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Research Report

Policy barriers to a healthier diet: The case of trade and agriculture

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Policy Paper No. 54

Policy Barriers to a Healthier Diet

The Case of Trade and Agriculture

by Aditya Alta, Rachma Auliya, & Azizah Nazzala Fauzi

www.cips-indonesia.org

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Policy Barriers to a Healthier Diet
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GLOSSARY

AKE:

Angka Kecukupan Energi (Energy Adequacy Rate)

AKP:

Angka Kecukupan Protein (Protein Adequacy Rate)

Bappenas:

Badan Perencanaan Pembangunan Nasional (National Development Planning Agency)

BKKBN:

Badan Kependudukan dan Keluarga Berencana Nasional (National Population and Family Planning Board)

BPNT:

Bantuan Pangan Non-Tunai (Non-Cash Food Subsidy)

BUMDes:

Badan Usaha Milik Desa (Village Owned Business Entities)

CMEA:

Coordinating Ministry of Economic Affairs

CPPD:

Cadangan Pangan Pemerintah Daerah (Local Government Food Reserve Program)

DDP:

Desirable Dietary Pattern

FAO:

Food and Agriculture Organization

GDP:

Gross Domestic Product

LP2B:

Lahan Pertanian Pangan Berkelanjutan (Regulations on Protected Farmlands)

MP-ASI:

Makanan Pendamping ASI (Complementary Feeding)

MOA:

Ministry of Agriculture

MOF:

Ministry of Finance

MOH:

Ministry of Health

MOHA:

Ministry of Home Affairs

MOT:

Ministry of Trade

MSMEs:

Micro, Small, and Medium Enterprises

NFA:

National Food Agency

NTM:

Non-Tariff Measures

PLG:

Pengembangan Lahan Gambut (Peatland Development)

RAD-PG:

Rencana Aksi Daerah Pangan dan Gizi (Local Action Plans for Food and Nutrition)

RAN-PASTI:

Rencana Aksi Nasional Percepatan Penurunan Angka Stunting Indonesia (National Action Plan for the Acceleration of Stunting Reduction in Indonesia)

RAN-PG:

Rencana Aksi Nasional Pangan dan Gizi (National Action Plan for Food and Nutrition)

Raskin:

Beras Miskin (Rice for the Poor)

Rastra:

Beras Sejahtera (Rice for Welfare)

Renstra:

Rencana Strategis (Strategic Plan)

RPJMN:

Rencana Pembangunan Jangka Menengah Nasional (National Medium-Term Development Plan)

SOE:

State-Owned Enterprises

Susenas:

Survei Sosial Ekonomi Nasional (National Socioeconomic Survey)

TPPS:

Tim Percepatan Penurunan Stunting (National Team to Accelerate Stunting Reduction)

TTI:

Toko Tani Indonesia (Indonesian Farmers Store)

UNICEF:

United Nations Children's Fund

WHO:

World Health Organization

EXECUTIVE SUMMARY

Improving nourishment and diets has become a priority for Indonesia. The stunting rate among under-five children in Indonesia at 24% is considered high and deserving of serious attention. Improving dietary diversity among children is essential to reduce the stunting rate and prevalence. Unfortunately, the Desirable Dietary Pattern (DDP) score and food supply indicate a typical Indonesian diet is severely dominated by rice and lacking in alternative sources of carbohydrates and protein. The high cost of healthy diets further complicates nutritional fulfillment as global food prices have experienced a recent sharp increase.

Realizing the importance of nutrition fulfillment for human capital, the government has set a target of reducing the stunting rate to 14% by 2024. A number of strategies and action plans have been issued to coordinate efforts across ministries: National Strategy to Accelerate Stunting Reduction, National Action Plan for the Acceleration of Stunting Reduction in Indonesia 2021–2024 (RAN-PASTI), and National Action Plan for Food and Nutrition 2020–2024 (RAN-PG). Targets and activities in these documents reflect the multidimensional nature of food and nutrition issues, but overlook the effects of trade policy on food affordability and the agricultural policy bias towards a few staple commodities, especially rice.

This paper discusses how Indonesia's trade and agricultural policies act as barriers to a healthier diet. Import/export licenses, quantitative restrictions (quotas), and other non-tariff trade measures can increase domestic food prices by increasing the cost of importing to Indonesia. Eventually, these additional costs are passed on to consumers, including those living in poverty, making healthy diets less affordable. A bias towards rice production and consumption underlies both recent and long-standing policies and programs in agriculture. These include longstanding rice self-sufficiency programs, large-scale opening of new rice fields, rice-based food assistance programs, and fertilizer subsidies that mostly go to rice farming.

To address these barriers, the National Strategy to Accelerate Stunting Reduction, RAN-PASTI, and RAN-PG should mandate a systematic review and impact assessment of trade and agricultural policies. The review and assessment should be the first step toward removing unnecessary non-tariff measures to improve the affordability of food in Indonesia and creating a crop-neutral agricultural policy that allows farmers to respond to market signals and avoids incentives and investments biased towards production of a few staple crops to improve the diversity of Indonesia's food supply.

THE URGENCY OF STUNTING REDUCTION AND THE IMPORTANCE OF DIVERSE, NUTRITIONALLY BALANCED DIETS

Stunting is defined as a developmental disorder in children where their height-for-age is more than two standard deviations below the WHO Child Growth Standards median. It is a key global challenge. In rural areas, children are 40% more prone to be stunted than those in urban areas, and children in the poorest families are more than twice as likely to be stunted (DIPR, 2020). Stunting is also one of the most pervasive nutritional challenges faced by Indonesians. In 2021, more than 24% of Indonesian toddlers under five years old experienced stunting (Ministry of Health, 2021). Based on WHO standards, Indonesia's rate of stunting is considered high (20% to <30%) (de Onis et al., 2019). Despite a 2 percentage point annual decline in the average stunting rate from 2013–2021, 27 provinces (out of 34) in Indonesia still had acute-chronic¹ nutrition problems in 2021.

