional needs would be between 6,566 Indonesian rupiah (IDR) and IDR 14,182 per capita per day, depending on location, or an average of IDR 8,532. The nutritious diet is 2.5 times more expensive than a staple-based diet that meets only energy needs.

According to March 2019 food prices reported by households (SUSENAS), the national average of the lowest cost diet that meets only energy needs would be IDR 3,392 per person per day. The nutritious diet, a diet that would meet requirements for macronutrients, 9 vitamins and 4 minerals at the lowest possible cost, would be on average IDR 8,532 per person per day, 2.5 times the cost of the energy only diet (Figure 5).²

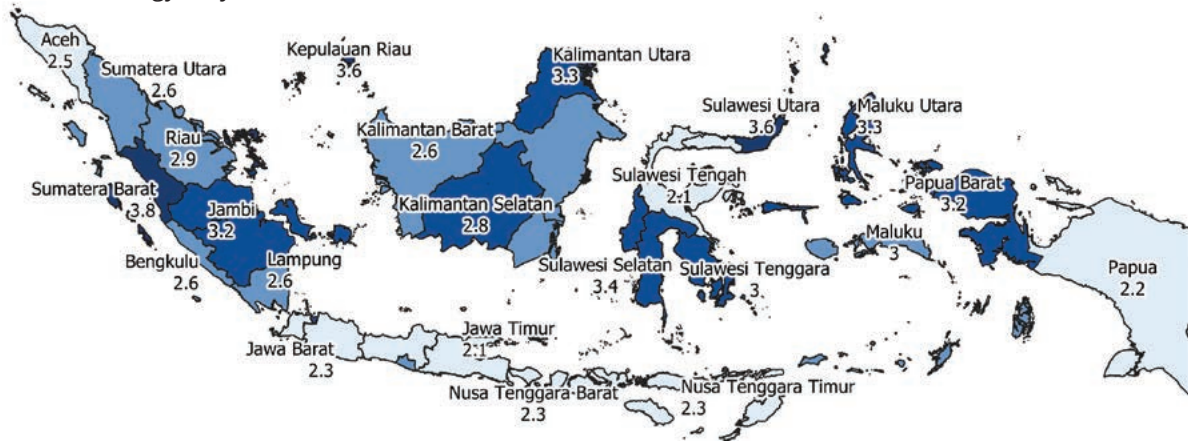
Figure 5: Average daily cost (IDR) of the nutritious diet per province, March 2019



In certain eastern provinces the cost of a nutritious diet could be more than two times the cost of this diet in other parts of the country (Figure 6). Remote provinces like Papua have a lower ratio between the cost of the two diets because even meeting only energy needs is also costly there. In provinces like Sulawesi Utara and

Sumatera Barat, which have a ratio higher than 3.5, meeting only energy needs was relatively cheap with low cost, low nutrient-dense staples, while nutritious foods are harder to access. In provinces like Aceh or Banten, where the ratio and the cost of both diets are relatively low, food is less expensive overall.

Figure 6: Ratio between the provincial average of the cost of the nutritious diet and the cost of the energy-only diet



The nutritious diet is calculated through linear optimization and represents the lowest possible cost of a selection of foods that meets nutrient requirements using locally available foods. The actual cost a household would need to incur to meet their nutrient needs is higher. As reflected by the “healthy diet” in the SOFI 2020 report (8), taking into account considerations from food-based dietary guidelines (FBDG) such as

including foods from several food groups and having a greater diversity within food groups, would translate into a higher cost diet. Based on the average cost difference between the “healthy diet” and the “nutrient adequate diet” for low-middle income countries, the healthy diet in Indonesia is estimated to cost between IDR 14,000 and IDR 16,000.³

² For more details on the baseline results of the CotD analysis, please refer to the Annexure to this Summary Report.

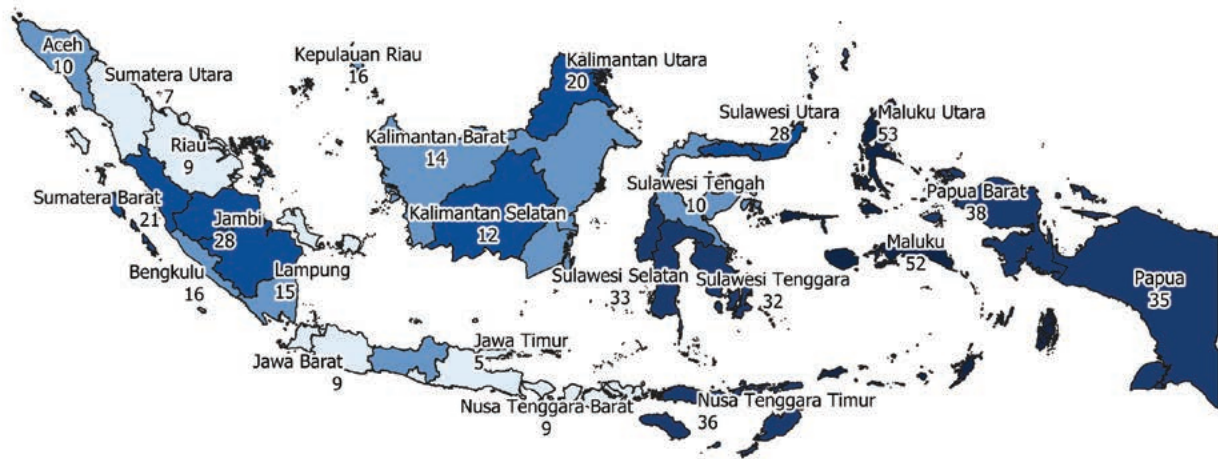
³ Estimated range based on average cost difference between healthy diet and nutrient adequate diet for lower-middle income countries (lower bound) and for Indonesia specifically (upper bound) (SOFI, 2020).

3.

Across the country, between 4 and 53 percent of the population, depending on the location, could not afford the lowest cost nutritious diet based on SUSENAS 2019 data. A lower cost of the nutritious diet in a geographic area does not necessarily mean that it is more affordable.

In all provinces except Papua, all the population would be able to afford an energy-only diet. In Papua, 6 percent of the population would not be able to afford to even meet only their energy needs. Non-affordability of the nutritious diet ranges from a low of 4 percent in Banten to a high of 53 percent in Maluku and Maluku Utara (Figure 7). On average, non-affordability in rural settings is 16 percent compared to 9 percent in urban settings. Based on the range estimated for the cost of a “healthy diet” as per the SOFI 2020 report, non-affordability for a healthy diet would range between 48 and 57 percent.

Figure 7: Average non-affordability of the nutritious diet per province



Nationally, Indonesia’s total affordability gap is estimated at IDR 26 trillion (USD 1.8 billion) per year. The average per capita affordability gap among those unable to afford a nutritious diet is roughly IDR 740,151 (USD 50.89) per year. The eastern most provinces, which have the highest average cost and non-affordability of the nutritious diet, have the largest per capita affordability gap (Figure 8). On average, an individual in these provinces that is unable to afford the nutritious diet is also furthest away from meeting

that threshold, suggesting that individual needs for closing the gap are higher than in other provinces. Any social assistance programme implemented in these areas should consider what an adequate response or transfer amount would be, given the greater needs of the population living there.

Based on cost and non-affordability of nutritious diets, the regions chosen by stakeholders for the modelling of interventions were classified into three types (Figure 9).



Figure 8: Average per capita affordability gap among individuals unable to afford the nutritious diet by province, and total affordability gap by province

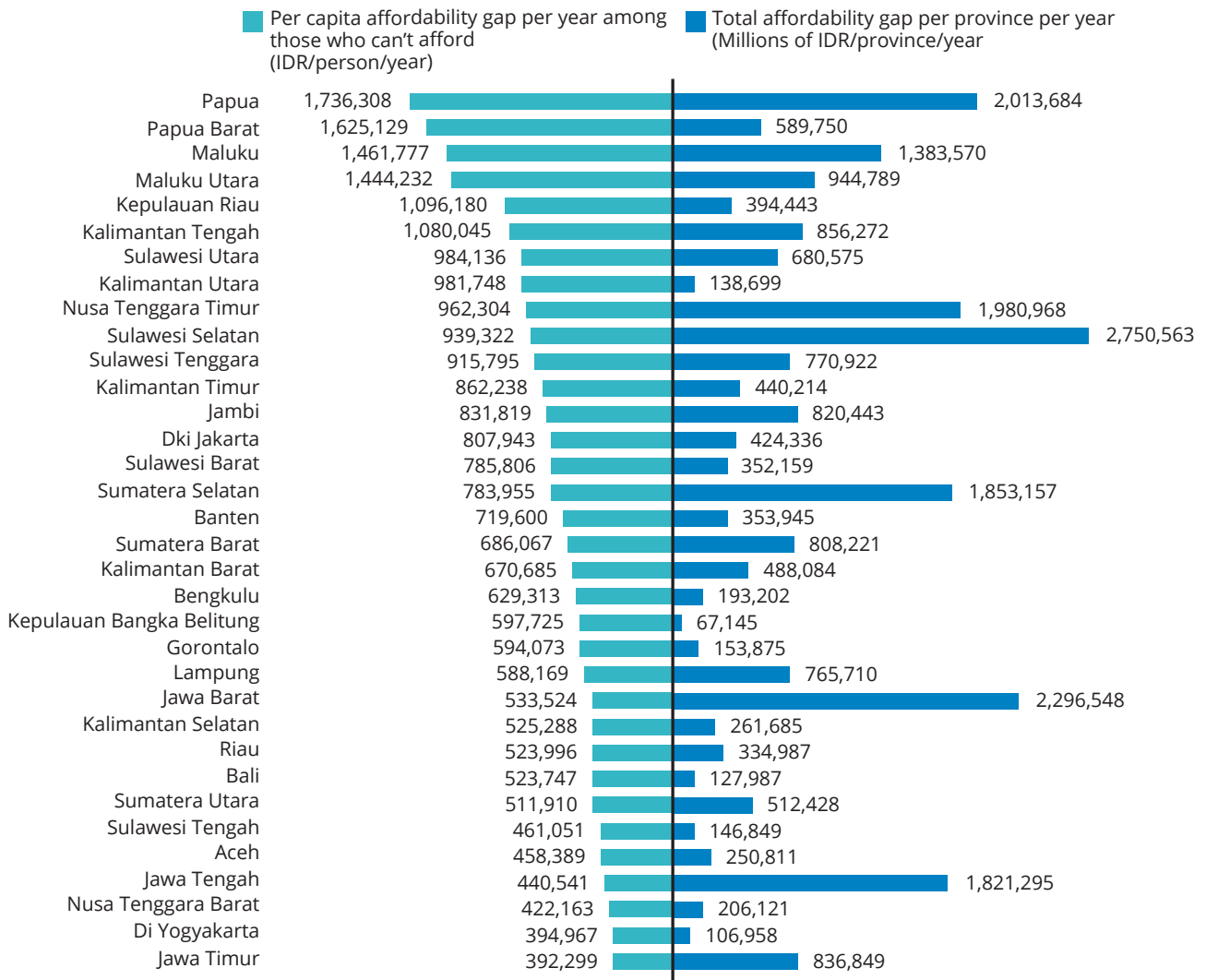
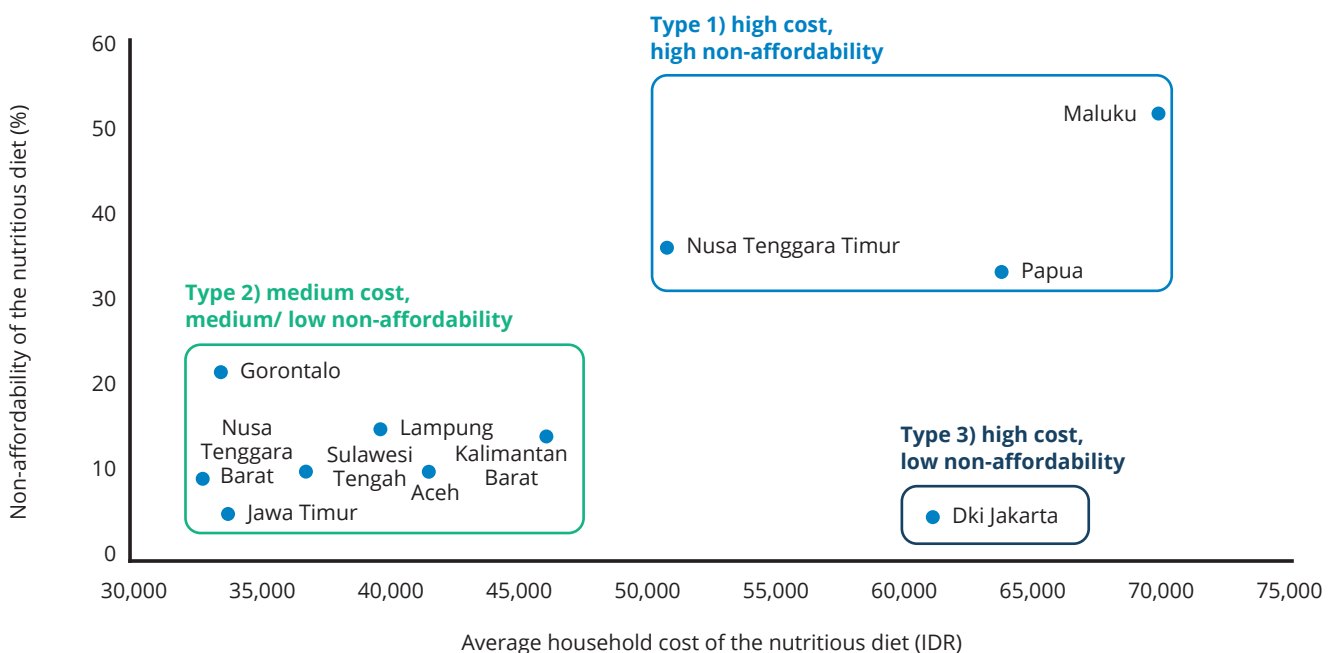


