

Strategic Review of Food Security and Nutrition in Indonesia

2019–2020 Update



Sirojuddin Arif

Widjajanti Isdijoso

Akhmad Ramadhan Fatah

Ana Rosidha Tamyis



World Food Programme



SMERU RESEARCH REPORT

Strategic Review of Food Security and Nutrition in Indonesia: 2019–2020 Update

Sirojuddin Arif

Widjajanti Isdijoso

Akhmad Ramadhan Fatah

Ana Rosidha Tamyis

The SMERU Research Institute

August 2020

Strategic Review of Food Security and Nutrition in Indonesia: 2019–2020 Update

Authors: Sirojuddin Arif, Widjajanti Isdijoso, Akhmad R. Fatah, Ana R. Tamyis

Cover photo: Mukti Mulyana.



This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

The World Food Programme encourages the dissemination of the material contained in this publication on condition that reference is made to the source.

The findings, views, and interpretations published in this report are those of the authors and should not be attributed to any of the agencies providing financial support to the SMERU Research Institute.

A significant part of the research in this publication uses interviews and focus group discussions. All relevant information is recorded and stored at the SMERU office.

© World Food Programme, 2020

The SMERU Research Institute Cataloging-in-Publication Data

Sirojuddin Arif

Strategic Review of Food Security and Nutrition in Indonesia: 2019–2020 Update/ Sirojuddin Arif, et al.

--Jakarta: Smeru Research Institute, 2020

--xi; 70 p; 29 cm.

ISBN 978-623-7492-41-2

ISBN 978-623-7492-42-9 [PDF]

1. Food Security 2. Nutrition 3. Indonesia

I. Title

363.8 –ddc 23

RESEARCH TEAM

SMERU Researchers

Sirojuddin Arif

Widjajanti Isdijoso

Akhmad Ramadhan Fatah

Ana Rosidha Tamyis

Regional Researchers

Yakomina Welmince Nguru

Ari Ratna Kurniastuti

ACKNOWLEDGEMENTS

This report is the outcome of a review commissioned by the United Nations World Food Programme (WFP) and conceptualized and conducted by a team from the SMERU Research Institute.

The team is grateful to experts and practitioners in key government agencies and non-governmental organizations that have provided invaluable information and data for this study. In particular, we would like to express our sincere appreciation and gratitude to the participants of the focus group discussions that were conducted in various stages of the study in 2019. At the national level, the team is immensely indebted to the Coordinating Ministry for Economic Affairs; Coordinating Ministry for Human Development and Cultural Affairs; the Meteorological, Climatological and Geophysical Agency (BMKG); Ministry of Agriculture; Ministry of Education; Ministry of Finance; Ministry of Health; Ministry of Social Affairs; National Disaster Management Agency (BNPb); Ministry of National Development Planning/National Development Planning Agency (BAPPENAS); Sustainable Development Goals (SDG) Secretariat; Secretariat of the Vice President of the Republic of Indonesia; the National Team for the Acceleration of Poverty Reduction (TNP2K) and the National Team for the Acceleration of Stunting Prevention (TP2AK) in the Vice President's office for their inputs to the initial design of the study. Our thanks also go to the Faculty of Medicine of the University of Indonesia, Humanitarian Forum Indonesia, and Indonesia International Institute for Life-Sciences (i3L) for their useful information about the current condition of food security and nutrition in the country.

We also would like to express our gratitude to Bustanul Arifin, Professor of Agricultural Economics of Lampung University; Prasinta Dewi, Deputy for Logistics and Equipment of the National Agency for Disaster Management; Dobby Izwardy, Head of the National Institute of Health Research and Development of the Ministry of Health; Rachmat Koesnadi, Director of Social Protection for Natural Disaster Victims of the Ministry of Social Affairs; and Vivi Yulaswati, Expert Staff for Social Affairs and Poverty Reduction of the Ministry of National Development Planning/National Development Planning Agency (BAPPENAS); Dodo Gunawan, Head of Climate Change Information Center of the Meteorological, BMKG; Iing Mursalin, Arip Muttaqin and Lucy Widasari of the National Team for the Acceleration of Stunting Prevention (TP2AK) at the Vice President's Office; Dhian Probhoyekti, Director of Public Health Nutrition of the Ministry of Health; and Rachmi Widiarini, Head of Availability of Food of the Food Security Agency of the Ministry of Agriculture for their help during different stages of the study.

The team is also thankful for the contributions received from experts and practitioners in key government agencies and institutions in East Java and East Nusa Tenggara Provinces during focus group discussions and interviews conducted in those two provinces. In East Java, we are thankful to the Agricultural Office, Animal Husbandry Office, Education Office, Health Office and Regional Development Planning Office (BAPPEDA) of East Java Province. We are also grateful to the BPS Office of East Java, BMKG Office of East Java, Faculty of Public Health of the University of Airlangga, and Regional Agency for Disaster Management (BPBD) of East Java Province.

In East Nusa Tenggara, the team is indebted to the Agricultural Office, Education and Cultural Office, Economic and Development Assistance Office, Health Office, Office of Fishery and Maritime Affairs, Planning, Development, Research and Regional Development (Bappelitbangda), and Social Office of East Nusa Tenggara Province. We are also grateful to the BMKG East Nusa Tenggara, BPS East Nusa Tenggara, Faculty of Public Health of Nusa Cendana University, and the WFP East Nusa Tenggara Office in Kupang. Our thanks also go to the Agricultural Office and Health Office of Kupang District for their participation in the focus group discussion in the province.

We would also like to express our gratitude to WFP for their constructive comments on earlier drafts of the document, and to Elan Satriawan, Chief of Policy Team of TNP2K and Associate Professor of Economics, the Department of Economics of Universitas Gadjah Mada for his peer review.

Finally, we are also grateful to Sudarno Sumarto, Ridho Al Izzati, and Nina Toyamah of the SMERU Research Institute for the help and support provided throughout the study.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS	i
TABLE OF CONTENTS	iii
LIST OF TABLES	iv
LIST OF FIGURES	iv
LIST OF BOXES	iv
LIST OF APPENDICES	v
LIST OF ABBREVIATIONS	vi
EXECUTIVE SUMMARY	viii
I. INTRODUCTION	1
1.1 Background	1
1.2 Objectives	2
1.3 Methodology	2
1.4 Structure of the Report	4
II. ANALYSIS OF THE FOOD SECURITY AND NUTRITION SITUATION	5
2.1 Progress on Food Security	5
2.2 Progress on Nutrition	11
2.3 New Challenges for Food Security	15
2.4 New Challenges for Nutrition	18
III. RESPONSE AND GAP ANALYSIS	20
3.1 Food Availability Policies and Programmes	21
3.2 Food Access Policies and Programmes	24
3.3 Food Utilization and Nutrition Improvement Policies and Programmes	28
3.4 Institutional Arrangements for Food Security and Nutrition	33
IV. THE IMPACT OF COVID-19 ON FOOD SECURITY AND NUTRITION	38
4.1 The Outbreak of COVID-19 and Its Impact on Food Security and Nutrition	38
4.2 Government Responses to the Outbreak of the COVID-19 Pandemic	41
4.3 Addressing the Impacts of COVID-19: What Needs to Be Done	46
V. CONCLUSIONS AND RECOMMENDATIONS	49
5.1 Conclusions	49
5.2 Recommendations	50
LIST OF REFERENCES	54
APPENDICES	64

LIST OF TABLES

Table 1. Indonesia’s Progress in the Provision of Health Care for Women and Children	10
Table 2. Prevalence of Stunting and Wasting among Children, by Gender	12
Table 3. Classification of Undernutrition Levels among Children under 5	12
Table 4. Number of Districts/Cities by Severity Level of Stunting (2018)	13
Table 5. Production Targets of Food Sovereignty, 2014–2019	21
Table 6. Nutrition-Specific and Nutrition-Sensitive Interventions	32
Table 7. National Action Plan for Food and Nutrition (RAN-PG) 2015–2019: Multisectoral Approach	35
Table 8. National Strategy to Accelerate Stunting Prevention (2018–2024): Pillars, Objectives, Strategies and Coordinators	36
Table 9. Expansion of Social Protection Programmes during the COVID-19 Outbreak	44

LIST OF FIGURES

Figure 1. Scope of the Strategic Review of Food Security and Nutrition	2
Figure 2. Analytical Framework of the Strategic Review of Food Security and Nutrition	4
Figure 3. Changes in Rural and Urban Household Food Expenditures, 2013–2019	9
Figure 4. Nutrition Status of Children Under 5, 2007–2018	12
Figure 5. Changes in the Prevalence of Stunting in Indonesia, 2013–2018	13
Figure 6. Overnutrition among Children, Teenagers, and Adults, 2013–2018	14
Figure 7. Incidence of Food Insecurity by Consumption Decile and Geographical Area	17
Figure 8. Changes in Harvested Area of the Vegetables and Staples, 2014–2019	23

LIST OF BOXES

Box 1. Food Production in East Nusa Tenggara (NTT)	22
Box 2. Gender Inequality in the Agricultural Sector in Indonesia	24
Box 3. The Evolution of Food Assistance for the Poor	26
Box 4. Family Hope Programme (Program Keluarga Harapan, PKH)	27
Box 5. National Action Plan for Food and Nutrition 2017–2019 (RAN-PG) Nutrition Improvement Programmes	31

LIST OF APPENDICES

Appendix 1. Indonesia's Food Balance, 2013–2019 (in million tons)	65
Appendix 2. Food Insecurity in Indonesia	66

LIST OF ABBREVIATIONS

ADB	Bank Pembangunan Asia	Asian Development Bank
ALC	Konversi Lahan Pertanian	Agricultural Land Conversion
BAPPEDA	Badan Perencanaan Pembangunan Daerah	Regional Development Planning Agency
BAPPENAS	Badan Perencanaan Pembangunan Nasional	Ministry of National Development Planning/National Development Planning Agency
BKP	Badan Ketahanan Pangan	Food Security Agency
BMKG	Badan Meteorologi, Klimatologi, dan Geofisika	Meteorological, Climatological, and Geophysical Agency
BNPB	Badan Nasional Penanggulangan Bencana	National Disaster Management Agency
BPBD	Badan Penanggulangan Bencana Daerah	Regional Disaster Management Agency
BPOM	Badan Pengawas Obat dan Makanan	National Agency for Drug and Food Control
BPNT	Bantuan Pangan Non Tunai	Non-Cash Food Social Assistance
BPS	Badan Pusat Statistik	Central Bureau of Statistics
CCA	Adaptasi Perubahan Iklim	Climate Change Adaptation
COVID-19	Penyakit yang disebabkan virus Corona	Coronavirus Disease
DKP	Dewan Ketahanan Pangan	Food Security Council
DRR	Pengurangan Risiko Bencana	Disaster Risk Reduction
DTKS	Data Terpadu Kesejahteraan Sosial	Integrated Database for Social Welfare
FDS	Pertemuan Peningkatan Kapasitas Keluarga	Family Development Session
FGD	Kelompok Diskusi Terpumpun	Focus Group Discussion
GDP	Produk Domestic Bruto	Gross Domestic Product
GNI	Pendapatan Nasional Bruto	Gross National Income
ha	Hektar	Hectare
IFPRI	Lembaga Penelitian Kebijakan Pangan Internasional	International Food Policy Research Institute
Kemenko PMK	Kementerian Koordinator Bidang Pembangunan Manusia dan Kebudayaan	Coordinating Ministry for Human Development and Cultural Affairs
KSPG	Kebijakan Strategis Pangan dan Gizi	Strategic Policy for Food Security and Nutrition

MDGs	Tujuan Pembangunan Milenium	Millennium Development Goals
MoA	Kementerian Pertanian	Ministry of Agriculture
MoH	Kementerian Kesehatan	Ministry of Health
MoSA	Kementerian Sosial	Ministry of Social Affairs
NTT	Nusa Tenggara Timur	East Nusa Tenggara
PHEOC	Pusat Pengendalian Keadaan Darurat Kesehatan Masyarakat	Public Health Emergency Operation Centre
PKH	Program Keluarga Harapan	Family Hope Programme
Posyandu	Pos Pelayanan Terpadu	Integrated Health Post
Posyandu cadre	Kader Posyandu	Volunteers, mainly women, providing outreach services from the Posyandu
PPH	Pola Pangan Harapan	Desirable Dietary Patterns
Rastra	Beras Sejahtera	Prosperous Rice
Raskin	Beras untuk Rumah Tangga Miskin	Rice Subsidy Programme for Poor Households
RAN-PG	Rancangan Aksi Nasional Pangan dan Gizi	National Action Plan for Food and Nutrition
Riskesdas	Riset Kesehatan Dasar	Basic Health Survey
RPJMN	Rencana Pembangunan Jangka Menengah Nasional	National Medium-Term Development Plan
SDGs	Tujuan Pembangunan Berkelanjutan	Sustainable Development Goals
SEMBAKO	Nama program bantuan sosial dalam bentuk pangan	Name of food aid programme
Stranas Stunting	Strategi Nasional Percepatan Pencegahan Anak Kerdil	National Strategy to Accelerate Stunting Prevention
TNP2K	Tim Nasional Percepatan Penanggulangan Kemiskinan	National Team for the Acceleration of Poverty Reduction
TP2AK	Tim Percepatan Pencegahan Anak Kerdil	National Team for the Acceleration of Stunting Prevention
UKP-PPP	Unit Kerja Presiden Bidang Pengawasan dan Pengendalian Pembangunan	Presidential Working Unit for Development Monitoring and Control
WFP	World Food Programme	World Food Programme

EXECUTIVE SUMMARY

As Indonesia has been experiencing impressive economic advancement and emerging as an upper-middle income country, it has also recorded important progress in enhancing food security and nutrition. Access to food increased and undernutrition continued to decrease over the last few years. However, the nutritional status of Indonesians is still low by international standards, and the variation across regions remains huge. While struggling to address long-standing food security and nutrition challenges, Indonesia is currently facing an unprecedented crisis triggered by the COVID-19 pandemic. Thus, new and enhanced strategies are needed for the country to achieve the 2030 Agenda, especially Sustainable Development Goal 2 (SDG 2), which states that by 2030 the country will end hunger, achieve food security and improved nutrition and promote sustainable agriculture.

This report is an update of the 2014–2015 Strategic Review. It was initiated in August 2019 and was extended until July 2020 to cover the initial impact of the COVID-19 pandemic on food security and nutrition. It is based on the latest secondary data available, updates on relevant policies and programmes related to food security and nutrition, the latest discourses, and emerging issues, including the impact of the COVID-19 pandemic. This report presents: (1) an update on the food security and nutrition situation since the 2014–2015 Strategic Review, mostly referring to data from 2013 to the most recent available and covering the three dimensions of food security (availability, access and utilization), the trend in nutritional status, the effects of disasters and climate change on food security and nutrition, and new challenges in nutrition; (2) an analysis of the latest development in policies and programmes that are aiming at improving the food security and nutritional status, both at national and sub-national levels; (3) the potential impact of the COVID-19 pandemic on food security and nutrition (through July 2020); and (4) conclusions and recommendations on measures to improve food security and nutrition in the country.

The situation analysis shows that Indonesia has made important progress in further improving food security and nutrition. Nevertheless, some challenges remain. First, the increases in the production of most food commodities, especially rice, have not caught up with the increase in consumption. The persistent dependency on rice imports could threaten food security during the COVID-19-induced crisis. Second, although insufficient food consumption is declining, in 2018, around 21 million people in Indonesia still had calorie intake below the minimum dietary requirement. Poverty and high food prices in relation to income remain major challenges in the effort to increase access to food. Third, the food consumption pattern of most Indonesians is still less than ideal, with carbohydrates continuing to dominate the food intake; insufficient consumption of sources of protein, fruits and vegetables; and the increasing trend in processed food consumption in both urban and rural areas. Fourth, even though the prevalence of stunting (low height for age), underweight and wasting (low weight for height) among children under 5 declined since 2013, the level of undernutrition is still high by international standards. In addition, the prevalence of overweight and obesity has steadily increased among children 6 to 12 years old, adolescents and adults. Evidence also suggests that micronutrient deficiencies prevail although representative data has not been collected for years. Indonesia is thus facing a triple burden of malnutrition in which undernutrition co-exists with overnutrition and micronutrient deficiencies. The current crisis caused by the COVID-19 pandemic and social distancing measures could erode the progress that has been achieved.

The policy analysis highlights significant progress as well as some policy gaps. Indonesia is still facing big challenges in increasing and diversifying food production that can support nutritional improvement toward more balanced diets. The focus on increasing rice production has not been able to meet the government ambition to significantly reduce import dependency, and it comes at the expense of less than sufficient effort to increase the production of fruit and vegetables, as well as

sources of plant and animal protein, with the exception of fish. Thus, the Indonesian Government need not only increase productivity of food commodities, but also give more support to the production of a more diversified range of food commodities. In addition, there is also a need to further acknowledge women's role in agriculture, and to provide support to women farmers to have full access to opportunities in this sector.

Regarding access to food, there has been significant progress in the development of social protection schemes as a vehicle to ensuring sufficient access to food for poor and vulnerable people. This is important as the price of various food commodities, particularly rice, in Indonesia is still relatively high. Furthermore, there have been commendable initiatives undertaken by the Government to make social protection schemes—particularly SEMBAKO and Program Keluarga Harapan (PKH)—more nutrition-sensitive. There are some implementation constraints that still need attention, particularly in improving the quality of the social welfare beneficiary database for better targeting, and further enhancement of the nutritional sensitivity of both regular social protection and social assistance provided during disaster or crises situations.

Indonesia is still facing challenges in various aspects of food utilization. Regarding food safety, there is a need to update the existing regulations, increase the capacity of the oversight organization and better educate the public. For the promotion of a balanced diet, the formulation of desirable dietary scores needs to be adjusted in order to target a lower proportion of carbohydrate intake, and higher proportion of fruit and vegetables in line with the latest Ministry of Health guidance on a balanced diet. With regard to further nutritional improvements, despite significant efforts to improve both nutrition-sensitive and nutrition-specific interventions, the effectiveness of these efforts needs to be enhanced by increasing awareness and knowledge of all stakeholders at all levels of the Government, and making the effort more holistic and integrated. In addition, it is also important to increase more attention to data availability on micronutrient deficiencies to have a basis for tackling all aspects of the triple burden of malnutrition, for example through food fortification.

Regarding institutional arrangements, the latest approach of assigning the leadership on improving nutrition under the Vice President is intended to strengthen coordination efforts, particularly related to stunting. However, the effort to link the production, access and utilization sides of food security with nutrition improvement efforts requires further attention. The fact that various related authorities in food security and nutrition-sensitive services are in the hands of district governments requires concerted efforts to translate central-level policies into effective local-level action. In this regard, the latest government approach to implement regional targeting and focus on an integrated approach to targeted districts and villages could potentially produce more effective results.

In 2020, the challenge of addressing food insecurity and malnutrition further increased due to the outbreak of COVID-19. The Central Bureau of Statistics revealed that as the Indonesian economy contracted by 2.4 percent (q-to-q) in the first quarter of 2020, around 1.6 million more people have fallen into poverty between September 2019 and March 2020 (BPS, 2020d, 2020e). The Government has responded swiftly with a scaling up of social protection programmes, but challenges with the social protection database remain, including the risk of missing many of the most vulnerable, including women-headed households and people with disabilities. As COVID-19 has also affected the implementation of government policies and programmes on health and nutrition, urgent measures are needed to ensure that these services continue.

Based on this analysis, some recommendations are made to decision-makers to deal with the impacts of COVID-19 on food security and nutrition. Addressing the effects of COVID-19 requires the Government to take a rather short-term perspective to prevent the pandemic from eliminating the

progress made so far and ensuring that the country can continue its path to achieving SDG 2 by 2030. The recommendations are as follows.

1. **Food availability:** The Government needs to closely monitor the rice stocks and pursue a flexible trade policy making timely import adjustments when necessary. They also should maintain farmers' incentives to uphold food production by ensuring input supplies, concessions for loan repayment and links to the market. Improvements in the transportation and overall supply chain system are also required to ensure that food commodities remain available and prices do not rise.
2. **Food access:** The Government needs to continue to ensure that all poor and vulnerable households receive social protection to cushion the impacts of COVID-19. Efforts to expand social assistance may need to involve sub-national governments and non-profit or community-based organizations.
3. **Food utilization:** The Government needs to ensure that children and pregnant and lactating mothers can have access to basic health services again, especially in those village health posts (Posyandus) and community health centres (Puskemas) that were closed in the last few months due to COVID-19—without compromising the safety of health workers or patients.
4. **Nutrition:** To prevent an increase in wasting and stunting during the COVID-19 crisis, the Government needs to expand the provision of supplementary foods (e.g. fortified biscuits) to help children and pregnant and lactating mothers from vulnerable groups to meet their nutrition requirements.

Actions are required on many dimensions of food security and nutrition to address long-standing shortcomings in these policy domains as well as new challenges, especially the rise of the triple burden of malnutrition. It is very important for the Government to stay on track and ensure that SDG 2 can be achieved by 2030 with no one being left behind. Therefore, this review makes the following recommendations:

1. **Broaden the policy focus beyond stunting to address the triple burden of malnutrition.** The Government should broaden its policy focus not only on stunting but also on other dimensions of malnutrition, especially wasting, obesity, overweight and micronutrient deficiencies. With regard to micronutrient deficiencies, a representative survey is required on the results of which respective supplementation and fortification plans can be based.
2. **Promote a balanced diet through social and behavioural change communication with the population.** To promote a balanced diet, not only does the Government need to improve its mass communication strategies but they also need to further support the population to put the messages of such a campaign into practice. For example, a diversified diet needs to be affordable by all sectors of society, either directly or through social protection measures.
3. **Improve access to diversified food through the development of diversified, resilient and nutrition-sensitive food systems.** It is also important for the Government to ensure the availability and accessibility of diversified food by developing a diversified agricultural system that is nutrition-sensitive and resilient to climatic shocks. Access to diversified food can also be improved by enhancing food affordability.
4. **Ensure social protection programmes are targeting those most in need, so that no one is left behind.** Overall funding for social protection programmes is limited, so the Government needs to ensure that inclusion and exclusion errors are prevented as much as possible; they also need to be made more gender- and disability-responsive, nutrition-sensitive and adaptive to shocks.
5. **Ensure proper utilization of food.** Only healthy bodies can appropriately utilize a diversified diet, so it remains fundamental that access to clean water and decent sanitation (including toilet facilities) be expanded, especially for poor and vulnerable groups. The coverage of health services, especially for children and pregnant and lactating mothers, is also to be ensured.

6. **Address gender inequality to improve food security and nutrition.** The Government needs to address the various problems that contribute to maintaining or exacerbating gender inequality and support women's access to information on nutrition and diversified diets, means of agricultural production and marketing, health services, social protection and access to education and economic opportunities in general.
7. **Strengthen the monitoring and evaluation system to enhance policies and programmes on food security and nutrition.** Rigorous government monitoring and evaluation should be conducted, and a proper mechanism be put in place to ensure that the results of the monitoring and evaluation will loop back to policy or programme enhancement.
8. **Strengthen the governance of food security and nutrition or rather food systems as a whole through the development of an effective coordinating agency.** The governance of food systems could be enhanced by strengthening policy coordination under the Vice President's Office as an expansion of the efforts to accelerate the reduction of stunting (Stranas Stunting). Indeed, it remains highly relevant that the Government develop an effective institution to govern and coordinate the work of different stakeholders in the areas of food security and nutrition as parts of one food system.

I. INTRODUCTION

1.1 Background

Indonesia is an emerging upper-middle-income country with a per capita gross national income (GNI) of \$4,050 in 2019 (World Bank, 2020a).¹ During the last decade, it recorded an average annual growth of around 5 percent per year. As one of the results, the country has succeeded in steadily reducing poverty from 14.1 percent in 2009 to 9.2 percent in 2019 (BPS, 2010, 2020e), and slightly reduced economic inequality from its peak of 4.1 (Gini ratio) in 2014 to 3.8 in 2019 (BPS, 2020b). The economic growth also contributed to an expanding middle class. According to the World Bank's estimate, one in every five Indonesians (around 52 million people) belonged to this group by 2017 (World Bank, 2017). The country also recorded important progress in human development. Indonesia's Human Development Index improved quite significantly from 0.67 in 2010 to 0.71 in 2018 (UNDP, 2019, p. 301).

In line with the economic progress highlighted above, Indonesia has made important progress in enhancing food security and nutrition. Access to food increased and undernutrition decreased during the last few years. However, the nutritional status of Indonesians is still low by international standards, and the variation across regions remains huge. Many people still face the risk of hunger and malnutrition. According to the *2018 Global Nutrition Report*, Indonesia is one of the three countries with the largest number of wasted children (Development Initiatives, 2018, p. 35).² As per the *2018 Basic Health Survey (Riset Kesehatan Dasar, Riskesdas)*, 10.2 percent of children under 5 in Indonesia were wasted and 30.8 percent were stunted (Kementerian Kesehatan, 2019). The lowest rate of stunting was observed in Gianyar of Bali Province (12 percent) while the highest rate was found in Nias of West Sumatra Province (61 percent) (BPS, 2019e). Simultaneously, the country is witnessing increasing rates of overweight and obesity as well as assumed micronutrient deficiencies. Indonesia is thus facing a triple burden of malnutrition in which undernutrition co-exists with overnutrition and micronutrient deficiencies.

While still struggling to address the long-standing food security and nutrition challenges, Indonesia is currently facing an unprecedented crisis triggered by the COVID-19 pandemic. The worldwide economic consequences of the pandemic harm Indonesia's economy through the drop in trade of goods and services, loss of jobs and income and decreased domestic products. Even worse, as the virus spreads, the economy is curtailed by measures to prevent it from spreading. Due to the current unavailability of a vaccine, this virus has the potential to severely affect the health and socioeconomic status and thus food security and nutrition conditions of significant portions of the population and diminish the progress made so far. New strategies are needed to ensure that the 2030 Agenda, especially concerning SDG 2, will be achieved.

This report provides an update of the 2014–2015 Strategic Review that was written at a time when the Government of Indonesia made strong commitments towards formulating and achieving its Sustainable Development Goals (SDGs) targets, including developing the corresponding road map. This update takes into account the National Medium-Term Development Plan 2020–2024 (*Rencana Pembangunan Jangka Menengah Nasional, RPJMN*) and the health and socioeconomic impact of the COVID-19 pandemic that Indonesia is currently facing. Based on the latest data and analysis

¹Indonesia's per capita GNI increased from USD 2,150 in 2009 to USD 4,050 in 2019 (World Bank, 2020a).

²According to the *2018 Global Nutrition Report*, the three countries with the highest number of wasting are India (25.5 million), Nigeria (3.4 million) and Indonesia (3.3 million). It should be noted, however, that the figure was projected based on the results of the 2013 Riskesdas (FAO, IFAD, UNICEF, WFP & WHO, 2017, p. 126).

available, as well as the most recent developments in policies and programmes related to food security and nutrition, this updated review identifies the progress and emerging challenges and provides an analysis of the responses to them, including to the new challenges posed by the impact of the COVID-19 outbreak. It aims to provide inputs to the Government of Indonesia’s policy focus.

1.2 Objectives

This update of the 2014–2015 Strategic Review of Food Security and Nutrition aims to provide a comprehensive and detailed overview and analysis of the national food security and nutrition situation since 2015 in the context of the 2030 Agenda, specifically concerning SDG 2 and the rapidly evolving impacts of the recent COVID-19 crisis.

This review has the following four objectives:

1. Determine the current state and progress of national and local-level plans, programmes and initiatives to achieve sustainable food security and nutrition.
2. Identify the gaps in policy, strategy, data availability and analysis and programmes, and recommend interventions to improve food security and nutrition.
3. Provide an overview of measures required to accelerate progress towards achieving SDG 2 by 2030, under the premise of “leaving no one behind.”
4. Assess the impacts of the outbreak of COVID-19 on food security and nutrition, identify the gaps in the Government’s responses to the pandemic and recommend interventions to mitigate the impacts of COVID-19 on food security and nutrition.