Stunting is one of the most pervasive nutritional challenges faced by Indonesians. In 2021, more than 24% of Indonesian toddlers under five years old experienced stunting.

The most direct causes of stunting are poor nutrition (lack of nutrients from food) and repeated infections that lead to the body's impaired intake, absorption, or use of dietary nutrients during the first 1000 days of a child's life (WHO, 2015). Ensuring adequate nutrition for pregnant women is crucial as it reduces the risk of stunting and wasting² in children (UNICEF, 2018). Malnutrition during pregnancy can also affect mothers, increasing the risk of miscarriage and death, and further increasing newborn and infant mortality, stunting, wasting, intellectual disabilities, and diseases that may affect children into adulthood (UNICEF, 2022).

Dietary diversity can improve nutritional status, promote healthy weight, and foster a healthier lifestyle (Weerasekara et al., 2020; Ruel, 2003a). Healthy diets³ with diverse food intake also help to prevent malnutrition in all forms as well as non-communicable diseases such as heart disease, stroke, diabetes, and cancer (WHO, 2020). Micronutrient adequacy is crucial to support the immune system, reducing the likelihood of contracting infectious diseases (Pecora et al., 2020). Improving dietary diversity among children is essential to reducing the prevalence of stunting. Children with diverse diets have an 83% lower chance of being stunted (Ahmad et al., 2018).

¹ Based on a modified WHO standard, the MOH classifies Indonesian provinces by their public nutrition status into four categories: good, acute, chronic, and acute-chronic. Acute-chronic areas show a stunting prevalence of 20% or more and wasted prevalence of 5% or more (MOH, 2021).

² Wasting is defined as low weight-for-height. (WHO, n.d.)

³ International standards differentiate between a healthy diet and a nutritious diet. Nutritious diets meet the required levels of all essential nutrients but do not necessarily reach diversity in food groups. Healthy diets provide adequate calories and nutrients, while also including more diverse intake from different food groups. According to WHO, a healthy diet is a diversified and balanced diet that meets the calories and energy needs or macronutrients (fats, proteins, and carbohydrates), and micronutrients (vitamins and minerals) needed for a person to live a healthy life (WHO, 2020).

Indonesia's dietary diversity has increased from 2015 to 2020. Despite these improvements, consumption of several food groups is less than ideal.

Indonesia's approach to measuring dietary diversity is reflected in the Pola Pangan Harapan or Desirable Dietary Pattern (DDP).⁴ Based on MOH Regulation No. 28/2019 on Recommended Nutritional Adequacy Rate for Indonesians, the DDP⁴ score represents the nutritional quality of food consumed by Indonesian households based on the contribution of each food group to the Energy Adequacy Rate (*Angka Kecukupan Energi* or AKE) compared to an ideal value for each food group. DDP score is measured from nine food groups: grains, tubers, animal-based food, oils and fats, oilseeds and fruits, pulses, sugar, vegetable and fruits, and others (Anwar & Hardinsyah, 2014). A maximum score of 100 reflects the ideal combination of a nutritious and diverse diet.

National DDP scores have increased from 2015 to 2020, representing an improvement in Indonesians' dietary diversity. Although the score has failed to meet the targets set in the National Medium-Term Development Plan (RPJMN), it reached 86.3 in 2020, up from 81.5 in 2015 (MOA Food Security Agency, 2021).

Despite these improvements, consumption of several food groups (as a percentage of the Energy Adequacy Rate) is less than ideal (Table 1). DDP scores from 2015–2020 show that grains contributed an average of 59.68% of energy per capita per day, more than the ideal 50%. Oils and fats contributed 11.76%, also higher than the ideal 10%. The food groups that contributed too little included animal-based food sources (10.55%, versus the 12% ideal) and vegetable and fruits (4.90%, less than the ideal 6%).

Table 1.
Average vs Ideal Contributions of Food Consumption by Food Group to Energy Adequacy Rate (in %)

Variable	Average Contribution to Energy Adequacy Rate (2015–2020)	Ideal Contribution to Energy Adequacy Rate
Grains	59.68	50
Tubers	2.47	6
Animal-based food	10.55	12
Oils and fats	11.77	10
Oilseeds or Fruits	1.47	3
Pulses	2.78	5
Sugar	4.25	5
Vegetable and Fruits	4.90	6
Others	2.07	3
Total	100	100

Source: MOA Food Security Agency (2021), processed by authors.

⁴ The MOH also developed "Isi Piringku" ("What's on My Plate") as a public guideline for the ideal meal portion, which recommends 700 calories per meal consisting of 50% fruits and vegetables and 50% carbohydrates and protein (MOH, 2018). Isi Piringku provides more precise recommendations by providing the recommended weight (in grams) of food consumption for each food group (MOH, n.d.).

DEPENDENCE ON RICE REDUCES DIETARY DIVERSITY

Rice dominates grain consumption among Indonesians. In 2021, rice consumption was 13–46 times more than the consumption of other carbohydrate-rich staples (Table 2). National rice consumption is mostly in-household consumption, followed by industrial consumption, hotels, restaurants, and services (Statistics Indonesia, 2019). In 2021, total rice consumption increased by 0.56%. Per capita rice consumption also increased by 3.86% (Statistics Indonesia, 2021). This is a cause for concern because high-calorie foods such as white rice as the main source of carbohydrates can cause diabetes, cardiovascular disease, and obesity. In 2021, Indonesia had the fifth highest proportion of the population with diabetes (Statista, 2021). The International Diabetes Federation (2022) estimated that there were 19.46 million people with diabetes in Indonesia in 2021, up by 167% compared to 2011 (7.29 million people). The number of people with diabetes is projected to increase by 19.84% by 2030, reaching a total of 23.33 million.

“The increasing per capita rice consumption is concerning as consumption of white rice as main source of carbohydrates can cause diabetes, cardiovascular disease, and obesity.”