Figure 9: Identified types for scenario modelling



4. Numerous underlying drivers across a range of systems are responsible for the significant subnational variation in the cost and non-affordability of a nutritious diet.

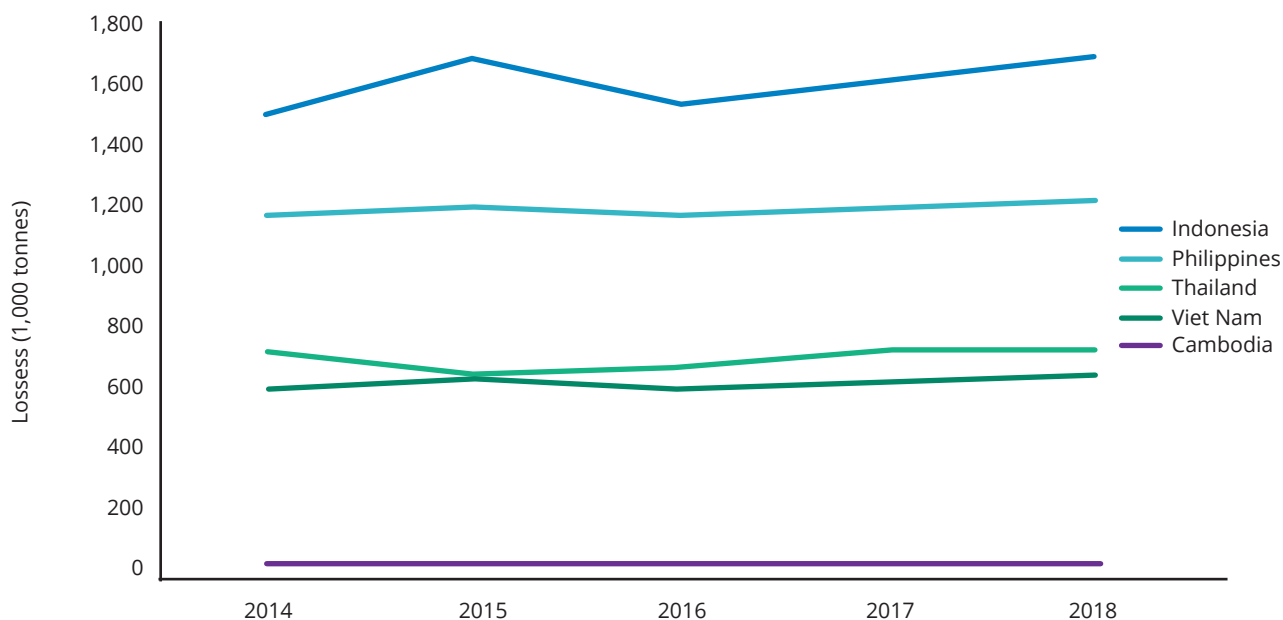
Rice represents a central part of every meal in Indonesia, and in certain regions of the country diets also have a significant tuber component. Rice and tubers make up between 40 and 60 percent of dietary energy in Indonesia. Yet the average intakes of traditional staple foods are declining while the intakes of processed foods, many of which are also predominantly a source of energy only, are increasing (in urban and rural settings).

In addition to cultural and social factors, food choices are constrained by income and wealth and by the food environment (prices, availability and information). Restrictive trade policies such as tariffs have led to relatively high prices of rice, which are almost double those of countries like Viet Nam, Myanmar, Cambodia and Thailand, for example (9). Most households spend at least half of their total expenditure on food, leaving low-income households vulnerable to increases in food prices.

The domestic market remains poorly integrated and there is great economic inequality among the different islands, with those in the east generally worse off than the rest of the country due to remoteness and economic underdevelopment. The food supply chain is long and inefficient because of low frequency of shipping and transportation of goods, and lack of cold storage and poor transportation infrastructure. This leads to comparatively high post-harvest losses of food crops, including rice, fruit and vegetables (Figure 10) (10,11).

Urbanization has also led to changes in the Indonesian food environment and in households' consumption patterns. Prepared foods sales from street vendors and roadside canteens are widespread in urban areas. Consumption of these foods has been mainly driven by the need for convenience related to long working hours, long commutes and/or very constrained housing conditions. The fast food and beverage industry also has a strong presence in Indonesia. Prepared foods represent over 40 percent of total food expenditure in urban areas, and a similar phenomenon is being observed in rural areas albeit to a lesser extent, with prepared foods representing more than a quarter (26 percent) of total expenditure on food (12).

Figure 10: Total losses of vegetables, by country and year (Source: FAOSTAT)



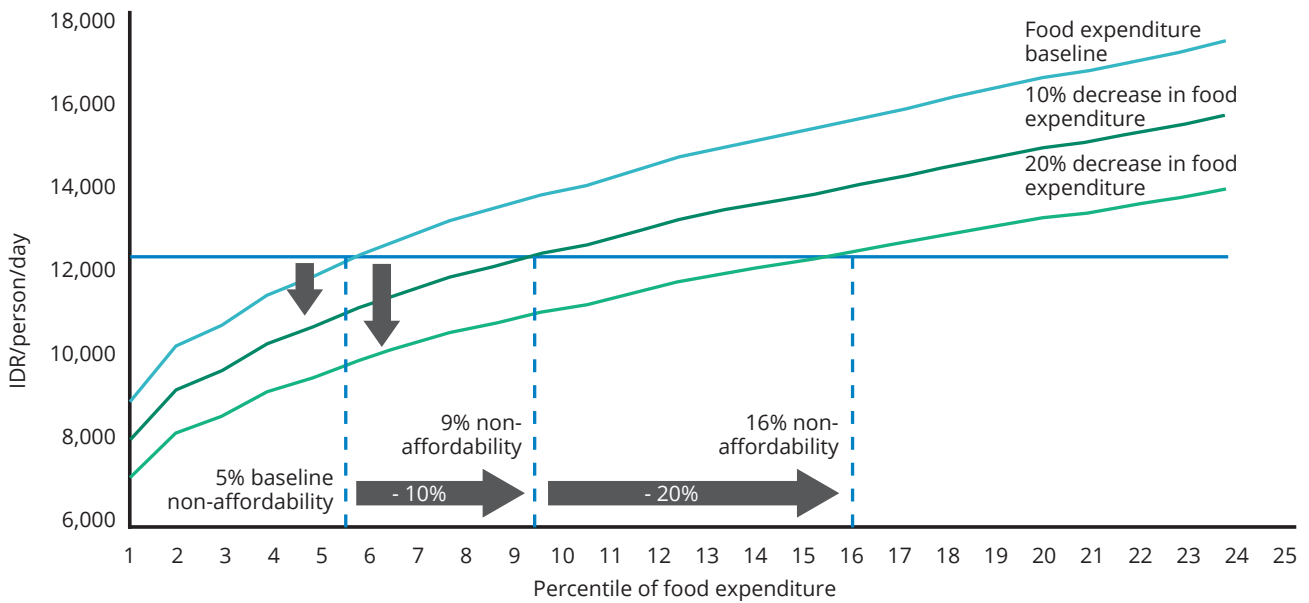
5. The impacts of the ongoing COVID-19 pandemic continue to exacerbate vulnerabilities. Lower income households have been disproportionately affected, with more households falling into poverty and nutritious diets pushed even further out of reach for the most vulnerable.

Indonesia was one of the south east Asian countries hardest hit by the COVID-19 pandemic, in terms of health and economic impacts (13). Following an average of more than 5 percent yearly growth in GDP from 2015 to 2019, the GDP contracted 2.1 percent in 2020. As of September 2020, 2.8 million additional people had fallen into poverty and, for the first time since 2006, extreme poverty increased in the country (14–16). The economic and food security effects of the crisis were notable on household purchasing power, as household income decreased. People in the bottom 40

percent of income were the most affected and those already in poverty fell deeper into it. As vulnerable households depleted their savings and lost income sources, the pandemic put them at a greater risk of continuing in a cycle of poverty and malnutrition (15,17,18).

To show how a reduction in purchasing power could affect non-affordability of the nutritious diet, a sensitivity analysis was conducted. At the time of the analysis precise data on the reduction in household food expenditure did not exist, therefore 10 and 20 percent reductions in food expenditure were selected. In Jakarta, for example, a 20 percent reduction would increase non-affordability by 11 percent and would mean that the nutritious diet would become unattainable for more than 1.1 million additional people (Figure 11). The affordability gap would become larger for those who were already experiencing it, placing them further away from a nutritious diet and increasing their vulnerability to malnutrition.

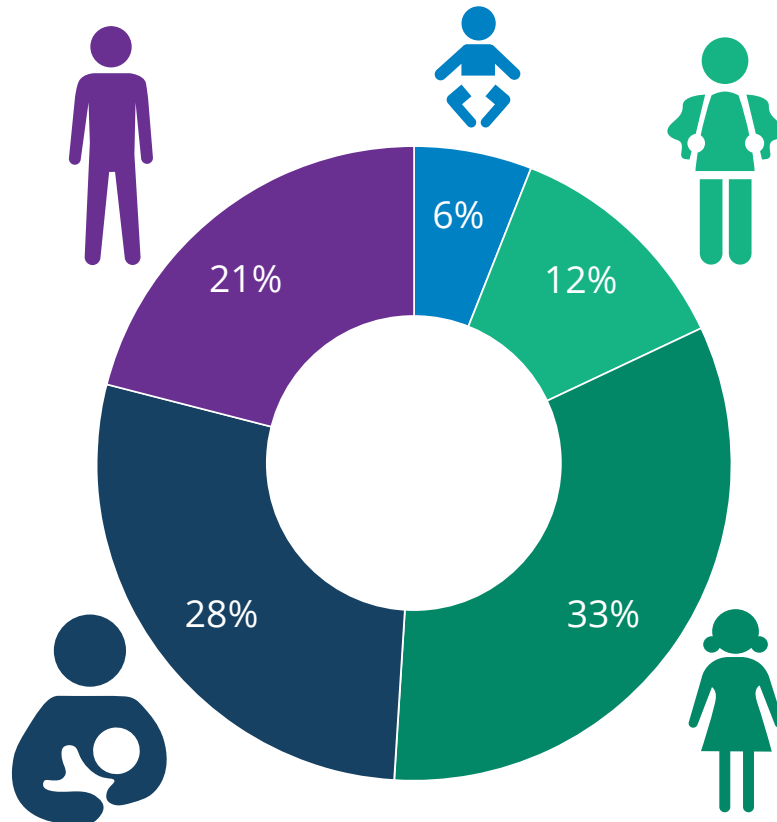
Figure 11: Non affordability in Jakarta, with a 10 percent and 20 percent decrease in food expenditure



6. Adolescent girls and pregnant and lactating women are the most vulnerable members of the household. They require high levels of nutrients which are expensive to obtain from locally available foods. Targeted interventions and fortification can reduce the burden of meeting their nutrient needs and improve nutrition outcomes.