1.3 Methodology

The analysis of the national food security and nutrition situation in Indonesia covers four main aspects: situational analysis, response analysis, gap analysis, and suggested measures to fill the gaps (Figure 1).

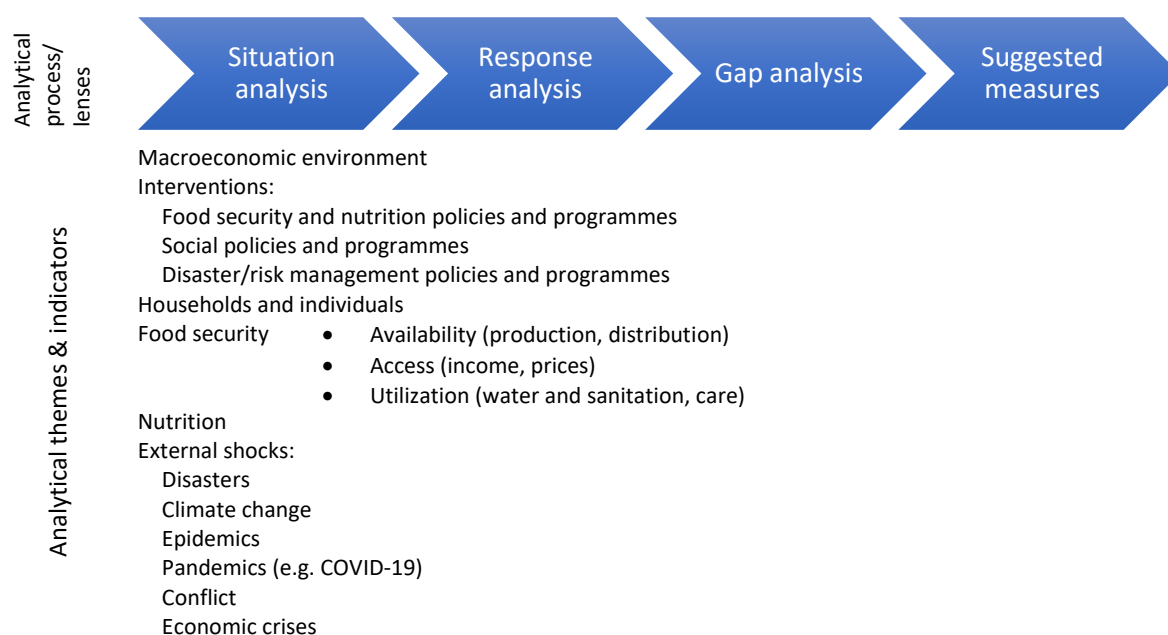


Figure 1. Scope of the Strategic Review of Food Security and Nutrition

This update of the 2014–2015 strategic review of food security and nutrition (SMERU, UKP4, & WFP, 2014) provides analysis based on the following sources.

1. The latest secondary data available, including *Riskesdas* 2018, consumption patterns from Statistics Indonesia (*Badan Pusat Statistik*, BPS) and the Food Security Agency (*Badan Ketahanan Pangan*, BKP) of the Ministry of Agriculture (MoA), and other relevant data. In addition to the national data, this study also explores data at the sub-national level, particularly from the East Nusa Tenggara Province (Nusa Tenggara Timur, NTT) and East Java Province. The former province was selected for assessment because it has the highest rate of stunting while the latter represents a moderate rate. Besides, the two provinces could inform variations in the challenges in improving food security and nutrition both within and outside of Java.
2. Updates on relevant policies and programmes that had been included in the *2014–2015 Review* as well as those emerging after 2015, which include those formulated by the national Government and sub-national governments of NTT and East Java. Issues related to disaster preparedness and management, which were not sufficiently explored in the *2014–2015 Review*, are also captured.
3. Latest discourses and emerging issues related to food security and nutrition, from the perspective of various levels of government (national, provincial and district) and non-governmental institutions, as well as academic actors and institutions.

The information was collected from literature and document reviews, secondary data analysis, in-depth interviews and focus group discussions (FGDs) with key policy makers and experts on food security and nutrition at the national level as well as the regional level (in East Java and NTT). The preparation of this review began in late September 2019 and most of the interviews and discussions were conducted until the end of December 2019. Additional data were collected during the COVID-19 outbreak from March until mid-July 2020.

The framework of analysis generally follows the International Food Policy Research Institute's (IFPRI) and the World Food Programme's (WFP) analytical framework on food security and nutrition (Ecker & Breisinger, 2012; WFP, 2009). As can be seen in the diagram below (Figure 2), the framework sees food security and nutrition status of individuals or households from a broader perspective of food security and nutrition system that consists not only of individuals' or households' food intake and access to food but also macro-economic conditions and various policies and programmes as well as shocks that may affect individuals' or households' food intake or access to food. Thus, while being necessary, food intake or access to food at the individual or household level is not sufficient to maintain food security and nutritional status of the population as other factors are also at play. Nevertheless, the analysis presented in this report focuses on selected issues that are closely related to food security and nutrition at the household and individual levels. Other than the availability of food, the analysis covers the situation of access to food and food intake at household and individual levels, the current nutrition situation and the governance and institutions at the macro-national level that deal with food security and nutrition. Regarding policies and programmes, the analysis looks at social security and food security as well as health and nutrition. In terms of shocks, the study focuses on disasters and climate change as well as COVID-19.

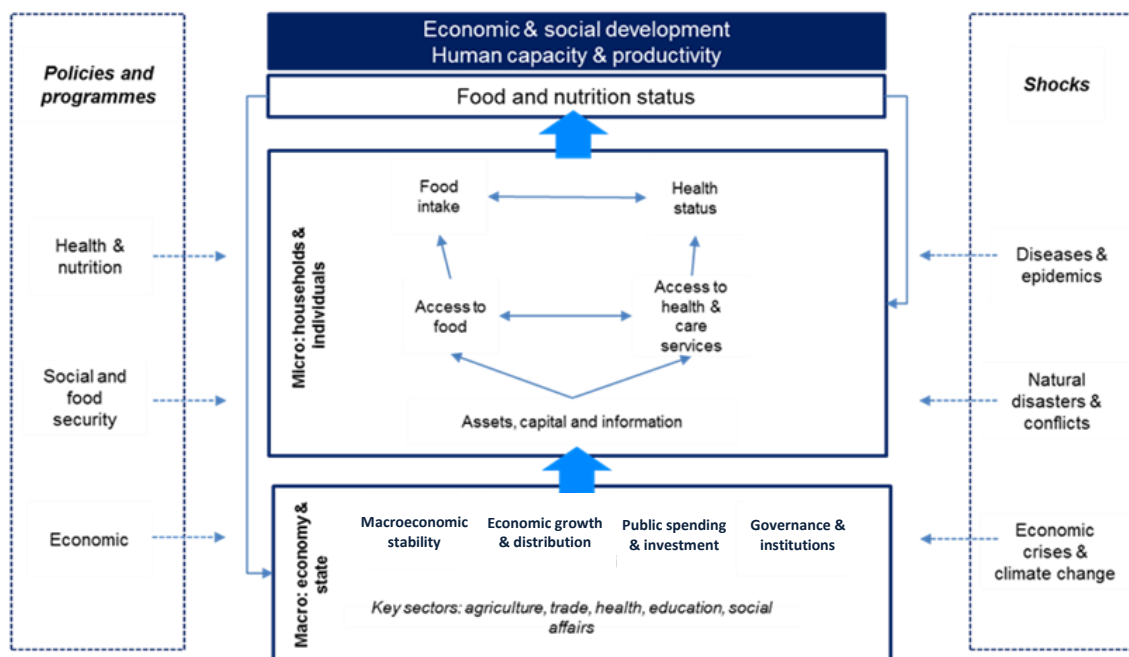


Figure 2. Analytical Framework of the Strategic Review of Food Security and Nutrition

Source: Ecker & Breisinger, 2012, "The Food Security System"; and WFP, 2009, *Comprehensive Food Security and Vulnerability Analysis Guidelines*.

1.4 Structure of the Report

This report is presented in five chapters. Chapter 1 presents the background of the study, the objectives and the methodology. Chapter 2 provides an update on the food security and nutrition situation since the *2014–2015 Review*, mostly referring to data from 2013 to the most recent available. It covers the three dimensions of food security, the trend in nutrition status, the effects of disasters and climate change on food security and nutrition and new challenges in nutrition. Chapter 3 presents an analysis of the latest developments in policies and programmes that aim to improve food security and nutritional status at national and sub-national levels. Chapter 4 describes the potential impact of the COVID-19 pandemic on food security and nutrition based on the situation up to July 2020. Finally, Chapter 5 concludes and provides recommendations on measures to improve food security and nutrition across the country.

II. ANALYSIS OF THE FOOD SECURITY AND NUTRITION SITUATION

This chapter gives an overview of Indonesia's current food security and nutrition situation. It starts by discussing the country's progress in improving food security. In line with the widely accepted World Food Summit (1996) definition of food security, this chapter focuses on the three dimensions of food security, namely food availability, access and utilization (FAO, 2006). It highlights the progress Indonesia has made in increasing domestic food production and the extent to which access to food has increased since 2013. The chapter also discusses some conditions that may affect food utilization and to what extent they have been improved. Regarding nutrition, the chapter looks into the progress made in reducing undernutrition as well as the challenges faced in addressing overnutrition and micronutrient deficiencies. Finally, the chapter discusses some new challenges in improving food security and nutrition.

2.1 Progress on Food Security

2.1.1 Food Production

Indonesia has successfully increased production of some food commodities. From 2013 to 2019, maize production nearly doubled from 18.5 million tons to 33 million tons per year; sugar production declined while soybean and beef production stagnated (Appendix 1). As for rice, it is quite difficult to assess the production trend between 2013 and 2019 as BPS changed the estimation method used in 2018.³ However, it is possible to assess the trend of rice production in two different periods, namely 2013–2017 and 2018–2019. Rice production increased from 41.43 million tons of milled rice in 2013 to 47.17 million tons in 2017, but it decreased from 33.94 million tons of milled rice in 2018 to 31.31 million in 2019. In line with this trend, the productivity of (unmilled) rice increased from 5 tons/hectare (ha) in 2010 to 5.34 tons/ha in 2015 but then declined to 5.2 tons/ha in 2018 and 5.1 tons/ha in 2019 (BPS, 2020c).

The MoA argued that a country may be categorized as self-sufficient if the import dependency ratio does not exceed 10 percent of the domestic consumption. Based on this criterion, Indonesia can be considered self-sufficient in rice. Except for 2018, when the country's import dependency ratio in rice reached a rather high figure of 6.2 percent, on average only 2.3 percent of domestic consumption during the 2013–2019 period that came from imports. Due to Indonesia's high population and high dependency on rice as the main staple, it had to import 0.9 million tons of (milled) rice on average every year between 2013 and 2019 from a relatively limited international rice market, where it had to compete with many other importing countries.

The dependency on rice imports to meet domestic demand has become a major concern during the current COVID-19 crisis. BPS showed that in the first quarter of 2020, on a year-on-year basis, food production in Indonesia contracted by 10 percent. This decline was likely to be the result of a prolonged dry season during the previous year, which moved the rice harvest period into the second quarter of 2020. Some parts of the country may face a hotter-than-usual dry season this year, potentially affecting rice production in the second planting season. According to agricultural

³To estimate rice production, the MoA used two sources of information: rice productivity and rice field area data. This method has been subject to criticism, especially as data on rice field areas were often based on estimates using eyesight. To address the criticism, BPS introduced in 2018 a new method that uses satellite imagery to estimate the rice field areas.

experts, the country might need to import around 2 million tons of (milled) rice this year (Hartomo, 2020). So far (July 2020), international rice prices have remained stable.

In the case of beef, sugar and soybean, Indonesia's dependency on import remains (BKP, 2018, p. 25). Indonesia's import dependency ratio for beef rose from 9.1 percent of total domestic consumption in 2013 to 34.7 percent in 2019, while the dependency on sugar import increased from 57.4 percent of total domestic consumption to 65 percent during the same period. Similarly, there has been no significant improvement in soybean production. The country's dependency on soybean import increased from 69.7 percent of domestic consumption in 2013 to 88.1 percent in 2019 (Appendix 1).

Several reports also suggest that domestic production failed to meet the rising demand for fruits and vegetables. The per capita demand for fruits increased by 2.9 percent annually between 2000 and 2015, whereas the per capita demand for vegetables grew by 2.4 percent per year during the same period (ADB, 2019, p. 35). However, domestic fruit production grew on average by only 2 percent annually, increasing from 18.3 million tons in 2013 to 19.6 million tons in 2018. As a result, fruit import increased from 0.5 million tons in 2013 to almost 0.7 million tons in 2018. Vegetable production also experienced a similar trend. While domestic production increased from 11.6 million tons in 2013 to 12.5 million tons in 2018, imports rose from 0.8 million tons to 0.9 million tons during the same period (BPS, 2019b, 2019c; Ministry of Agriculture, 2018).

The availability of protein from domestic sources other than beef has experienced an increasing trend. The availability of fish from Indonesia has increased by around 15 percent during the period 2014–2018, or on average by 3.6 percent per year. Egg production increased by around 2.6 percent per year between 2015 and 2019, rising from 1.9 million tons to 2.4 million tons. Meanwhile, between 2013 and 2019, the production of chicken rose on average by 16 percent per year, making the chicken production increase from 1.5 million tons to 3.5 million tons. Despite this growth in the availability of fish and the production of eggs and chicken, however, some challenges remain for the Government to ensure the availability of diversified food. A diversified agricultural production system is needed to achieve this goal.

2.1.2 Access to Food

Access to food has improved during the past few years. On average, the daily calorie consumption increased from 2,004 kilocalories (kcal) per capita in 2015 to 2,165 kcal per capita in 2018 (BKP, 2019, p. 25). The *Food Security and Vulnerability Atlas 2018* shows that the number of districts considered “food secure” increased between 2015 and 2018 (BKP, 2018, p. xvi). Nevertheless, more than 20 million people still face the risk of hunger. According to BPS, the prevalence of insufficient food consumption, which is defined as “calorie intake below the minimum dietary energy requirement,” fell from 16.5 percent in 2011 to 7.9 percent in 2018 (BPS, 2018b). The number of undernourished people dropped from 39.8 million in 2011 to 21 million in 2018. According to the *Global Hunger Index*—which captures the multidimensional nature of hunger by combining undernourishment, child stunting, wasting and mortality—the proportion of people at risk of hunger in Indonesia declined from 9.1 percent in 2011/2013 to 8.3 percent in 2016/2018, decreasing from 22.3 million to 21.7 million people (von Grebmer et al., 2019, p. 52; 2014, p. 41).

Poverty and high food prices in relation to income remain the major challenges in the effort to increase access to food. Despite improvements during the last several years, around 9.8 percent of

the population or 26.4 million people lived under the national poverty line in 2020⁴ (BPS, 2020e). Poverty is highly correlated with food insecurity. Valesova et al. (2017) observed that it is smallholder farmers, farmworkers and fishers who constitute the bulk of those who suffer most from hunger (Valesova et al., 2017, p. 922).

The price of rice in Indonesia is considered high by international standards, despite high amounts of fertilizer subsidies allocated to rice producers. Since the early 2010s, the domestic price of rice in Indonesia has been higher than the price in the international market. In 2017, for example, the average price of medium-quality rice in the international market was around Rp6000 per kilogram (kg), but the average domestic price was more than Rp10,000 per kg (ADB, 2019, p. 22). The rice price has a significant impact on poverty and food insecurity because food spending constitutes a substantial part of the expenditures of poor households, and rice constitutes a substantial part of overall food expenditures in these households (Patunru & Ilman, 2019, p. 8). While 56 percent of household expenditures in Indonesia goes toward food, food-insecure households spend as much as 69 percent of expenditures on food⁵ (Appendix 2). Lower rice prices would help improve access to food for the poorest.

Some evidence shows that the outbreak of COVID-19 has already increased the number of poor people in the country. BPS revealed that as the economy contracted by 1.3 percent during the first quarter of 2020, the poverty rate increased from 9.2 percent to 9.8 percent between September 2019 and March 2020. Accordingly, the number of poor people increased by 1.6 million people, rising from 24.8 million to 26.4 million people during the same period (BPS, 2020e). More people may fall into poverty and would be at risk of becoming food insecure if the pandemic lasts longer and affects the economy more severely. According to Suryahadi, Izzati and Suryadarma, COVID-19 might increase the number of poor people by around 1.3 million to 19.7 million people depending on the severity of economic contraction caused by the pandemic (Suryahadi, Izzati & Suryadarma, 2020). Thus, efforts to increase people's access to food, especially during the pandemic and in its aftermath, should consider not only the affordability of food prices but also the purchasing power of the poor and vulnerable groups.

2.1.3 Food Intake

Although the consumption of low-cost carbohydrates is expected to decrease as income increases, carbohydrates continued to dominate the calorie intakes of most Indonesians despite the continued increase of per capita GNI during the past decade. Rice consumption remains high in the country. A decline in rice consumption was observed only in the highest income category but not in others (Arifin, Achsani, Martianto, Sari, & Firdaus, 2018). The annual average per capita rice consumption even slightly increased from 96.3 kg in 2013 to 97.1 kg in 2018 (BKP, 2019, p. 5). During the same period, annual average per capita wheat flour consumption also rose from 10.1 kg to 18.1 kg (BKP, 2019, p. 5). As a result, the intake of rice and other cereals accounted for approximately 65.7 percent of the total calorie intake of Indonesians in 2018. This is much higher than the reference figure of 50 percent recommended by Indonesia's desirable dietary pattern (*Pola Pangan Harapan*, PPH) (BKP, 2019, p. 1), which is already higher than international standards.

Fish and meat consumption also increased during the period 2013–2018. The consumption of fish, which has been the most important source of protein, increased slightly from 19.5 kg per capita per

⁴BPS defined poverty line as the amount of money required to obtain a minimum of 2,100 calories (kcal) per capita per day and other necessary non-food items. Per March 2020, Indonesia's poverty line was recorded at Rp454,652 per capita per month (BPS, 2020e).

⁵A food insecure household is defined as having calorie intakes of less than 80 percent of the national standard (2,150 kcal/capita/day) and spending more than 60 percent of household expenditures on food (Maxwell et al., 2000).

year in 2013 to 20.7 kg per capita in 2018. The increase in meat consumption was higher than in fish consumption. During 2013–2018, the annual per capita poultry consumption rose from 5.0 kg to 7.2 kg, and beef consumption from 1.3 kg to 4.5 kg (BKP, 2019, p. 8). Nevertheless, inequality persists between different income groups. In 2017, protein consumption among the highest income groups (fifth quintile) reached 84.1 grams per capita per day. Yet among the lowest quintile group, it was only 45.7 grams per capita per day (Arifin et al., 2018). Meat consumption in Indonesia also remains lower than in other Southeast Asian countries. The proportion of energy intake from meat (1.5 percent) is even lower than in countries that have lower GNI per capita like Cambodia (3.2 percent) (Mathijs, 2015, p. 115).

Fruit and vegetable consumption, which is required to maintain healthy and balanced diets, is also low in Indonesia. According to the World Health Organization (WHO), people are considered to have enough fruit and vegetable intake if they eat more than five portions of fruits and vegetables per day (WHO, 2020b). However, the *2018 Riskesdas* showed that only 4.6 percent of the population aged 5 years or older consumed enough fruits and vegetables. Most of the respondents (66.5 percent) stated that they consumed only one to two portions of fruits and vegetables per day (Kementerian Kesehatan, 2019, p. 311). In 2013, around 93.5 percent of the population aged 5 years or older did not meet their daily fruit and vegetable consumption standards (Kementerian Kesehatan, 2013, p. 12). This proportion rose even higher to 95.4 percent in 2018 (Kementerian Kesehatan, 2019, p. 313).

There have, however, been major changes in people's food expenditure patterns. The portion of expenditure for ready (or prepared) meals increased quite significantly during the past few years (Sukmana, 2019). BPS (2013, 2019a) shows that the share of expenditure on prepared food rose from 25.9 percent of total food expenditures in 2013 to 35.9 percent in 2019. This went hand-in-hand with the declining share of spending on rice and other cereals (from 16.3 to 11 percent), vegetables (from 8.7 to 7.3 percent), eggs and milk (from 6 to 5.7 percent), fruits (from 4.6 to 4.5 percent), oil and fat (from 3.2 to 2.3 percent), beverage stuffs (from 3.8 to 2.9 percent), legumes (from 2.6 to 1.9 percent) and tobacco and betel (from 12.3 to 11.7 percent). Only the share of expenditure on meat and tubers increased during this period. Consistent with the increasing consumption of beef and poultry, the share of expenditure on meat increased from 3.7 percent in 2013 to 4.7 percent in 2019. Meanwhile, the share of expenditure on tubers slightly increased from 0.9 to 1.1 percent during the same period.

Figure 3 shows that the change in the food expenditure pattern is happening among both urban and rural households. A study on energy intake of junior high school students in Semarang, Central Java showed that consumption of fast food, such as fried chicken, was observed not only among students living in urban areas but also those in rural areas (Dwiningsih, 2013, p. 237). Even though the proportion of household expenditures spent on prepared foods was higher among urban households in 2019, the growth of the share of prepared foods consumed was higher among rural households. During the past six years, the share of expenditures on prepared foods among rural households rose by 10.88 percentage points, which is higher than the 8.9 percentage point increase among urban households. The diminishing role of rice in people's food expenditures, however, does not necessarily indicate improvement in the dietary diversity of the population, as the consumption of prepared food increased quite significantly since 2013. Unfortunately, the available statistics do not reveal the nutritional composition of the prepared food. Yet, from the broader perspective of food security and nutrition, what this review suggests is that policies or programmes to improve dietary patterns of the population should reach both urban and rural areas. The Government should also pay greater attention to food diversity while enhancing people's access to food.

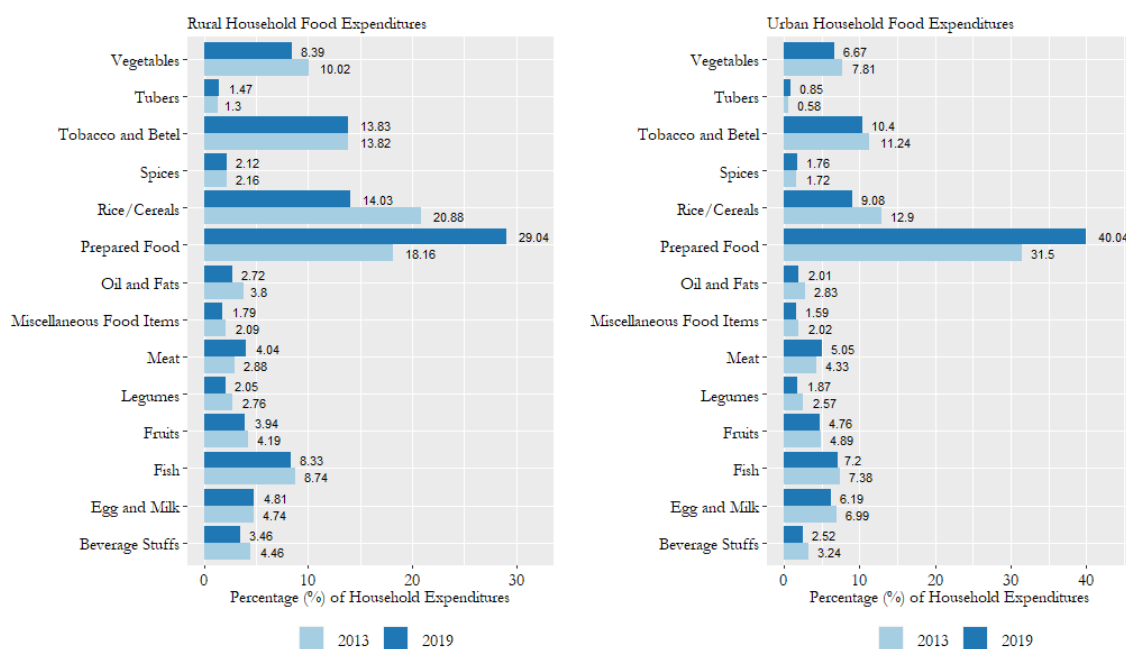


Figure 3. Changes in Rural and Urban Household Food Expenditures, 2013–2019

Source: BPS (2013, 2019a).

2.1.4 Food Utilization

Proper utilization of food also requires non-food components. To make the best use of a diet, people will need to have access to clean water and sanitation as well as health care so that they can achieve “nutritional well-being,” which is defined as a state in which all energy and nutritional requirements are met (FAO, 2006). While clean water and sanitation are needed to ensure the safety of the food eaten, access to health care is needed to prevent or address a variety of diseases that may diminish the nutritional value of the food consumed or affect how that food gets metabolized. Indonesia’s achievements in this policy domain have been rather mixed.

As shown in Table 1, progress has been made in improving health care services for women of childbearing age, pregnant and lactating mothers and children. However, despite the improvements, some challenges remain. The proportion of women who received Vitamin A supplements in the two months after giving birth was low (52 percent) in 2017. The proportion might actually be even lower if we consider only those women who actually consumed the vitamin, rather than all those that received it. The improved figure on the proportion of pregnant women who received iron tablet supplementation (88 percent according to the *2018 Riskesdas*) did not fully reflect the situation on the ground because compliance with consuming the iron supplement remained an issue (Utomo, Nurdiani & Padmawati, 2015). According to the MoH’s regulation No. 97/2014, pregnant women should take at least 90 iron tablets during the pregnancy (Kementerian Kesehatan, 2014). However, the *2018 Riskesdas* revealed that 62 percent of pregnant women consumed fewer than 90 tablets, and only 38 percent of pregnant women consumed 90 tablets or more during pregnancy (Kementerian Kesehatan, 2019, p. 511). Under certain circumstances, the consumption of iron tablets among pregnant women can be even lower. A study by Aditianti, Permasari and Julianti (2015) in three villages in West Java revealed that 90 percent of respondents had low compliance with the consumption of iron tablets.

Table 1. Indonesia's Progress in the Provision of Health Care for Women and Children

Indicator		Progress: Percentage (year)	
1.	Proportion of infants with symptoms of acute respiratory infection (ARI) who were taken to a health facility	75% (2012)	90% (2017)
2.	Proportion of children under 5 who were reported to have diarrhea and were taken to a health facility	65% (2012)	80% (2017)
3.	Proportion of children aged 6–23 months who were given foods rich in vitamin A	83% (2007)	86% (2017)
4.	Proportion of women who received iron tablet/syrup supplementation for their most recent birth	76% (2012)	86% (2017)
5.	Proportion of women who received antenatal care (ANC) from a skilled provider	96% (2012)	98% (2017)
6.	Proportion of women with at least four ANCs from a skilled provider	74% (2012)	77% (2017)
7.	Proportion of women who received vitamin A in the two months after childbirth	48% (2012)	52% (2017)

Source: BKKBN, BPS, Health, & ICF, 2018.

The improvements of the distribution of food supplements like iron tablets, however, does not necessarily indicate real improvements in people's health. More granular data on the consumption of food supplements or, even better, on micronutrient deficiencies are needed to better assess the adequacy of micronutrient consumption among pregnant women.

According to the MoH, in 2015, 28 percent of Indonesian children were infected by *helminth* (a parasitic worm infection that hampers proper food utilization) which affects children's nutritional status and impairs cognitive processes. In 2002–2015 the helminthiasis control programme was integrated with the *filariasis* (a parasitic disease transmitted by mosquitoes) control in more than 200 districts and cities. Beginning in 2017, the Government accelerated its efforts by integrating the distribution of deworming tablets with the biannual distribution of vitamin A to children aged 12 months to 12 years at integrated health posts (Posyandus), kindergartens and primary schools. Several studies have shown that distributing deworming tablets with vitamin A can have an impact on improving the health status of preschoolers because worm-free children can have higher absorption rates of vitamin A and iron.