Table 2.
Consumption of Carbohydrate Food Sources in Indonesia (per capita/month)

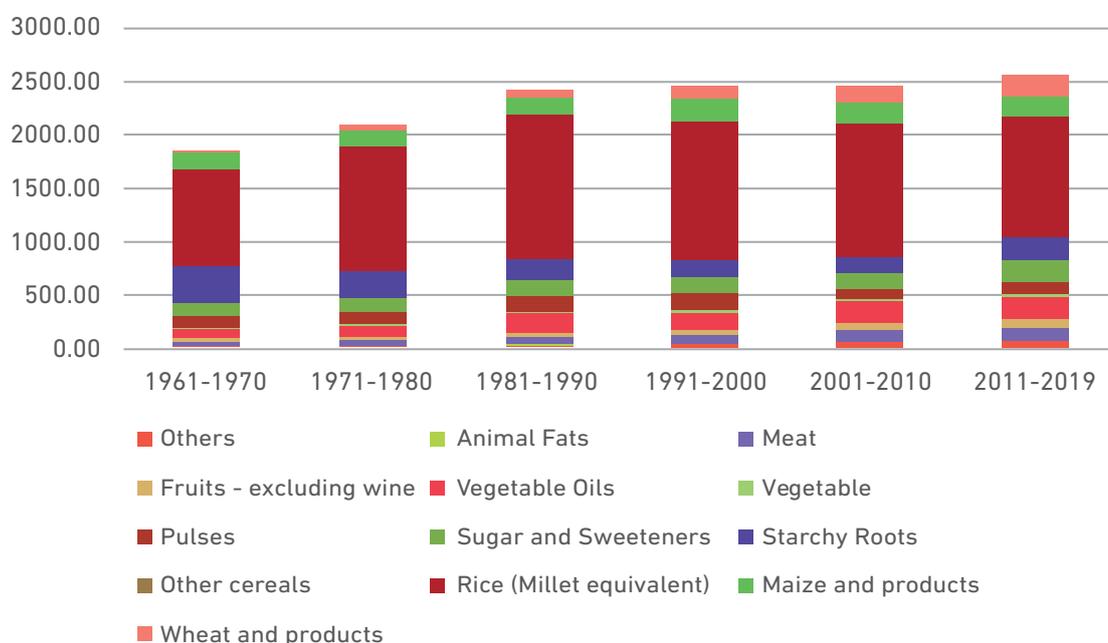
Year	Rice (kg)	Maize (kg)	Cassava (kg)	Sweet Potato (kg)	Flour (kg)
2017	6.7	0.11	0.52	0.30	0.21
2018	6.6	0.13	0.39	0.26	0.22
2019	6.4	0.17	0.36	0.26	0.21
2020	6.5	0.22	0.39	0.26	0.20
2021	6.7	0.15	0.51	0.30	0.23

Source: Statistics Indonesia 2021, processed by authors.

High rice consumption is related to a longstanding concern about domestic food availability and a resulting policy focus on rice production as the main staple food. This concern is unfounded. Food supplies by food group at the national level show that the amount of food available per capita has continued to increase since 1961 (Figure 1). Calories available have consistently exceeded the recommended Energy Adequacy Rate of 2,100 kcal/capita/day since the 1980s. In 2020, calories available per individual per day reached 2,112 kcal; similarly, 61.98 grams of protein were available per individual per day, more than the recommended Protein Adequacy Rate (*Angka Kecukupan Protein/AKP*) of 57 grams/capita/day (Statistic Indonesia, 2020). For a long time, Indonesia has not had a food availability problem at the national level.

At the same time, dependence on rice undermines a move toward diverse, nutritionally balanced diets. Figure 1 shows a declining trend of diversity in food groups consumed. Although its proportion of total food supply has been declining since the 1970s, rice still makes up more than 40% of food available for the Indonesian population today. From 1961–1970, maize and its processed products, pulses, and starchy roots made up 34% of the food supply—in 2011–2019 this proportion fell to less than 20%. This might be due to the declining cultivation and consumption of traditional staples, such as cassava, and their replacement with rice cultivation. On the positive side, the proportion of meat, fruit, vegetables, and wheat and their processed products have slowly increased over time.

Figure 1.
Food Supply by Food Groups (kcal/capita/day), 1961–2019



Source: FAOSTAT 2022, processed by authors.

HIGH FOOD PRICES WORSEN THE STUNTING RATE AND NUTRITIONAL FULFILLMENT

In the aftermath of the Covid-19 pandemic and rising food prices, the number of people globally who cannot afford a healthy diet is estimated to grow by 267.6 million (Richard et al., 2020). The stunting rate is predicted to increase for the first time in two decades, with an estimated 3.6 million more children likely to be stunted (Osendarp, 2021). The number of stunted children will increase by an additional 700,000 for each percentage point drop in global gross domestic product (GDP) (United Nations, 2020). As in many countries, Indonesia experienced a sharp increase in food prices concurrent with job losses from the Covid-19 pandemic, affecting the ability of millions to afford nutritious food. Millions of families worldwide have been forced to eat cheaper and less nutritious food or to skip meals altogether. Reduced expenditure on food leads to reductions in calorie intake and, in turn, increased micronutrient deficiencies (FAO, 2021).

In June 2022, Indonesia experienced 0.61% monthly inflation and the highest annual inflation in five years at 4.35% (Statistic Indonesia, 2022). This development was mainly caused by rising prices of food, energy, and unstable weather conditions. Food prices were responsible for more than three quarters of the monthly inflation total, alone causing 0.47% monthly inflation in June 2022, with the highest contribution coming from chili, shallots, and eggs. This high price of food disproportionately affects poor households, which contain the people most prone to stunting.

The price of food such as rice in Indonesia can be 50–70% more expensive compared to the price in neighboring countries (WFP, 2017). CIPS' Food Monitor⁵ reports that the prices of sugar, rice, and soybeans were respectively 55.68%, 38.36%, and 15.94% more expensive than their international counterparts throughout 2021.

Food affordability is important to the nutritional status of individuals. Based on the costs of food in 90 cities in 2021 and the *Survei Sosial Ekonomi Nasional* (Susenas) March 2021, the average cost for a nutritionally balanced diet in Indonesia is IDR 22,126 per day per person or IDR 663,791 per month per person.⁶ About 68 percent or 183.7 million Indonesians could not afford this amount (Wisanggeni et al., 2022).