In the modelled household, the adolescent girl and the lactating woman represent over 60 percent of the total household cost of the nutritious diet (Figure 12), reflecting their higher nutritional needs and demonstrating their extreme vulnerability to malnutrition and elevated risk for micronutrient deficiencies. Almost 1 of 3 (32 percent) girls and women between 15 and 24 are anaemic. Anaemia is most severe among pregnant adolescent girls and women; almost 9 of 10 (85 percent) pregnant women aged 15–24 years, and almost half (49 percent) of all pregnant women, are anaemic. (5)

Figure 12: Intrahousehold distribution of the cost of the nutritious diet in Indonesia (national average)



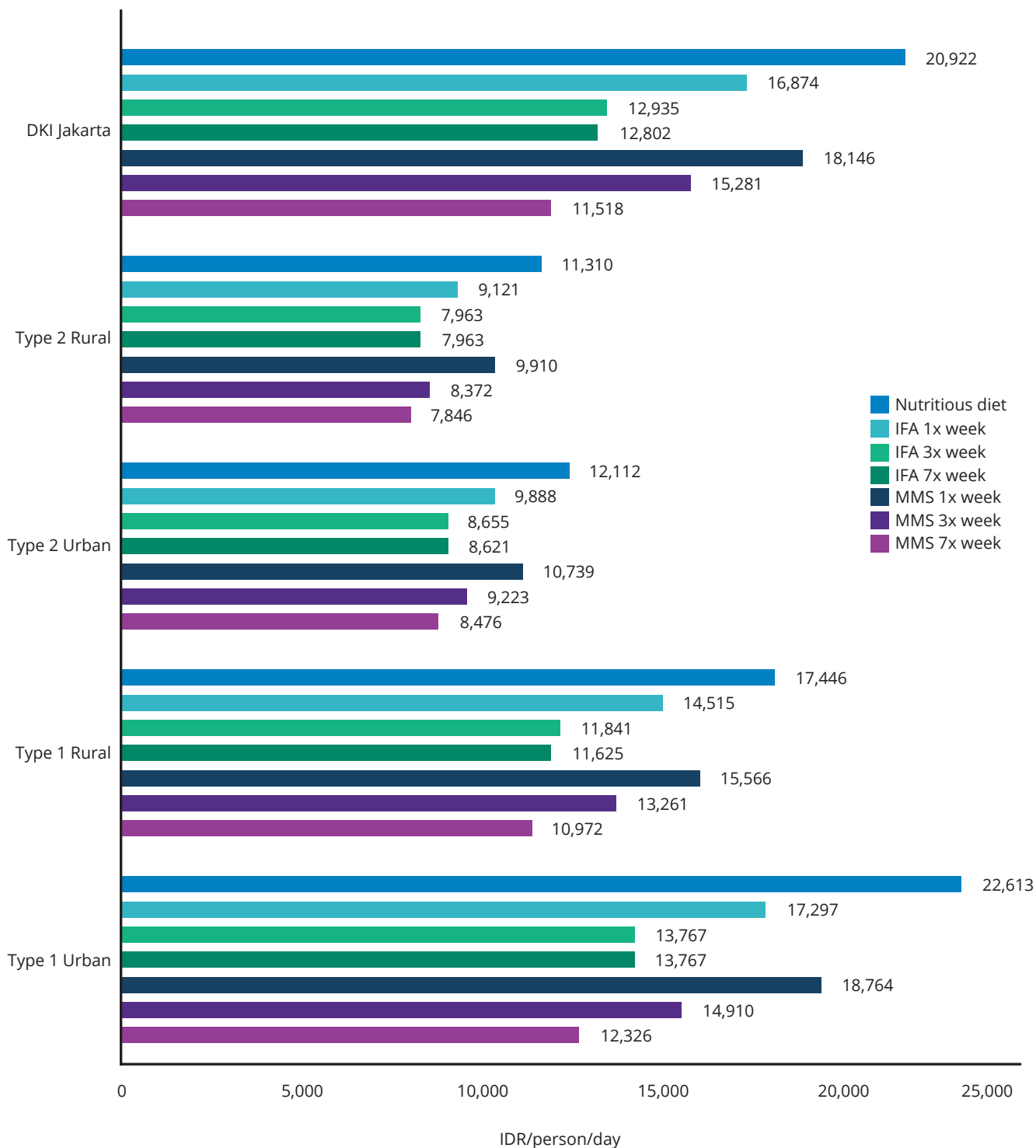
Micronutrient supplementation has been recognized globally as an effective intervention to reduce anaemia and other micronutrient deficiencies (19,20). In Indonesia, an iron-folic acid (IFA) supplementation programme for adolescent girls and pregnant and lactating women is being implemented by the Gol through the Ministry of Health. Adolescent girls are entitled to IFA supplements on a 1 tablet per week dosage, while pregnant women are entitled to daily IFA supplements for at least a 90 day period during their pregnancy. But the programme still faces certain challenges in terms of implementation and adherence. Of adolescent girls (10–19 years of age) who received IFA at school, 96% were supplied with the supplement less than once a week (5).

Several studies have examined the impact of multiple micronutrient supplements (MMS) in adolescent girls and women of reproductive age, as a way to prevent

pre-conception anaemia and other micronutrient deficiencies (21–23). The Supplementation with Multiple Micronutrients Intervention Trial (SUMMIT) in Lombok found that infants of women receiving MMS during pregnancy had an 18 percent reduction in early infant mortality when compared to those of women receiving IFA supplementation. This impact was more notable for infants of undernourished or anaemic women. (24)

Both IFA and MMS were modelled for the non-pregnant adolescent girl (Figure 13) and the lactating woman (Figure 14) at frequencies of 1, 3, and 7 times per week, to compare the impacts of different levels of coverage and adherence. The biggest impact on the cost of the nutritious diet for the adolescent girl is observed with a daily dose of MMS. It could help reduce the cost by 30 percent (Type 2 Urban) and up to 46 percent (Type 1 Urban). Compared to IFA, MMS only has a larger impact on the cost when given daily.

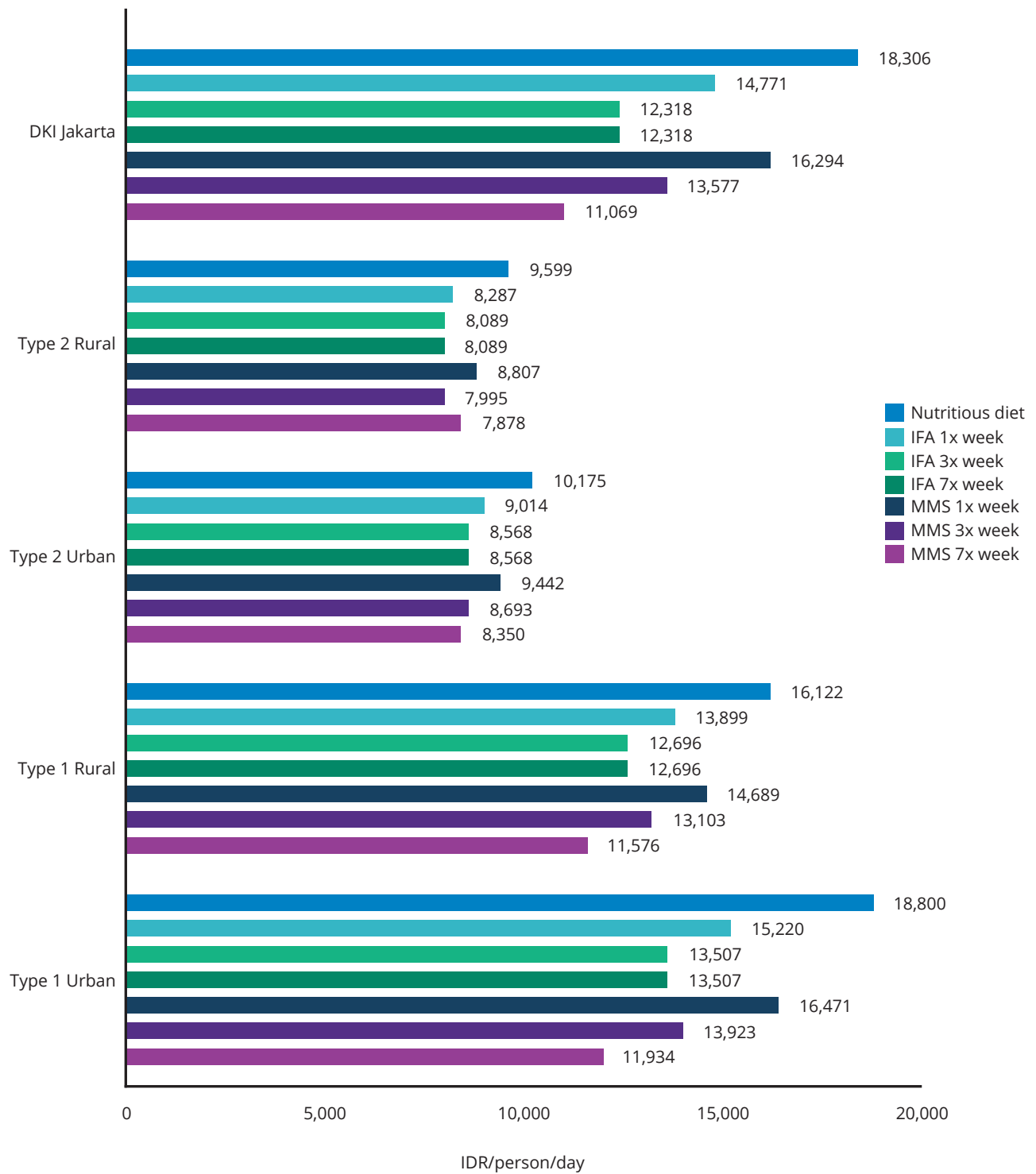
Figure 13: Daily cost of the nutritious diet for the adolescent girl with IFA or MMS supplementation 1, 3 and 7 times per week



For the lactating woman, daily or 3 times a week IFA supplements can reduce the cost of the nutritious diet between 16 and 33 percent. There is no - or only a minimal - difference between a daily or 3 times per week IFA dosage in the reduction of the cost of the

diet, because IFA needs have already been met. MMS, however, has the most potential to reduce the cost of the nutritious diet of the lactating woman when increased to a daily dosage.