Basic vaccination for children also needs attention. Although the proportion of children aged 12–23 months that received (any) vaccinations increased slightly, from 93 percent in 2012 to 94 percent in 2017, those who received all basic vaccinations decreased slightly from 66 percent to 65 percent (BKKBN et al., 2018). In summary, there was no deterioration but also no improvement. This suggests a lack of discipline in carrying out complete immunization. The coverage of basic vaccinations was unequal across different income categories as well. Among the 20 percent highest-income group, around 64 percent of children aged 12–23 months received all basic vaccinations. In contrast, only around 49 percent of children of the same age group from the 20 percent lowest-income group received all basic vaccinations.

There is some evidence that since the start of the COVID-19 outbreak the provision of vaccination as well as of maternal and child health services has declined, especially in areas where the number of COVID-19 cases is high (see Chapter 4). According to the MoH, the coverage of basic

immunization dropped by nearly 20 percent, with the number of children receiving all basic vaccinations falling from 1.2 million in April 2019 to 0.97 million in April 2020 (Susanti, 2020)

Improving access to decent sanitation also remains challenging. Even though Indonesia reduced open defecation from 33 percent in 2000 to 10 percent in 2017, the number of people still practicing open defecation has remained large (around 26.5 million people in 2017). In 2019, BAPPENAS stated that out of the 514 cities and districts, only 23 can be considered as “open-defecation free” (Bappenas, 2019). The *2018 Riskesdas* also revealed that 38.4 percent of Indonesian households still practiced unsafe disposal of child feces (Kementerian Kesehatan, 2019). Geographically, BPS (2020b) shows that even though the proportion of the population that had access to decent and sustainable sanitation increased from 67.5 percent in 2017 to 77.4 percent in 2019, there were disparities between rural and urban areas. In 2019, only 71.2 percent of the rural dwellers had access to decent and sustainable sanitation, compared to 82.3 percent of the urban population (BPS, 2020f).

Indonesia also continues to face major challenges in access to clean water. Around 26.3 percent of the country’s population—68.9 million people—still have no adequate access to safe and sustainable water (BPS, 2020f).⁶ Moreover, access to safe and sustainable drinking water has been unequal between rural and urban areas. In 2018, 81.6 percent of the urban population had access to safe drinking water and only 64.2 percent of the rural population enjoyed the same.

Correspondingly, piped water coverage remains exceptionally low in Indonesia. By 2015, only 17 percent of the population used metered piped water. The distribution is also skewed towards rich and urban households. Around 77.7 percent of households that use piped water live in urban areas. According to Komarulzaman (2017, p. 20), households that did not have piped water usually paid a higher price of water and bought a lower amount of water. Consequently, these households had to ration the use of water to maintain the costs at an affordable level. Hence many households had to choose other sources of drinking water, such as wells, rainwater and rivers, which are usually lower quality. Indonesia has to expand the provision of clean water and sanitation for the country to enhance its food security and nutrition. Otherwise even the best food intake may be lost as digestion problems prevail.

2.2 Progress on Nutrition

Over the 2013–2018 period, Indonesia made significant improvements in the reduction of stunting. Among children under 5, the *Riskesdas* data show that the prevalence of stunting and underweight declined from 37.2 percent and 19.6 percent in 2013, respectively, to 30.8 percent and 17.7 percent in 2018. These declines are quite remarkable as Indonesia had even witnessed some increases in the prevalence of stunting and underweight between 2007 and 2013 (Figure 4). Progress was also made in reducing the prevalence of wasting among this age group, from 12.1 percent in 2013 to 10.2 percent in 2018.

⁶BPS defines “safe and sustainable water” as water taken from sources that are located at least 10 meters away from wastewater disposal sites, drilling wells, pumps, shielded wells and shielded springs. It includes collected rainwater. The definition excludes bottled water, water from vendors, water sold through tanks, well water and unprotected springs (BPS, 2019d).

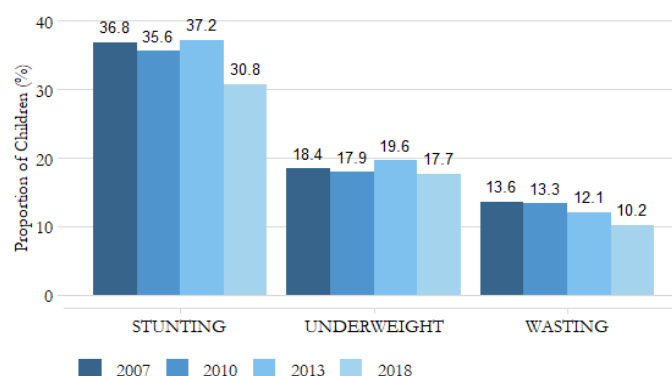


Figure 4. Nutrition Status of Children Under 5, 2007–2018

Source: Riskesdas, various years.

Among older children, nutrition conditions also improved quite significantly during the same period. In the case of children aged 5 to 12 years, the prevalence of stunting decreased from 30.7 percent in 2013 to 23.6 percent in 2018, while wasting fell from 11.2 percent to 9.2 percent. Among children aged 16 to 18 years, stunting also declined from 31.4 percent in 2013 to 26.9 percent in 2018. Similarly, the prevalence of wasting among this age group also decreased from 9.4 percent to 8.1 percent.

Across genders, however, some disparities prevailed between boys and girls. In all age categories, the prevalence of stunting and wasting was slightly higher among boys than girls (Table 2).

Table 2. Prevalence of Stunting and Wasting among Children, by Gender

Age Category	Stunting		Wasting	
	Female	Male	Female	Male
Under 5 Years	29.7	31.7	9.2	11.1
5 – 12 Years	22.8	24.5	8.2	10.1
13 – 15 Years*	24.9	26.5		
16 – 18 Years	25.0	28.8	4.3	11.8

Source: Kementerian Kesehatan (2019).

*The 2018 Riskesdas report did not provide the number of wasted children by gender for this age category.

The 2018 Riskesdas data show that, per WHO categorization (Table 3), Indonesia is classified as having medium severity of underweight (17.7 percent), and high severity of stunting (30.8 percent) and wasting (10.2 percent).

Table 3. Classification of Undernutrition Levels among Children under 5

Indicator	The severity of undernutrition by prevalence ranges (%)			
	Low	Medium	High	Very High
Stunting	<=19	20–29	30–39	>=40
Underweight	<=9	10–19	20–29	>=30
Wasting	<=4	5–9	10–14	>=15

Source: WHO (2020).

At the sub-national level, the *Riskesdas* data reveal that most of the districts and cities had a high or very high prevalence of stunting in 2018. As Table 4 shows, 298 out of 514 districts and cities covered in the 2018 *Riskesdas* (58 percent) had a high or very high prevalence of stunting among children under 5. The provinces with the highest number of cities and districts that had a high or very high prevalence of stunting are East Java (23), East Nusa Tenggara (21), South Sulawesi (20), North Sumatera (20), Aceh (19), Papua (18), Central Java (18) and West Java (16). These areas account for more than half (55.3 percent) of the cities and districts that had a high or very high prevalence of stunting among children under 5.

Table 4. Number of Districts/Cities by Severity Level of Stunting (2018)

Severity of Stunting	Number of Districts/Cities	Proportion (%)
Low	35	7
Medium	181	35
High	206	40
Very High	92	18
Total	514	100

Source: BPS 2019, modified.

Despite the declining trend of stunting at the national level, not all regions share similar progress. At the provincial level, stunting among children under 5 declined in all but one province, East Kalimantan where it increased from 27.5 percent in 2013 to 29.2 percent in 2018. A deeper look at the development at the sub-provincial level during this period shows that the prevalence of stunting among children under 5 increased in a total of 19 cities and 94 districts. About half of these cities and districts are located in Central Java (3 cities and 7 districts), East Java (3 cities and 7 districts), Aceh (2 cities and 5 districts), East Kalimantan (2 cities and 5 districts), Southeast Sulawesi (7 districts), Papua (7 districts), South Sumatera (1 city and 5 districts), West Java (1 city and 5 districts), and South Sulawesi (1 city and 5 districts). This demonstrates that despite the overall improvement at the national level, the stunting situation deteriorated in many areas across the country (Figure 5). This causes concerns, as people in these areas are clearly being left behind.

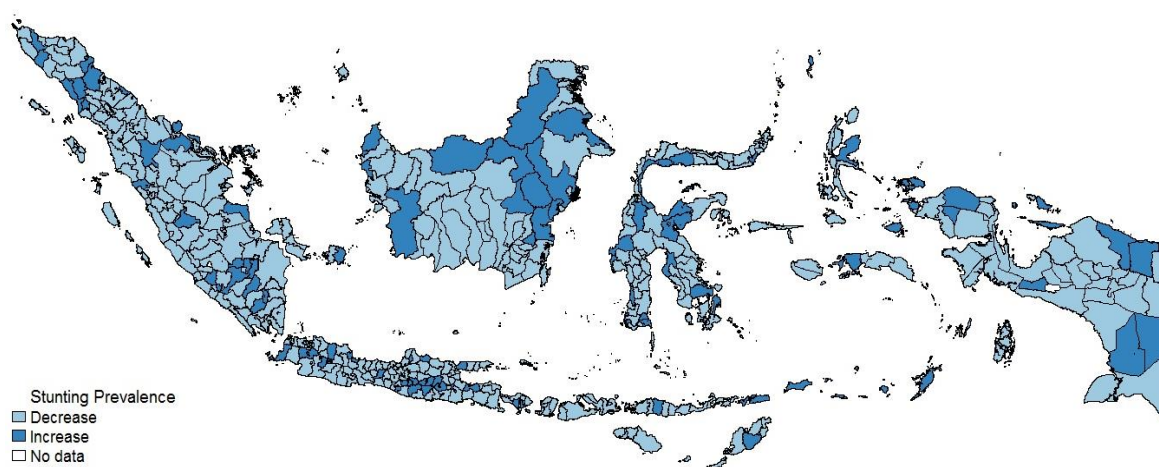


Figure 5. Changes in the Prevalence of Stunting in Indonesia, 2013–2018

Source: Riskesdas 2013 and BPS 2019.

The prevalence of undernutrition (stunting, underweight and wasting) was unequal between rural and urban areas. Among children under 5, undernutrition was more prevalent in rural than in urban areas. According to the *2018 Riskesdas* data, 34.9 percent of children under 5 in rural areas were stunted while 27.3 percent of children under 5 in urban areas were stunted. The prevalence of underweight and wasting was also higher in rural areas where 20 percent of children under 5 suffered from underweight and 10.7 percent from wasting, compared to urban areas where 15.7 percent suffered from underweight and 9.8 percent from wasting.

It is also important to note that stunting was prevalent not only among the poor but also those with higher incomes. The *2013 Riskesdas* data show that 25 percent of children from the highest wealth decile suffered from stunting, compared to 43 percent of children from the poorest decile. This indicates that stunting does not only result from inadequate access to food (the case of poor households), but also from other socioeconomic, health, behavioural and cognitive factors such as non-exclusive breastfeeding for the first six months and parental education (Beal et al., 2018).

In contrast to the overall improvements in undernutrition, overnutrition has been on the rise. Several studies have shown that Indonesia is undergoing a fast and profound nutrition transition, with obesity rates rising significantly (Aizawa & Helble, 2017; Roemling & Qaim, 2012). In 2018, the rate of overweight and obese adults was 35.4 percent, with obesity alone at 21.8 percent (Kementerian Kesehatan, 2019, p. 582). Except for children under 5, in which the prevalence of overweight decreased from 11.9 percent to 8 percent between 2013 and 2018, overnutrition continued to increase in all age groups (Figure 6).

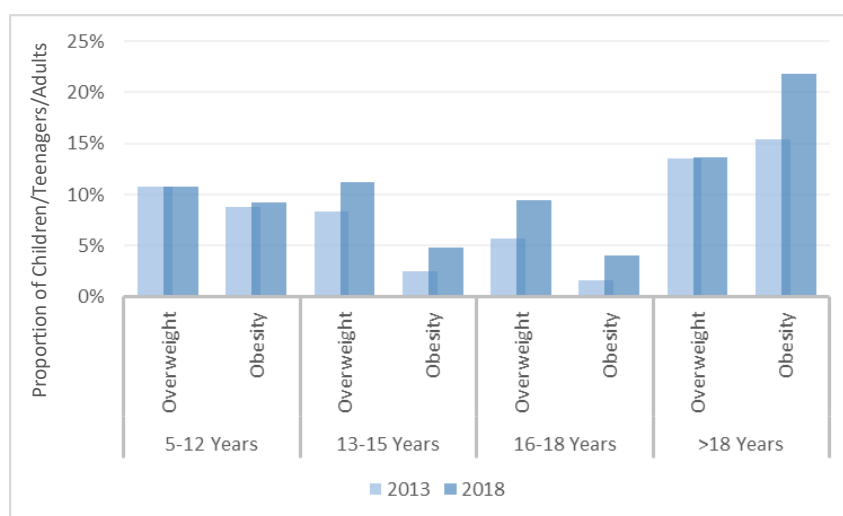


Figure 6. Overnutrition among Children, Teenagers, and Adults, 2013–2018

Source: Kementerian Kesehatan, 2013 and 2019.

Socioeconomic and environmental factors are associated with the propensity of being overweight or obese (Aizawa & Helble, 2017; Roemling & Qaim, 2012). As for the environmental factors, overnutrition is overall more prevalent in urban than in rural areas. Among adults, the *2018 Riskesdas* data show that while 17.8 percent of rural adults were obese, this was the case for 25.1 percent of adults in urban areas (Kementerian Kesehatan, 2019, p. 583). Sedentary jobs and lower physical activity during leisure time may explain the higher prevalence of overweight and obesity in urban areas (Roemling & Qaim, 2012, p. 1010). Nevertheless, it is important to note that the rise of overnutrition was not confined to urban areas (Roemling & Qaim, 2012, p. 1011).

As for socioeconomic factors, gender seems one of the most important features of overweight and obesity in Indonesia. Obesity rates are significantly higher among women than men. As shown by the *2018 Riskesdas*, 29.3 percent of female adults (older than 18) were obese compared to 14.5 percent of male adults (Kementerian Kesehatan, 2019, p. 583). People from higher income groups were also more prone to overweight and obesity. According to Aizawa and Helble (2017), a 1 percent increase in a household's wealth is associated with an increase of 0.6 percentage points in the probability of being overweight or obese. There is, however, clear evidence that the increase in overnutrition occurred more rapidly among poor households. Drawing on five rounds of Indonesian Life Family Surveys (1993, 1997, 2000, 2007 and 2014), Aizawa and Helble (2017) have shown that while obesity among the richest quintile grew by 3.8 percent per year between 1993 and 2014, it rose by 8.3 percent per year among the poorest quintile. Unfortunately, the data from the *2018 Riskesdas* do not reveal the prevalence by wealth group, so it cannot be analysed whether the trend persists.

Finally, the population of Indonesia is also experiencing deficiencies in micronutrients. Also called "hidden hunger," micronutrient deficiencies refer to the lack of vitamins and minerals that are essential to ensure optimal health and well-being. Across the globe, research shows that around 2 billion people suffer from vitamin A, iodine, and/or iron deficiency (Abeshu & Geleta, 2016). In the developing world, it is estimated that 20 percent of the population is iodine deficient. In addition, around 25 percent of children suffer from subclinical vitamin A deficiency, and 40 percent of women are anaemic (Abeshu & Geleta, 2016, p. 1). Unfortunately, apart from anaemia, there is currently no representative data available that can be used to adequately reflect the magnitude of micronutrient deficiencies in Indonesia.

In the case of anaemia, the available data for Indonesia suggests that the prevalence increased over the past few years. Among children under 5, the prevalence of anaemia increased from 28.1 percent in 2013 to 38.5 percent in 2018 (Kementerian Kesehatan, 2013, 2019). In certain regions, the prevalence of anaemia among this age group was extremely high. Drawing on a household survey and haemoglobin measurement in the provinces of South Sumatera, Central Kalimantan and West Kalimantan in late 2014 and early 2015, Beatty et al. (2017) observed that 60 percent of children under 3 were anaemic. The survey also shows that 55 percent of pregnant women in the survey areas were anaemic (Beatty, et al., 2017).

According to the results of the *Riskesdas*, the prevalence of anaemia among pregnant women increased from 37.1 percent in 2013 to 48.9 percent in 2018 (Kementerian Kesehatan, 2013, 2019), which was higher than the estimated 40 percent average at the global level (Abeshu & Geleta, 2016). These figures demonstrate that Indonesia is challenged by a triple burden of malnutrition, and the challenge to enhance the nutritional status of the population in the country is mounting. In addition to the long-standing problems of undernutrition—especially stunting, wasting and underweight—the Government also needs to pay serious attention to overnutrition and micronutrient deficiencies. The challenges to enhance nutritional status have increased with the outbreak of COVID-19, as the pandemic adversely affects people's income on the one hand and the provision of health services for children and pregnant and lactating mothers on the other.

2.3 New Challenges for Food Security

2.3.1 The Impact of Disasters and Climate Change

Indonesia is prone to a variety of hydro-meteorological disasters, such as floods, droughts, cyclones, erosion and land fires. The risk of hydro-meteorological disasters has increased over the past few

decades, especially due to climate change, population pressures, urbanization and environmental degradation. Data from the National Disaster Management Agency (BNPB) show that more than 78 percent of disasters that took place in Indonesia between 2005 and 2015 were hydro-meteorological, and only about 22 percent could be categorized as geological (BNPB, 2016). For example, from January to March 2019, the country witnessed 1,107 disasters, 98 percent of which were hydro-meteorological.

Climate change impacts—including rainfall pattern changes, increased frequency and intensity of extreme weather events, higher temperatures and rising sea level—have serious impacts on the agricultural sector. In Indonesia, changes in rainfall seasonality have created many difficulties for farmers to start the planting season, which, in turn, affects the harvest period. Meanwhile, infrequent and/or more intense rainfall causes floods or drought. Consequently, crop failure can be inevitable, especially under the condition of inadequate water management. The rise of temperature and humidity can have damaging impacts on plant physiology. They may also lead to the emergence of pests and plant diseases. Meanwhile, the rise of sea levels due to global warming has affected agriculture and fisheries in coastal zones, due to seawater intrusion and salinization of aquifers. It has also raised ecosystem pressures that have impacted fisheries, as well as led to the decay of forest and coastal ecosystems.

Several studies have documented the negative impact of climate change on food production. According to Ruminta (2016) and Ruminta, Handoko and Nurmala (2018), there has been a seasonal shift in the beginning of planting and harvesting time, which has led to a decrease of areas planted and harvested. This shift also had negative impacts on agricultural production and productivity. Studies found that the risk of production and productivity decline was high in some rice-producing regions. The rise of temperature and rainfall also adversely affected the production and productivity of other food crops, especially maize and soybean. Santoso's study in Maluku showed that soybean was the most sensitive crop to climate change; in the Maluku region, El Niño caused a decline in soybean yields by 10.7 percent, and La Niña caused a decline of 11.4 percent (Santoso, 2016).

Confirming these studies, a simulation by the Asian Development Bank (ADB) research team shows that unless efforts are seriously made to address global warming, the negative impacts of climate change on food production will be very significant by 2030 and highly pronounced by 2050 (ADB, 2019). Climate change will affect a variety of food crops, especially potatoes and sugarcane. Rainfed crops, such as cereals, are foreseen to be more vulnerable to climate change than irrigated crops, except for rainfed root crops, which are likely to have small gains in yield.

The ADB simulation also suggests that productivity can improve only if more investments are made in research and development. As climate change is most likely to continue having negative impacts on productivity, governments would need to increase investments in research and development to at least counter these effects. With no respective investment increase, there will certainly occur a decline in the productivity of most crops.

The magnitude of the impacts and losses caused by disasters and climate change requires the active participation of all parties to reduce the risks through climate change adaptation (CCA) and integrated disaster risk reduction (DRR). The significant influence of the impact of climate change on disaster risk has encouraged many parties, both international and national, to focus on CCA and DRR in an integrated manner. Law No. 17/2007 in Indonesia's National Long-Term Development Plan 2005–2025 states that disaster and climate change are two related challenges that need to be considered seriously in development planning at various levels of the Government. Nevertheless, there remain challenges in implementing the CCA-DRR convergence effort in Indonesia, especially related to policy, institutions, funding and management of activities and methodologies (Sagala, 2016).

2.3.2 The Impact of Urbanization

During the past two decades, Indonesia has experienced a significant increase in urbanization. The share of the population that lives in urban areas has grown much faster than the country's population overall. From 2000 to 2010, the population grew by 17 percent, from 204 million people to 238 million. During the same period, the urban population grew by 39 percent, from 85 million to 118 million (Firman, 2016, p. 258). By 2015, more than half of the population (53 percent, or 136 million people) lived in urban areas.

The rapid growth of the urban population and areas can have an impact on the availability of food, due to the loss of agricultural land. Like in many other countries, urbanization is a major cause of agricultural land conversion (ALC) in Indonesia. The Government's effort to limit the rate of ALC has so far been rather ineffective. The wide gap in the value of land rent between housing and agriculture in peri-urban areas has created major barriers for farmers in peri-urban areas to maintain their agricultural land amidst the massive growth of urban centres (Rondhi et al., 2019). Consequently, ALC continues at an alarming rate, especially on Java island. Drawing on satellite images and field observations, Mulyani et al. (2016) estimated that the rate of ALC reached 96,512 ha per year during the 2000–2015 period. With this rate, farmland will decrease from 8.1 million ha in 2016 to around 5.1 million ha in 2045. Unless an appropriate and effective policy can be put in place to stop it, ALC is likely to be a threat to the future of food security in Indonesia (Rondhi et al., 2019).

Urbanization may also increase the food insecurity risk of poor households. Limited space in cities implies that it is difficult or impossible for city dwellers to grow their food. As they will have to buy food to meet their needs, increases or volatility in food prices can have significant impacts on their food security. For poor households, the impact can be very severe, as daily food consumption takes a substantial part of household expenditures. The *2018 National Socioeconomic Survey (Survei Sosial Ekonomi Nasional, Susenas)* data reveal that rural food-insecure households spend, on average, 68.8 percent of their expenditures on food, while urban food-insecure households spend on average 68.4 percent—about the same. In cities, however, the self-production of food is much more difficult, so food insecurity risks are higher there than in rural areas (Figure 7).

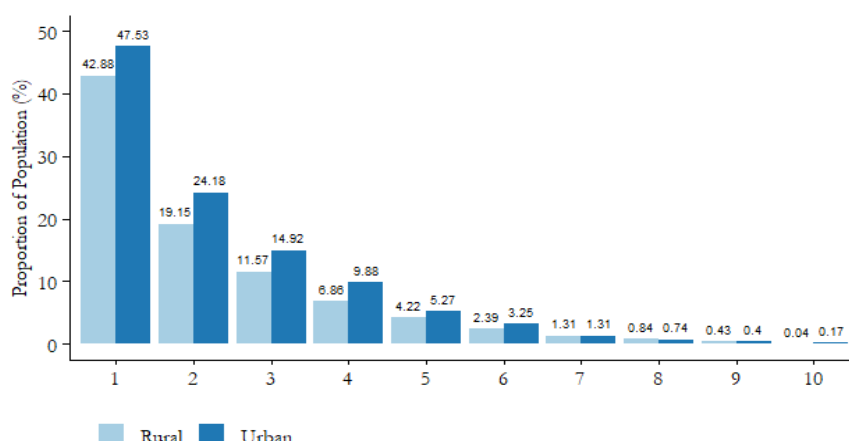


Figure 7. Incidence of Food Insecurity by Consumption Decile and Geographical Area

Source: Calculated from the 2018 Susenas.

2.3.3 Demographic Transition in the Agricultural Sector

Food production in Indonesia also faces serious challenges from the demographic transition in the agricultural sector. The first challenge is the shrinking number of farmers. Between 2013 and 2018, the number of agricultural households increased from 26.1 million to 27.7 million. Yet, from a longer-term perspective, the number of agricultural households has declined overall from 31.2 million in 2003 to 27.7 million in 2018 (BPS, 2014a, p. 39; 2018, p. 17). Regarding food, in particular, BPS further shows that the number of rice growers dropped from 14.1 million households in 2013 to 13.2 million households in 2018 (BPS, 2014a, p. 44, 2018a, p. 15). The second challenge is that farmers are getting older. In 2013, 38.2 percent of farmers were between the age of 25 and 45. But, the *2018 Agricultural Inter-Census Survey* revealed that the proportion of farmers in the same age group declined to 34.8 percent. In contrast, the number of farmers aged 45 and older rose from 60.8 percent in 2013 to 65.8 percent in 2018 (BPS, 2014a, p. 46, 2018a, pp. 16-17). In countries like Indonesia, where mechanization and agricultural research are still limited, age does affect farmer productivity. Older farmers are less productive than younger ones (Susanti, Listiana, & Widayat, 2016).

The regeneration problem in the agricultural sector does not necessarily result from the lack of interest in the sector among young villagers. A systematic study of the aspirations of young people in 12 rice-producing villages in West Java, Central Java and South Sulawesi shows that many young people demonstrated interest in being a farmer (Akatiga & White, 2015; Nugraha & Herawati, n.d.). There was, however, little opportunity for those interested to actually become farmers. Landlessness is widespread, and less than half of the farmers own the land they cultivate. This situation of lack of access to land creates a huge barrier for young people to become farmers, especially for those from poor agricultural households that have only a small plot (Akatiga & White, 2015). Therefore, access to land and financial services should be seriously considered in the efforts to address the problem of the declining number of farmers and the aging of the farm population.

2.4 New Challenges for Nutrition

Economic growth, urbanization and globalization in trade and information systems have contributed to many changes in society. Several studies suggest that Indonesia is undergoing a process of nutrition transition (Aizawa & Helble, 2017; Colozza & Avendano, 2019). The transition is most clearly seen in the country's megacity, Jakarta. Living there increases the probability of having less traditional diets, as predicted by the "nutrition transition" hypothesis. It assumes that greater urbanization leads to a dietary shift towards diets characterized by higher intakes of carbohydrates, fats, sugar and salt; reduced intakes of whole grains, vegetables and fruits; and increased consumption of packaged and processed foods. In line with this, food consumption in Jakarta is associated with lower expenditures for rice, higher expenditures for prepared foods and a lower share of self-produced food (Colozza & Avendano, 2019, p. 103-111).

Outside Jakarta, Colozza and Avendano (2019) found that the nutrition transition has taken place in both urban and rural areas. Factors other than urbanization itself play a role in driving the nutrition transition. The boundaries between urban and rural localities are not clear cut. Rather, there is an in-between spatial configuration called *desakota*, which can be translated as "rural-urban," and which refers to a mixture of urban functions and rural characteristics, especially regarding people's socioeconomic activities (Setyono, Yunus & Giyarsih, 2016, p. 54). Under such circumstances, changes in dietary patterns may spread more widely to divergent communities, including those in surrounding rural localities. Some evidence suggests that transformation towards less traditional diets has been faster in villages than in cities. As already mentioned in section 2.1.3

(Figure 3), the growth of expenditures for prepared foods was faster among rural households than among urban ones during the 2013–2018 period.

The undergoing nutrition transition has been made possible by the growth in the number of restaurants and food stalls, as well as the development of communication. First, fast food outlets and street stalls grew significantly not only in urban but also in semi-urban areas, at an overall rate of 10–15 percent per year over the past few years (Richard, 2019). Second, Indonesia's food and beverage industries also grew significantly during the same period. In 2015, Indonesia was estimated to have over 5,700 medium- and large-scale food and beverage companies (Rangkuti & McDonald, 2018, p. 1). In 2018 alone, the sector grew by 7.9 percent, which is higher than the country's overall growth during the same period (5.2 percent) (Kementerian Perindustrian, 2019).