“About 68% Indonesians could not afford the average cost for a nutritionally balanced diet at IDR 663,791 per month per person.”

⁵ CIPS Food Monitor provides monthly price and regulation updates and annual reports on Indonesia's essential food commodities, such as rice, soybeans, maize, and sugar. Subscribe to access the reports and monthly updates at <https://www.cips-indonesia.org/food-monitor>

⁶ The study by Kompas considers a nutritionally balanced diet to be composed of a balanced proportion of staple food (carbohydrate sources), protein and fat sources, vegetable and fruit, and water. Of 38 food commodities considered in the study, it selected two types of animal-based food, two types of fruit, one type of pulses, one source of fat, two sources of carbohydrate, and three types of vegetable, with whichever combination that satisfies the nutritional standard of the Healthy Diet Basket used by the FAO.

POLICY FRAMEWORKS FOR STUNTING REDUCTION AND NUTRITIONAL IMPROVEMENT

In the 2020–2024 RPJMN, the Indonesian government set a target for reducing stunting prevalence to 14% in 2024. The RPJMN tasked the Ministry of Health (MOH), the National Population and Family Planning Board (BKKBN), the Ministry of Public Works and Public Housing, the Ministry of Home Affairs (MOHA), the Ministry of Education and Culture, and local governments with achieving this target.

The government reiterated the target of bringing stunting prevalence below 14% by 2024 in Presidential Regulation No. 72/2021 on Accelerating Stunting Reduction. This regulation sets the National Strategy to Accelerate Stunting Reduction and establishes a National Team to Accelerate Stunting Reduction (*Tim Percepatan Penurunan Stunting* or TPPS). TPPS aims to coordinate ministries and government agencies at the national and local levels.

The TPPS consists of two committees, the Steering Committee and the Implementing Committee. The Steering Committee provides policy direction and plans and monitors and evaluates the implementation of the strategy. It is chaired by the Vice President of Indonesia and includes the Minister of National Development Planning (Bappenas), the Coordinating Minister of Human Development and Culture, and the Minister of Home Affairs. As chair, the Vice President set a target reduction of three percentage points in 2022 in order to achieve the 14% target by 2024 (Ministry of State Secretariat, 2022).

The Implementing Committee prepares national action plans, coordinates with relevant institutions, monitors and evaluates execution, and is responsible for capacity building. This committee is chaired by the Head of National Population and Family Planning Board and supported by ministries such as Bappenas, the Coordinating Ministry for Human Development and Cultural Affairs, MOHA, and the Ministry of State Secretariat. While both committees involve cross-ministerial cooperation, the Ministry of Agriculture (MOA), Ministry of Trade (MOT), and the National Food Agency (NFA)—the main agencies for agriculture, food trade, and food security—are absent from the national team.

The National Strategy to Accelerate Stunting Reduction rests on five pillars. Each pillar sets guidelines for government interventions to address stunting, along with the expected outputs, targets, and timeline. The strategy establishes the link between food security and nutrition fulfillment through Pillar 4, which focuses on “building food security and nutrition at the individual, family, and community levels.” Responsibility for implementation lies entirely with district and city governments while the national ministries, provincial governments, and other stakeholders take supporting roles. As seen in Table 3, this pillar lacks an agenda item for enhancing food affordability. It is also clear from the targeted outputs that the strategic interventions strongly rely on direct provisions of healthy food through cash and non-cash assistance, as well as education for vulnerable groups.

Table 3.
Presidential Regulation No. 72/2021 - Activities and Intended Outputs by 2024 in Pillar 4
"Build Food Security and Nutrition at the Individual, Family, and Community Levels"

Activities	Output	Target by 2024	Supporting Ministries/ Agencies/Parties
a. Fulfill the dietary and nutritional needs of individuals, families and communities, including in times of disaster	Percentage of families at risk of stunting obtained the benefit of home garden resources to increase nutritional intake	Target: 50%	MOA ⁷ , provincial governments, and other stakeholders
	Percentage of families at risk of stunting included in the campaign to increase fish consumption	Target: 90%	MOH, Ministry of Marine Affairs and Fisheries, provincial governments, and other stakeholders
	Percentage of beneficiary families with pregnant women, breastfeeding mothers, and children under two years of age receiving food assistance other than rice and eggs (carbohydrate, animal-based and plant-based protein, vitamins and minerals, and/or weaning food)	Target: 90%	Ministry of Social Affairs, provincial governments, and other stakeholders
	Couples of reproductive age with poverty and welfare problems who receive conditional cash transfers	Target: 90%	Ministry of Social Affairs, provincial governments, and other stakeholders
	Couples of reproductive age with poverty and welfare problems who receive non-cash food assistance	Target: 90%	Ministry of Social Affairs, provincial governments, and other stakeholders
	Couples of reproductive age with low incomes and poverty status receive health insurance assistance	Target: 90%	MOH, Ministry of Social Affairs, provincial governments, and other stakeholders
b. Increase the quality of food fortification	Percentage of recommendations for fortified food products followed up by businesses	Target: 75%	National Agency of Drug and Food Control, provincial governments, and other stakeholders

Source: Presidential Regulation No. 72/2021, processed by authors.

⁷ The MOA acts as a supporting ministry but is not part of the TPPS.

Following Presidential Regulation No. 72/2021, in December 2021, BKKBN issued Regulation No. 12/2021 on the National Action Plan for the Acceleration of Stunting Reduction in Indonesia 2021–2024 (*Rencana Aksi Nasional Percepatan Penurunan Angka Stunting Indonesia Tahun 2021–2024* or RAN-PASTI). RAN-PASTI sets reference points for the coordination, synchronization, and integration of activities by the central government, local governments, and other stakeholders. It comprises three approaches in its implementation: a nutrition intervention approach, a multi-sectoral and multi-stakeholder approach, and a stunting risk-based family approach.