Figure 14: Daily cost of the nutritious diet for the lactating woman with IFA or MMS supplementation 1, 3 and 7 times per week





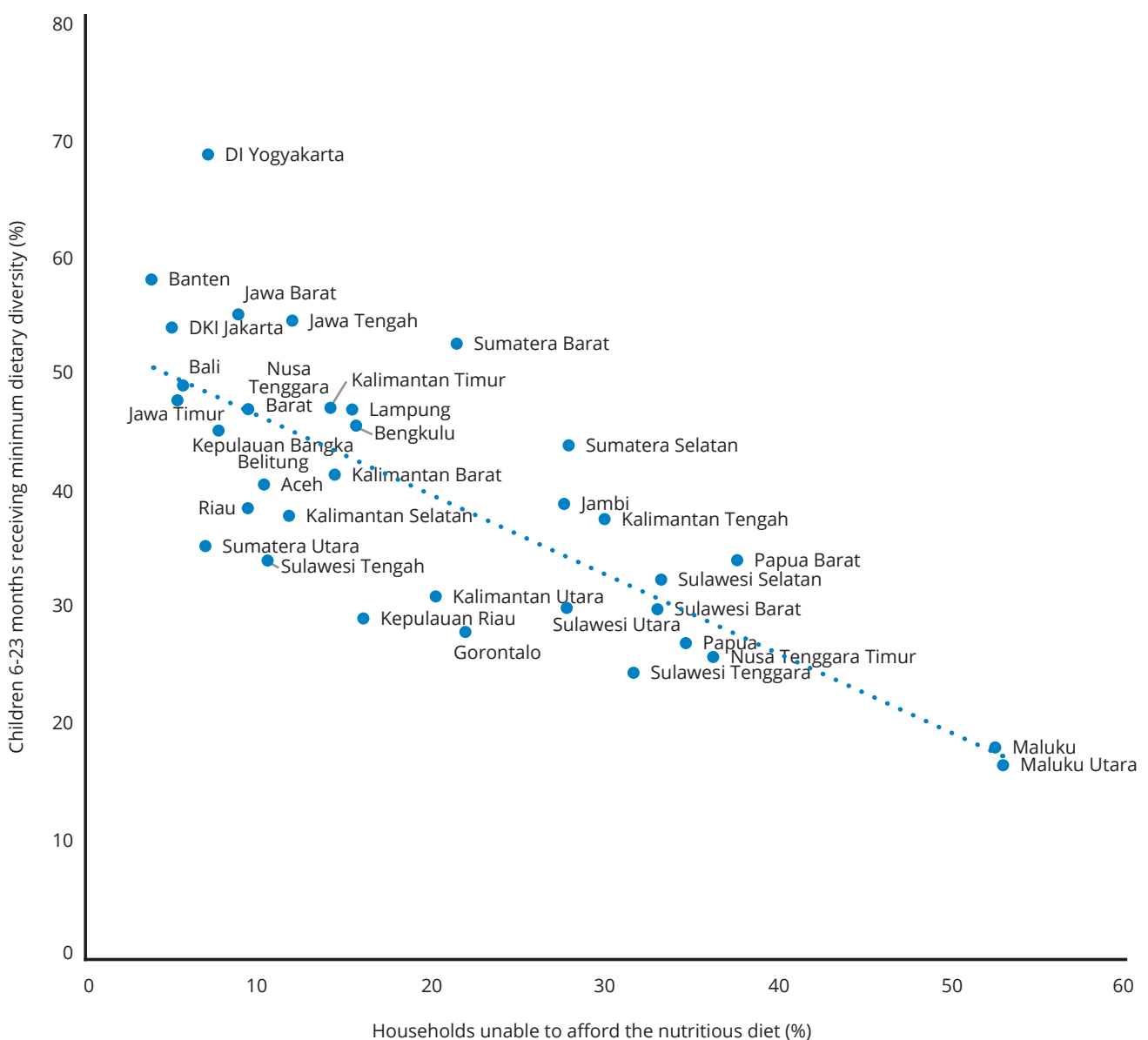
7. For children under 2 years old, suboptimal breastfeeding, low dietary diversity, and high consumption of unhealthy snack foods, increase the cost of the nutritious diet and their risk of malnutrition, which has lifelong consequences.

Adequate infant and young child feeding practices, which encompass breastfeeding and complementary feeding, increase children’s chances of survival, good health and good cognitive and physical development.

Yet in Indonesia one fourth (25 percent) of all infants under 6 months were not exclusively breastfed in the 24 hours preceding the survey, and fewer than half (47 percent) of children between 6 and 24 months are receiving a diverse range of foods. (5)

With low dietary diversity and suboptimal meal frequency, only 40 percent of children under 2 had a minimum acceptable diet. Only 28 percent of infants and young children in the lowest wealth quintile had a minimum acceptable diet compared to 57 percent in the highest wealth quintile (25). In provinces with higher levels of non-affordability, there is lower dietary diversity among children under 2 (Figure 15).

Figure 15: Scatterplot between minimum dietary diversity of children 6-23 months and non-affordability of the nutritious diet (correlation coefficient = -0.76) (Source: RISKESDAS 2018, Cost of the Diet 2021)



As part of the FNG, practices that are negative and practices that are positive for child nutrition were included in the modelling. In the first group (practices detrimental to child nutrition), the models included suboptimal breastfeeding and consumption of sugary snacks, sugar-sweetened beverages and “growing-up milks” (Figure 16). In the second group (practices

that support child nutrition), the models included complementary feeding with nutritious recipes that are culturally appropriate and use local foods at market prices, complementary feeding porridge (MP-ASI) at market price for complementary feeding (Figure 17), and free provision of micronutrient powder (Taburia or MNP) (Figure 18).

Figure 16: Daily cost of the nutritious diet for the child of 12-23 months with and without a sugary snack or beverage

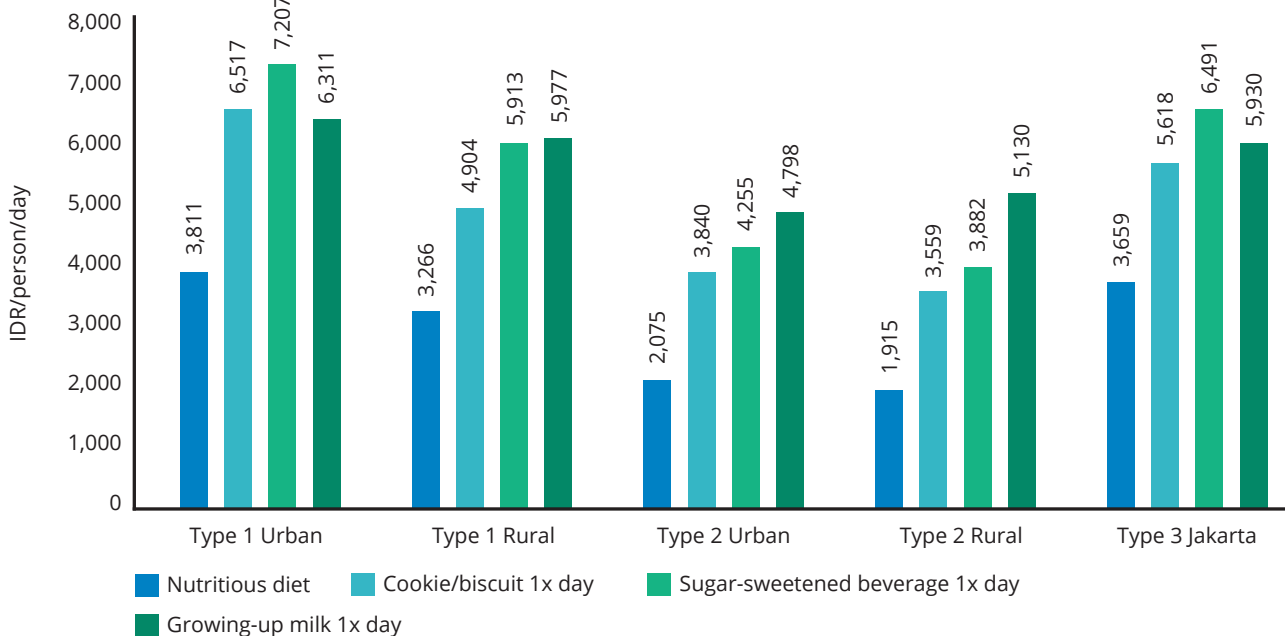


Figure 17: Daily cost of the nutritious diet for the child aged 12-23 months, with and without complementary and or sugary meals and foods

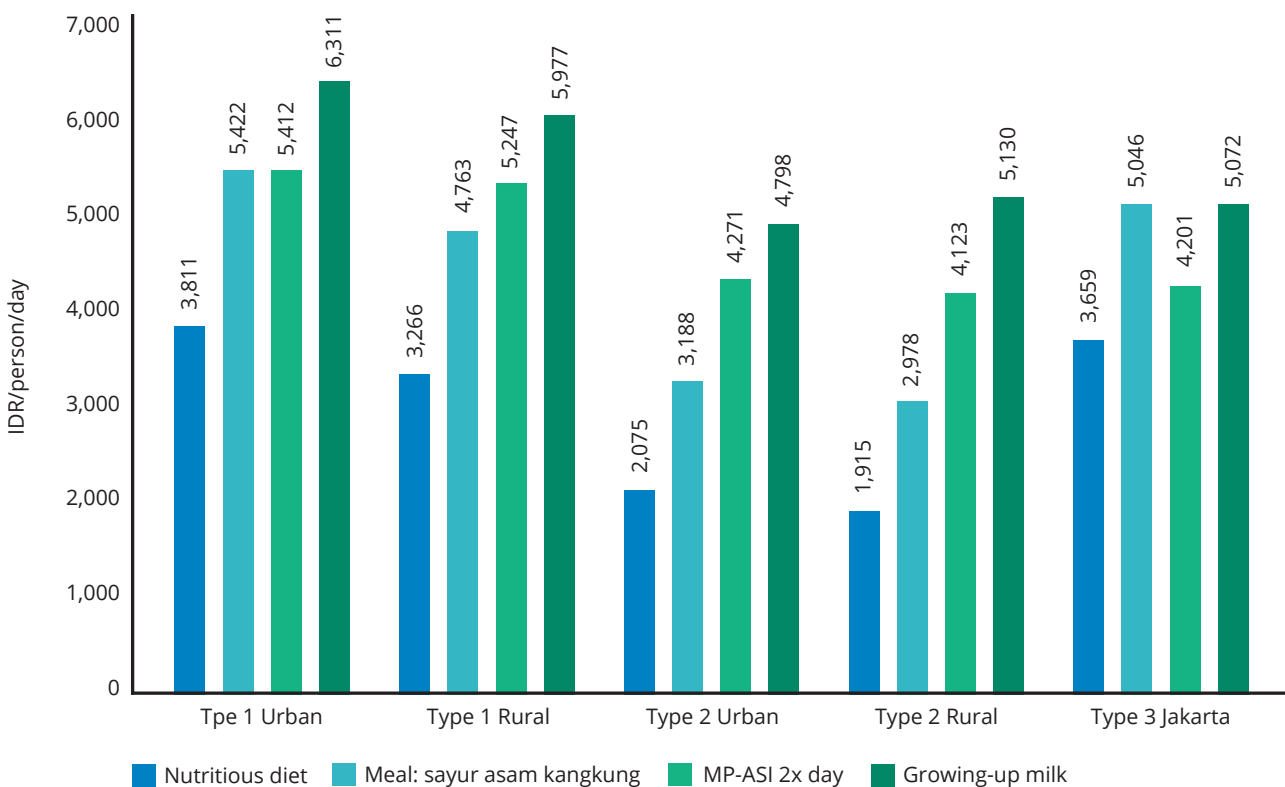
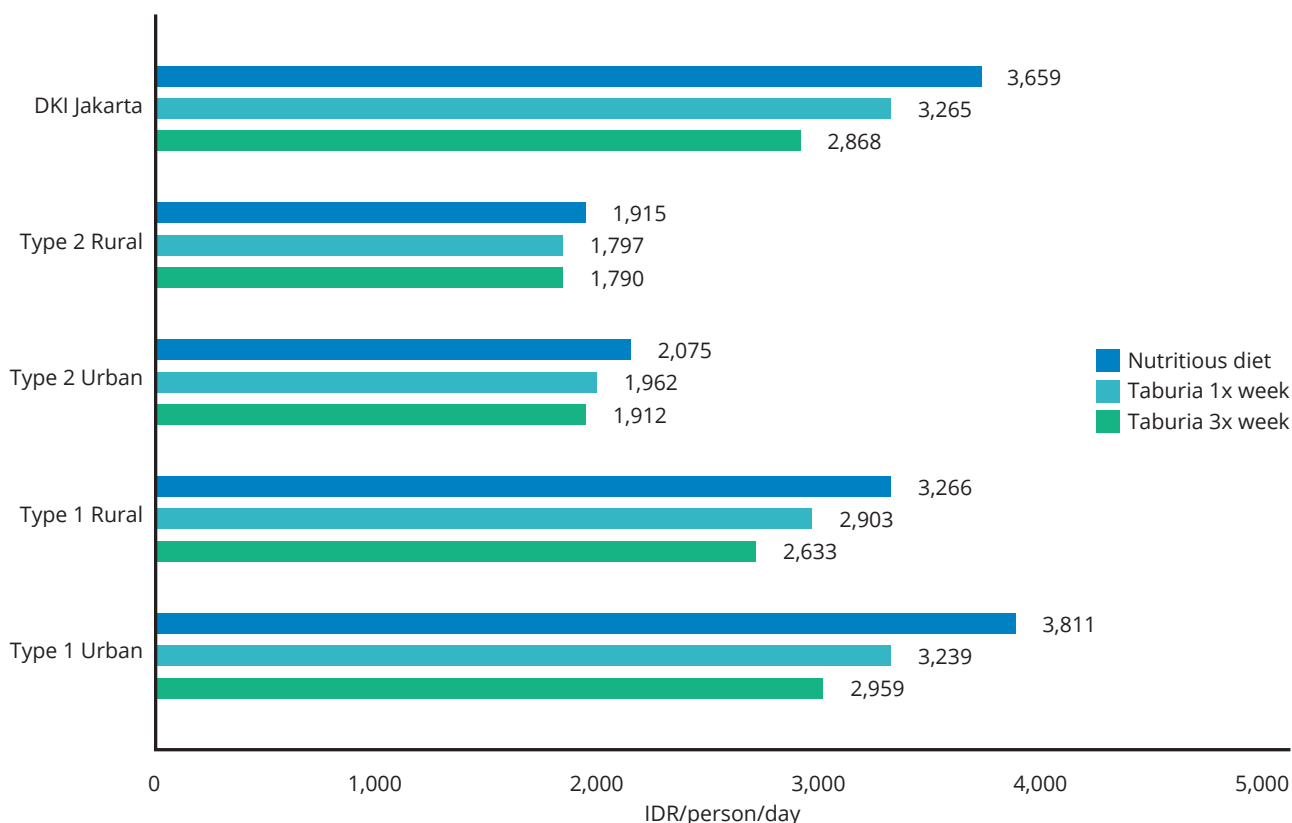