Developments in information systems and technology have also contributed to the change in people's dietary patterns. A systematic review of empirical works on the effect of television on children's dietary intake shows that exposure to food advertising on television increases calorie consumption in children (Russel, Croker & Viner, 2019). The growing use of smart phones and food delivery services have also contributed to the rising preference for ready-made or prepared meals. BPS data show that in line with the rise of expenditure shares for prepared food (Figure 6), the share of expenditures on communication and transportation also increased. Within one year, from 2017 to 2018, the expenditure share for these components increased from 5 percent to 6.1 percent (BPS in Sukmana, 2019).

The problem with the nutrition transition has not been the change of dietary patterns or even the shift towards less traditional diets. Rather, it is the longer-term consequences of these changes that matter. In rich countries, research has found that the shift towards diets rich in carbohydrates, fats, sugar and salt have been associated not only with overweight but also with the significant rise of non-communicable diseases (NCDs) (Colozza and Avendano, 2019, p. 103). In Indonesia, evidence shows that the nutrition transition is likely to affect nutritional status and health outcomes. As already mentioned, overweight and obesity have increased quite significantly since the early 2000s, especially in urban areas. Compared to villages, not only does a sedentary lifestyle prevail in cities, but there is also less space for city dwellers to perform physical exercise. Consequently, city dwellers are more likely to be overweight or obese than villagers in rural areas (Aizawa and Helble 2019). The *2018 Riskesdas* showed that while obesity affected around 17.8 percent of rural adults, no less than 25 percent of urban adults were obese.

As Indonesia is undergoing rapid urbanization, the growing rate of overweight and obesity among the urban population can become a serious problem in the years ahead. Research has pointed out that overweight and obesity are drivers of NCDs, such as hypertension and Type 2 diabetes (Harbuwono, Pramono, Yunir, Thebecti, 2018). The burden of NCDs has indeed been growing rapidly over the past few decades. The proportion of deaths in Indonesia caused by NCDs rose from 41.7 percent in 1997 to 59.5 percent in 2007. According to the most recent figure from MoH, the proportion of deaths caused by NCDs further increased to almost 70 percent in 2017 (Antara, 2019).

The ongoing COVID-19 crisis is demonstrating that persons who are overweight and obese not only have a higher likelihood of developing NCDs but also, as a result, have a high likelihood of being among those who develop severe COVID-19 conditions and are at higher risk of death. According to Pate and van Nieukoop (2020), unhealthy diets contribute to creating pre-existing conditions that make people more susceptible to COVID-19.

This chapter shows that Indonesia has made significant progress in improving food security and nutrition. Nevertheless, challenges remain and, without necessary mitigating measures, that progress is at risk of being eroded by the effects of the COVID-19 crisis.

III. RESPONSE AND GAP ANALYSIS

Indonesia's food security and nutrition policies during the period 2015–2019 were shaped by two main frameworks. The first is the *Long-Term National Development Plan 2005–2025 (Rencana Pembangunan Jangka Panjang Nasional, RPJPN)*, which explicitly asserts the importance of food security and nutrition for the development of the nation. While requiring the Government to enhance food security and nutrition, the document underlines the importance of improving domestic production capacity and includes food self-reliance as an indicator of the achievement of fair and equal development. It also asserts that food production and distribution are needed to support government policies in the health sector (Bappenas, n.d.). The second is Law No. 18/2012 on Food (Food Law), which added and formalized the goal of food sovereignty in Indonesia's development agenda.

Following these directives, the RPJMN 2015–2019 stated that the Government should focus on (1) increasing food availability by enhancing domestic food production; (2) improving quality of food distribution and food access; (3) improving the overall quality and nutrition value of the Indonesian diet; (4) protecting food security through preparedness against disasters and plant diseases; and (5) improving livelihoods of smallholders, fishermen and food producers. These are in line with Indonesia's commitment to SDG 2, which stated that by 2030 the country will end hunger and address malnutrition as well as increase agricultural productivity in inclusive and sustainable ways. The commitment to achieve the SDGs is manifested in the Presidential Regulation 59/2017 (*Peraturan Presiden, Perpres*). Regarding SDG 2, this regulation specifically sets the targets on ending hunger and ensuring food access for all, eliminating all forms of undernutrition and ensuring a sustainable food production system.⁷

The RPJMN 2020–2024 follows a similar path. It stipulates increasing production of and access to food as well as increasing the quality of food consumption as priorities. However, there is a bigger emphasis on increasing water security and water productivity as ways to increase food production. It is placed as one of the priorities under infrastructure development. In addition, nutrition improvement is also placed as one of the components under human development—one of five main directives of the 2020–2024 development plan.⁸

This chapter presents a review of policies and programmes to improve food security and nutrition outcomes. It begins with a discussion on the Government's policies and programmes to increase food production and on the RPJMN 2015–2019 targets. Then follows a discussion on policies and programmes to improve access to food, particularly for poor and vulnerable people. The next section discusses policies related to food utilization and improving nutrition. The final section highlights the latest developments in institutional arrangements regarding inter-ministerial coordination and leadership in food security and nutrition.

⁷It determines four indicators to be regularly monitored: (1) prevalence of insufficient food consumption, (2) proportion of severe and moderate food-insecure people based on food insecurity experience, (3) proportion of the population that consume less than 1,400 kcal per capita per day, and (4) proportion of children under six months that receive exclusive breastfeeding.

⁸The five main directives of the RPJMN 2020–2024 are: human development, infrastructure development, simplification of regulations, simplification of bureaucracy and economic transformation.

3.1 Food Availability Policies and Programmes

Indonesia set an ambitious plan of food sovereignty during 2015–2019. As stated in the RPJMN 2015–2019, the Government aimed to achieve self-sufficiency in rice within three years, and in maize, soybean, sugar, beef, fish and salt within five years (Table 5).

Table 5. Production Targets of Food Sovereignty, 2014–2019

No.	Products	2014 (Baseline)	2019
1.	Rice (million tons)	70.6	82.0
2.	Corn (million tons)	19.1	24.1
3.	Soybean (million tons)	0.9	2.6
4.	Sugar (million tons)	2.6	3.8
5.	Beef (thousand tons)	452.7	755.1
6.	Fish (million tons)	12.4	18.8
7.	Salt (million tons)	2.5	4.5

Source: Bappenas, 2014, *Rencana Pembangunan Jangka Menengah Nasional 2015-2019*, pp. 5-8.

To meet these targets the MoA implemented the *Upsus Pajale (Upaya Khusus Padi, Jagung dan Kedelai)*⁹ Programme to increase the production of rice, maize and soybean, and the *Upsus Siwab (Upaya Khusus Sapi Induk Bunting)*¹⁰ Programme to increase livestock production (ADB, 2019). The *Upsus Pajale* provided farmers with fertilizer subsidies, seed subsidies, tractors and other agricultural machinery to help them increase production. With these subsidies, the average ratio of producer support¹¹ increased significantly from around 17 percent of farm revenues in 2009–2010 to 29 percent in 2017 (Hamilton-Hart, 2019, p. 6). As for the *Upsus Siwab*, the MoA promoted the use of artificial insemination, increased the development of cattle production areas, enhanced the capacity of cattle-breeding centres, provided breeds of cattle for farmers and improved the standard of production and health of cattle.

Indonesia also invested heavily in the expansion of farmland and the development of agricultural infrastructure. According to the strategic plan of the Ministry of Public Works, Indonesia would create 1 million ha of new paddy fields, develop 65 dams and increase fishpond irrigation networks by 115,000 ha by the end of 2019 (Bappenas, 2014, pp. 5–8). By the end of 2018, the construction of 43 dams was completed. However, the farmland creation programme was not that successful. Only one-fifth of the planned new paddy fields (i.e., 212,000 ha) had been developed by 2018. The Government however reported that they had converted around 900,000 ha of unused lands, mostly swamp areas, into new farmlands, mostly for paddy fields. The Government also revived the Merauke Integrated Food and Energy Estate in West Papua (MIFE), which was first initiated in 2010 but was halted due to resistance from local residents and difficulties in securing land. Other than in Papua, large commercial paddy fields were also opened in Kalimantan, with the participation of the private sector.

⁹Special efforts for rice, maize and soybean.

¹⁰Artificial insemination for cattle.

¹¹The “ratio of producer support” measures the difference between subsidized and market price divided by farm revenue (OECD, 2018).

Despite these supporting programmes, the Government's performance in meeting the self-sufficiency goal has been mixed. Sugar and beef production were around half of the targets, while soybean production was only around one-third of the target. On the other hand, the production targets of maize and fish were achieved with 30.1 and 23.9 million tons, respectively, in 2018. These figures were even higher than the production targets in 2019, namely 24.1 million tons for maize and 18.8 million tons for fish. The rise in maize production resulted from a significant increase in the contribution of regions outside of Java, from 47 percent in 2014 to 60 percent in 2018.

As for rice, Indonesia could not achieve its ambitious goal of self-sufficiency, but in some ways parts of the Government's strategy to increase rice production were successful. Most strikingly, the Government succeeded in increasing rice production outside of Java. Because of this, Java's contribution to Indonesia's total rice production declined from 53 percent in 2013 to 49 percent in 2017 (Wardani, Jamhari, Hardyastuti & Suryantini, 2019, p. 121). The policy helped to raise domestic rice production, but it was achieved at a cost. For regions like NTT (Box 1), the drive to achieve self-sufficiency in rice may have gone against the region's comparative advantage in producing other agricultural commodities.

Box 1
Food Production in East Nusa Tenggara (NTT)

Located in the eastern part of Indonesia, NTT has a semi-arid climate. Many parts of the province have a prolonged dry season that can last up to eight months. This has consequential impacts on the province's food production and food security. For a long time, NTT had to rely on other provinces to meet its food demands. However, the drive to attain self-sufficiency in food led the MoA to set an ambitious target for NTT to produce more rice and become self-sufficient in rice (Aziliya, 2016).

Several policies, including dam construction, have been put in place to boost rice production, and thanks to the policy, rice production in NTT increased by 11 percent during the period 2014–2018. The policy has been very costly, however. Rice production needs a substantial amount of water, which is scarce in the province. Despite NTT's popularity in maize production, it has become less competitive than other products, especially soybean and peanuts. Maize production is now even less competitive than rice (Hendayana, n.d.). As the price of maize from other regions like East Java and South Sulawesi is cheaper than locally produced maize, it would be more economical for NTT to buy maize from these regions. As a result, maize production in NTT only increased by 6 percent from 2014 to 2018.

Some believe that the emphasis on rice production in NTT has led to the local agricultural production system being neglected. Other than maize, the province was also widely known as a cattle producer, but cattle production declined by around 2 percent between 2015 and 2019. Additionally, according to one participant of the FGD on food security and nutrition held in the province in late 2019, the emphasis on rice production has driven NTT away from commercially prospective commodities like Soe tangerine, which could give greater economic returns to farmers.

At the national level, the emphasis on staple foods has changed the structure of production and budget allocation within the MoA. For example, while the harvest areas of rice and maize increased significantly by 16 percent and 60 percent, respectively, from 2014 to 2019, the harvest areas of several vegetables decreased during the same time period (e.g., harvest areas of tomato declined by 7 percent, spinach declined by 13 percent, and eggplant declined by 13 percent) (Figure 8).

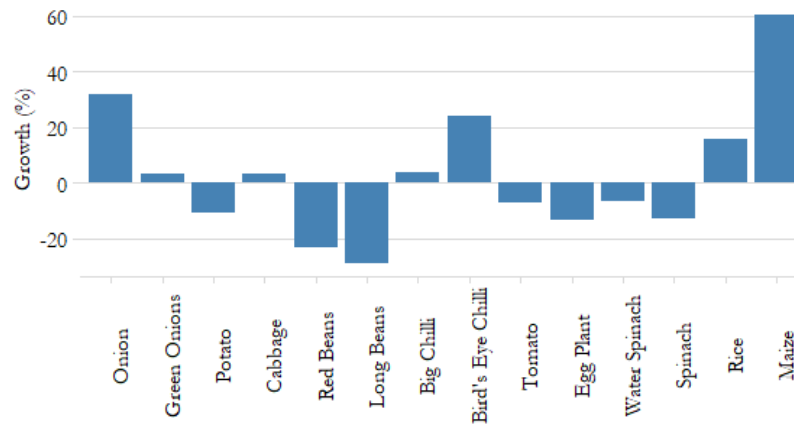


Figure 8. Changes in Harvested Area of the Vegetables and Staples, 2014–2019

Source: Kementerian Pertanian (2015, 2020).

Meanwhile, the budget share for the Directorate of Food Crops increased from 18.3 percent of the MoA budget in the 2015/2016 fiscal year to 29.7 percent in the 2017/2018 fiscal year. Even though the budget share for horticulture also increased from 3.7 percent in 2015/2016 to 5.2 percent in 2017/2018, the increase was much smaller than for food crops. The budget share of BKP, which is responsible for promoting food diversification, was very small at around 2 percent and it even slightly declined during this period. A part of the budget was allocated to various small-scale programmes, including sustainable food storage area (*Kawasan Rumah Pangan Lestari*), people's food reserve (*Lumbung Pangan Masyarakat*), food price monitoring using an android-based application (*Panel Harga Pangan BKP*), development of local food industries, local staples (*Pangan Pokok Lokal*) and food diversification campaign (*Gerakan Konsumsi Pangan Beragam Bergizi Seimbang dan Aman*). This might have led to a less than effective effort to promote food diversification at the national level.

The efforts to increase domestic food production have been constrained by several factors. First, land availability continued to be a major issue. According to BPS, irrigated wetland slightly decreased from 4.8 million ha in 2013 to 4.7 million ha in 2017, while total agricultural land dropped from 39.2 million ha to 37.1 million ha during the same period (Ministry of Agriculture, 2018, p. 7). The farmland expansion policy failed to increase the size of farmed land as the rate of land conversion from farm to non-farm use continued to occur at a rate higher than the opening up of new farmland. Second, as shown in the previous chapter (section 2.3.3), food production also faced challenges from the decline in the number of farmers as well as the aging of farmers. Yet, Indonesia's population grew by 1.34 percent per year between 2000 and 2015 (ADB, 2019, p. 33). Without a significant improvement in productivity per farmer, this trend could be alarming for food production. As discussed in section 2.3.1, climate change would also negatively affect food production in both irrigated and rainfed fields.

In addition to increasing food production, the Government has promoted a gender mainstreaming policy in agriculture for almost 20 years. Since 2003, the MoA has established a coordination team for gender mainstreaming in agriculture led by the Secretary General. This coordination team is to ensure the availability of gender disaggregated data as well as the inclusion of women in all the MoA's programmes. Thus, women have been included in, among others, agricultural extension, food security and agricultural infrastructure support programmes. Women empowerment programmes are mostly channelled through the formation of women farmers groups, which receive cash and non-cash government assistance. However, gender inequality in agriculture persists (Box

2). To some extent, this problem has its roots in the low capacity to analyse gender gaps as well as limited knowledge and understanding of gender mainstreaming measures across different levels of the Government, despite the enactment of more gender-sensitive laws and regulations (FAO, 2019a). A limited number of women officials in the local agricultural office and female extension workers also contributes to maintaining gender inequality in the agricultural sector. Even more importantly, at the local level, gender inequality is also rooted in the persistence of patriarchal culture in most communities.

Box 2
Gender Inequality in the Agricultural Sector in Indonesia

Most of the food production in Indonesia relies on small-scale farmers, including women. The *2013 Agricultural Census* shows that women represent around 23 percent of the agricultural labour force. The highest participation rate of women was observed with 25 percent in the livestock subsector. Women were usually responsible for cleaning enclosures, preparing feed and other aspects of animal care. In food crops and horticulture, women contributed 21 percent and 22 percent of the labour force, respectively. In food crop production, women were involved in nearly all stages of production except in the preparation of land, which was usually done by men. In the horticulture subsector, women played an important role in intercropping activities, such as planting long beans, yams, taro and some vegetable crops. They also often used their home yards to cultivate vegetables either for family consumption or sale (FAO, 2019a, pp. 27-28). Nevertheless, despite their significant contribution to food production, women's role in the agricultural sector is often under-recognized or completely unrecognized. Women's role and participation is often under-reported, as what they do is not classified as self-employment per se, but as an unpaid contribution to the household and farm work. Local norms or cultures often put women in a disadvantaged position in securing land ownership. This makes it difficult for them to have access to credits or other resources to support their production (FAO, 2019a, pp. 29–32).

Overall, Indonesia is still facing big challenges in increasing food production that can support nutritional improvement and promoting balanced diets. The strong focus on increasing rice production has not been able to meet the Government's ambition to significantly reduce import dependency, and has come at the expense of efforts to increase the production of fruit, vegetables, and animal proteins (with the exception of fish). Thus, the Government needs not only to increase productivity of food commodities but also to support the production of more diversified food commodities. And closely related to this, there is a strong need to further enhance the support to women working in agriculture by increasing their access to information and economic resources and raising their overall visibility.

3.2 Food Access Policies and Programmes

Access to food deals with two issues: the economic and social affordability of food. According to the *Strategic Policy for Food and Nutrition from 2010–2024 (Kebijakan Strategis Pangan dan Gizi, KSPG)*, the Government should maintain the economic affordability of food by (1) maintaining price stability of staples and other important foods like sugar and cooking oil, (2) providing incentive policies for the business sustainability of food producers, (3) expanding access to market information systems and food prices and (4) economically empowering low-income families to increase food security and nutritional status (Food Security Council, 2015; Government of Indonesia, 2017).

Regarding food prices, there are a couple of policy instruments that can be used by the Government to maintain their stability. The first one is the so-called highest-retail price (*Harga Eceran Tertinggi, HET*), and the second is the state logistics agency called *Badan Urusan Logistik (BULOG)*. The

Government sets the HET of the key food commodities and asks BULOG to conduct market operations to lower prices when they go up above the HET. The architecture of the system was first developed in the 1970s when Indonesia was struggling to tackle the chronic problem of food deficits. The main goal of the country's food pricing system was to stabilize the prices of rice while at the same time maintaining the profitability of rice cultivation for farmers so that they would have enough incentives to produce. The system worked well during this period and helped to increase rice production and achieve self-sufficiency in rice in 1985 (Patunru & Ilman, 2019, p. 12). However, the increased trade openness due to economic globalization has made this system ineffective. Despite the involvement of BULOG, the domestic price of rice in Indonesia has been higher than the rice price in international markets since the last decade (ADB, 2019, p. 22).

Relatedly, one important element of the Government's policies to maintain the availability of rice is by providing agricultural subsidies like fertilizers. However, misallocation and misappropriation of subsidized fertilizers prevailed in the country. An Ombudsman report in 2016 stated that subsidized fertilizers were sold to plantations rather than small farmers at 40 percent above the official subsidized price (Hamilton-Hart, 2019, p. 12). Meanwhile, most farmers (90 percent) purchased subsidized fertilizers at higher prices than the highest retail price (Rachman & Sudaryanto, 2010), and most of the benefits of the subsidy went to the 40 percent largest farmers, who captured up to 60 percent of the subsidy (Osorio et al., 2011). Understandably, increases in the allocation of fertilizer subsidies in the last few years did not help much to lower the domestic prices of rice.

With an ineffective domestic price stabilization system, the Government in practice relies on the social affordability of food by providing social protection to ensure that food is accessible for the poor and vulnerable groups. This social protection policy has included food assistance to the poor (Box 3), a conditional cash transfer programme called Family Hope Programme (*Program Keluarga Harapan, PKH*) (Box 4), and food assistance for victims of natural and social disasters. These programmes, especially the food assistance to the poor, were first developed in response to the 1998/1999 Asian Financial Crisis. But they have been continuously improved since then. Along with the technological advances used by the programmes, the distribution modalities have been modified to increase the financial inclusion of the poor.

Both the food assistance to the poor and PKH programmes have become more nutrition-sensitive over the years as well. The change in food assistance to the poor from the provision of rice at a subsidized price to an e-card or voucher to buy a variety of food items allows the beneficiary households to choose food items that potentially increase their nutritional status. In 2017, the programme has included eggs, in addition to rice, as food choice that can be purchased by beneficiary households that receive an e-card. However, the lack of knowledge and awareness about nutritious foods might limit benefits regarding improved nutritional status. In addition, since the e-card or voucher can be used to buy food from certain outlets (*e-warong*), there are cases where food is sold in one pack and the beneficiary household cannot make any choice (Hastuti, Widyaningsih & Ruhmaniyati, 2020). Regarding PKH, efforts to increase the nutritional status of the members of beneficiary households are conducted through family development sessions.

Box 3 The Evolution of Food Assistance for the Poor

Starting in 2006, the Government provided subsidized rice to the poor called Rice for the Poor (*Beras untuk Keluarga Miskin*, Raskin). Since then, the name of the programme has changed several times and has evolved to adopt technological advances and improved nutritional value. In 2016, the name of the programme was changed to Prosperous Rice (*Beras Sejahtera*, Rastra), but the targeted beneficiary households remained the same. In 2016, there were about 15.5 million poor beneficiary households. According to the programme design, they were to receive 10 kg of medium-quality rice per month at a subsidized price.

In 2017, the programme was modified by introducing a non-cash distribution modality using the banking system. Known as BPNT (*Bantuan Pangan Non-Tunai*), this non-cash food assistance was now in the form of e-transferred money of Rp110,000 per beneficiary household per month. This amount could be used only to buy rice and eggs in *e-warungs* (special outlets) that acted as food distribution agents. In 2017, BPNT was implemented only in 44 cities and districts (mostly in urban areas) with around 1.2 million beneficiary households. Simultaneously, the Rastra programme was implemented and targeted 14.3 million beneficiary households. In 2019, BPNT was provided to around 10.2 million households, while Rastra was distributed to 5.3 million households in 295 districts that did not have sufficient telecommunication networks and signals for *e-warungs*.¹² In both programmes, the entitlement holder was the head of household, usually a man.

Gupta's and Huang's (2018) study using five rounds of the Indonesian Family Life Survey (IFLS) covering the period of 1993–2014 finds that children from the Raskin beneficiary households show improved health status as per various anthropometric measures, as well as improved long-run health conditions in their adolescence and adulthood.

In 2020, the food assistance programme was renamed into SEMBAKO, and 15.2 million beneficiary households are set to receive a benefit of Rp150,000 per household per month through their e-voucher card, which continues to be in the name of the head of household, usually a man. The card can be used to buy a variety of food products.¹³

In response to the COVID-19 pandemic, the Government increased the coverage of the programme to 20 million households with a benefit package of Rp200,000 per beneficiary household per month (from April–December 2020).

Some flaws in the targeting mechanism, however, which relies on the Integrated Database for Social Welfare (*Data Terpadu Kesejahteraan Sosial*, DTKS), may keep the programme from achieving its maximum impact on raising the well-being of the poor. The DTKS, which originated from a unified database first developed in 2011 and updated in 2015, is currently managed by the Ministry of Social Affairs but the district governments are mandated to regularly update it. Due to limited political commitment and lack of technical capacity of most district governments, the data is not matched and updated regularly. The data on PKH beneficiary households is registered under a women's name (usually the wife of the head of household) (Box 3), while other social protection programmes and the civic registration database use the head of household's name (usually a man), making data integration challenging. This has resulted in increased mistargeting and led to protests, as this data is currently used for targeting social assistance as a response to the COVID-19 crisis.

¹²An electronic mutual assistance stall (*warung gotong royong*, *e-warung*) is a bank agent, trader, and/or other party that works with a partner bank and has been determined along with the partner bank as a place of withdrawal or purchase of social assistance by beneficiary households.

¹³According to the programme guideline, these include (1) sources of carbohydrates (rice or other local staples such as corn or sago), (2) sources of animal protein (eggs, chicken, beef and/or fish), (3) sources of vegetable protein (nuts, tofu and tempe) and (4) sources of vitamins and minerals (vegetables and fruits).

Box 4

Family Hope Programme (Program Keluarga Harapan, PKH)

PKH is a conditional cash transfer programme aimed at reducing the economic burden of poor households. The beneficiary households receive a certain amount of money from the Government, under the condition that they fulfill certain obligations to participate in health and education services. The entitlement holder is a woman of the household, usually the wife of the household head or an adult woman of the household, in the absence of a wife. The programme was first piloted in 2007 in seven provinces with around 388,000 beneficiary households. Over time, the Government enhanced the programme by increasing the number of beneficiaries; expanding its coverage to include more children, people with disabilities and elderly (aged 70 years and older); and providing household sessions on health and education for the women beneficiaries. In 2015, PKH covered around 3.5 million households, and in 2018 it reached 9.2 million households in all provinces of the country. In response to the outbreak of COVID-19, the Government increased the number of beneficiary households to 10 million.

In terms of beneficiary household criteria, since 2016, PKH targeted poor households with a pregnant mother, children under 5, children in primary and junior secondary school, people living with disabilities, the elderly, and children enrolled in senior high school. PKH beneficiary households were also entitled to access other social assistance programmes, including Indonesia Smart Card (*Program Indonesia Pintar, PIP*) and the Indonesia Health Card (*Kartu Indonesia Sehat, KIS*), with the objective of comprehensive support to increase the quality of life of the poor. Cahyadi et al. (n.d.) also found that PKH has a substantial positive impact on stunting reduction among under-5 year old children.

Since 2015, the programme is complemented with so-called family development sessions (FDS) that aim to increase knowledge and awareness of PKH beneficiaries about the importance of education and health in improving the quality of family life. The FDS has 5 main modules: (1) health and nutrition, (2) education, (3) economy (family financial management), (4) child protection (prevention of violence against children & maternal protection), and (5) social welfare (elder care). The FDS modules are delivered by the programme facilitators (who are mainly men) at monthly meetings that are attended by (mainly) women from programme beneficiary households.

At the early stages of PKH implementation, the benefit package was calculated based on the composition of families/households targeted by the programme. The annual benefit ranged from Rp600,000 to Rp2,200,000 per household. However, in 2017 it was changed to a flat rate of Rp1.89 million per beneficiary household per year, and Rp2 million if there were elderly or people with disabilities in the household. Since 2019 the determination of the benefit is changed back to a non-flat rate, with the benefit ranging from Rp950,000 to Rp3.9 million per household per year. The benefit is distributed every three months through an individual bank account or a post office if the beneficiary household lives in a location far from a bank. Responding to the COVID-19 pandemic, the Government has increased the transfer amounts by 25 percent and distributes them on a monthly basis.

Since 2017, the Government has also implemented PKH AKSES. This scheme provides social assistance with special conditions to improve the accessibility for poor and vulnerable families to basic social services in disadvantaged or remote areas and outer islands.

Disaster emergency response is a policy area related to food access that requires attention from the Government. As Indonesia is highly vulnerable to disasters, the operating rules concerning the distribution of food assistance and the composition of the food assistance package to meet nutritional needs must be improved. This relates primarily to the special nutritional needs of specific groups of people like pregnant or lactating mothers and small children between 6 and 24 months. Mothers of babies under six months should be advised to continue exclusive breastfeeding.

In line with BNPB's Regulation No. 4/2018 on logistics and equipment management system (*Sistem Manajemen Logistik dan Peralatan*), food for disaster victims falls under logistics. In a disaster situation BNPB provides food in the form of ready-to-eat food packages, side dish packages and food supplements. It also provides clean water as required. BNPB opens public kitchens and provides food at the disaster site, mainly to emergency responders. Food and other relief supplies are available at the logistics warehouses run by BNPB at both the national level and the

province/district levels, depending on the magnitude of the disaster. At the time of a disaster, upon the declaration of emergency status, the governors and heads of districts or mayors can request additional supplies from BULOG through the Ministry of Social Affairs.