The nutrition intervention approach is further divided into specific and sensitive interventions. Specific interventions directly support fetal and newborn development up to 23 months of life, while sensitive interventions aim to reduce stunting incidence through indirect means such as improving family planning, parenting, access and quality of health services, access to drinking water and sanitation, food safety, and social assistance. The stunting risk-based family approach seeks to ensure that specific and sensitive interventions reach families at risk of stunting. These are families exposed to one or more risk factors of stunting such as having an income below the poverty line, low parental education, poor sanitary conditions, and unclean drinking water.

“**Presidential Regulation No. 72/2021 and RAN-PASTI do not address food affordability, which is essential to ensure healthier diet among low-income Indonesians.**”

As with the Presidential Regulation, RAN-PASTI does not address affordability as a dimension of food security. But without economic access to nutritious food, low-income Indonesians face a serious barrier to greater and healthier household consumption.

In October 2021, Bappenas issued a National Action Plan for Food and Nutrition 2020–2024 (*Rencana Aksi Nasional Pangan dan Gizi* or RAN-PG) through the Bappenas Decree No. 124/2021. RAN-PG serves as a guideline for government agencies at the national and local levels in planning programs related to food and nutrition. Due to its broader scope, stunting-reduction programs should also refer to RAN-PG.

RAN-PG aims to secure food and nutrition at the household level through four strategic goals: 1) Improved Availability of Diverse, Nutritionally Balanced, and Safe Food; 2) Improved Affordability of Diverse, Nutritionally Balanced, and Safe Food; 3) Improved Use of Food and (Essential) Nutrition Services; and 4) Institutional Strengthening and Food and Nutrition Governance. These strategic goals are outlined in Table 4. The RAN-PG is intended as a holistic policy framework for food security, covering and highlighting aspects such as affordability, availability, and nutrition. The central action plan is intended to be translated into specific regional RAD-PGs (regional action plans) by each district and provincial government.

“**Strategic actions outlined in RAN-PG are restricted to direct government interventions which may be effective to respond to rising food prices but not to tackle underlying systemic problem of affordability.**”

Considering affordability in RAN-PG is commendable, but the strategic actions outlined in the plan are restricted to direct government interventions, such as direct distribution of food, training and education to change producer and consumer behaviors, and price monitoring and direct distribution of stocks in order to stabilize prices in the domestic market. While these actions may be effective to respond to rising food prices, they do not address the underlying, systemic problems responsible for that lack of affordability. The RAN-PG approach to increasing food availability also relies heavily on government action meant to increase domestic production and neglects action that would increase access to international sources of nutritious food.

The RAN-PG does not rely exclusively on direct government action. Several activities engage the private sector (private and other non-state actors) in campaigns and healthy product development and, crucially, multi-stakeholder coordination. However, evaluation of trade and agricultural policies that may directly or indirectly contribute to unhealthy consumption patterns and food choices are missing from the RAN-PG.

Table 4.
Summary of the RAN-PG

No	Strategy Goal	Action
Strategic Goal 1. Improved Availability of Diverse, Nutritionally Balanced, and Safe Food.		
1.1	Increased production of diverse food	Improve the development of diverse food production centers, promote the use of certified seeds, and expand efforts to increase food security at the family level by empowering women and utilizing land available around the house for food production through collaboration with local governments.
1.2	Provision of safe food (during production process)	Increase cooperation with the National Agency of Drug and Food Control and strengthen the capacity of authorities related to food safety.
1.3	Management of food reserves of the central government, local governments, and the community	Increase the availability of food reserves in the province/district/city and develop support for the construction of food storage.
1.4	Handling of crop damage and loss	Provide assistance, access to information and technology for food loss handling to food producers; develop smart farming.
1.5	Enriching the nutritional values of food sources through biofortification	Compile a roadmap for food biofortification to improve policies and develop biofortification in various food commodities.
Strategic Goal 2. Improved Affordability of Diverse, Nutritionally Balanced, and Safe Food.		
2.1	Improve supply stability and food prices	Use and monitoring of food price panels, increasing the diversity of foods available in Toko Tani Indonesia (TTI), which include locally cultivated food commodities.
2.2	Expand access to market and food prices information system	Prepare a food availability outlook and conduct regular monitoring of vegetable and fruit prices in the food price panel.

2.3	Strengthen micro, small, and medium enterprises (MSMEs), cooperatives, and Village Owned Business Entities (BUMDes) in food sector	Foster MSMEs to develop local food industries to improve nutrition for vulnerable groups.
2.4	Development of a social safety net system in food and nutrition by improving consumption of various types of food	Incorporate elements of dietary diversity and nutrition in social assistance programs such as the Non-Cash Food Subsidy (BPNT).
2.5	Provision and distribution of food for emergency situations	Revitalize Local Government Food Reserve Program (CPPD) in cooperation with local food suppliers.
2.6	Develop capacity for food self-sufficiency for communities in food-insecure and disaster-affected areas	Increase the capacity of villagers in processing local food and provide plans and assistance to areas with food insecurity.
2.7	Development of food logistics system	Develop a food logistics system according to regional situations and collaborate with the e-commerce industry to improve food distribution.

Strategic Goal 3. Improved Use of Food and (Essential) Nutrition Services

3.1	Strengthen food and nutrition awareness system and the monitoring of nutritional status	Integrate information system of food and nutrition at the local and national levels.
3.2	Annual updates of the food security and vulnerability status	Improve the use of food insecurity maps.
3.3	Educate individuals and communities regarding diverse, nutritionally-balanced, and safe dietary patterns from an early age	Increase public education about the importance of food diversification through local communities, public figures, and community leaders.
3.4	Increase the frequency of campaigns and education activities on food safety and quality	Campaigns on labeling for processed and ready-to-eat foods; education on the importance of food ingredients, nutrition, and safety in schools.
3.5	Increase consumption of animal protein, vitamins, and minerals from vegetables and fruit to address nutritional problems among pregnant women, under-five children, and other food vulnerable groups	Develop a roadmap for food diversification and incorporating local food to the MOH's healthy eating pattern, <i>Isi Piringku</i> .
3.6	Exclusive breastfeeding and provision and complementary feeding (MP-ASI) based on local foods	Foster the issuance of regional regulations for exclusive breastfeeding, increase the accessibility of complementary foods based on locally cultivated sources.