Figure 18: Daily cost of the nutritious diet for the child under 12-23 months of age, with and without Taburia supplementation



The baseline cost of the nutritious diet assumes optimal breastfeeding of the child under 2. If only half the optimal amount of breastmilk was received by the child, the cost of the nutritious diet would increase by 17 percent on average. If the child was not breastfed at all, the cost of the diet would increase by 44 percent. As breastmilk contains essential nutrients that the child needs for adequate development, those who are not breastfed require highly nutritious meals to meet nutrient needs. They also miss out on other benefits of breastfeeding such as immune system support through the transfer of antibodies.

Complementary feeding should be composed mostly of highly nutritious foods as children under 2 have relatively low energy requirements and can consume only small quantities of food. Consuming sugary foods or beverages increases the cost of their nutritious diet of the child under 2 between 50 and 100 percent, as the remaining foods to be consumed would have to be highly nutritious and therefore more expensive. Products known as “growing-up milks” are marketed as healthy and nutritionally beneficial for growing young children, but typically have a very high sugar content (26). One common “growing-up milks” that was modeled in the FNG had a negative effect similar to sugary snacks, increasing the cost of the nutritious diet by up to 131 percent.

Nutritious complementary feeding can be achieved by purchasing local nutritious foods to prepare healthy recipes in areas where these foods are available and affordable. Meals like Sayur Asam Kangkung (27) with diverse vegetables and nuts (kale, eggplant, long bean, peanut, spring onion, garlic) can help deliver the nutrients the child requires at a lower cost.⁴ In cases where diverse nutritious foods are not available or prepared for every meal of the young child due to time constraints for food preparation or other reasons, commercially available, well-formulated, complementary feeding products like MP-ASI could conveniently deliver nutrients at a relatively low cost.

Where nutritious complementary foods for children are inaccessible, unaffordable or otherwise challenging to provide, Taburia can be added to complementary foods to improve micronutrient intake and prevent micronutrient deficiencies. The highest impact of Taburia on the cost of the nutritious diet is observed in those regions with higher food prices (Type 1 and Type 3), where it could help reduce the cost up to 22 percent. In Type 2 regions, the cost would only be reduced by 7–8 percent as nutritious foods are less costly. While Taburia provides micronutrients, it does not contribute towards energy, protein or fat needs.

⁴ The nutritious diet remains the least expensive option as it is a mathematically optimized diet. However, the selection of foods might not make a palatable dish. By including recipes, the diet becomes more realistic in terms of cost and consumption patterns.

8.

Social assistance programmes have the potential to bring households within better reach of nutritious diets and other essential needs, and protect the most vulnerable from the worst effects of the pandemic downturn. However, programmes must be made more nutrition-sensitive through improved targeting, ensuring that cash-based transfers are adequate, offering a range of nutritious items in the case of food transfers, and stimulating demand for nutritious foods.

The Government of Indonesia has adopted a series of social assistance reforms in the past couple of decades to reduce and prevent poverty of vulnerable households. However, for social assistance to better support the country in achieving its long-term development objectives, programmes must become nutrition-sensitive so as to improve human capital development. As part of the FNG, the effects of three social assistance programmes on economic access to nutritious diets were simulated and evaluated.

SEMPAKO

SEMPAKO is Indonesia's voucher-based food assistance programme. Beneficiaries of the programme receive an electronic card or voucher which can be redeemed at dedicated disbursement outlets (e-warongs) for certain pre-approved foods. During COVID-19 the Government expanded SEMPAKO, increasing the number of eligible households (from over 15 million to a total of 20 million) and the transfer size (from IDR 150,000 to 200,000 per household per month) (28).

Though the objectives and design of the programme explicitly include nutrition, it still falls short of meeting

nutrition targets in its implementation. Programme monitoring shows that some e-warongs pre-select foods, effectively reducing or eliminating choice for participants. Some e-warongs transfer vendor-related costs to participants who may pay up to 10 percent above market price for their bundle and thus receive a lower value than the programme intends. (29–31)

The FNG modelling assumed three different scenarios for foods received under SEMPAKO, with increasing levels of dietary diversity (Figure 19 and Figure 20) and with prices calculated at local market rates. To reflect the higher prices commonly found at e-warongs, the modelling assumed that 95 percent of the transfer (IDR 190,000 per month) was available for use.

- Basic scenario: approximately 10kg of rice with the remainder used for eggs.
- Improved scenario: approximately 10kg of rice with the remainder used for eggs, tofu, and chicken.
- Diverse scenario: approximately 10kg of rice, with the remainder used for eggs, tofu, chicken, banana and cassava leaves.

The diverse scenario was also modelled using fortified rice to measure the potential benefit of integrating rice fortification with national social assistance programmes (Figure 21). The total cash value of all scenarios is the same. Rice value and amount is constant through all three scenarios based on the average market price for each modelling region. Portions of additional foods included in each scenario were adjusted based on local market prices in each modelling region, using the remainder after deducting the cost of 10kg of rice.

The cash value of the SEMPAKO transfer used (IDR 190,000 per month) is equal to 9–19 percent of the cost of the mathematically optimized nutritious diet. However, the limited foods available through SEMPAKO have a lower impact on diet costs. Even in the case of the diverse scenario, the contribution of SEMPAKO is limited given the relatively low transfer size.



Figure 19: Daily household cost of the nutritious diet in urban modelling areas, including different scenarios of SEMBAKO basket

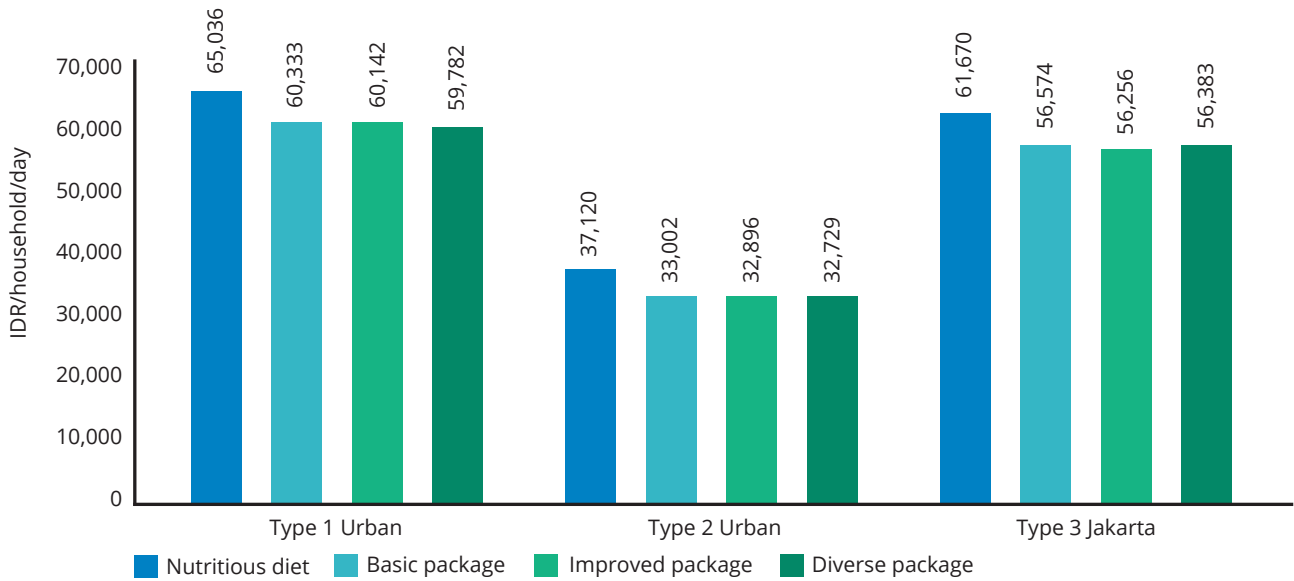


Figure 20: Daily household cost of the nutritious diet in rural modelling areas, including different scenarios of SEMBAKO basket

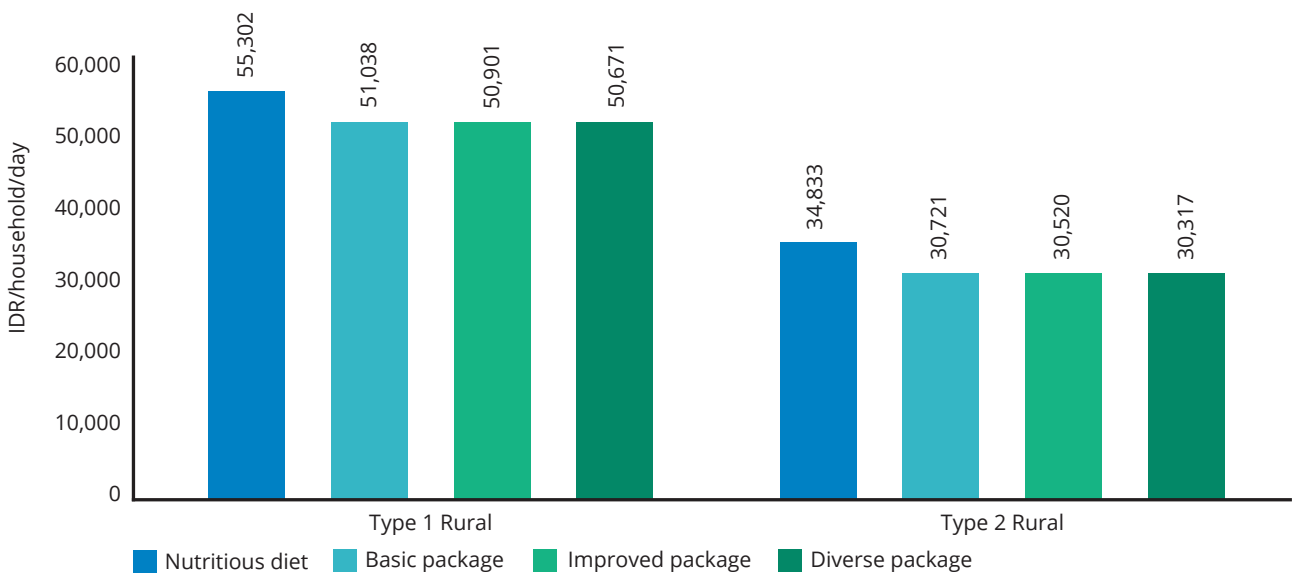
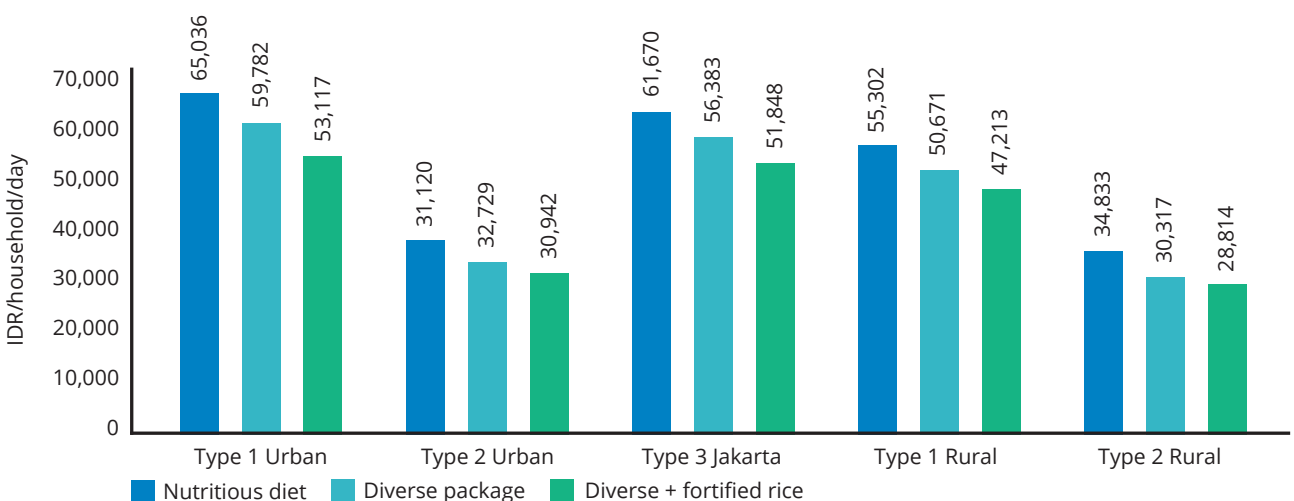