Food assistance to affected populations at the disaster sites is carried out by the Ministry of Social Affairs' Social Office which establishes public kitchens for the preparation and distribution of meals. It also distributes eating utensils. All the food provided should meet nutritional adequacy standards. The BPBD and the Social Offices collaborate in this effort. The Ministry of Social Affairs also has a PKH programme-line specifically intended to support victims of disasters, namely through the PKH ADAPTIF scheme. Different from the regular PKH, PKH ADAPTIF beneficiaries cannot receive support unless they fulfill certain criteria such as living in remote, underdeveloped areas; being a disaster victim, including social disasters; and poor, but not listed in the DTKS.

In the context of the current economic crisis due to the COVID-19 pandemic, the social assistance provided to affected people is mostly using the schemes that have been designed for regular idiosyncratic shocks, including SEMBAKO and PKH. Since such a scheme is likely to be less than perfect in responding to the needs of people affected by a public health crisis, like the COVID-19 pandemic, the Government introduced several new schemes. As will be discussed in Chapter 4, these new schemes include, among others, Presidential Sembako Assistance Packages (*Sembako Bantuan Presiden*) for the Greater Jakarta Area (Jabodetabek), Social Cash Assistance for non-Jabodetabek areas, Cash Transfer from the Village Fund, and Pre-Employment Card (*Program Kartu Prakerja*).

3.3 Food Utilization and Nutrition Improvement Policies and Programmes

This section discusses policies on two important aspects of food intake: (1) food safety and food consumption pattern and (2) nutrition improvement.

3.3.1 Policies and Programmes on Food Safety and Food Consumption Pattern

Food safety in Indonesia is regulated under Law 18/2012 on Food and Government Regulation No. 28 of 2004 on Food Safety, Quality and Nutrition. Ensuring food safety, in general, involves various ministries and institutions. The MoA and Ministry of Marine Affairs and Fisheries are responsible for regulating fresh food. The National Agency for Drug and Food Control (*Badan Pengawas Obat dan Makanan*, BPOM) primarily controls processed food. The MoH and local health authorities oversee prepared or ready-to-eat food. In addition, the Ministry of Industry and other ministries also have roles in food systems. The Ministry of Education is involved in regulating the safety of food sold in school canteens, and works together with BPOM to implement the National Action Plan for Children's School Snacks (*Rencana Aksi Nasional Pangan Jajanan Anak Sekolah*, RAN PJAS).

BKP is responsible for ensuring the safety of strategic perishable commodities, especially those that may quickly deteriorate, such as fresh fruit, vegetables and other edible crops. This is conducted through: (1) food certification by the Food Safety Authority (*Otoritas Kompeten Keamanan Pangan*, OKKP), which can be done either at the central or local offices of the OKKP; and (2) food registration, a mechanism that can be used for fresh food of plant origin and packing houses. In addition, in 2014, BPOM launched four main programmes: (1) product registration, especially for traditional medicine and health supplements; (2) a food safety information system (Indonesia Rapid Alert System for Food and Feed); (3) food safety reporting and compliance (web-based

pharmacovigilance and BPOM's contact center); and (4) development of community participation for food safety (Food Safety at Village Level) (SMERU et al., 2014).

Regardless of these efforts, food safety remains a pressing problem in Indonesia. According to FAO (2019), the Directorate of Environmental Health and the Public Health Emergency Operation Centre (PHEOC) of the MoH reported 163 outbreaks of foodborne diseases across the country in 2017. The figure is higher than the number of reported cases in 2013 (46 cases) and 2015 (61 cases) (FAO, 2019b). A 2018 study highlights various obstacles in realizing food safety in Indonesia, which stem from internal as well as external factors (Putri, 2018). Internal factors include outdated regulations that do not keep up with the development of new food substances, the BPOM's lack of enforcement power (because law enforcement is overseen by the police), and the insufficient number of BPOM staff and working facilities. External factors include low incomes that lead consumers to focus more on cheaper food prices than on food quality; lack of awareness and knowledge of food hygiene and safe food additives among food producers, which are mostly from micro and small businesses; and lack of public awareness of food safety and the prevalence of illness due to food poisoning due to insufficient epidemiological data.

Regarding the food consumption pattern, at least two policies have been implemented. The first is the desirable dietary pattern (PPH) score that provides general guidance linking production and consumption patterns. This is primarily implemented and monitored by BKP of the MoA. The second is the MoH's guidance on balanced diets.

The RPJMN 2015–2019 set the target for increasing the desirable dietary pattern score—a metric of recommended dietary diversity—from 85.2 in 2015 to 92.5 in 2019 (BKP, 2019). According to the RPJMN 2020–2024, this target has been achieved and a new target of 96.3 was set to be achieved by 2024. Nevertheless, it is important to note that compared to international standards of dietary diversity as recommended by the EAT-Lancet Commission, Indonesia's desirable dietary pattern has too many cereals or carbohydrates. The Commission suggests the cereal intake to make up approximately 34 percent of total calorie intake per day, while Indonesia's desirable dietary pattern suggests around 56 percent of daily calorie intake from cereals. This partly explains why Indonesia, despite its high score on its national desirable dietary pattern, scores low on dietary diversity compared to other countries. According to the *2019 Global Food Security Index*, while Indonesia has an overall score of 62.6 (ranked 62 out of 113 countries in the survey), the dietary diversity score is only 19—significantly lower than the world average of 55.8—and ranked 102. Thus, while the BKP programme to support food diversification and link production and consumption at the community level has not been as successful as possible because of underfunding, the national desirable dietary pattern itself does not provide the best nutritional standard for improving food consumption patterns.

The MoH's guidance for a balanced diet, on the other hand, provides advice that is closer to the EAT-Lancet Commission's recommendation. The guidance that was promulgated in 2014 in MoH's Regulation No. 41/2014, suggests that each meal should consist of the following portions: staple food or source of carbohydrate (two-thirds of half a plate, or around 33 percent), vegetables (two-thirds of half a plate), side dishes with plant and animal protein (one-third of half a plate), and fruits (one-third of half a plate). The composition, however, could be different for people of different ages or different levels of physical activities. The popularity of this guidance, however, has not yet replaced the previous guidance of *4 sehat—5 sempurna* (healthy 4—perfect 5) that suggests people consume rice (or staple food), sources of protein (animal or vegetable), vegetables, and fruits to be healthy and add milk for perfection.

3.3.2 Policies and Programmes on Nutrition Improvement

On 22 October 2011, Indonesia joined the global Scaling Up Nutrition (SUN) movement, which led to the development of the National Movement to Accelerate Nutrition Improvement (*Gerakan Nasional Percepatan Peningkatan Gizi*). It was institutionalized through Presidential Regulation No. 42/2013 on National Movement to Accelerate Nutritional Improvement. This regulation states that all stakeholders from national and regional governments as well as non-governmental and private sectors should be involved in the movement. It also states that the Government will pursue two types of policies intended to accelerate the value of people's nutrition—nutrition-specific interventions and nutrition education. Nutrition education programmes include national and regional campaigns for nutrition improvement, inter-sectoral and inter-ministerial advocacy and public dissemination (*sosialisasi*), dialogues with many different actors to promote collaboration, trainings, discussions and nutrition-specific and nutrition-sensitive interventions.

In realizing this national movement, the Government launched a healthy living community movement (*Gerakan Masyarakat Hidup Sehat*, GERMAS) in November 2016. The primary objective of this movement is to increase community awareness, willingness and ability to practice a healthy lifestyle to improve the quality of life. The main activities carried out within the GERMAS framework are: (1) increased physical activity, (2) education on clean and healthy behaviour, (3) provision of healthy food and acceleration of nutritional improvement, (4) prevention and early detection of disease, (5) improvement of environmental quality, and (6) education on healthy living. These activities are to be carried out by various ministries as well as sub-national governments, non-governmental organizations, business communities, individuals and communities. As stipulated in Presidential Regulation No. 42/2013, this movement is directed by a special task force led by the Coordinating Ministry for Human Development and Cultural Affairs.

In addition to GERMAS, in 2015, the Government also issued Government Regulation No. 17/2015 on Food Security and Nutrition.¹⁴ This regulation specifically links nutrition improvement with food diversification and gives higher priority to nutrition improvement of pregnant mothers, breastfeeding mothers, babies, children under 5 and other nutritionally at-risk groups. This regulation provides the basis for the promulgation of Presidential Regulation No. 83/2017 on KSPG, which provides a legal foundation for the development of a national action plan for food and nutrition and demands provincial and district governments to develop regional action plans on food and nutrition. BAPPENAS at the national and BAPPEDA at the sub-national level were mandated to lead the formulation of these plans. This presidential regulation also asserts the need to develop integrated measures to accelerate the reduction of stunting.

In early 2018, the Minister for National Development Planning/Head of BAPPENAS issued the National Action Plan for Food and Nutrition 2017–2019 (*Rencana Aksi Nasional Pangan dan Gizi*, RAN-PG), which was later renamed as the National Strategic Policy and Plan of Action on Food and Nutrition. The RAN-PG 2017–2019 maintained the five pillars of the previous RAN-PG 2011–2015.¹⁵ Nevertheless, the 2017–2019 Action Plan specified the ministries and institutions responsible for implementing each pillar, which was not listed in the previous plan. It strengthens and continues most of the programmes that have been implemented in the previous plan, under the SUN movement and GERMAS. However, this plan refers to national priority regions (geographical targeting) for integrated measures. There were 8 priority districts selected in 2017; this was

¹⁴ It governs: (1) government food reserves and regional government food reserves; (2) food diversification and improvement of community nutrition; (3) food crisis preparedness and food crisis response; (4) food distribution, food trade and food assistance; (5) supervision; (6) food and nutrition information system; and (7) community participation.

¹⁵ According to the Presidential Decree No. 83/2017 on KSPG, the five pillars of the RAN-PG were restated as follows: (1) improvement of the value of people's nutrition; (2) improvement of people's access to food; (3) food quality and safety; (4) hygiene and healthy habits; and (5) coordination of food and nutrition development.

expanded to 84 districts in 2018 and to more than 500 districts in 2019. Similar to the earlier plan, reference is made to nutrition-sensitive and nutrition-specific interventions.

Box 5
National Action Plan for Food and Nutrition 2017–2019 (RAN-PG)
Nutrition Improvement Programmes

According to the RAN-PG 2017–2019, policies to accelerate nutrition improvement comprise several programmes focused on the following objectives:

1. Improving nutrition surveillance including monitoring of child development.
2. Increasing access and quality of health and nutrition services, with a specific focus on the first 1,000 days of life, adolescents, brides and pregnant mothers. The programme also provides supplementary food (e.g. fortified biscuits and food provided in Posyandus), especially for poor households and those living in disadvantaged and border areas.
3. Promoting behavioural change related to health, nutrition, sanitation, hygiene and parenting.
4. Enhancing the role of society in nutrition improvement programmes, especially those targeting pregnant mothers, women of childbearing age, and children under 5 in disadvantaged and border areas, by developing village weighing posts (in Posyandus) and holistic, integrative early childhood education (*Pendidikan Anak Usia Dini*, PAUD).
5. Strengthening the implementation and evaluation of nutrition regulations and standards.
6. Strengthening inter-sectoral collaboration in conducting nutrition-sensitive and nutrition-specific interventions supported by improved capacities of central, provincial and district governments in implementing the RAN-PG (Bappenas, 2015, p. 19).

The Directorate of Nutrition of the MoH also implements several policies and programmes that are intended to improve maternal and child nutrition; increase the availability and equitable distribution of treatment, medicines and drugs; and address malnutrition. These policies and programmes include improving infant and young child feeding (IYCF) practices such as exclusive breastfeeding for infants under six months, providing treatment for acute malnutrition, Vitamin A supplementation, controlling iodine deficiency disorder, treating iron deficiency anaemia, and improving maternal and child health. To accelerate nutrition improvement, the MoH also attempted to enhance the society's role through a specific programme called Nutrition Aware Family (*Keluarga Sadar Gizi*, Kadarzi). As part of the broader programme of the Alert Village (*Desa Siaga*), Kadarzi aims to improve the nutritional value and dietary patterns of Indonesian households, provide supplementary feeding, and strengthen the food diversification programme.

In 2018, the Government also unveiled a new strategy to accelerate the reduction of stunting. In line with the global target to reduce stunting by 40 percent stipulated by the World Health Assembly, the Government targeted to reduce the country's stunting rate from 37.2 percent in 2013 to 22 percent in 2025. Yet, as per the RPJMN 2020-2024, the Government set a more ambitious target of reducing the stunting rate to 14 percent in 2024/2025. Building on UNICEF's conceptual framework of the determinants of child undernutrition, the Government's strategy to reduce stunting addresses four key areas that can directly and indirectly affect child development. These are access to nutritious food, parenting/childcare, health care services and clean water and sanitation. Therefore, realizing the complexity and multi-dimensional aspects of stunting, the Government employed a multisectoral approach that involved various related stakeholders. The Government strategy builds on five pillars of policy intervention, namely (1) political commitment and leadership; (2) national campaign for behavioural change; (3) convergence, coordination and consolidation of government action from the national to the village level; (4) food security and nutrition; and (5) monitoring and evaluation. This is realized through the National Strategy to Accelerate Stunting Prevention 2018–2024 (*Strategi Nasional Percepatan Pencegahan Anak Kerdil/Stranas Stunting*) (TNP2K, BAPPENAS, & Kemendagri, 2018).

As the plan emphasizes the integration of programmes, the Government adopts a geographical approach by specifically focusing on areas that have high stunting rates (TNP2K, BAPPENAS & Kemendagri, 2018). In the first phase (2018), the Government conducted a coordinated intervention in 1,000 villages located in 100 cities and districts using a multisector convergence approach. In the second phase (2019), the intervention activities were expanded to 1,600 villages in 160 cities and districts. Finally, in the third phase (2020–2024), the activities will be gradually extended to all cities and districts. This policy intervention was intended to develop a model for a comprehensive approach to reduce stunting, which will be expanded to many more villages.

To accelerate stunting prevention, the Government now implements both nutrition-specific and nutrition-sensitive interventions. They consist of programmes and activities that can directly or indirectly prevent stunting. In line with the *Stranas Stunting 2018–2024*, the Government reorganized its strategies to reduce stunting and categorized interventions into nutrition-specific and -sensitive ones (Table 6).

Table 6. Nutrition-Specific and Nutrition-Sensitive Interventions

No.	Nutrition-Specific Intervention	Nutrition-Sensitive Intervention
1.	Providing iron tablets and folic acid	Clean water and sanitation
2.	Promotion of exclusive breastfeeding and early breastfeeding initiation (<i>Inisiasi Menyusui Dini</i> , IMD)	Access to health care services
3.	Providing information on infant and young child feeding (IYCF) practices	Balanced diet promotion
4.	Providing food supplements	Parenting counseling for parents
5.	Providing treatment for acute malnutrition	Providing universal early childhood education
6.	Immunization	Reproductive health counseling for teenagers
7.	Providing calcium and iodine	Support for food security
8.	Vitamin A supplementation	Social protection programmes for poor households (i.e. PKH)
9.	<i>Helminth</i> prevention and control	Food Fortification
10.	Providing treatment for diarrhea	
11.	Improving maternal healthcare services	
12.	Nutrition education for pregnant mothers	
13.	Providing mosquito nets and treatment for pregnant mothers who suffer from malaria	

Source: Kementerian PPN/BAPPENAS, 2015, *Strategi Nasional Percepatan Pencegahan Anak Kerdil (Stunting)*, p. 41.

To address the complex and multisectoral problem involved in stunting reduction, in May 2019 the Government also established the National Team for the Acceleration of Stunting Prevention (*Tim Nasional Percepatan Pengurangan Anak Kerdil*, TP2AK). The Team is designed as a ‘Strategic and Operational Support Team’ for the Vice President’s Office to coordinate the efforts to accelerate stunting reduction. This coordination arrangement is planned to be formalized as a Presidential Regulation on Acceleration of Stunting Prevention where the Vice President will be the Chair of the Policy Steering Committee and the Head of Bappenas will serve as Chair of the Executing Committee. The TP2AK has been soliciting support and commitment from local governments to take an active role in addressing stunting and carrying out convergence actions. Tangible forms of

support and commitment include the Special Allocation Fund (*Dana Alokasi Khusus*, DAK) for physical and non-physical needs to reduce stunting, such as health, clean water and sanitation, family planning and the use of village funds for stunting prevention. TP2AK has also attempted to periodically collect accurate data and information, which are needed for monitoring and evaluation. The team is now developing a stunting prevention dashboard that will provide data and information for the central and local governments. The TP2AK also supports the Indonesian Child Nutritional Status Survey (*Survei Status Gizi Balita di Indonesia*, SSGBI), which, in 2019, was conducted by the MoH's National Institute of Health Research and Development (*Badan Penelitian dan Pengembangan Kesehatan*, Balitbangkes). The SSGBI collected data from 514 districts and cities across the country. From 2020, the SSGBI is changed to Indonesian Nutrition Survey (*Survey Status Gizi Indonesia – SSGI*) that covers all age categories. The Government plans to further improve the survey by adding some new variables and respondents to enhance the quality of data collected.

As discussed in the previous chapter, there has been significant progress in the reduction of stunting as well as other forms of undernutrition, although prevalence is still high by international standards. In an effort to estimate the effectiveness of the Government's spending on stunting reduction, the World Bank's 2020 public expenditure review highlighted the difficulty in measuring the real expenditure as the nutrition-related expenditure in the health sector accounted only for around 12 percent of the Central Government's expenditures, while the rest was scattered in various ministries and agencies. In addition, more than half of the nutrition-related expenditure was allocated to sub-national level and data are difficult to collect and consolidate. Preliminary estimates from a few cities and districts suggest that overall government spending on nutrition may be adequate, and the issue is more about efficiency in allocation and use of resources (World Bank, 2020c). Other recommendations posted by the World Bank include: (1) the critical need to invest and standardize health information and accounting systems, and establish processes for information exchange across the relevant ministries, as the MoH is responsible for just one-eighth of all nutrition-related expenditures; (2) the need to improve targeting mechanisms and provide clearer intervention guidance and regular retraining to frontline health workers so that they can properly identify at-risk households and reinforce the quality of service delivery; and (3) the need to give greater focus on developing standard operating procedures and securing resources for more communication materials, training and supervision of (mainly women) community volunteers (*cadres*) to improve the quality of service delivery at the front line.

Generally, Indonesia is still facing many challenges in various aspects of food utilization. Regarding food safety, there is a need to update the existing regulations, increase the capacity of the oversight organizations, and better educate the public. In regards to promoting a balanced diet, the formulation of desirable dietary scores needs to be adjusted to aim at a lower proportion of carbohydrate intake and a more balanced diet aligned with MoH recommendations. In terms of nutritional improvement, despite significant efforts to improve both nutrition-sensitive and nutrition-specific interventions, the effectiveness of the efforts need to be enhanced by increasing awareness and knowledge of all stakeholders at all levels of government, and making these efforts more holistic and integrated. In addition, it is also important to increase attention to simultaneously tackle the triple burden of malnutrition.

3.4 Institutional Arrangements for Food Security and Nutrition

There have been no major changes in terms of institutional arrangements for food security and nutrition or food systems as a whole. The Food Security Council (*Dewan Ketahanan Pangan*, DKP) established by the Presidential Decree No. 83/2006 continues to be mandated to deal with matters regarding food security and nutrition. The DKP advises on the formulation of policies governing the

supply and distribution of food, the development of food reserves, food diversification and the control of food quality. It is also in charge of monitoring and evaluating food security improvements and coordinating stakeholders at the national, provincial and district levels. During the preparation of the RPJMN 2015–2019, there had been a discourse to establish a special agency for governing food security and nutrition. Unlike the DKP, which serves more as a coordinating body between different ministries and agencies responsible for food security and nutrition, the proposed agency was meant to have administrative authority to implement policies and programmes on food security and nutrition and be directly under the President. Thus, it would have been different from the BKP, which is under the MoA. However, such special agency for food security and nutrition was politically unpopular since it would have potentially taken over some functions or roles of other ministries and agencies.

The most recent development is the Presidential Regulation (*Peraturan Presiden, Perpres*) No. 83/2017 on Strategic Policy for Food and Nutrition that highlights the need to strengthen the institutions responsible for the improvement of food security and nutrition. However, this regulation does not indicate how the Government at the national and sub-national levels can and should reinforce food security and nutrition institutions. This can be done through the **harmonization of policy and programme planning among food security and nutrition institutions**. So far, the Government has issued several policies on food security and nutrition, such as the formation of institutions and regulations dealing with food security and nutrition. However, harmonization and synchronization, as well as the interrelationships between regulations, have not taken place yet. The next strategy is to **strengthen programme implementation**. In addition to the national leadership, local leaders' commitment to food security and nutrition and implementing food and nutrition action plans at the local level is also required. In addition, the Government should also **develop an integrated evaluation and monitoring system for policy and programme improvement**. As policies and programmes on food security and nutrition are implemented by several ministries and agencies, the Government needs to develop an integrated monitoring and evaluation system that includes the different ministries and agencies responsible for improving food security and nutrition (Aziza, 2019).

The Perpres No. 83/2017 addresses the need to strengthen the institutions responsible for the improvement of food security and nutrition. However, there has been an inconsistency in the leadership of two related key strategies/action plans, namely the National Action Plan for Food and Nutrition (RAN-PG) 2017–2019 and the National Strategy to Accelerate Stunting Prevention (*Stranas Stunting*) 2018–2024. The former adopted a multisectoral approach involving 20 ministries and boards and 3 coordinating ministries (Table 7), under the leadership of the Coordinating Ministry for Human Development and Cultural Affairs (*Kementerian Koordinator Bidang Pembangunan Manusia dan Kebudayaan, Kemenko PMK*), which is mandated as the head of the special task force for the implementation of the RAN-PG, and reports directly to the President.

Table 7. National Action Plan for Food and Nutrition (RAN-PG) 2015–2019: Multisectoral Approach

No.	Pillars	Ministries and Boards
1.	Improvement of the value of people's nutrition	Ministry of Health, Ministry of Manpower, Ministry of Women's Empowerment and Child Protection, Ministry of Villages and Disadvantaged Regions and Transmigration, Ministry of Social Affairs, and the National Population and Family Planning Board
2.	Improvement of people's access to diverse foods	Ministry of Agriculture, Ministry of Marine Affairs and Fisheries, Ministry of Industry, Ministry of Trade, Ministry of Villages, Development of Disadvantaged Regions, and Transmigration, and Ministry of Social Affairs
3.	Improvement of food quality and safety	Ministry of Agriculture, Ministry of Marine Affairs and Fisheries, Ministry of Industry, Ministry of Trade, and National Agency of Food and Drug Control
4.	Improvement of hygiene and healthy habits	Ministry of Health, Ministry of Education and Culture, Ministry of Religious Affairs, Ministry of Public Works and Public Housing, Ministry of Youth and Sports, and Ministry of Communication and Information
5.	Strengthening of food and nutrition institutions	Ministry of National Development Planning (BAPPENAS), Coordinating Ministry for Human Development and Cultural Affairs, Coordinating Ministry for Economic Affairs, Coordinating Ministry for Maritime and Investment Affairs, Ministry of Internal Affairs, and State Secretariat

Source: Kementerian PPN/BAPPENAS, 2015, *Rencana Aksi Nasional Pangan dan Gizi Tahun 2015-2019*, p. ii.

The *Stranas Stunting 2018–2024* also adopted a multisectoral approach involving 23 ministries and state institutions (Table 8), which are mostly the same as in RAN-PG 2017–2019. However, the *Stranas Stunting 2018–2024* is led by the Vice President and the Coordinating Ministry for Human Development and Cultural Affairs as deputy, while coordination is managed by the TP2AK in the Secretariat of the Vice President's office. The Government is currently drafting a Presidential Regulation on Acceleration of Stunting Prevention. In this draft, the coordination arrangement/structure consists of the Vice President as Chair of the Policy Steering Committee and the Coordinating Minister of Human Development and Cultural Affairs as Deputy Chair, while the Head of Bappenas serves as Chair of the Executing Committee coordinating 21 ministries/agencies as members of this committee.

Table 8. National Strategy to Accelerate Stunting Prevention (2018–2024): Pillars, Objectives, Strategies and Coordinators

No.	Pillars	Objectives	Strategies	Coordinator
1.	Commitment and vision of the country's highest level leaders	Ensuring the prevention of stunting is a priority of the Government and society at all levels	<ol style="list-style-type: none"> 1. Leadership of the President/ Vice President, local government and village government for stunting prevention 2. Involvement of private sector, civil society and communities 	Secretariat of the Vice President / TNP2K/TP2AK ¹⁶
2.	National campaign and communication for behaviour change	Increasing public awareness and change people's behaviour to prevent stunting	<ol style="list-style-type: none"> 1. Consistent and sustainable behaviour change campaigns for the public 2. Interpersonal communication according to the target context 3. Sustainable advocacy for policymakers 4. Capacity building for organizers 	Minister of Health and Minister of Communication and Information
3.	Convergence, coordination, and consolidation of national, regional and community programmes	Strengthening convergence through coordination and consolidation of programmes and activities on central, regional and village levels	<ol style="list-style-type: none"> 1. Strengthening convergence in planning and budgeting programmes and activities 2. Improvement of programme design and management 3. Strengthening coordination across sectors and between the Government and village levels 	Minister of National Development Planning and Minister of Home Affairs
4.	Nutrition and food security	Increase access to nutritious food and encourage food security	<ol style="list-style-type: none"> 1. Provision of access to nutritious food 2. Expansion of social assistance programmes and nutritious non-cash food assistance for underprivileged families 3. Meeting the food and nutritional needs of the family 4. Strengthening regulations regarding food labels and advertisements 	Minister of Agriculture and Minister of Health Minister of Social Affairs
5.	Monitoring and evaluation	Improving monitoring and evaluation as a basis for ensuring quality service delivery, increasing accountability and accelerating learning	<ol style="list-style-type: none"> 1. Improving data collection system 2. Use of data in results-based planning and budgeting 3. Accelerating the learning cycle 	Secretariat of the Vice President/ TNP2K/TP2AK and BAPPENAS

Source: TNP2K, BAPPENAS and Kemendagri, 2018, *Strategi Nasional Percepatan Pencegahan Anak Kerdil (Stunting)*.

The latest approach of assigning the leadership under the Vice President is intended to strengthen the leadership in coordinating efforts to improve nutrition, particularly related to stunting. Indeed, as discussed in the previous sections, the efforts of linking the production, access and utilization dimensions of food security with nutrition improvement efforts are still less than effective. The fact that various related authorities in food security and the provision of nutrition-sensitive services are

¹⁶Starting in May 2019, support for the implementation of the *Stranas Stunting 2018–2024* has been provided by the TP2AK, which used to be under the TNP2K.

in the hands of district governments also add to the complexity of coordination measures. In this regard, the latest government strategy of pursuing regional targeting and focusing on an integrated approach to targeted districts and villages could potentially produce a more effective result.

To summarize, this chapter demonstrates that while the Government has made important progress on food security and nutrition from 2015 to 2019, some policy gaps remain. The Government has been successful in increasing food production, although there is still a need to catch up with the demand side, pay more attention to diversification of food commodities, address the gender gap in food production and institute special measures to support women farmers and provide them with better access to farm inputs and services. Significant progress has been made in expanding and making social assistance more nutrition sensitive, especially through the PKH facilitators and the SEMBAKO staple foods programme. Moreover, there has been considerable advancement in policies related to food utilization and nutritional improvement, but better coordination is needed to increase their effectiveness. Finally, as the institutional reform related to the DKP is halted, there has been an innovation in developing new and stronger leadership to coordinate policies and initiatives to accelerate stunting reduction under the Vice President's Office. Indeed, coordination between various ministries and institutions at the central level as well as coordination between central and local levels of government still need to be strengthened.