3.7	Improvements of public health and nutrition services	Increase the role of local governments and facilities such as Puskesmas to improve nutrition and eradicate malnutrition.
3.8	Food waste control	Training on food waste handling, establishing a platform for food waste redistribution, voluntary agreements with the industry to control food waste, development of food production, distribution, and storage database.
3.9	Food fortification to increase the nutritional value of food	Develop a roadmap for fortification, collaborate with industry and implement integrated supervision on food fortification.
3.10	Development of food logistics system	Support the designation of sweetened packaged drinks as a new excisable good, issue regulations on “healthier choice” labels for ready-to-eat food.

Strategic Goal 4. Institutional Strengthening and Food and Nutrition Governance.

4.1	Strengthen coordination in planning, implementation, monitoring, and evaluation of food and nutrition action plans at the central and local levels	Establish a multi-stakeholder coordination forum for stunting reduction at the central and sub-national government levels, integrate local action plans for food and nutrition (RAD-PG) in stunting reduction programs.
4.2	Strengthening the role of the non-government sector in supporting food and nutrition security at the central and local levels	Improve the coordination of non-government stakeholders and engage the private sector in programs to change dietary behaviors and avoid food loss and waste.
4.3	Strengthening the institutional role of gender and women in food and nutrition	Improve the capacity and role of women and women’s organizations in promoting healthy diets and food security.
4.4	Strengthening regulations for food security and nutrition	Support local governments in issuing regulations on protected farmlands (LP2B), policymaking related to the use of innovative food products.
4.5	Development of a food and nutrition research and development platform	Improve research, development, data collection, and knowledge sharing activities.

Source: The Decree of the Head of Bappenas No. KEP 124/M.PPN/HK/10/2021, processed by authors.

KEY POLICY BARRIERS TO HEALTHIER DIETS

The strategies to reduce stunting and improve overall food and nutrition fulfillment cover a wide range of programs—from nutritional improvements for pregnant women, infants, and toddlers to food fortification in cooperation with businesses to the development of food logistics and supply chain systems. This broad approach correctly reflects the multidimensional nature of the problem. However, these strategies neglect barriers to healthier consumption that come not only from socioeconomic factors (such as high food prices in the market, poverty, low consumer education), but from policy choices made in the name of food security and domestic self-sufficiency.

Indonesia’s trade policy has acted as a barrier to an affordable food supply, and agricultural policy has been biased toward the production of rice.

Indonesia’s trade policy has acted as a barrier to an affordable food supply, and agricultural policy has been biased toward the production of rice. Furthermore, while RAN-PG includes actions aimed at addressing high food prices, the most specific strategies planned for stunting reduction neglect the problem of food affordability.

Trade Policy as a Barrier to Food Affordability

Trade policy has important effects on food affordability and therefore needs to be considered in programs and strategies for stunting reduction. The importation of strategic and staple food commodities⁸ follows a quota system that is managed through non-automatic licensing. Quota allocation is determined through inter-ministerial coordination meetings and grants a monopoly on imports of certain commodities, such as corn for feed, to state-owned enterprises (SOE).⁹ The inter-ministerial meeting involves the Coordinating Ministry for Economic Affairs, the MOT, and the MOA (Amanta & Wibisono, 2021). While these ministries have the power to impose import restrictions on food, they are not part of the National Team to Accelerate Stunting Reduction.

In addition to import/export licenses and quantitative restrictions (quotas), food and agriculture trade in Indonesia is subject to other non-tariff measures (NTM) restricting trade,¹⁰ such as technical barriers to trade, sanitary and phytosanitary measures, and pre-shipment inspections. NTMs can increase domestic food prices by increasing the cost of importing to Indonesia. According to calculations by Marks (2017), NTMs are responsible for a domestic price for rice that is 67.2% higher than international prices. Quota policies played a significant role: without quota restrictions, the price of domestic rice would be only 8.4% higher than international prices (Marks, 2017). Costs imposed by NTMs are eventually passed on to consumers, including those living in poverty. NTMs thereby make healthy diets less affordable.

⁹ Imports of fruits and other food commodities needed for a healthy diet are not assigned to SOEs, but can be conducted by the private sector.

¹⁰ NTMs are measures other than tariffs that modify the prices or quantity of goods traded, or both (UNCTAD, 2012).

The Indonesian government has recently implemented the commodity balance (*neraca komoditas*) as a new tool for trade governance. The commodity balance¹¹ is a centralized, integrated database of supply and demand for certain commodities based on which the decision over import and export quotas will be taken by the government. In theory, based on supply and demand data provided by firms and technical ministries, the commodity balance can determine surpluses and deficits of a commodity in the market and use this information to determine how quotas and licenses will be allocated (Gupta et al., 2022). The new National Food Agency (NFA), established in 2021, is responsible for maintaining supply and demand data, as well as determining quantities supplied and demanded for nine food commodities: rice, maize, soybeans, table sugar, shallots, beef, poultry, poultry eggs, and chilies.

By referencing the supply (production) and demand (consumption) data, the commodity balance is supposed to eliminate the need for technical ministries to issue import and export recommendation letters, making quota allocation more objective and expediting the licensing process. However, CIPS studies found substantial issues may plague the new system, such as data reliability and accuracy, the fact that inter-ministerial meetings are still needed to reconcile supply and demand data, and a lack of price information to guide quota allocation (Gupta, 2022; Gupta et al., 2022). The commodity balance preserves much of the old system where trade licensing is guided by food availability concerns and few mechanisms exist to account for price fluctuations.