Figure 21: Daily household cost of the nutritious diet, including the diverse scenario of SEMBAKO transfer with and without post-harvest fortified rice



To ensure the intended impacts on nutrition and human capital development of SEMBAKO are achieved, the transfer size would need to be adjusted depending on the number of people in the household, and to make up for the differences in food prices between regions. Food items for specific target groups within the household, such as Taburia or MP-ASI for young children, could also be incorporated to the programme based on the demographic make-up of the household.

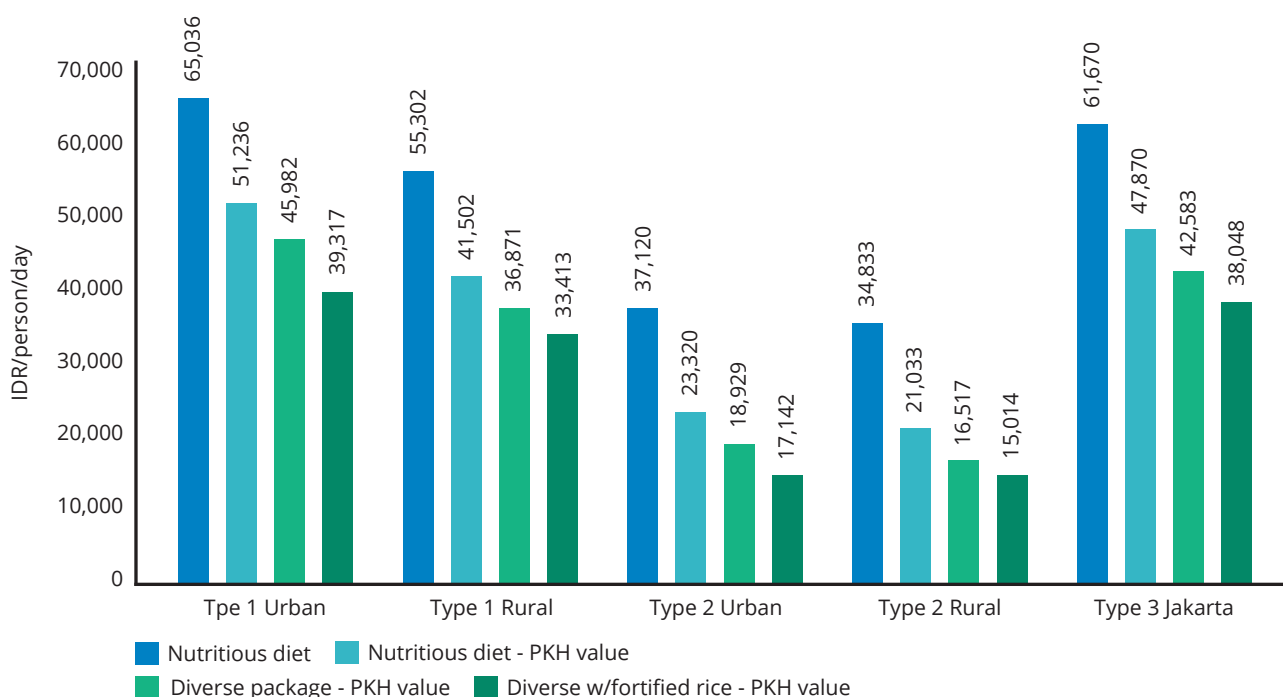
Program Keluarga Harapan (PKH)

The PKH is a conditional cash transfer programme that targets households of low socioeconomic status (lowest decile) and of certain household composition, seeking to reduce the burden of health and education expenses on vulnerable households while ensuring the investment in health and education for human capital development (32). The transfer amount is calculated based on household composition.

The modelling conducted as part of the FNG assumed a total transfer amount of IDR 8,400,000 per year (IDR 700,000 per month) based on the composition of the modelled household ("PKH value"). Of that transfer, it was assumed that 60 percent was spent on food and the remaining 40 percent was spent on non-food items, in accordance with observed general expenditure patterns in Indonesia.

The PKH has the potential to cover up to 40 percent of the cost of the nutritious diet in areas with lower food prices (Type 2) and more than 20 percent in areas with higher food prices (Type 1 and Type 3). If the modelled household was a beneficiary of SEMBAKO and PKH and received the diverse scenario for SEMBAKO, the combination of the two programmes has the potential to reduce the burden on household expenditure to access the nutritious diet by up to 57 percent in Type 2 areas, assuming the diverse scenario with fortified rice for SEMBAKO (Figure 22).

Figure 22: Daily cost of the nutritious diet and remaining cost of the nutritious diet for the household with the following combinations of social assistance transfers: (i) PKH value; (ii) PKH value and diverse scenario of the SEMBAKO transfer; (iii) PKH value and diverse scenario of the SEMBAKO transfer with fortified rice



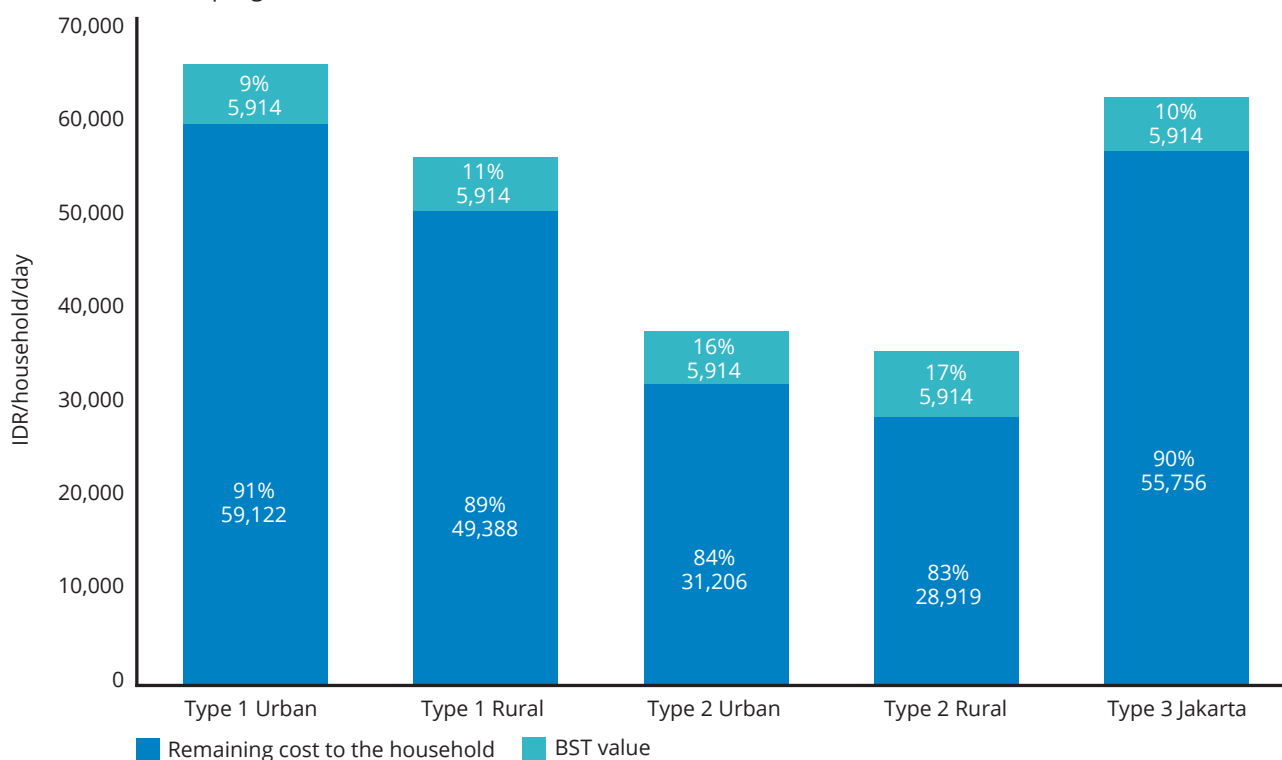
Bantuan Sosial Tunai (BST) (Cash Social Assistance) Programme

BST was an unconditional cash transfer programme targeting vulnerable households not covered by SEMBAKO, PKH or the Pre-Employment Card-Programme (Program Kartu Prakerja) in the communities worst affected by COVID-19. The programme covered 10 million households throughout Indonesia and formed part of the Government's efforts

to reactivate the economy by strengthening people's purchasing power (33).

Beneficiaries of BST received IDR 300,000 per household per month for a total of 4 months, regardless of the size and demographic composition of the household. Assuming 60 percent of the transfer is used optimally on food (IDR 180,000 per month), this transfer has the potential to cover between 9 and 17 percent of the 5 person modelled household's cost of the nutritious diet (Figure 23).

Figure 23: Daily cost of the nutritious diet for the modelled household and percentage covered by the BST programme



9. Agricultural systems have strong potential to provide for affordable, nutritious diets to all households. This will require agricultural transformation driven by policies that align incentives with nutrition outcomes by promoting diversified production and repurposing agricultural support.

Despite agriculture being central to the Government’s development efforts and plans, productivity gains in the last decade have been slow or stagnant for most crops. The harvested land is not becoming more productive, indicative of an overall lack of improved agricultural techniques. Ninety-three percent of Indonesia’s farmers are smallholder families with an average plot size of 0.6 hectares. Though agriculture is their main economic activity, it represents less than half of smallholder farmers’ annual income and farmers are likely to have a secondary non-agricultural income source. Yet even with that additional income, almost one fifth (18 percent) of small family farms in Indonesia are below the national poverty line (34).