IV. THE IMPACT OF COVID-19 ON FOOD SECURITY AND NUTRITION

This chapter discusses the impact of the outbreak of the COVID-19 pandemic on food security and nutrition in Indonesia, and how the Government has responded to the pandemic as of July 2020. The first section of the chapter looks at the different impacts of COVID-19 on food security and nutrition. It discusses how the economic impact of the pandemic needs to be buffered for different groups like women, children and people with disabilities. It also looks at how the impact of COVID-19 on the provision of health services for pregnant and lactating mothers and children is likely to affect the nutrition status of the mothers and/or children. In the following section, the Government's response to the COVID-19 pandemic is discussed, especially with regard to food security. Based on the analysis presented in these sections, the chapter concludes with some recommendations on what needs to be done to mitigate the adverse impacts of the pandemic on food security and nutrition.

4.1 The Outbreak of COVID-19 and Its Impact on Food Security and Nutrition

The outbreak and transmission of the Coronavirus disease (COVID-19) started in Wuhan, China, in late 2019, spread out on a global scale and was declared a pandemic on 11 March 2020 (Ghebreyesus, 2020). Towards the end of July 2020, more than 15 million people have tested positive for COVID-19, causing more than 610,000 deaths. In Indonesia, the first COVID-19 case was reported on 2 March 2020, and the disease spread rapidly to all 34 provinces. Towards the end of July 2020, COVID-19 in Indonesia had led to about 100,000 confirmed cases and about 5,000 deaths (John Hopkins University, 2020).

The effect of COVID-19 on food security and nutrition should be understood from the broader perspective of the impact of the pandemic on the entire food system. As argued by Schmidhuber, Pound, and Qiao (2020, p. 10), the COVID-19 pandemic may affect food and agriculture through various mechanisms ranging from disruptions in international trade to a decrease in domestic production and decline in people's purchasing power.

In Indonesia, COVID-19 has led to concerns over the food supply. The Minister of Agriculture stated in May that the rice stock was expected to stand at 14 million tons between April and June. The figure exceeded the estimated consumption of 7.6 million tons of rice within these three months (Rahman, 2020a). The country would have a surplus of 6.4 million tons of rice in June 2020. Yet, based on this stock and production forecasts for the second half of 2020, the Government must determine what quantity of rice imports is needed to meet domestic demand. The country usually has a difficult time securing rice availability between November and January, as these months become the season of scarcity (*musim paceklik*). Some evidence shows that rice production would be lower this year than the previous one. According to WFP's estimate, rice production in the first half of 2020 is 13.2 percent lower than in the same period in 2019 (WFP, 2020, p. 24). Rice production might also decline in the second half of 2020 compared to the previous year because 30 percent of the country's areas are expected to face a worse-than-usual dry season this year (BMKG, 2020). WFP also estimates that if rice production during the second semester of 2020 declined by the same proportion as it did during the first semester (-13.2 percent), the country might have a surplus of 3.5 million tons by the end of December 2020. Another estimate by the

Coordinating Ministry for Economic Affairs suggests that rice stock would reach 4.7 million tons at the end of the year. Assuming that domestic consumption of rice is around 2.5 million tons per month, the estimated stock would then only cover an additional month of consumption. Therefore, WFP further writes, "the Government may need to be ready to cover any potential deficit with timely imports" (WFP, 2020, p. 24).

As Indonesia most likely continues to depend on rice imports to supplement its domestic production, COVID-19 may pose additional challenges for the country to maintain its food supply during the *paceklik* period. The risk is that the pandemic might depress the international market for rice while rice-exporting countries might implement export barriers to prioritize domestic needs (Sulser & Dunston, 2020).

Regarding the affordability of food, Indonesia has not faced dramatic increases in food prices since the first COVID-19 case was reported in the country in early March. Except for certain commodities, food prices were relatively stable or even declined during the first half of 2020. Rice prices, for instance, stood at Rp11,850/kg nearly all the time between 13 February and 2 June 2020. The price of rice rose to Rp12,600/kg on 21 May due to the rise of demand during the *Idul Fitri* holidays but fell back to Rp11,850/kg in the following week. A similar trend was also seen for cooking oil prices, which stood at Rp13,750/kg from February to June. Beef prices were also stable, until 21 May, when they rose to a peak of Rp122,900/kg; overall, beef prices stood at around Rp118,000/kg between January and June. However, red onion (shallot) prices rose significantly from Rp36,850/kg on 2 March to more than Rp60,000/kg in early June. Sugar prices also increased significantly beginning in late February. Chicken meat prices increased since early May after they declined from Rp35,050/kg on 3 January to Rp28,550/kg on 21 April. On 8 June, chicken meat prices were still around Rp38,650/kg. Thus, the prices of food commodities have been quite stable, but the Government will need to closely watch any changes in prices, especially those for rice.

COVID-19 has primarily affected food access by disrupting people's employment and income, as a result of pandemic-induced social and physical distancing requirements. In the first quarter of 2020, Indonesia's economy grew by only 2.97 percent (y-to-y), much lower than the first quarter of 2019 (5.07 percent) or the fourth quarter of 2019 (4.97 percent). On a quarter-to-quarter basis, the country's economy contracted by 2.41 percent in the first quarter of 2020 (BPS, 2020d). The economy continued to contract during the second quarter of 2020 (5.32 percent), resulting in a huge shock to the economy (BPS, 2020a). Consequently, unemployment and partial unemployment rose significantly. More than 3 million workers lost their jobs fully or partially, based on data from 27 May 2020, with the possibility of more to come. As a result, headcount poverty increased from 24.79 million people (9.22 percent of the population) in September 2019 to 26.42 million people (9.78 percent of the population) in March 2020 (BPS, 2020e). The number of poor people is expected to have increased further in the following months.

There are different estimates on the impacts of the COVID-19 outbreak on poverty. According to the World Bank's estimate, Indonesia was projected to face a poverty rate between 8.2 percent and 11.6 percent in 2020, depending on the severity level of the COVID-19 impact on the economy and the coverage of the Government's social assistance package (World Bank, 2020b, p. 24). Another estimate by Suryahadi, Izzati, and Suryadarma (2020) suggested that in the best-case scenario poverty would remain below 10 percent if the country can maintain the economy to grow by 4.2 percent in 2020. However, the poverty rate will increase to 16.6 percent if the growth rate drops to 3.5 percent. In the best-case scenario—with only a 0.48 percentage point rise in the poverty rate—the estimated number of people pushed into poverty will rise by 1.3 million. In the worst-case scenario, the poverty rate will increase by 7.4 percentage points, and the number of poor people will reach 44.5 million people as 19.7 million more people will fall into poverty. BPS revealed that the poverty rate increased from 9.2 percent in September 2019 to 9.8 percent in

March 2020. These figures meant that 1.6 million people have fallen into poverty during this period (BPS, 2020e).

As COVID-19 affects people differently, the economic impacts of the pandemic can be more severe in certain groups than in others. For instance, a group of researchers from the Abdul Latif Jameel Poverty Action Lab (J-PAL) found that job loss among people with disabilities was higher than that of the general population (Satriana, 2020). Another survey covering 731 people with disabilities shows that COVID-19 caused 46.8 percent of the respondents to experience a significant drop in income (50-80 percent) and another 22.6 percent of the respondents a moderate drop in income (30-50 percent) (Satriana, 2020).

COVID-19 also affects men and women differently. COVID-19 is likely to have lowered women's participation in the labour market. Before the pandemic, women's labour force participation rate (52 percent) was already lower than men's (62 percent), according to the 2018 National Labour Force Survey (*Survei Angkatan Kerja Nasional*, Sakernas). The proportion of women who worked in the informal sector (62 percent) was higher than that of men (54 percent) (Ministry of Women Empowerment and Child Protection, 2019, pp. 45–58). COVID-19 has further depressed women's labour force participation, as the pandemic severely hit the informal sector and other sectors that employ many female workers like trade, hotels, restaurants and services (Rahman, Kusuma, & Arfyanto, 2020, p. 3).

As incomes decline and poverty rises considerably, the number of people at risk of hunger is predicted to increase during the COVID-19 pandemic. Some evidence indicates that many people bought less food than they usually did. Interviews with grocery store owners by SMERU researchers in Bekasi of East Jakarta, Maros of South Sulawesi, and Badung of Bali in late April and early May 2020 revealed that food sales dropped considerably following the outbreak of COVID-19. According to one grocery store owner in Bekasi, for instance, sales declined by 65–80 percent. Debts to grocery stores or food vendors also increased during this period as many people had only limited or no savings to cope with the loss of income (Hastuti, Widyaningsih & Ruhmaniyati, 2020). In line with this finding, a survey conducted by J-PAL revealed that “only 19 percent of the households reported eating as much as they should in the last week, with 35 percent reporting that they ate less than they should, often due to financial constraints” (Hanna & Olken, 2020).

COVID-19 will adversely affect not only food security but also nutrition. For poor and vulnerable groups, the drop in income has caused not only a decline in food intake but also a deterioration in dietary quality. In many low- or middle-income countries like Indonesia, the prices of staples like rice and maize are much lower than vegetables, fruits and meat. Consequently, people, especially from lower-income groups, are more likely to reduce these types of food when their income decreases. The COVID-19 pandemic also disrupted the transportation of agricultural products, especially perishable ones like vegetables, adding to the costs and making it more difficult for poor households to afford them. As a result, the outbreak of COVID-19 will most likely harm the nutritional status of the poor and vulnerable groups (Headey & Ruel, 2020).

A negative impact of the COVID-19 outbreak on nutrition may have also been caused by disruptions in the Government's programme on health and nutrition such as the integrated health service called Posyandu (*Pos Pelayanan Terpadu*, Village Health Post). In 2014, there were 289,635 Posyandus that served 82,190 villages across the country. Posyandus have been instrumental in providing supplementary foods (e.g. fortified biscuits) and food supplements for young children and pregnant and lactating mothers. Besides, the Posyandus became the first contact of health services for pregnant mothers and mothers of young children to monitor the progress of their pregnancy or the growth of small children (Rokx, Subandoro & Gallagher, 2018, p. 36). But many Posyandus have reduced operations or closed completely during the COVID-19 pandemic. A survey of health

facilities by UNICEF (2020) shows that around 64 percent of Posyandus that responded stopped operating partially while the other 36 percent stopped completely during the pandemic.

Not only did COVID-19 affect Posyandus but it also affected community health centres (*Pusat Kesehatan Masyarakat*, Puskesmas). According to a UNICEF survey, 32 percent of the responding Puskesmas shut down completely while the rest reduced their operations due to the pandemic (UNICEF, 2020). SMERU's rapid assessment of the impact of COVID-19 on the health sector shows that immunization and health care services for pregnant mothers declined in areas severely affected by COVID-19 like Badung, Bekasi and Maros (Saputri et al., 2020). A more recent survey by the MoH revealed that 84 percent of health care services were affected by COVID-19 (Sagita, 2020). As of April, this disruption lowered the coverage of basic immunization among children under 5 by nearly 20 percent compared to April 2019. The number of children receiving all basic vaccinations fell from 1.2 million in April 2019 to 0.97 million children in April this year (Susanti, 2020).

4.2 Government Responses to the Outbreak of the COVID-19 Pandemic

4.2.1 Policies on Disease Prevention and their Implications on Food Security

In late March 2020, Indonesia decided to pursue social distancing policies to curb the spread of COVID-19. But different from countries like India, which implemented a nationwide lockdown, Indonesia opted for a partial lockdown called Large-Scale Social Restriction (*Pembatasan Sosial Berskala Besar*, PSBB) to be implemented at the sub-national level. According to the Government Regulation (*Peraturan Pemerintah*, PP) No. 21/2020, which was signed by President Widodo on 31 March 2020, provincial and city or district governments might implement PSBB in their areas with the approval of the MoH. Jakarta became the first province to implement PSBB. On 10 April, the Governor of Jakarta issued Regulation No. 33/2020 and Decree 380/2020 that began the implementation of large-scale social restrictions in the country's capital city. Many provincial and district governments followed suit due to the spread of the coronavirus in their areas. By 23 May 2020, 4 provinces and 25 districts and cities implemented PSBB (Priastuti, 2020).

The PSBB aimed at restricting people's movements and social activities that can lead to a crowd. As stipulated by the PP No. 21/2020, sub-national governments could instruct the closure of schools, workplaces and places of worship, and put restrictions on sports, cultural and public events. In line with this physical distancing policy, the central Government also imposed restrictions on public transport and the use of private cars. According to the MoH Regulation No. 9/2020 on the PSBB Guideline, all modes of transportation had to limit the number of passengers to a maximum of 50 percent of vehicle capacity. To further restrict people's movement, the central Government banned annual *mudik* (exodus) on the *Idul Fitri* holidays (Tambun, Lumanaw, & Putuhena, 2020); it banned commercial passenger flights, land and water (sea) transportation from 24 April 2020 until 1 June 2020, with some categories of official travelers being exempted.

Despite the Government's efforts to maintain the country's supply chain system, the implementation of PSBB brought negative consequences to the distribution of foodstuffs and other necessary goods. According to the head of Gadjah Mada University's Center for the Study of Transportation and Logistics (*Pusat Studi Transportasi dan Logistik*), the implementation of PSBB caused disruptions in the supply chain system, which, in turn, contributed to delays in the distribution of medical and foodstuffs (Grehenson, 2020).

COVID-19 and PSBB affected the distribution of agricultural commodities in several ways. The implementation of PSBB adversely affected the tourism industry in general; many hotels and restaurants had to close due to a drop in visitors. This condition adversely affected the agricultural sector as demands for foodstuffs fell considerably. At the same time, the implementation of PSBB led many local governments not only to reduce the operation time of traditional markets but even to close them. This policy made it difficult for farmers to sell their products. Second, the implementation of PSBB, especially the restrictions on flights and other means of transport, contributed to the disruption of the logistical system of certain areas that are dependent on other regions to supply their food needs. In a cabinet meeting on 28 April 2020, President Widodo stated that the implementation of the PSBB had adversely affected the distribution of food and other necessary goods in certain regions. For example, there had been a deficit of rice in seven provinces, maize in 11 provinces, chili in 23 provinces, and eggs in 22 provinces (Taher, 2020b).

4.2.2 Measures to Ensure Food Availability

The outbreak of COVID-19 raised concerns over the availability of certain food commodities in Indonesia. First, there was the fear that the negative impacts of COVID-19 on international trade could harm countries like Indonesia, which are dependent on imports to meet domestic food demand. Indonesia's soybean, sugar, and beef supplies are highly dependent on imports; although, to a limited extent, the country is also dependent on the import of rice. Even though rice imports were only 4 percent of domestic production in 2018, the import was important to maintain the stability of domestic food prices and the country's food security. As shown by Yusuf and Sumner (2015, p. 340), a small increase in rice prices could lead to a substantial increase in the incidence of poverty. According to their estimate, 1 percent increase in the price of rice would increase the poverty rate in the country by more than 1 percent. Second, there was a fear that the COVID-19 pandemic might also affect domestic agricultural production. Some estimates suggest that the domestic supply of agricultural products in Indonesia was expected to decline by 6.2 percent (McKibbin & Fernando 2020 in Amanta & Aprilianti 2020, p. 3).

Anticipating the impact of COVID-19, the Circular of the Secretary General of the MoA No. 1056/SE/RC.10/03/2020 on the government strategy to cope with the impacts of COVID-19 on the agricultural sector stated that the Government would concentrate on five priorities: (1) ensuring the availability of staple foods, especially rice and maize; (2) expediting export of strategic commodities to maintain the country's economic growth; (3) informing farmers and extension workers about the protocols of the MoH to contain the spread of the virus; (4) developing agricultural markets in each province, increasing the consumption of local food and building logistics infrastructure and e-marketing systems for agricultural commodities; and (5) implementing manpower-intensive projects in rural areas to help develop the agricultural sector and provide the rural societies with money to cushion the negative impacts of COVID-19.

As part of its effort to stabilize food prices, the Government relaxed import restrictions on some commodities, especially as the country was entering the *Idul Fitri* holidays on 24–25 May 2020. For garlic and onion, for example, the Minister of Trade issued Regulation No. 27/2020, which lifted from 19 March to 31 May 2020 the non-automatic import licensing system that requires importers to obtain an import license (*Surat Persetujuan Impor*) and surveyor report from the Ministry of Trade. The Ministry of Trade also relaxed import restrictions for sugar and allowed not only private importers but also state-owned enterprises to import the product. By the end of April 2020, the Ministry of Trade granted permits for the import of over 680,000 tons of raw sugar (Rahman, 2020b).

One important issue concerning food availability is if and at what point there should be a decision to import rice. Since the early days of the COVID-19 outbreak, some observers advised the

Government to import rice as soon as possible to anticipate potential negative impacts of COVID-19 on domestic food supply. They argued that domestic rice production was predicted to decline this year as there was the forecast of a hotter-than-usual dry season this year. As a result, rice production in 2020 would be lower than that in 2019. Some agricultural economists indicated that without imports, Indonesia would face rice shortages between November 2020 and January 2021 (Lidyana, 2020). However, the Minister of Agriculture highlighted that Indonesia would have enough rice beyond the end of the year. It was estimated that rice stocks would stand at 6.1 million tons of rice in December 2020, so no imports would be needed (Asmara, 2020). The development of rice stocks towards the end of 2020 will need to be closely watched though.

Other policy measures taken by the Government included the release of food stocks to the market to lower the prices of food commodities. Such market operations could be carried out not only by the central Government but also by provincial or local governments; it is meant to maintain both food availability and stability of food prices. For the same purpose, the Government allocated Rp25 trillion to support the logistics infrastructure for the physical movement of food. The Government also provided incentives for farmers to maintain their production. For this purpose, the Ministry of Trade revised the existing regulation on the domestic procurement of rice by issuing Minister of Trade Regulation No. 24/2020 on the Government's purchasing price. The regulation stipulates that BULOG will buy farmers' rice if the commercial price of rice falls below the Government's purchasing price. Thus, as part of its economic stimulus packages to respond to the outbreak of COVID-19, the Government has been monitoring and ready to intervene in the market to maintain the availability of rice and the stability of its price.

4.2.3 Measures to Ensure Access to Food for Poor and Vulnerable People

As part of Indonesia's responses to the impacts of COVID-19 on the economy and people's well-being, the central Government allocated funds from the state coffers to prevent negative economic growth and help poor and vulnerable people deal with the difficult economic conditions caused by the pandemic and related social and physical distancing measures. In February 2020, the Government announced two rounds of stimulus packages worth Rp10.3 trillion and Rp22.9 trillion each (US\$0.7 billion and US\$1.6 billion).¹⁷ The first package, which was announced on 25 February 2020, was intended to provide food assistance and mortgage subsidies for low-income households as well as fiscal incentives for travel-related businesses while the second provided individual and corporate tax cuts (Akhlas, 2020a).

In the following month, the Government unveiled a bigger stimulus package. On 20 March 2020, the Minister of Finance stated that the Government would re-allocate Rp62.3 trillion (US\$3.9 billion) of state funding from the 2020 budget to tackle the COVID-19 pandemic. The budget would be used to strengthen the country's rescue packages in three sectors, namely health care, social protection and businesses (Akhlas, 2020a). Ten days later, the Government revised the plan by announcing a bigger stimulus package that would boost state spending by up to Rp405.1 trillion (US\$24.7 billion). Of the extra spending, Rp150 trillion (US\$9.1 billion) would be allocated to finance economic recovery programmes like credit restructuring and financing for small and medium businesses. The second-largest part of the spending, Rp110 trillion (US\$6.7 billion), would go to social protection programmes, such as conditional cash transfers/Family Hope Programme (PKH), food assistance (mainly SEMBAKO) and pre-employment card programmes, while the rest would be allocated to health care (Rp75 trillion, US\$4.6 billion), tax incentives and credit for businesses (Rp71 trillion, US\$4.3 billion) (Gorbiano & Akhlas, 2020).

¹⁷The Indonesian Rupiah (Rp) depreciated against the United States Dollar (US\$) during the first few months of 2020, declining from Rp13,895 per US\$1 on 2 January 2020 to Rp16,241 on 9 April 2020. The Indonesian Rupiah subsequently gained strength and reached Rp14,502 per US\$1 on 2 June 2020 (Bank of Indonesia, 2020).

When the Government first unveiled its social protection plan for the COVID-19 response, some of the programmes, especially those that were implemented to tackle the outbreak of the pandemic like the increase in social protection programmes, were planned to be implemented for the duration of three months (April to June). However, as it became clear that the pandemic would last longer, the Government extended the duration of the programmes until the end of 2020. The Government also increased the economic stimulus budget from the initial amount of Rp405.1 trillion (US\$24.6 billion) announced in early April to Rp641.2 trillion (US\$44 billion) in May, and further increased to Rp677.2 trillion (US\$47.6 billion) in early June.¹⁸ Out of this figure, Rp203.9 trillion (US\$14.3 billion) was allocated for social protection. Table 9 shows the budget allocation for social protection programmes during the COVID-19 outbreak.

Table 9. Expansion of Social Protection Programmes during the COVID-19 Outbreak

No.	Social Protection Programmes	Budget (Trillion Rupiah)	Number of Households		Allowance	
			Before COVID-19	During COVID-19	Before COVID-19	During COVID-19
1.	Conditional Cash Transfers/Family Hope (PKH)	37.4	9.2 million	10 million households	Depending on the number of children, people with disability and elderly covered	The allowance increased by 25 percent
2.	Food Assistance (SEMPAKO/BPNT)	43.6	15.2 million	20 million households	Rp150,000 (per month)	Rp200,000 (per month)
3.	Social Assistance (SEMPAKO) Jabodetabek	6.8	N/A	2.4 million households (for 3 months), then 1.3 million (for 6 months) *	N/A	Rp600,000/month (for 3 months), then Rp300,000/month (for 6 months)
4.	Unconditional Cash Transfer Non-Jabodetabek	32.4	N/A	9 million households	N/A	Rp600,000/month (for 3 months), then Rp300,000/month (for 6 months)
5.	Pre-employment Card	20	N/A	5.6 million individuals	N/A	Rp1 million for training fee, and Rp600 thousands each month for 4 months
6.	Electricity Subsidy	6.9	N/A	24 million households that had 450 VA, 7 million households that had 900VA	N/A	Free electricity for households that had 450VA (6 months) and 50% discount for households that had 900VA (6 months)
7.	Unconditional Cash Transfer from Village Fund (BLT Dana Desa)	31.8	N/A	11 million households	N/A	Rp600,000/month (for 3 months), then Rp300,000/month (for 3 months)
8.	Logistics/Food	25	N/A	N/A	N/A	Logistics and food supplies during the COVID-19 (i.e. Market Operation)

Source: Compiled from various sources.

*Jointly provided by Ministry of Social Affairs and the Provincial Government of DKI Jakarta for the first three months, and then by the Ministry of Social Affairs.

¹⁸Presidential Regulation (Perpres) 72/2020.

The extra spending allowed the Government not only to expand the coverage of the existing social protection programmes but also to introduce new programmes to tackle the effects of COVID-19. These programmes include, among others, the President's Social Assistance (Sembako Bantuan Presiden) for Greater Jakarta Area (Jabodetabek), Social Cash Assistance for non-Jabodetabek area, and Pre-Employment Card (Program Kartu Prakerja). The last programme (Pre-Employment Programme), which was originally intended to provide a training for workers to improve their skills, has been adjusted to the COVID-19 crisis situation (Akhlas, 2020b). The required infrastructure to implement the programme was not ready yet when the pandemic hit the country in early March. However, the necessity to address the massive rise of unemployment due to COVID-19 led the Government to modify the scheme. It used the programme not only to give training but also to give the participants some money to cushion the impact of the pandemic. Without the pre-employment card programme, it would have been difficult for the Government to reach the programme participants as they were usually above the "bottom 40 percent" income category that is the main target of the Government's social protection programmes (Dharmasaputra, 2020).

In response to the challenges faced by the Government in adjusting to the pandemic situation, the targeting mechanism and the distribution of social assistance, the Government introduced some new initiatives in the targeting approach of the social assistance programmes, especially for new programmes that were implemented due to the COVID-19. Unlike the expansion of regular programmes like PKH, which used DTKS as a source of beneficiary data, programmes like the Jabodetabek and non-Jabodetabek social assistance programmes combined DTKS and data from the local database submitted by the local government to generate the target beneficiaries. Different from these modes of targeting programme beneficiaries, the Pre-Employment Card used an 'On-Demand System' where anyone between 18-65 years old and not in schools can apply to get the programme benefit, which includes training voucher and cash assistance.

The linkages between the Government's response to COVID-19 and food security can be seen more clearly in the existing social protection programmes such as the conditional cash transfer Family Hope Programme (PKH) and food assistance (SEMBAKO/BPNT). Not only did the Government increase the allowance but it also expanded the coverage (Table 9). First, the Government put an additional Rp8.3 trillion to the PKH to increase the number of programme recipients from 9.2 million to 10 million households starting from April 2020. The Government also increased the PKH allowances by 25 percent. Second, the Government raised the number of SEMBAKO/BPNT recipients from 15.2 million to 20 million households. Like in the case of PKH, the Government increased the value of the SEMBAKO/BPNT allowance by 33 percent for nine months, from Rp150,000 to Rp200,000 per household per month. For this purpose, the Government added Rp10.9 trillion to the SEMBAKO/BPNT programme. Third, the Government allocated some Rp25 trillion to distribute food packages in the Greater Jakarta Area (Jabodetabek). Fourth, the Government decided to provide unconditional cash transfers named social assistance (*Bantuan Sosial*) to 7.5 million households. Each beneficiary household was to receive Rp600,000 per month (Hastuti et al., 2020).

The increase of 67 percent in the third economic stimulus plan compared to the first plan indicates a significant improvement in the policy response to COVID-19. However, a comparison with other countries suggests that Indonesia might need to allocate even more funds to tackle the effects of the COVID-19 outbreak effectively. As a percentage of gross domestic product (GDP) (2018), Indonesia's most recent economic stimulus plan (Rp677.2 trillion or US\$47.6 billion) stood at around 4.6 percent. The figure is much lower than that of Singapore (11 percent), Malaysia (18 percent) or Japan (20 percent) (Bata, Muslim, & Mariska, 2020). The Indonesian Chamber of Commerce and Industry (*Kamar Urusan Dagang dan Industri*) suggested that the country boost its economic stimulus package to Rp1,600 trillion (US\$113.5 billion) or around 11 percent of GDP.

The limitation of Indonesia's COVID-19 stimulus package can be seen in the budget allocation for social protection programmes. Although funding for the programmes did increase by 85 percent, from Rp110 trillion in the first announcement to Rp203.9 trillion in the third announcement, a closer look at the allowances suggests that budget constraints limited the Government's capacity to provide economic assistance to poor and vulnerable groups to cushion the economic impacts of COVID-19. This problem can be seen in the programmes that were newly introduced to tackle the pandemic like the social assistance programme (*Bantuan Sosial*). While the Government extended the duration of this programme to the end of the year, it reduced the allowance for each recipient household by 50 percent. While it is certainly still helpful for the recipients to cushion the negative impacts of COVID-19, the transfers might be too small to actually prevent the households from falling into poverty.

The effectiveness of social protection programmes in assisting households in coping with the impacts of COVID-19 was plagued with implementation problems ranging from delays in the delivery of the programme benefits to mis-targeting. Some believed that these problems resulted from the rigidity of bureaucratic procedures in processing the deliveries (Taher, 2020a). Yet, more than that, the problem is deeply rooted in the absence of good institutional infrastructure that allows the Government at the national and sub-national levels to effectively deal with a large-scale disaster like COVID-19. At the core of the issue is the absence of a proper mechanism to update DTKS, the lists of households entitled to receive social protection transfers (Oley, 2020). Despite the best knowledge about the shortcomings of the existing system of identifying and updating the list of potential social protection programme recipients, the central Government has not yet developed a system that would address the challenges faced by government officials at the sub-national level with updating the database. The absence of a proper mechanism for updating the database made it difficult to swiftly coordinate the social protection response to the COVID-19 pandemic.