Trade reforms can promote nutritional status and welfare by improving access to cheaper food. Trade liberalization can indirectly affect nutrition by reducing the price of imports, enabling consumers to access an affordable and wider variety of food (Mansury et al., 2019). Removal of NTMs can also reduce the poverty rate—an indirect cause of stunting. A CIPS study estimates that removing NTMs on rice and meat will reduce the poverty rate by 2.83 percentage points nationally, and 3.77 percentage points in rural areas where poverty is concentrated (Amanta & Wibisono, 2021).

Agriculture Policy Bias Toward Rice Production and Consumption

The dominance of rice in Indonesia's agricultural production and diets has been encouraged by self-sufficiency and other agricultural policies. Though not native to Indonesia, botanical evidence suggests that rice has been cultivated and spread across the archipelago for at least 3500 years (Deng et al., 2020). While rice cultivation spread organically through migration, self-sufficiency, especially in rice, is inherently political. Indonesia's first president, Sukarno, imbued domestic agricultural production with nationalist sentiments and an ambition for self-sufficiency as "a key indicator of prosperity, security, and well-being" (Neilson and Wright, 2017, p. 4). As a reaction to food shortages in the early 1960s, President Suharto made food security, narrowly understood as rice self-sufficiency at the national level, a focus of the New Order's economic and

¹¹ The commodity balance started to be applied to five commodity groups in early 2022: rice, salt, sugar, beef, and fisheries products. As of September 19, 2022, 19 more commodity groups have been added, including maize (CMEA, 2022; Anisah, 2022). More commodities that require import and export licenses will be added in the future.

social policy (Neilson and Arifin, 2012). The Green Revolution, pursued in Indonesia's New Order through the introduction of the high-yielding "miracle seeds," fertilizer and pesticide provision programs, and the development of irrigation systems, rural credit schemes, and rural input retailers, led to the achievement of rice self-sufficiency for the first time in the 1980s (Djurfeldt et al., 2005; Hansen, 1972).

Self-sufficiency is understood by the MOA as a situation in which a country produces at least 90% of its national food needs (MOA, 2019).¹² Indonesia produced an average of 34.5 million tonnes of milled rice annually between 2020–2022. Consumption averaged 35.2 million tonnes during the same period (USDA, 2022). This represents a self-sufficiency ratio of about 98%.

Many of Indonesia's ethnic groups traditionally cultivated other staple crops (Nurhasan et al., 2021), such as sago, corn, cassava, and sweet potato. This diversity in staples has been in decline as Indonesians increasingly become rice consumers.

Despite continuous achievements of rice self-sufficiency at the national level and a typical Indonesian diet that is dominated by rice (Figure 1, Table 3) the government continues to promote rice. The MOA Strategic Plan (*Rencana Strategis* or Renstra) 2020–2024 includes the availability of 46.8 million tonnes of milled rice by 2024 as an indicator for food security improvement (MOA Decree No. 484/2021). While there are other indicators related to diets and nutrition (such as the scores for Desirable Dietary Pattern and prevalence of undernourishment), rice is the only carbohydrate source whose availability is used as an indicator for food security. Both recent and long-standing policies and programs in agriculture serve as further examples for the bias towards rice production.

"Rice Field Printing" Programs

Large-scale "rice field printing" programs (*Program Cetak Sawah*) have been pursued by the national government since the 1990s. While each administration had different names for the programs, they all essentially opened new agricultural lands, especially for rice fields and in non-Java islands in an effort to extend production and solve the problem of diminishing agricultural land use in Java. In 1995, President Suharto issued Presidential Decree No. 82/1995 on Peatland Development for Food Crop Farming in Central Kalimantan, with which the Mega-Rice Project, also known as the One Million Hectare Peatland Project (*Proyek Lahan Gambut Satu Juta Hektar*), was enacted. The program only managed to create about 3000 hectares of rice field before being abandoned in 1999 because 80% of the designated lands were not fit for rice cultivation (Tempo, 2003).

¹² According to the MOA, the 90% threshold comes from an FAO provision in 1999. The authors however could not find this statement in any FAO publication that we came across. Instead, an FAO report from 1999 and another one published in 2015 both emphasize the need for governments to situate food self-sufficiency policy along a continuum between complete autarky and complete reliance on foreign-sourced food, and provide a reminder that food self-sufficiency is not the same as food security (FAO, 1999; FAO, 2015).

Similar programs were pursued by subsequent administrations. Under President Yudhoyono, new agricultural lands were opened in Ketapang, Merauke, and Bulungan. A number of studies and media reports suggest that these projects failed to optimize land use and boost yields (Aziliya, 2015; Koran Kaltara, 2022; Napitupulu et al., 2021). During President Widodo's first term, "rice field printing" was attempted again in 28 provinces. The State Audit Board found weaknesses in the program, such as infertile soil, inadequate irrigation, and locations far from farmers' villages (Paskalis, 2021). Today, new agricultural lands are being developed through the Food Estate program in several provinces. Though it develops other crops such as cassava, garlic, and shallot, rice is still featured prominently, especially in the Central Kalimantan sites that use peatland areas from the Mega-Rice Project.

The Food Estate program is a long-term program to maintain national food security implemented on 2.3 million hectares of lands spread over Central Kalimantan, North Sumatra, and East Nusa Tenggara (Indonesia House of Representative, 2021). In Central Kalimantan, there are two food estate developments, one of them is for rice development which is located on 165,000 hectares of alluvial land and an Ex-Peatland Development (PLG) land (Ministry of Public Works and Housing, 2022). From 2021–2023, the total budget disbursed for food estates from the MOA's budget was IDR 1.60 trillion (Indonesia House of Representative, 2022). This amount represented about 11% of the MOA's budget in 2022.

Rice-Based Food Assistance

The acceptance of rice as a staple crop is also reinforced by Indonesia's rice-based food assistance. Since 1998, the national government has implemented food assistance in the form of discounted or free rice for the poor under the Rice for the Poor (*Beras Miskin* or Raskin) program, later changed into Rice for Welfare (*Beras Sejahtera* or Rastra) in 2015. The program transitioned in 2017 into a direct food subsidy for the poor called Non-Cash Food Subsidy (*Bantuan Pangan Non-Tunai* or BPNT). While the program technically gave recipients freedom on how to spend the transferred funds, that freedom was limited to spending on rice and eggs. It was only in 2020 with the Sembako Program that the food assistance was expanded to cover other carbohydrate sources (including local staples like corn and sago), animal proteins (eggs, beef, chicken, fish), plant proteins (pulses, including tempe and tofu), and vitamin and mineral sources (vegetables, fruits). The expansion is intended to improve poor households' access to diverse sources of nutrients and prevent stunting (Control Team for Non-Cash Social Assistance Distribution, 2019).