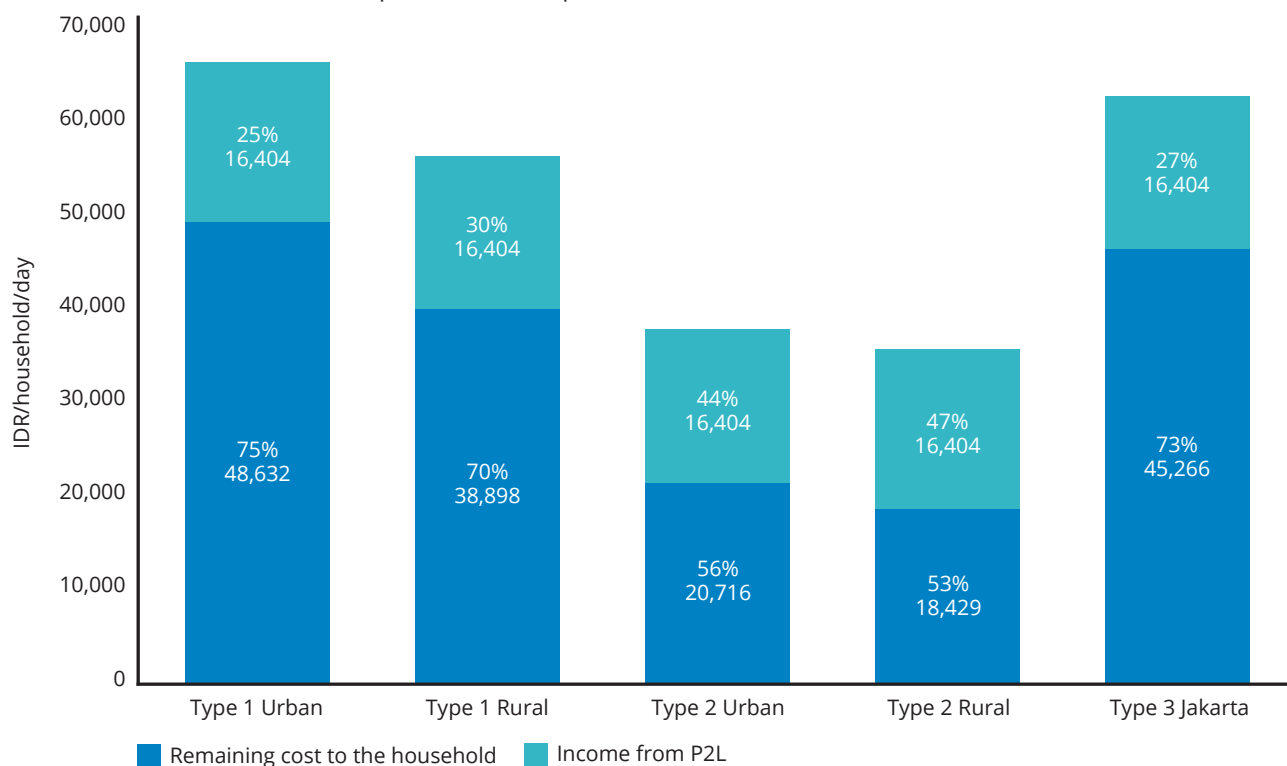
Policy efforts aiming to increase productivity and achieve self-sufficiency have focused on rice, maize, and soybeans, yet Indonesia remains a net importer

of rice (35). Many of these policies, including tariff and non-tariff measures, contribute to elevating market prices above their regional averages. With two thirds of farmers being net buyers of rice (36), this reduces the income they have left to spend on nutritious foods.

As part of the FNG, modelling was conducted on the Sustainable Food Garden (Pekarangan Pangan Lestary or P2L) programme which provides support for households to improve incomes and food security through community gardens. The modelling simulates a 30 square metre community garden and estimates the contribution that income earned makes to meeting the cost of the nutritious diet. The modelling includes two growing seasons per year for six crops, each grown on a five square metre plot: chillies, tomatoes, Chinese broccoli, cauliflower, bok choy and cabbage. It estimates a 10 percent harvest lost. Of the income earned, 60 percent was assumed to be used for purchasing food at the market and the remainder was assumed to be used for non-food needs.

By monetizing a diverse set of crops from a small plot, the programme has the potential to make a significant contribution to household income which would cover between 25 and 47 percent of the cost of the nutritious diet, significantly reducing the burden to the household (Figure 24).

Figure 24: Average daily cost of the nutritious diet and contribution made by the income from the monetization of crops from the P2L plot



10. Rice fortification can help to deliver micronutrients to households and vulnerable household members, with post-harvest fortification adding a wider range and higher levels of micronutrients. Biofortification also has potential to better leverage the agriculture sector to make foods more nutrient-dense.

Indonesia has established mandatory fortification programmes for salt, cooking oil and wheat flour. Though rice fortification is currently not mandatory, the Government has recognized its importance and potential for combatting malnutrition, and incorporated fortification as an objective in the RPJMN 2020–2024 (37).

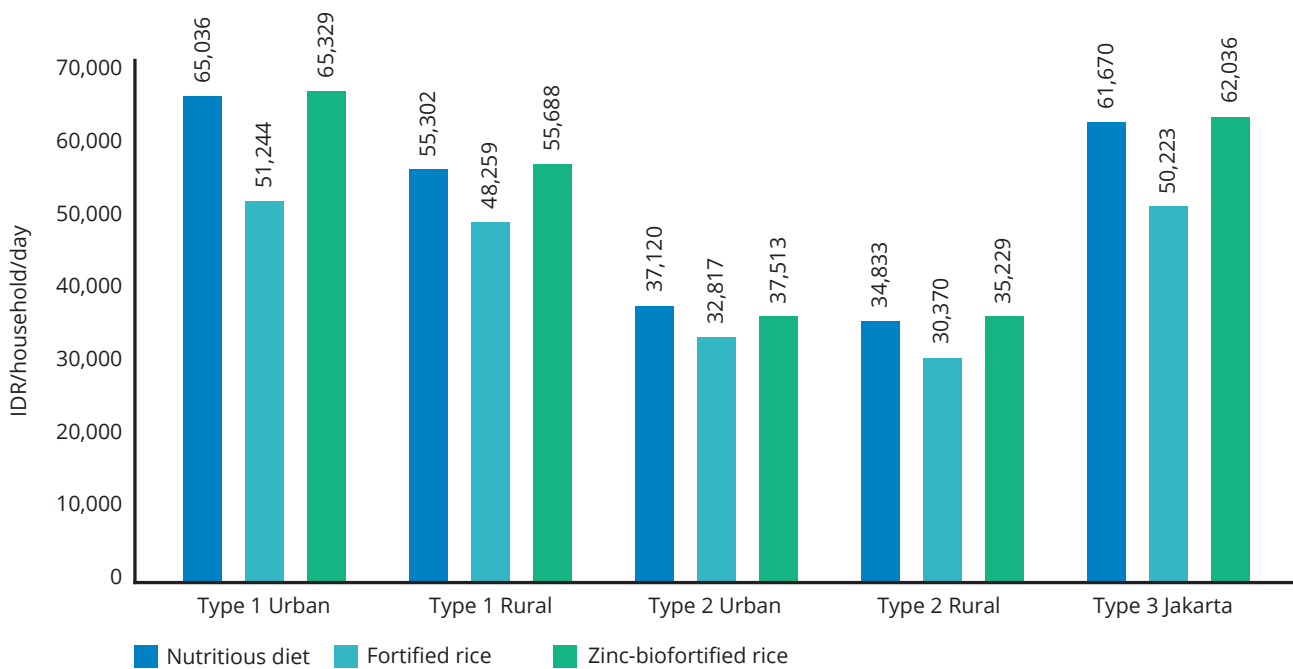
Production and distribution of post-harvest fortified rice were piloted in the country by the Government (38) and the Better Rice Initiative Asia (BRIA) (39). As part of the pilot, BRIA also researched its acceptability and potential to prevent micronutrient deficiencies among adolescent girls. Overall, post-harvest fortified rice that does not vary from unfortified rice in main characteristics (such as taste, smell, and consistency), has been found acceptable by consumers. It has also shown potential to reduce and prevent iron deficiency

anaemia and other micronutrient deficiencies among vulnerable groups. However, increased cost (estimates vary, depending on scale of production) could pose a constraint on affordability, especially among lower income consumers who may need support to access it.

Biofortification of rice can be an adequate complementary intervention to post-harvest fortified rice as it can target subsistence rice producers, village communities and rural supply chains, whereas post-harvest fortification technology and infrastructure may be out of reach. Both interventions have the potential to provide vulnerable populations with essential micronutrients, though at the time of the FNG study only zinc biofortified rice was available in the country. By contrast, Fortivit, Bulog’s post-harvest fortified rice, is fortified with 8 different essential micronutrients.

The modelling conducted as part of the FNG assumes a 3 percent increase in the average price of rice for each modelling region, for post-harvest fortified and biofortified rice. If all rice included in the nutritious diet was fortified (post-harvest) and was priced 3 percent above the market price of unfortified rice, the cost for the modelled household would be reduced between 12 and 21 percent (Figure 25). Zinc-biofortified rice could deliver an essential nutrient without increasing the diet cost significantly (approximately 1 percent), but it wouldn’t lower the cost of the nutritious diet.

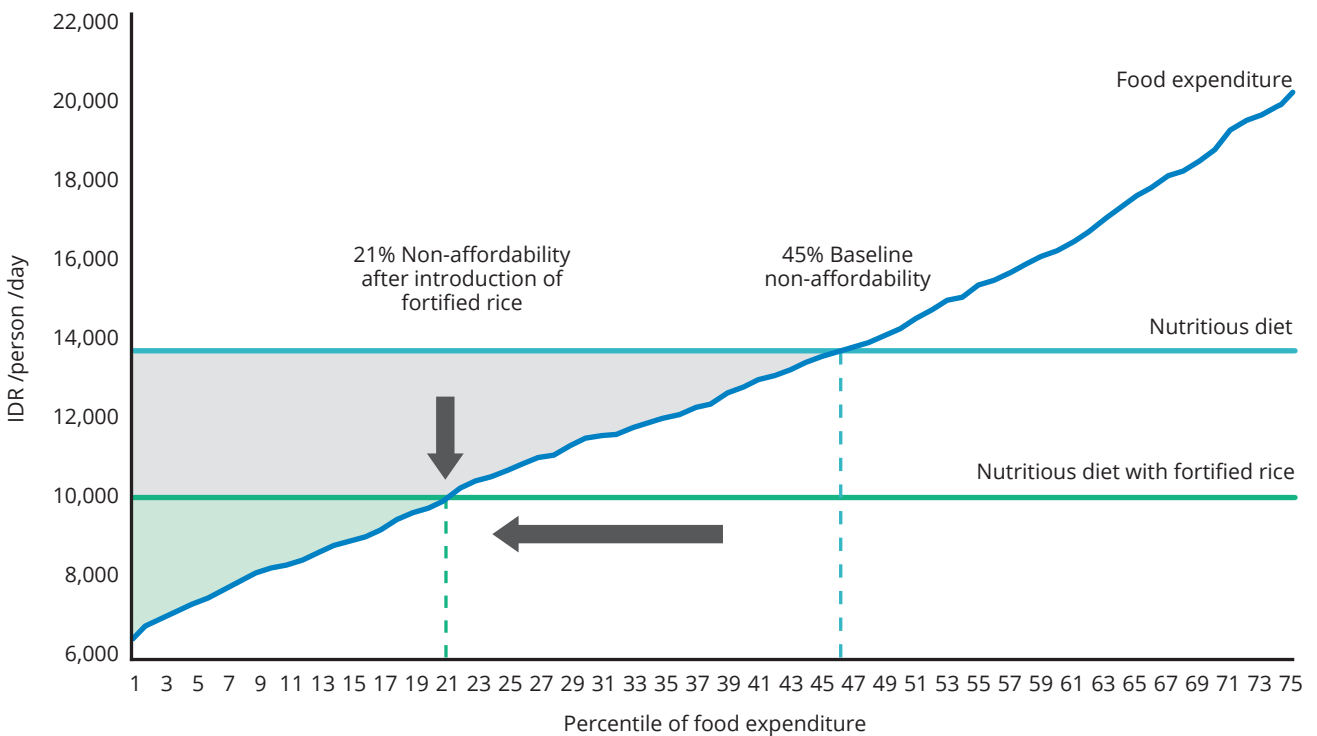
Figure 25: Daily cost of the nutritious diet for the modelled household with unfortified, post-harvest fortified and bio-fortified rice



If post-harvest fortification were available to all consumers in Indonesia, the effects would be large-scale and could decrease the cost of the nutritious diet for the population as a whole. In Nusa Tenggara Timur,

for example, 26 percent more people in urban areas and 11 percent more people in rural areas would be able to afford the nutritious diet if all rice were fortified (Figure 26).