4.3 Addressing the Impacts of COVID-19: What Needs to Be Done

This section recommends measures that need to be taken to address the impacts of the COVID-19 pandemic on food security and nutrition. As the pandemic is ongoing, there is still much uncertainty on how the impact of COVID-19 on food security and nutrition will unfold in the next few months or even years. Although it has been about five months since the first COVID-19 case was reported, the transmission rate in the country remains high. Since the second week of July 2020, the number of identified COVID-19 infected cases increased on average by more than 1,500 per day, which was higher than in the previous months (Gugus Tugas Percepatan Penanganan COVID-19, 2020). Based on the analysis of the impact of the pandemic on the socioeconomic conditions of society in the last few months, some recommendations are made to decision makers to deal with the impacts of COVID-19 on food security and nutrition.

Food Availability

1. Rice production is predicted to be lower this year compared to 2019. In fact, COVID-19 is likely to affect the international market of rice. Therefore, taking all described facts and risks into consideration, the Government needs to closely monitor the rice stocks in the country and pursue a more flexible trade policy and make timely import adjustments when necessary. A late decision on this matter could have serious consequences for the country's food security.

2. To address the negative impacts of COVID-19 on domestic food production, it is also important for the Government to maintain farmers' incentives to uphold food production by ensuring input supplies, mobility of farmworkers, concessions for loan repayment and links to the market, for rice and other food commodities. This will need resource mobilization from various sources, such as the Village Fund and agriculture-fintech start-ups for technology and capital boosts.
3. For retailers and consumers, improvement in the transportation and overall supply chain system is required to ensure that food commodities—especially perishable items such as vegetables, fruit, fish and meat—remain available and prices do not rise.

Food Access

1. The Government needs to continue to ensure that all poor and vulnerable households receive sufficient social assistance to cushion the economic impacts of COVID-19 on their well-being, especially food consumption. As the pandemic affects various socioeconomic groups differently, the Government will need to pay attention to the condition of specific groups, namely those that work in the informal sector and among them especially women, people with disabilities, the elderly and female-headed households.
2. To mitigate the negative impacts of COVID-19 on food insecurity and nutrition, not only does the Government need to accelerate the effort to update the DTKS but they also need to enhance the mechanism to regularly update the DTKS. Efforts also need to be undertaken to develop mechanisms to match the data bases of the PKH and the SEMBAKO programmes, one having the entitlements in the name of a woman and the other in the name of the (mostly male) head of household.
3. Sub-national governments need to consider extending the provision of social assistance to the poor and vulnerable groups, especially those uncovered by the programmes of the central Government, after the end of the PSBB in their areas. The Government also needs to consider extending the use of some part of the Village Funds for social assistance during the pandemic. This would help increase the coverage of social protection programmes during the COVID-19 outbreak. Other than strengthening the existing social protection programmes, the Government may support various initiatives pursued by non-profit or community-based organizations to help the poor and vulnerable groups to access sufficient food.

Food Utilization

1. The Government needs to ensure that children, women of childbearing age and pregnant and lactating mothers can have access to basic health services. Therefore, integrated health posts (Posyandus) and community health centres (Puskesmas)—especially those that had been closed in the last few months due to COVID-19—need to be reopened without compromising the health of both health workers and patients. The Government will have to develop specific health protocols and new ways of operating the basic health facilities to deal with COVID-19.
2. The Government should continue its deworming programme, even during the COVID19 period to reduce the prevalence of soil-transmitted *helminthiases* among children. This should be conducted by distributing deworming tablets to all pre-school and school-aged children, especially in poor areas, even if schools are closed.
3. Specific efforts are also needed to continue expanding access to clean water, especially for the poor and vulnerable groups. The expansion will be necessary not only to enhance food utilization but also to stay healthy.

Nutrition

1. To prevent acute and chronic malnutrition in this crisis, the Government needs to expand the provision of supplementary foods such as fortified biscuits, especially to help children and pregnant and lactating mothers from vulnerable groups that are not covered by the PKH to keep meeting nutritional requirements. The goal is to prevent stunting or wasting among children but also micronutrient deficiencies among them and their mothers.
2. The Government also needs to enhance knowledge and awareness of social protection and nutrition programme transfer recipients about healthy diets and how to prevent malnutrition. This can be undertaken, for example, by strengthening the Posyandu *cadres*' and PKH facilitators' knowledge and delivery sessions on maternal childcare including nutrition. Otherwise, there is a high risk that the beneficiary households, especially of the PKH, do not use a portion of the (increased) transfer amounts for more diversified diets.

This chapter has shown that COVID-19 is likely to have serious impacts on Indonesia's food security and nutrition unless social protection measures are fully effective. The effects of marketing and supply chain disruptions during the pandemic add to the already existing challenges faced by the Government in ensuring the availability of food. Poverty has increased, and consequently the strain on food purchase capacity, and food consumption quantity and quality. There is a high likelihood that malnutrition will increase across the country as poorer households have to focus on providing sufficient quantities of food to their members rather than the quality of a diversified diet. Moreover, the pandemic also adversely affects access to and use of health care facilities, which is especially critical for pregnant and lactating mothers and small children. The Government needs to continue taking measures to mitigate the negative impacts of the pandemic on food security and nutrition.

V. CONCLUSIONS AND RECOMMENDATIONS

This chapter presents conclusions from this study and recommends ways for Indonesia to strengthen its policies and programmes to improve food security and nutrition.

5.1 Conclusions

Indonesia has made significant progress in improving food security and nutrition. Access to food increased and undernutrition declined in all age categories. Nevertheless, some problems still loom large. Despite the progress made, food availability and dietary diversity still need to be improved. For many poor and vulnerable groups, prices remain an important barrier for access to food. At the same time, the diversity of food supply needs to be improved. Fruits and vegetable consumption is low by international standards. Systematic efforts are needed to improve not only people's dietary patterns but also the availability of diversified food at affordable prices.

The country also faces new problems and challenges in nutrition due to the rise of the triple burden of malnutrition. While important but not yet sufficiently strong progress has been made by the Government in reducing stunting, underweight and wasting, overnutrition measured by overweight and obesity has been on the rise since the early 2000s. At the same time, Indonesia also has to deal with the high prevalence of 'hidden hunger' or micronutrient deficiencies, especially among children, women of childbearing age and pregnant and lactating mothers.

Improving food security and nutrition has been on Indonesia's development agenda for decades. Almost every area of food security and nutrition is covered by Government policies or action plans, in some cases overlapping. However, organizational silos established by ministries do not lend themselves to coordination or integration of programmes. Consequently, there is insufficient collaboration or cross-fertilization between policies and programmes implemented by different ministries. A case in point is the promotion of healthy diets, overseen by both MoA and MoH. Despite the potential linkages between the two, institutional barriers prevent them from building up an effective collaboration; the MoH focuses on nutritional requirements of a diet without liaising with the supply side of diversified diets (MoA) while the MoA focuses on the availability of food with insufficient attention to the nutritional value of the food produced (MoH).

The lack of coordination of policies and programmes may not be the only factor preventing more diversified food systems for healthy diets. Insufficient monitoring and evaluation looping back to programme enhancements is another crucial factor. This may explain the relatively slow response of the Government in dealing with new challenges Indonesia faces in improving food security and nutrition. For example, to fully address the triple burden of malnutrition, an overhaul of the entire food system is needed for the betterment of the population's long-term health and productivity as well as for improving the livelihoods for both male and female smallholders.

This update of the *Strategic Review of Food Security and Nutrition* also highlights areas in Indonesia's food security and nutrition information system that need to be strengthened. For example, for more than a decade Indonesia has not collected representative data on micronutrient deficiencies, except for anaemia. Data on distribution and effectiveness of iron tablets among women and girls or deworming tablets among children are also missing due to the absence of rigorous evaluations of respective Government programmes. Consequently, it is difficult to get a

good understanding of the impact of the programmes funded by the Government's health budget year-on-year.

Without regularly obtaining updated data on household well-being, expanding the country's social protection programmes also becomes a major problem, resulting in less capacity to mitigate the negative impacts of large-scale shocks such as those caused by COVID-19. Without regular household level data, it is difficult for the Government to determine and improve coverage and effectiveness of policies and programmes on food security and nutrition. Such data is necessary to effectively monitor which groups and areas are at risk of being left behind and require special attention.

Gender inequality is another crucial issue that hampers Indonesia's efforts to improve food security and nutrition. Despite mainstreaming gender in its development goals over the last couple of decades, gender inequality persists in terms of participation and access to socioeconomic opportunities and resources. As these inequalities can be rooted deeply in local culture and value systems, the Government's way forward will need to be through policies and programmes that are based on solid situational analyses that inform a gradual strategic transformation of gender relations towards full participation of both men and women in all spheres of life, benefitting their families and the society as a whole. This requires not only more gender-disaggregated data but also contextual analysis of gender inequalities.

Last, but not least, as food insecurity and undernutrition are likely to increase due to COVID-19, the Government's role in maintaining and improving food security and nutrition, especially for poor and vulnerable groups, is increasing during and in the aftermath of the pandemic. Nevertheless, COVID-19 can also provide an opportunity for the Government to enhance its policies and programmes. For example, the challenge of mitigating COVID-19 impacts on food security and nutrition can be an opportunity for the Government to accelerate the development of systems that ensure regular data updates in the Integrated Database for Social Welfare (DTKS).

5.2 Recommendations

Although there has clearly been progress in improving both food security and nutrition since the 2014–2015 Strategic Review of Food Security and Nutrition, Indonesia continues to face challenges in the design and implementation of policies and programmes that will allow the country to achieve SDG 2. The unforeseen outbreak of COVID-19 adds further challenges as the pandemic adversely affects nearly every dimension of food security and nutrition, as well as other human development dimensions unless the population is strongly cushioned by effective government measures, which will also allow a better and faster rebound when conditions improve. Concerted actions are needed on many fronts simultaneously for the Government to get back on track and steer the country towards achieving SDG 2 and ensuring that no one is being left behind.

As a result, this *2019–2020 Update of the Strategic Review of Food Security and Nutrition* makes the following central recommendations.

Overall, the Government needs to broaden its policy focus to address the triple burden of malnutrition and further promote a balanced diet.

(1) Broader policy focus beyond stunting to address the triple burden of malnutrition. Indonesia faces not only stunting and wasting, but also growing overnutrition and micronutrient deficiencies. A triple burden of malnutrition has emerged which needs to be tackled to prevent

productivity losses and high health insurance costs. Therefore, it is recommended that the Government broaden its policy focus beyond stunting (and wasting) towards overnutrition and micronutrient deficiencies. Improved knowledge of all forms of malnutrition is required among officials who engage in human and economic development planning at central and local levels.

Second, more disaggregated data collection and analysis (by age, sex, gender, etc.) will be instrumental for the Government and the population at large to address the triple burden of malnutrition effectively. Important information about certain dimensions of malnutrition, like micronutrient deficiencies, continues to be missing and warrants a representative survey.

- (2) Promote a balanced diet through a comprehensive approach, both on the demand as well as the supply side.** The low dietary diversity of many—if not most—Indonesians results to a large extent from a lack of awareness about the importance of a diversified and healthy diet. On the one hand, there's a lack of demand for, and consumption of, a diversified food basket, and, on the other hand, a lack of availability of diversified food at affordable prices. Thus, the promotion of a balanced diet should be done through effective social and behavioural change communication with the population.

As a first step towards promoting a balanced diet, the Government should not only raise people's awareness about the importance of a balanced diet for their health but also encourage and facilitate behavioural change on food consumption. In 2014, the MoH issued new guidance on balanced diets, communicated through the slogan "Fill up My Plate" (*Isi Piringku*). This slogan has been institutionalized in the Government's Healthy Living Community Movement called GERMAS.

Effective mass communication strategies and outreach to a widespread population are needed to disseminate the guidance of a balanced diet and promote respective behavioural change. In addition to mass communication—including through social media—the Government should enhance the use of more traditional channels, such as schools, community health centres (Puskesmas), integrated health posts (Posyandus) with their volunteer *cadres* and PKH facilitators who regularly reach out to low-income social protection beneficiaries. Diversified foods need to be made available in the SEMBAKO *e-warongs* for those who depend on social protection and in the market for the general population, at affordable prices.

To attain these strategic goals, the Government should improve policies and programmes in dealing with the problems and challenges in raising food production, improving people's access to food, and improving food utilization.

- (3) Improve access to diversified food through the development of diversified, resilient and nutrition-sensitive food systems.** To further support the promotion of balanced diets, it is important to ensure and facilitate the production of diversified food in a way that maintains and adapts to the environment, makes best use of the skills of both men and women farmers and allows the producers and their families to make a decent living, allows for marketing in the locality and in deficit areas, and ensures availability of diversified foods with higher portions of vegetables, fruits and sources of proteins in the consumer markets at affordable prices. What's required is a move towards more diversified and nutrition-sensitive agricultural production systems that maintain rice (and other staple) production as a basis for an increasing population, but that also create room for more vegetable and fruit production as well as sources of plant and animal protein.

Investment packages, availability of inputs and agricultural extension services would need to be made available by the Government, or the private sector could be encouraged to establish

contract farming for higher value perishable fruits and vegetables. The use of a skilled digital extension service that brings innovations into producer communities may be considered if this is not already available. Conscious efforts are needed to ensure that production structures and technology are resilient to climatic shocks, which are likely to affect the country's agricultural system in the near future.

Improvements must be made in the distribution system of perishable items like fruits and vegetables as well as fish and meat. This includes the development of local value chains for perishable products that allow consumers to have better options while at the same time help farmers achieve better prices for their products. Increased cold chains, including warehouses, are likely to be needed for some products.

The social affordability of diversified food also needs further enhancing. The Government has already integrated a diversified food basket into the SEMBAKO programme. Beneficiary households need to be attracted to purchasing them from the *e-warongs*, however. As there is a significant overlap between PKH and SEMBAKO beneficiary households, it is recommended that the PKH facilitators' knowledge and training skills on the benefits of diversified food consumption and other nutrition-related practices be thoroughly strengthened. Also, Posyandu *cadres*, who are closest to the local community, should be trained to increase nutrition knowledge.

- (4) Ensure social protection programmes are targeting those most in need.** As overall funding for social protection programmes is limited, the Government needs to ensure that inclusion and exclusion errors are prevented as much as possible. As the COVID19 crisis has demonstrated, it is fundamental that DTKS be continuously verified and updated at the local level. This is a longstanding challenge. It is hence recommended that this be tackled by the Government on a priority basis. Equally required is the proper matching of databases as some programmes (e.g. PKH) use the woman's name to identify the household recipients while others (e.g. SEMBAKO) use the household head's name (usually the husband). Attention should also be put on addressing regional inequalities by ensuring that social protection programmes are adapted to the local context, to the extent possible.
- (5) Ensure proper utilization of food.** As only healthy bodies can appropriately utilize a diversified diet it remains fundamental that access to decent sanitation including toilet facilities be expanded, especially for poor and vulnerable groups, also in remote places, so that open defecation will be eliminated. The Government also needs to expand the coverage of clean water. The coverage of health services, especially for children and pregnant and lactating mothers is also fundamental and needs to be increased. The outbreak of COVID-19 has adversely affected the provision of health care services for women and children, as many Posyandus and Puskesmas stopped their activities partially or completely during the pandemic. It is also important for the Government to ensure continued availability of adequate medical prevention and treatment services like vaccinations and deworming tablets for children and food supplements, as well as supplementary foods for pregnant and lactating mothers.

These policy and programme improvements should be supported by stronger gender sensitivity, monitoring and evaluation, and institutional support.

- (6) Address gender inequality to improve food security and nutrition.** The Government should increase women's access to health care services and enhance gender equality in the economy and overall food systems. Evidence shows that women have a crucial role in maintaining food security and nutrition. First, at the household level, resource allocations by women have better impact on household food security and nutrition than when allocated by men. Nevertheless,

access to household resources is unequal between men and women. Various factors ranging from culture to education and labour market participation put women as wives in a less advantageous position than their husbands in gaining the needed resources or securing access to them. Second, women also play an important role in food production. Yet, access to land, agricultural inputs and credit are also unequal between men and women (FAO, 2019a). Third, as mothers, women have significant impacts on the nutritional status of their children. However, many women themselves suffer from undernutrition, overnutrition or micronutrient deficiencies. The Government needs to address these problems and help women to not only have better access to health services but also equal access to economic opportunities.

- (7) Strengthen the monitoring and evaluation system to enhance policies and programmes on food security and nutrition.** The Government should strengthen its monitoring and evaluation system on food security and nutrition. Depending on the cycle of the policies and programmes, rigorous monitoring and evaluation should be conducted regularly or periodically to assess not only the target achievement of the policies or programmes but also their cost effectiveness. More importantly, a proper mechanism should be put in place to ensure that the results of the monitoring and evaluation will loop back to policy or programme enhancement. This would require strong political leadership authorized to enforce or facilitate the adoption of policy recommendations made by monitoring or evaluating officers on improving design or implementation of the policies or programmes on food security and nutrition.
- (8) Strengthen the governance of food security and nutrition or food systems as a whole through the development of an effective coordinating agency.** The Government should strengthen its policies and programmes on food security and nutrition and consider them as an integral part of a food system. The 2014-2015 Strategic Review recommended that the Government develop a food security and nutrition agency that would be chaired by the President to govern food security and nutrition in the country. The agency would have the authority not only to advise the President on developing policies governing different aspects of food security and nutrition, but also to implement specific policies and programmes on food security and nutrition and the food system as a whole. This plan for a food security and nutrition agency has not (yet) been adopted by decision-makers. Such an institution, however, continues to be needed to address many new challenges faced by Indonesia in the areas of food security and nutrition as well as to coordinate among ministries, agencies and the private sector; and to secure the resources needed for improving food security and nutrition. Such an institution can be gradually developed by strengthening an existing agency, such as expanding the tasks and authority of the Stranas Stunting – under the leadership of the Vice President. The task and authority of this institution could include not only stunting reduction but also other challenges related to food security and nutrition, especially since Indonesia faces a triple burden of malnutrition.

LIST OF REFERENCES

- Abeshu, M., & Geleta, B. (2016). The Role of Fortification and Supplementation in Mitigating the "Hidden Hunger." *Journal of Nutrition and Food Sciences*, 6(1), 4. DOI: 10.4172/2155-9600.1000459
- ADB. (2019). *Policies to Support Investment Requirements of Indonesia's Food and Agriculture Development During 2020-2045*. Manila. DOI: 10.22617/TCS190447-2
- Aditianti, Permanasari, Y., & Julianti, E. D. (2015). Pendampingan Minum Tablet Tambah Darah (TTD) Dapat Meningkatkan Kepatuhan Konsumsi TTD pada Ibu Hamil Anemia. *Penelitian Gizi Dan Masyarakat*, 38(1), 71–78. DOI: 10.1016/j.ehb. 2017.09.005.
- Aizawa, T., & Helble, M. (2017). Socioeconomic Inequality in Excessive Body Weight in Indonesia. *Economics and Human Biology*, 27(Part B), 315–327. Retrieved from 10.1016/j.ehb.2017.09.005
- Akatiga, & White, B. (2015). Would I Like to be a Farmer. *Inside Indonesia*.
- Akhlas, A. W. (2020a). \$3.9 billion state spending reallocated for COVID-19 response: Sri Mulyani. *Jakarta Post*. Retrieved from <https://www.thejakartapost.com/news/2020/03/20/3-9-billion-state-spending-reallocated-for-covid-19-response-sri-mulyani.html>
- Akhlas, A. W. (2020b). Indonesia Advances Pre-Employment Card Program to Tackle Pandemic Impacts. *JakartaPost*. Retrieved from <https://www.thejakartapost.com/news/2020/03/13/indonesia-advances-pre-employment-card-program-to-tackle-pandemic-impacts.html>
- Amanta, F., & Aprilianti, I. (2020). Indonesian Food Trade Policy during Covid-19. Policy Brief. Jakarta: Center for Indonesian Policy Studies. DOI: 10.35497/309123.
- Antara. (2019). Kemkes: Penyakit Tidak Menular Jadi Penyebab Kematian Paling Banyak. Retrieved March 4, 2020, from <https://www.antaraneews.com/berita/1083372/kemkes-penyakit-tidak-menular-jadi-penyebab-kematian-paling-banyak>
- Arifin, B., Achسانی, N. A., Martianto, D., Sari, L. K., & Firdaus, A. H. (2018). *Modeling the Future of Indonesian Food Consumption: Final Report*. Jakarta. <https://docs.wfp.org/api/documents/WFP-0000073426/download/?_ga=2.129270730.712986845.1600054709-251376546.1600054709>
- Asmara, C. G. (2020, June). No Impor! Mentan Jamin Stok Beras Aman Sampai Akhir Tahun. *CNBC Indonesia*. Retrieved from <https://www.cnbcindonesia.com/news/20200611130814-4-164641/no-impor-mentan-jamin-stok-beras-aman-sampai-akhir-tahun>
- Aziliya, D. (2016). NTT Didesain Menjadi Provinsi Lumbung Beras. Retrieved March 4, 2020, from <https://ekonomi.bisnis.com/read/20160922/99/586207/ntt-didesain-menjadi-provinsi-lumbung-beras>
- Aziza, T. N. (2019). Upaya Penguatan Kelembagaan Pangan. *Jurnal Ekonomi Pertanian Dan Agribisnis*, 3(1), 204–217. Retrieved from <https://jepa.ub.ac.id/index.php/jepa/article/view/159>

- Bank of Indonesia. (2020). Foreign Exchange Reference Rate Jakarta Interbank Spot Dollar Rate USD - IDR. Retrieved July 21, 2020, from <https://www.bi.go.id/en/moneter/informasi-kurs/referensi-jisdor/Default.aspx>
- Bappenas. (n.d.). *Visi dan Arah Pembangunan Jangka Panjang (PJP) Tahun 2005-2025*. Jakarta: Badan Perencanaan Pembangunan Nasional.
- Bappenas. (2014). *Rencana Pembangunan Jangka Menengah Nasional 2015-2019*. Jakarta.
- Bappenas. (2015). *Rencana Aksi Nasional Pangan dan Gizi Tahun 2015-2019*. Jakarta: BAPPENAS.
- Bappenas. (2019). Menteri Bambang: Percepatan Perbaikan Akses Air Minum dan Sanitasi Melalui Investasi Berbagai Sumber Pendanaan Tingkatkan Capaian ODF Sekaligus Manfaat Ekonomi dan Non-Ekonomi. Retrieved from <https://bappenas.go.id/id/berita-dan-siaran-pers/menteri-bambang-percepatan-perbaikan-akses-air-minum-dan-sanitasi-melalui-investasi-berbagai-sumber-pendanaan-tingkatkan-capaian>
- Bata, A., Muslim, A., & Mariska, D. (2020). What About Us?: Indonesia's Private Employers Demand More Stimulus. *Jakarta Globe*. Retrieved from <https://jakartaglobe.id/business/what-about-us-indonesias-private-employers-demand-more-stimulus>
- Beal, T., Tumilowicz, A., Sutrisna, A., Izwardy, D., & Neufeld, L. M. (2018). A Review of Child Stunting Determinants in Indonesia. *Maternal & Child Nutrition*, 14(4). DOI: 10.1111/mcn.12617.
- Beatty, A., Ingwersen, N., Leith, W., & Null, C. (2017). *Anemia Prevalence and Correlates Among Young Children and Pregnant Women in Indonesia*. Washington, DC.: Mathematica Policy Research.
- BKKBN, BPS, Health, M. of, & ICF. (2018). *Indonesia Demographic and Health Survey 2017*. Jakarta: BKKBN, BPS, Kemenkes and ICF.
- BKP. (2018). *Food Security and Vulnerability Atlas 2018*. Jakarta: : Badan Ketahanan Pangan, Kementerian Pertanian.
- BKP. (2019). *Direktori Perkembangan Konsumsi Pangan*. Jakarta: Badan Ketahanan Pangan, Kementerian Pertanian.
- BMKG. (2020). Prakiraan Musim Kemarau Tahun 2020 di Indonesia. Retrieved from <https://www.bmkg.go.id/iklim/prakiraan-musim.bmkg>
- BPS. (2010). *Profil Kemiskinan di Indonesia Maret 2010*. Jakarta. Jakarta: BPS.
- BPS. (2013). *Expenditure for Consumption of Indonesia Based on Susenas March 2013*. Jakarta: BPS.
- BPS. (2014). *Analisis Kebijakan Pertanian Indonesia: Implementasi dan Dampak terhadap Kesejahteraan Petani dari Perspektif Sensus Petanian 2013*. Jakarta: BPS.
- BPS. (2018a). *Hasil Survei Petanian Antar Sensus (SUTAS) 2018*. Jakarta: BPS.
- BPS. (2018b). Prevalensi Ketidacukupan Konsumsi Pangan, 2011 dan 2017 - 2018. Retrieved

- August 18, 2020, from <https://www.bps.go.id/dynamictable/2018/08/0713:15:47.165115/1550/prevalensi-ketidakcukupan-konsumsi-pangan-2011-dan-2017---2018.html>
- BPS. (2019a). *Consumption Expenditure of Population of Indonesia Based on the September 2019 Susenas*. Jakarta: BPS.
- BPS. (2019b). *Impor Buah-Buahan Menurut Negara Asal, 2010-2018*. Jakarta. Retrieved from <https://www.bps.go.id/statictable/2019/02/14/2010/impor-buah-buahan-menurut-negara-asal-utama-2010-2018.html>
- BPS. (2019c). *Impor Sayuran Menurut Negara Asal Utama, 2010-2018*. Jakarta. Retrieved from <https://www.bps.go.id/statictable/2019/02/14/2009/impor-sayuran-menurut-negara-asal-utama-2010-2018.html>
- BPS. (2019d). *Persentase Rumah Tangga Yang Memiliki Akses Terhadap Layanan Sumber Air Minum Layak Dan Berkelanjutan (40% Bawah), Menurut Daerah Tempat Tinggal 2015-2018*. Retrieved July 22, 2020, from <https://www.bps.go.id/dynamictable/2019/10/0411:10:26.240007/1664/persentase-rumah-tangga-yang-memiliki-akses-terhadap-layanan-sumber-air-minum-layak-dan-berkelanjutan-40-bawah-menurut-daerah-tempat-tinggal-2015-2018.html>
- BPS. (2019e). *Prevalensi Balita Sangat Pendek dan Pendek Menurut Kabupaten/Kota, 2018*. Retrieved October 19, 2019, from <https://www.bps.go.id/dynamictable/2019/09/30/1648/prevalensi-balita-sangat-pendek-dan-pendek-menurut-kabupaten-kota-2018.html>
- BPS. (2020a). *Ekonomi Indonesia Triwulan II 2020 Turun 5,32 Persen*. Jakarta. Retrieved from <https://www.bps.go.id/pressrelease/2020/08/05/1737/-ekonomi-indonesia-triwulan-ii-2020-turun-5-32-persen.html>
- BPS. (2020b). *Gini Ratio Provinsi 2002 - 2020*. Retrieved August 24, 2020, from <https://www.bps.go.id/dynamictable/2017/04/2600:00:00/1116/gini-ratio-provinsi-2002-2018.html>
- BPS. (2020c). *Luas Panen, Produksi, dan Produktivitas Padi Menurut Provinsi, 2018-2019*. Retrieved June 25, 2020, from <https://www.bps.go.id/dynamictable/2019/04/15/1608/luas-panen-produksi-dan-produktivitas-padi-menurut-provinsi-2018.html>
- BPS. (2020d). *Pertumbuhan Ekonomi Indonesia Triwulan I-2020*. Jakarta: BPS.
- BPS. (2020e). *Profil Kemiskinan di Indonesia Maret 2020*. Jakarta: BPS.
- BPS. (2020f). *Proporsi Populasi Yang Memiliki Akses Terhadap Layanan Sumber Air Minum Layak Dan Berkelanjutan Menurut Daerah Tempat Tinggal, 2015 - 2018*. Retrieved from <https://www.bps.go.id/dynamictable/2018/05/28/1388/proporsi-populasi-yang-memiliki-akses-terhadap-layanan-sumber-air-minum-layak-dan-berkelanjutan-menurut-daerah-tempat-tinggal-2015---2017.html>
- Cahyadi, N., Hanna, R., Olken, B. A., Prima, R. A., Satriawan, E., & Syamsulhakim, E. (n.d.). Cumulative Impacts of Conditional Cash Transfer Programs: Experimental Evidence from Indonesia. *American Economic Journal: Economic Policy*. Retrieved from <https://www.aeaweb.org/articles?id=10.1257/pol.20190245>