Progressive developments of Indonesia's food assistance are commendable, though it is unfortunate that the government spent decades and hundreds of trillion of rupiah¹³ encouraging mostly rice consumption. Decades of such policies may have been responsible for the conversion of local communities, especially in the outer islands, into rice consumers. One study argued that rice assistance and the rice self-sufficiency policy have converted the local diet of rural communities in the Mentawai Islands—composed traditionally of sago, taro, and banana—to primarily rice. In the process, the Mentawaians came to believe that rice is superior, while the traditional crops were associated with backwardness and inferiority (Delfi, 2017).

¹³ Between 2005–2017 (almost the entire period of Raskin and Rastra), the total food subsidy budget almost reached IDR 200 trillion and made it the second largest non-energy subsidy at the time after the fertilizer subsidy (Ministry of Finance (MOF), 2019), 1999; FAO, 2015).

Fertilizer Subsidy Program

Fertilizer from the fertilizer subsidy program goes mostly to rice farmers. According to the Agency for Agricultural Research and Development of the MOA, lowland rice is the largest fertilizer consumer in Indonesia, absorbing around 60% of the total national fertilizer needs (MOA, 2020). Harvested area is an important factor behind the significant consumption, as rice was harvested from 10.66 million hectares of land in 2020 and is the second most grown crop by harvested area behind oil palm (FAO, 2022).¹⁴ In 2022, the MOA released the MOA Regulation No. 10/2022 which limits the subsidy coverage to urea and nitrogen-phosphorus-potassium (NPK), and to farmers cultivating rice, corn, soybeans, chili, shallots, garlic, coffee, cocoa, and sugarcane. Previously, the subsidies covered a wider range of fertilizers¹⁵ and were allocated by sector to farmers cultivating food, plantation, and horticulture crops. Limiting recipients based on cultivated commodity risks driving farmers' preference towards these commodities and further strengthening the dominance of rice.

¹⁴ About 60% of oil palm areas are owned by large plantations. Meanwhile, subsidized fertilizer is eligible for farmers managing a maximum of two hectares of farmland. This explains why oil palm does not receive the most subsidies.

¹⁵ ZA, SP-36, and organic fertilizers were previously covered.

POLICY RECOMMENDATIONS

The Indonesian government has made reducing child malnutrition a priority, especially by achieving a stunting rate below 14% by 2024 and by improving the consumption of a diverse and nutritionally balanced diet. To support these goals, the government has issued a number of national strategies and action plans—National Strategy to Accelerate Stunting Reduction, RAN-PASTI, and RAN-PG. Targets and activities in these documents aim to reduce stunting and improve dietary patterns mostly by attempting to change consumer behavior (for example through public campaigns and education) and providing safety nets (for example via food and cash assistance). While these interventions are important, the overall strategies overlook the effects of trade and agricultural policies on affordability and production bias towards a few commodities, especially rice.

Inter-ministerial coordination is needed to align policies and activities from different ministries and avoid unintended outcomes that promote less affordable food or undermine the goal of a more diverse food supply. Improving multi-stakeholder coordination is a commendable part of the RAN-PG, but the action plan does not explain further or engage in a systematic review of agricultural and trade policies. To correct these shortcomings, the following policy areas should be reviewed and actions should be considered:

Inter-ministerial coordination is needed to align policies and activities from different ministries and avoid unintended outcomes that promote less affordable food or undermine the goal of a more diverse food supply.

- Food affordability targets should be part of RAN-PASTI and the National Strategy to Accelerate Stunting Reduction. The MOT should be included in the plan in order to review trade policies and tools such as import/export licensing and quota—including evaluation of the new commodity balance mechanism—and removing unnecessary NTMs that act as barriers to affordable food from the international market. Moreover, as the ministries and agencies responsible for food security, the MOA, MOT, and the NFA should become members of the National Team to Accelerate Stunting Reduction to align their policies with stunting reduction goals.
- RAN-PG should mandate a systematic review of agricultural policies (under the MOA) to address the effects of policies such as the food estates, fertilizer subsidies, food assistance, and rice self-sufficiency on consumer access to non-staple food crops. The goal should be a crop-neutral agricultural policy that allows farmers to respond to market signals and avoids incentives and investments biased towards production of a few staple crops (Pingali, 2015). As with stunting-related strategies, to improve food affordability in RAN-PG, the MOT should expand beyond its role in price stabilization and monitoring to conduct an impact assessment of specific NTMs and review the effects of its trade policies on food affordability and consumption of non-staple food.

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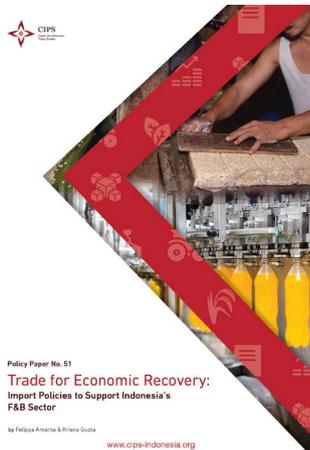
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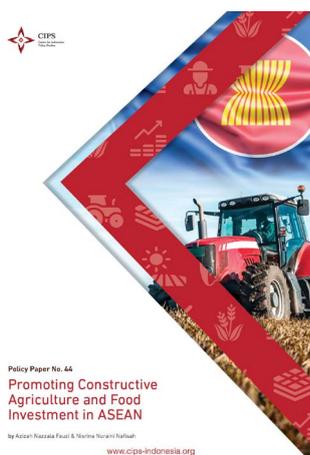
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