Figure 26: Non-affordability of the nutritious diet with fortified rice in Nusa Tenggara Timur (urban only)



11.

Shifts in dietary patterns toward more nutritious diets may adversely impact the environment and natural resources, increasing greenhouse gas (GHG) emissions. Ways to limit the environmental impacts of producing, delivering and consuming foods for nutritious diets should be optimized to reduce trade-offs.

Food systems are one of the main contributors of anthropogenic GHG emissions (40). At the same time, they are deeply impacted and affected by climate change. Countries are facing the complex challenge of addressing malnutrition and providing a growing population access to healthy and diverse diets, while limiting pressure on the environment. For this transformation, governments and individuals will face trade-offs, as currently no single system meets both nutrition and environmental goals (41,42). Dietary patterns and consumer behaviours in Indonesia have changed as incomes have increased. Diets have increased in diversity but have also shifted towards more processed and animal source foods, especially in urban areas.

To obtain a better understanding of current constraints, dynamics, drivers and trade-offs of the Indonesian food systems, more and better data are required on current consumption patterns and preferences, food

environment and the environmental impacts of diets. The case study conducted by de Pee, Hardinsyah, Jalal et al. (42) compared costs, nutrient content, GHG emissions, and water footprint of 13 diet scenarios, with different food groups and levels of diversity. Their analysis shows that none of the scenarios examined could meet the targets of affordability, nutrition and environmental sustainability (GHG emissions and water footprint) at the same time. It is clear that food system transformation is necessary. As the Government plans to address affordability, nutrition and environmental challenges, it should implement policies that address these three targets. These include:

- Policies aiming to diversify diets and reduce rice intake without increasing consumption of unhealthy processed foods.
- Policies prioritizing diversification by avoiding incentives to the production of rice or cash crops to the detriment of a more diverse production system.
- Investing in those opportunities along the supply chain that reduce environmental impacts, lower cost and improve nutrient content of foods, such as the use of green energy sources, incentivizing environmentally friendly production methods, and post-harvest and biofortification of food products.
- Tackling the demand side of diets by stimulating consumer demand for healthy and nutritious foods and discouraging the consumption of unhealthy foods. Some examples include taxes on unhealthy foods or strategies that nudge or influence consumers through social and behaviour change.



Stakeholder recommended priorities

As shown throughout the FNG findings, social assistance, health and food systems are interconnected and have a direct effect on food security and nutrition. Together, these three systems determine physical and economic access to diverse, healthy and nutritious foods and diets.

After the review of the FNG results during a virtual workshop held on 5 August 2021 and to provide guidance at country level, stakeholders from different sectors identified priorities for these three systems. The interconnectedness of the systems is reflected in the prioritized interventions, with interventions and delivery platforms cross-cutting. They cover a wide range of sectors and are targeted at different actors who would need to coordinate for adequate implementation.

Food systems

- Scale up the P2L programme to further increase smallholder income through the production of nutritious foods, including fruit, vegetables, and animal source foods for sale at the market and for own consumption, and the monetization of other crops.
 - Support local government to replicate the P2L programme, thus ensuring the sustainability of a scaled-up programme.
 - Encourage private sector collaboration in the P2L programme and in smallholder farming, to improve technology and agricultural mechanization.
 - Prioritize the use of biofortified crops in smallholder agriculture.
 - Improve market access of smallholder farmers to improve local availability of foods and smallholder farmers' income.
 - Set up a digital platform that support smallholder farmers access to markets, by enabling farmers to sell their products through these platforms and avoiding costs of middlemen.
- Assess and address bottlenecks of different foods throughout the supply chain to ensure a more even availability and prices across the country, through the establishment of a national logistics system that informs and manages regional food stocks, creates regional food hubs, and sets up systems for the transportation and distribution of food to regions where it is scarce.
 - Shorten supply chains to reduce the price of nutritious foods through lower post-harvest losses.
- Strengthen linkages between the food system and social assistance by including post-harvest fortified (or biofortified) foods (such as rice) with existing social assistance programmes, thus ensuring these interventions reach the most vulnerable populations.

Health

- Strengthen and promote exclusive breastfeeding practices so that only breastmilk is provided to infants under 6 months, and continued breastfeeding practices so that young children between 6 and 24 months continue to receive breastmilk alongside nutritious complementary meals.
 - Improve health service policies and practices to ensure mothers receive adequate support and information at critical breastfeeding periods, such as at birth and during the first week of life.
 - Implement a social and behaviour change strategy with the objective of changing attitudes and preferences towards breastfeeding by informing the public of its benefits and the consequences of inadequate breastfeeding practices.
 - Implement and monitor compliance of policies and regulation to protect maternity in the workplace, including in informal employment. Ensure and monitor adequate implementation by local governments of Law number 36 of 2009 on Health, article 128, paragraphs (2) and (3), stating every infant has the right to exclusive breastfeeding from birth for six months, and that family, government, regional government and society must support the mother fully by providing special time and facilities in working and public spaces.
 - Ensure and monitor compliance with the WHO International Code of Marketing Breastmilk Substitutes and, among other actions, limit marketing of breastmilk substitutes.
- Scale up Taburia/MNP distribution for children aged 6–23 months where non-affordability of the nutritious diet is high.
 - There is a planned scale up in 2022 of Taburia distribution to 90 districts in 19 provinces (from 60 districts in 15 provinces in 2021). FNG results can help guide the decision on target locations these being the identified provinces with the highest cost and non-affordability of the nutritious diet.
 - Review recommended frequency of Taburia to establish a higher frequency of 3 times per week in areas with higher cost and lower access to nutritious diets.
 - In remaining provinces and districts with no blanket distribution of Taburia, link distribution with social assistance programmes like SEMBAKO to reach the most vulnerable households.
- Implement and scale up nutrition education components and programmes, especially for vulnerable groups (caretakers of children under two, adolescent girls, and pregnant and lactating women) in clinics, hospitals and schools, and through community health workers.

- Provide guidance and education on the importance of the consumption of micronutrient supplements for pregnant and lactating women, and the consequences of micronutrient deficiencies during pregnancy and lactation.
- Provide breastfeeding guidance counselling services for lactating women, and nutrition education and counselling targeted at caretakers on complementary feeding practices for older infants
- Provide guidance for adolescents on healthy and nutritious diets, the use of micronutrient supplements, and reduced consumption of unhealthy snacks and sugar-sweetened beverages. Use peer groups to support adequate coverage of, and adherence to, supplementation interventions, and obtain more information on barriers to consumption.
- Strengthen regulation for processed foods and include regulation on sugar, salt, and fat content in such foods.
 - Current regulation for processed foods only addresses the inclusion of nutritional content information on food labels. Revision is required to include formulation.
 - Enforcement and compliance of regulation is weak. Strengthen compliance and enforcement through joint work between the government and the food and beverage industry.
- Ensure adequate availability of nutritious and diverse foods in the e-warungs for the SEMBAKO programme. Provide support throughout the supply chain to these retail points.
- Review SEMBAKO transfer size by province to ensure it responds to variations in the price of nutritious foods and allows recipients to purchase fresh, diverse and nutritious foods.
- Strengthen local government capacity on nutrition and on implementation for nutrition interventions.
 - Build local government capacity to ensure social assistance programmes are used as a platform for nutrition.
 - Optimize local budgets (dana desa) to vertically expand social security allowances so that the affordability gap is reduced, especially for vulnerable groups.⁵
- Enhance the contribution of social assistance programmes to nutrition by including nutritious food in the transfer.
 - Provide nutrition-specific interventions for social assistance recipients with higher nutritional needs. This can include Taburia and fortified complementary foods for children aged 6–23 months, and is especially important when the family's affordability gap cannot yet be fully closed by the transfer. These could also be delivered through the health system with eligibility determined by social assistance programme participation.
 - Prioritize social assistance programmes for the introduction of post-harvest (or biofortified) rice at the same cost to the recipient as non-fortified rice. This addresses the greater unmet nutritional needs among recipients of social assistance transfers and provides guaranteed demand and specific distribution channels which is helpful to support the development of the fortified rice supply chain.

Social assistance

- Make social assistance programmes (such as SEMBAKO, BANSOS or BST) more nutrition-sensitive.
 - Review the benefits package, including the size of the cash transfer, to ensure it makes a substantial contribution to affordability of the nutritious diet. Take regional cost variations into consideration.
 - Strengthen regulation on nutrition education and its implementation to help optimize use of the allowances provided by the social assistance programmes. Guide participants on the use of cash for nutrition, healthy eating and food consumption habits.

⁵ The affordability gap differs between provinces because of differences of food availability, prices and incomes.



Annexure

Average daily cost per person per province of the energy-only and nutritious diet, ratio between the nutritious diet and the energy-only diet, and non-affordability of the nutritious diet

Province	Energy-only diet (IDR/person/day)	Nutritious diet (IDR /person/ day)	Ratio between the nutritious and the energy-only diets	Non-affordability of the nutritious diet
Aceh	3,375	8,367	2.5	10%
Sumatera Utara	3,184	8,309	2.6	7%
Sumatera Barat	3,010	11,456	3.8	21%
Riau	3,170	9,074	2.9	9%
Jambi	3,605	11,366	3.2	28%
Sumatera Selatan	3,072	9,587	3.1	28%
Bengkulu	3,443	8,985	2.6	16%
Lampung	3,075	7,988	2.6	15%
Kepulauan Bangka Belitung	3,852	12,055	3.1	8%
Kepulauan Riau	3,705	13,284	3.6	16%
Dki Jakarta	4,079	12,334	3	5%
Jawa Barat	3,655	8,229	2.3	9%
Jawa Tengah	3,081	7,025	2.3	12%
Di Yogyakarta	2,827	7,293	2.6	7%
Jawa Timur	3,190	6,747	2.1	5%
Banten	3,562	8,531	2.4	4%
Bali	3,691	8,164	2.2	6%
Nusa Tenggara Barat	2,911	6,566	2.3	9%
Nusa Tenggara Timur	4,343	10,153	2.3	36%
Kalimantan Barat	3,576	9,286	2.6	14%
Kalimantan Tengah	3,900	12,879	3.3	30%
Kalimantan Selatan	3,461	9,684	2.8	12%
Kalimantan Timur	3,970	11,798	3	14%
Kalimantan Utara	4,049	13,412	3.3	20%
Sulawesi Utara	2,874	10,421	3.6	28%
Sulawesi Tengah	3,520	7,393	2.1	10%
Sulawesi Selatan	2,718	9,128	3.4	33%
Sulawesi Tenggara	2,823	8,497	3	32%
Gorontalo	2,780	6,720	2.4	22%
Sulawesi Barat	3,006	9,230	3.1	33%
Maluku	4,729	14,182	3	52%
Maluku Utara	4,254	13,865	3.3	53%
Papua Barat	4,152	13,446	3.2	38%
Papua	5,867	12,877	2.2	35%

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Acronyms

BAPPENAS	Ministry of National Development Planning
BPNT	Bantuan Pangan Non Tunai / Non-Cash Food Assistance
BPS	Badan Pusat Statistik / Statistics Indonesia
BRIA	Better Rice Initiative Asia
BST	Bantuan Sosial Tunai / Cash Social Assistance
CotD	Cost of the Diet
FBDG	Food-Based Dietary Guidelines
FNG	Fill the Nutrient Gap
GHG	Greenhouse gas
IFA	Iron Folic Acid
MMS	Multiple Micronutrient Supplements
MP-ASI	Complementary feeding porridge
NCDs	Non-communicable diseases
P2L	Pekarangan Pangan Lestari / Sustainable Food Garden
PKH	Program Keluarga Harapan / Family Hope programme
RPJMN	National Medium-Term Development Plan
SEMBAKO	Sembilan Bahan Pokok / Nine Basics
SOFI	State of Food Insecurity
SUSENAS	Indonesia's National Socio-Economic Survey
Taburia/MNP	Micronutrient powder
WFP	World Food Programme

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