- Colozza, D., & Avendano, M. (2019). Urbanisation, Dietary Change and Traditional Food Practices in Indonesia: A Longitudinal Analysis. *Social Science and Medicine*, 233, 103–112.
- Development Initiatives. (2018). *2018 Global Nutrition Report*. Bristol: Development Initiatives.
- Dharmasaputra, M. (2020). Dilema Kebijakan Kartu Prakerja. *KataData*. Retrieved from <https://katadata.co.id/opini/2020/05/03/dilema-kebijakan-kartu-prakerja>
- Dwiningsih, A. P. (2013). Perbedaan Asupan Energi, Protein, Lemak, Karbohidrat dan Status Gizi pada Remaja yang Tinggal di Wilayah Perkotaan dan Pedesaan. *Journal of Nutrition College*, 2(232–241).
- Ecker, O., & Breisinger, C. (2012). *The Food Security System: A New Conceptual Framework*. Washington, DC.: International Food Policy Research Institute.
- FAO. (2006). Food Security, *Policy Brief*, June 2006 Issue No. 2 Retrieved from http://www.fao.org/fileadmin/templates/faoitaly/documents/pdf/pdf_Food_Security_Cocept_Note.pdf.
- FAO. (2019a). *Country Gender Assessment of Agriculture and the Rural Sector in Indonesia*. Jakarta: FAO.
- FAO. (2019b). Saving Lives with Safer Food. Retrieved July 28, 2020, from <http://www.fao.org/indonesia/news/detail-events/en/c/1197200/>
- FAO, IFAD, UNICEF, WFP, & WHO. (2017). *The State of Food Security and Nutrition in the World 2017*. Rome: FAO.
- Firman, T. (2016). Demographic Patterns of Indonesia's Urbanization, 2000-2010: Continuity and Change at the Macro Level. In C. Z. Guilmoto & G. W. Jones (Eds.), *Contemporary Demographic Transformation in China, India and Indonesia* (pp. 255–269). Cham: Springer.
- Food Security Council. (2015). *Kebijakan Strategis Pangan dan Gizi Tahun 2015 - 2019*. Jakarta: Food Security Council.
- Ghebreyesus, T. A. (2020). WHO Director-General's opening remarks at the media briefing on COVID-19 - 11 March 2020. Retrieved from <https://www.euro.who.int/en/health-topics/health-emergencies/coronavirus-covid-19/news/news/2020/3/who-announces-covid-19-outbreak-a-pandemic>
- Gorbiano, M. I., & Akhlas, A. W. (2020). Indonesia Announces Rp 405 Trillion COVID-19 Budget, Anticipates 5% Deficit in Historic Move. Retrieved from <https://www.thejakartapost.com/news/2020/03/31/indonesia-announces-rp-405-trillion-covid-19-budget-anticipates-5-deficit-in-historic-move.html>
- Government of Indonesia. Kebijakan Strategis tentang Pangan dan Gizi (2017). Jakarta.
- Grehenson, G. (2020). Distribusi Logistik Kemanusiaan Covid-19 Belum Optimal. Retrieved June 26, 2020, from <https://ugm.ac.id/id/berita/19399-distribusi-logistik-kemanusiaan-COVID-19-belum-optimal>
- Gugus Tugas Percepatan Penanganan COVID-19. (2020). Perkembangan Kasus Terkonfirmasi Positif Covid-19 Per-Hari. Retrieved July 21, 2020, from <https://covid19.go.id/peta-sebaran>

- Gupta, P., & Huang, B. (2018). *In-Kind Transfer and Child Development: Evidence from Subsidized Rice Program in Indonesian* (ADBI Working Paper No. 826). Tokyo: ADB Institute.
- Hamilton-Hart, N. (2019). Indonesia's Quest for Food Self-Sufficiency: A New Agricultural Political Economy? *Journal of Contemporary Asia*, 49(5), 734–758.
<https://doi.org/10.1080/00472336.2019.1617890>
- Hanna, R., & Olken, B. (2020). *Online Survey on Economic Impact of COVID-19 in Indonesia: Results from Week 8*. Power point presentation, J-PAL Southeast Asia, Faculty of Economics and Business, University of Indonesia, Jakarta.
- Harbuwono, D. S., Pramono, L. A., Yunir, E., & Subekti, I. (2018). Obesity and Central Obesity in Indonesia: Evidence from a National Health Survey. *Medical Journal of Indonesia*, 27(2), 114–120.
- Hartomo, G. (2020). Potensi Kemarau Panjang, RI Diprediksi Impor Beras 2 Juta Ton. *OkeFinance*. Retrieved from <https://economy.okezone.com/read/2020/05/14/320/2213965/potensi-kemarau-panjang-ri-diprediksi-impor-beras-2-juta-ton>
- Hastuti, Widyaningsih, D., & Ruhmaniyati. (2020). *Efektivitas Pelaksanaan PKH dan Program Sembako dalam Kerangka Mitigasi Dampak Covid-19*. Jakarta.
- Headey, D., & Ruel, M. (2020). The COVID-19 Nutrition Crisis: What to Expect and How to Protect. Retrieved June 25, 2020, from <https://www.ifpri.org/blog/covid-19-nutrition-crisis-what-expect-and-how-protect>
- Hendayana, R. (n.d.). *Keunggulan Kompetitif Sistem Usaha Tani Tanaman Pangan di Kabupaten Sumba Timur*, NTT. Retrieved from <http://ntt.litbang.pertanian.go.id/phocadownload/pdf067.pdf>
- John Hopkins University. (2020). COVID-19 Dashboard. Retrieved from <https://coronavirus.jhu.edu/map.html>
- Kementerian Kesehatan. (2013). *Riset Kesehatan Dasar (RISKESDAS) 2013*. Jakarta: Badan Penelitian dan Pengembangan Kesehatan.
- Kementerian Kesehatan. Peraturan Menteri Kesehatan Republik Indonesia Nomor 97 Tahun 2014 (2014). Indonesia.
- Kementerian Kesehatan. (2019). *Laporan Nasional Riskesdas 2018*. Jakarta: Badan Penelitian dan Pengembangan Kesehatan.
- Kementerian Perindustrian. (2019). Industri Makanan dan Minuman Jadi Sektor Kampiun. Retrieved June 30, 2020, from <https://kemenperin.go.id/artikel/20298/Industri-Makanan-dan-Minuman-Jadi-Sektor-Kampiun>
- Kementerian Pertanian. (2015). *Statistik Produksi Hortikultura Tahun 2014*. Jakarta: Kementerian Pertanian. Retrieved from <http://hortikultura.pertanian.go.id/wp-content/uploads/2016/02/Statistik-Produksi-2014.pdf>
- Kementerian Pertanian. (2020). Data Lima Tahun Terakhir. Retrieved August 25, 2020, from <https://www.pertanian.go.id/home/?show=page&act=view&id=61>

- Kementerian PPN/BAPPENAS. (2015). *Rencana Aksi Nasional Pangan dan Gizi Tahun 2015 - 2019*. Jakarta: Kementerian PPN/BAPPENAS.
- Komarulzaman, A. (2017). *Water Affordability, Water Quality and their Consequences for Health and Education in Indonesia*. Radboud University.
- Lidyana, V. (2020, May). RI Diprediksi Impor 2 Juta Ton Beras Tahun Ini. *Detik*. Retrieved from https://finance.detik.com/berita-ekonomi-bisnis/d-5014456/ri-diprediksi-impor-2-juta-ton-beras-tahun-ini?_ga=2.105629696.208356425.1592025204-2015578833.1586359050
- Mathijs, E. (2015). Exploring Future Patterns of Meat Consumption. *Meat Science*, 119, 112–116. DOI: 10.1016/j.meatsci.2015.05.007.
- Maxwell, D., Levin, C., Armar-Klemesu, M., Ruel, M., Morris, S., & Ahiadeke, C. (2000). *Urban Livelihoods and Food and Nutrition Security in Greater Accra, Ghana*. Research Report. Washington, DC: International Food Policy Research Institute.
- Ministry of Agriculture, R. of I. (2018). *Agricultural Statistics 2018*. (A. A. Susanti & B. Waryanto, Eds.). Jakarta: Ministry of Agriculture, Republic of Indonesia.
- Ministry of Women Empowerment and Child Protection. (2019). *Profil Perempuan Indonesia 2019*. Jakarta: Ministry of Women Empowerment and Child Protection.
- Mulyani, A., Kuncoro, D., Nursyamsi, D., & Agus, F. (2016). Analisis Konversi Lahan Sawah: Penggunaan Data Spasial Resolusi Tinggi Memperlihatkan Laju Konversi yang Mengkhawatirkan. *Jurnal Tanah Dan Iklim*, 40(2), 121–133. Retrieved from [http://ejurnal.litbang.pertanian.go.id/index.php/jti/article/view/5708/Analisis Konversi Lahan Sawah-Penggunaan Data Spasial Resolusi Tinggi Memperlihatkan Laju Konversi yang Mengkhawatirkan.pdf](http://ejurnal.litbang.pertanian.go.id/index.php/jti/article/view/5708/Analisis%20Konversi%20Lahan%20Sawah-Penggunaan%20Data%20Spasial%20Resolusi%20Tinggi%20Memperlihatkan%20Laju%20Konversi%20yang%20Mengkhawatirkan.pdf)
- Nugraha, Y. A., & Herawati, R. (n.d.). *Menguak Realitas Orang Muda Sektor Pertanian di Perdesaan*. Retrieved from <https://media.neliti.com/media/publications/458-ID-menguak-realitas-orang-muda-sektor-pertanian-di-perdesaan.pdf>
- OECD. (2018). Producer and Consumer Support Estimates Database. Retrieved July 28, 2020, from <https://www.oecd.org/eu/producerandconsumersupportestimatesdatabase.htm>
- Oley, J. D. B. (2020). Urgensi untuk Memperbaiki Sistem Bantuan Sosial di Tengah Pandemi COVID-19. Retrieved August 21, 2020, from <https://www.smeru.or.id/id/content/urgensi-untuk-memperbaiki-sistem-bantuan-sosial-di-tengah-pandemi-covid-19>
- Osorio, C. G., Abriningrum, D. E., Armas, E. B., & Firdaus, M. (2011). *Who Is Benefiting from Fertilizer Subsidies in Indonesia?* (Policy Research Working Paper No. 5758).
- Pate, M. A., & van Nieukoop, M. (2020). How nutrition can protect people's health during COVID-19. Retrieved July 23, 2020, from <https://blogs.worldbank.org/voices/how-nutrition-can-protect-peoples-health-during-covid-19>
- Patunru, A. A., & Ilman, A. S. (2019). *Political Economy of Rice Policy in Indonesia: A Perspective on the ASEAN Economic Community* (No. 6). Jakarta: : Center for Indonesian Policy Studies.
- Priastuti, C. F. (2020). Data Terkini Wilayah PSBB di Indonesia: Total 4 Provinsi dan 25 Kabupaten/Kota. *Tribunnews*. Retrieved from

<https://palu.tribunnews.com/2020/05/23/data-terkini-wilayah-psbb-di-indonesia-total-4-provinsi-dan-25-kabupatenkota?page=2>

- Putri, S. A. (2018). Challenge to Enforce Food Safety Law and Regulation in Indonesia. *IOP Conf. Series: Earth and Environmental Science*, 175, 1–6. DOI: 10.1088/1755-1315/175/1/012216
- Rachman, B., & Sudaryanto, T. (2010). Impacts and Future Perspectives of Fertilizer Policy in Indonesia. *Analisis Kebijakan Pertanian*, 8(3), 193–205. DOI: 10.21082/ akp.v8n3.2010.193-205.
- Rahman, D. F. (2020a). Govt to secure staple food stocks as dry season approaches. *The Jakarta Post*. Retrieved from <https://www.thejakartapost.com/news/2020/05/05/govt-to-secure-staple-food-stocks-as-dry-season-approaches.html>
- Rahman, D. F. (2020b, April). Government Call to Ramp Up Sugar Production Bearing Fruit but Price Remains High. *Jakarta Post*. Retrieved from <https://www.thejakartapost.com/news/2020/04/29/government-call-to-ramp-up-sugar-production-bearing-fruit-but-price-remains-high.html>
- Rahman, M. A., Kusuma, A. Z. D., & Arfyanto, H. (2020). *Situasi Ketenagakerjaan di Lapangan Usaha yang Terdampak Pandemi COVID-19*. Jakarta.
- Rangkuti, F. Y., & McDonald, G. (2018). *Indonesia: Food Processing Ingredients*. Retrieved from https://apps.fas.usda.gov/newgainapi/api/report/downloadreportbyfilename?filename=Food Processing Ingredients_Jakarta_Indonesia_3-29-2018.pdf
- Richard, M. (2019). Bisnis Restoran Cepat Saji Berpeluang Tumbuh 15% Tahun Ini. *Bisnis*. Retrieved from <https://ekonomi.bisnis.com/read/20190211/12/887488/bisnis-restoran-cepat-saji-berpeluang-tumbuh-15-tahun-ini>
- Roemling, C., & Qaim, M. (2012). Obesity Trends and Determinants in Indonesia. *Appetite*, 58(3), 1005–1013. DOI: 10.1016/j.appet.2012.02.053
- Rokx, C., Subandoro, A., & Gallagher, P. (2018). *Aiming High: Indonesia's Ambition to Reduce Stunting*. Washington, DC.: World Bank.
- Rondhi, M., Pratiwi, P. A., Handidi, V. T., Sunartomo, A. F., & Budiman, S. A. (2019). Agricultural Land Conversion and Food Policy in Indonesia: Historical Linkages, Current Challenges, and Future Directions. In L. Mueller & F. Eulenstein (Eds.), *Current Trends in Landscape Research* (pp. 631–664). Cham, Switzerland: Springer.
- Ruminta. (2016). Analisis Penurunan Produksi Tanaman Padi Akibat Perubahan Iklim di Kabupaten Bandung Jawa Barat. *Jurnal Kultivasi*, 15(1), 37–45. Retrieved from <http://jurnal.unpad.ac.id/kultivasi/article/viewFile/12006/5609>
- Ruminta, Handoko, & Nurmala, T. (2018). Decreasing of Paddy, Corn and Soybean Production Due to Climate Change in Indonesia. *Journal of Agronomy*, 17(1), 37–47. <https://doi.org/10.3923/ja.2018.37.47>
- Russel, S. J., Croker, H., & Viner, R. M. (2019). The Effect of Screen Advertising on Children's Dietray Intake: A Systematic Review and Meta-Analysis. *Obesity Reviews*, 20(4), 554–568. <https://doi.org/10.1111/obr.12812>

- Sagala, S. (2016). *Convergence of Climate Change Adaptation and Disaster Risk Reduction in Indonesia*. Retrieved from https://www.rccap.org/wp-content/uploads/2017/04/Indo-WS-D1-5_Convergence_of_ClimateChange_Adaptation_and_Disaster_Risk.pdf
- Sagita, N. S. (2020). Imbas Corona, Cakupan Imunisasi Per April 2020 Turun 4,7 Persen. *Detik*. Retrieved from <https://health.detik.com/berita-detikhealth/d-5044944/imb- corona-cakupan-imunisasi-per-april-2020-turun-47-persen>
- Santoso, A. B. (2016). The Impact of Climate Change on Food Crops Production in the Province of Maluku. *Jurnal Penelitian Pertanian Tanaman Pangan*, 35(1).
- Saputri, S. N., Anbarani, M. D., Toyamah, N., & Yumna, A. (2020). Dampak Pandemi COVID-19 terhadap Pelayanan Gizi dan Kesehatan Ibu dan Anak (KIA): Studi Kasus Lima Wilayah di Indonesia. Research Note. Jakarta: : The SMERU Research Institute. Retrieved from https://www.smeru.or.id/sites/default/files/publication/cp05_covidkia_in.pdf.
- Satriana, S. (2020). Dampak Ekonomi Covid 19: Kerentanan Pendapatan dan Akses terhadap Perlindungan Sosial Bagi Penyandang Disabilitas. Jakarta: MAHKOTA.
- Schmidhuber, J., Pound, J., & Qiao, B. (2020). *COVID-19: Channels of Transmission to Food and Agriculture*. Rome: FAO. <https://doi.org/10.4060/ca8430en>
- Setyono, J. S., Yunus, H. S., & Giyarsih, S. R. (2016). The Spatial Pattern of Urbanization and Small Cities Development in Central Java : A Case Study of Semarang-Yogyakarta-Surakarta Region. *Geoplanning: Journal of Geomatics and Planning*, 3(1), 53–66. <https://doi.org/10.14710/geoplanning.3.1.53-66>
- SMERU, UKP4, & WFP. (2014). *Food and Nutrition Security in Indonesia: A Strategic Review*. Jakarta: SMERU.
- Sukmana, Y. (2019). Gemar Pesan Makanan Ketimbang Memasak? Itu Fenomena Kekinian. *Kompas*. Retrieved from <https://ekonomi.kompas.com/read/2019/02/06/164710126/gemar-pesan-makanan-ketimbang-memasak-itu-fenomena-kekinian?page=all> [last accessed 30 January 2020]
- Sulser, T., & Dunston, S. (2020). COVID-19-Related Trade Restrictions on Rice and Wheat Could Drive Up Prices and Increase Hunger. Retrieved August 18, 2020, from <https://www.ifpri.org/blog/covid-19-related-trade-restrictions-rice-and-wheat-could-drive-prices-and-increase-hunger>
- Suryahadi, A., Izzati, R. Al, & Suryadarma, A. (2020). Estimating the Impact of COVID-19 on Poverty in Indonesia. *Bulletin of Indonesian Economic Studies*. DOI: 10.1080/00074918.2020.1779390
- Susanti, D., Listiana, N. H., & Widayat, T. (2016). Pengaruh Umur Petani, Tingkat Pendidikan dan Luas Lahan terhadap Hasil Produksi Tanaman Sembung. *Jurnal Tumbuhan Obat Indonesia*, 9(2), 75–82. DOI: 10.22435/toi.v9i2.7848.75-82
- Susanti, R. (2020). Pandemi Covid-19, Cakupan Imunisasi Anjlok, Wabah Mengintai. *Kompas*. Retrieved from <https://lifestyle.kompas.com/read/2020/06/04/093420120/pandemi-covid-19-cakupan-imunisasi-anjlok-wabah-mengintai?page=all>
- Taher, A. P. (2020a). Birokrasi Berbelit Diakui Jokowi bikin Bansos Corona Tersendat. *Tirto*. Retrieved from <https://tirto.id/birokrasi-berbelit-diakui-jokowi-bikin-bansos-corona>

tersendat-fx9w

- Taher, A. P. (2020b). Jokowi Sindir Daerah Defisit Pangan, Mentan: Ada Kendala Distribusi. *Tirto*. Retrieved from <https://tirto.id/jokowi-sindir-daerah-defisit-pangan-mentan-ada-kendala-distribusi-fkA1>
- Tambun, L. T., Lumanaw, N., & Putuhena, I. M. (2020). Jokowi Bans Mudik as Police Prepare to Close Off Roads In and Out of Jakarta. *Jakarta Globe*. Retrieved from <https://jakartaglobe.id/news/jokowi-bans-mudik-as-police-prepare-to-close-off-roads-in-and-out-of-jakarta>
- TNP2K, BAPPENAS, & Kemendagri. (2018). *Strategi Nasional Percepatan Pencegahan Anak Kerdil (Stunting)*. Jakarta: TNP2K.
- UNDP. (2019). *Human Development Report 2019: Beyond Income, Beyond Averages, Beyond Today*. New York, NY: UNDP.
- UNICEF. (2020). *Rapid Assessment: Impact of COVID-19 Pandemic on Immunization Services in Indonesia*. Jakarta: UNICEF.
- Utomo, A. P. W., Nurdiati, D. S., & Padmawati, R. S. (2015). Rendahnya Asupan Zat Besi dan Kepatuhan Mengonsumsi Tablet Besi Berhubungan Dengan Kejadian Anemia pada Ibu Hamil di Wilayah Kerja Puskesmas I Kembaran, Banyumas. *Jurnal Gizi Dan Dietetik Indonesia*, 3(1`), 41–50. Retrieved from <http://www.ejournal.almaata.ac.id/index.php/IJND/article/view/305/277>
- Valesova, L., Herak, D., Shinoda, K., Mazancova, J., & Verner, V. (2017). The Nexus between Food Insecurity and Socioeconomic Characteristics of Rural Households in Western Indonesia Identified with Food and Nutrition Technical Assistance's Approach by USAID. *Agronomy Research*, 15(3), 921–934.
- von Grebmer, K., Bernstein, J., Patterson, F., Wiemers, M., Ni Cheilleachair, R., Foley, C., ... Fritschel, H. (2019). *2019 Global Hunger Index: The Challenge of Hunger and Climate Change*. Bonn and Dublin: Welthungerhilfe and Concern Worldwide.
- von Grebmer, K., Saltzman, A., Birol, E., Wiesmann, D., Prasai, N., Yin, S., ... Menon, P. (2014). *2014 Global Hunger Index: The Challenge of Hidden Hunger*. Bonn, Washington D.C., and Dublin: Welthungerhilfe, International Food Policy Research Institute, and Concern Worldwide.
- Wardani, C., Jamhari, Hardyastuti, S., & Suryantini, A. (2019). Kinerja Ketahanan Beras di Indonesia: Komparasi Jawa dan Luar Jawa Periode 2005 - 2017. *Jurnal Ketahanan Nasional*, 25(1), 107–130. DOI: 10.22146/jkn.41770
- WFP. (2009). *Comprehensive Food Security and Vulnerability Analysis Guidelines*. Rome: WFP.
- WFP. (2020). *Indonesia: COVID-19: Economic and Food Security Implications*. Jakarta.
- WHO. (2020a). Global Database on Child Growth and Malnutrition. Retrieved from <https://www.who.int/nutgrowthdb/about/introduction/en/index5.html>
- WHO. (2020b). Healthy diet. Retrieved June 28, 2020, from <https://www.who.int/news-room/fact-sheets/detail/healthy-diet>

World Bank. (2017). Indonesia's middle class vital for the country's future. Retrieved August 12, 2020, from <https://www.worldbank.org/en/news/press-release/2017/12/04/indonesia-middle-class-vital-for-the-country-future>

World Bank. (2020a). GNI Per Capita, Atlas Method (current US\$) - Indonesia. Retrieved July 19, 2020, from <https://data.worldbank.org/indicator/NY.GNP.PCAP.CD?locations=ID>

World Bank. (2020b). *Indonesia Economic Prospects: The Long Road to Recovery*. The World Bank.

World Bank. (2020c). *Indonesia Public Expenditure Review: Spending for Better Results*. World Bank.

Yusuf, A. A., & Sumner, A. (2015). Growth, Poverty, and Inequality under Jokowi. *Bulletin of Indonesian Economic Studies*, 51(3), 323–348.
<https://doi.org/10.1080/00074918.2015.1110685>

List of Government Regulations

Presidential Regulation No. 83/2017 on Strategic Policies on Food and Nutrition.

Minister of Health Regulation No. 97/2014 on Healthcare Before and During Pregnancy, Delivery Attendance and Postpartum Care, Family Planning and Sexual Health Services.

APPENDICES

APPENDIX 1

Indonesia's Food Balance, 2013–2019 (in million tons)

	2013	2014	2015	2016	2017	2018 ¹⁹	2019
RICE							
Production	41.43	41.18	43.83	46.13	47.17	33.94	31.31
Import	0.47	0.84	0.86	1.28	0.31	2.25	0.44
Import Dep. Ratio	1.13	2.01	1.93	2.71	0.64	6.15	1.38
MAIZE							
Domestic Production	18.51	19.01	19.61	23.58	28.92	30.06	33
Import	3.3	3.4	3.5	1.1	0.45	0.48	
Import Dep. Ratio	15.13	15.17	15.14	4.46	1.53	1.57	
SOYBEAN							
Domestic Production	0.78	0.95	0.96	0.86	0.54	0.98	0.36
Import	1.79	1.97	2.26	2.26	2.67	2.59	2.67
Import Dep. Ratio	69.65	67.47	70.19	72.44	83.18	72.55	88.12
SUGAR							
Domestic Production	2.55	2.58	2.5	2.2	2.12	2.17	2.2
Import	3.44	3.04	3.47	4.84	4.57	5.03	4.09
Import Dep. Ratio	57.43	54.09	58.12	68.75	68.31	69.86	65.02
BEEF							
Domestic Production	0.5	0.5	0.51	0.52	0.49	0.5	0.49
Import	0.05	0.1	0.05	0.15	0.16	0.21	0.26
Import Dep. Ratio	9.09	16.67	8.93	22.39	24.62	29.58	34.67
FISH							
Domestic Production		20.84	22.30	22.58	23.00	23.95	
Import		0.13	0.12	0.11	0.17	0.14	
Import Dep. Ratio							

Source: BPS, Ministry of Agriculture, and other sources.

¹⁹In 2018, BPS introduced a new method to estimate rice production, which uses satellite imagery to estimate the rice field areas. The new method produced a lower estimate than the old method; rice production figures for years before 2018 were based on the old method. See Box 1.

APPENDIX 2

Food Insecurity in Indonesia

	2009	2010	2012	2014	2015	2016	2017	2018
Share of Food Expenditures for Food Insecure Households (%)								
National	68.81	68.78	68.87	68.55	68.12	67.28	68.69	68.62
Rural	70.41	70.38	70.01	69.99	69.40	67.72	69.24	68.81
Urban	66.37	66.35	67.11	66.11	65.68	66.54	67.95	68.39
Share of Food Expenditures for All Households (%)								
National	58.11	58.46	59.80	58.53	55.98	55.02	57.70	56.42
Rural	62.60	63.52	63.99	63.42	60.63	59.01	61.92	60.10
Urban	53.24	53.27	55.50	53.61	51.37	51.22	53.97	53.37
Proportion of Food Insecure Households (%)								
National	17.67	17.64	22.66	20.00	13.95	10.30	9.35	8.75
Rural	20.51	21.00	27.14	25.14	18.34	13.20	11.49	10.48
Urban	14.59	14.18	18.05	14.82	9.58	7.54	7.46	7.32
Number of Food Insecure Individuals								
National	21.07	20.95	26.45	23.86	16.60	12.60	11.73	11.05
Rural	24.72	25.42	31.81	29.93	21.85	16.12	14.38	13.08
Urban	17.16	16.46	21.05	17.81	11.44	9.28	9.38	9.36

Source: Estimated from Susenas (various years).

The SMERU Research Institute

Telephone : +62 21 3193 6336

Fax : +62 21 3193 0850

E-mail : smeru@smeru.or.id

Website : www.smeru.or.id

Facebook : @SMERUInstitute

Twitter : @SMERUInstitute

YouTube : The SMERU Research Institute

