



Minimum Standards and Guidelines for the ASEAN School Nutrition Package





**Minimum Standards and Guidelines for the
ASEAN School Nutrition Package**

The ASEAN Secretariat
Jakarta

The Association of Southeast Asian Nations (ASEAN) was established on 8 August 1967. The Member States are Brunei Darussalam, Cambodia, Indonesia, Lao People's Democratic Republic, Malaysia, Myanmar, Philippines, Singapore, Thailand and Viet Nam.

The ASEAN Secretariat is based in Jakarta, Indonesia.

For inquiries, contact:

The ASEAN Secretariat

Community Relations Division

70A Jalan Sisingamangaraja

Jakarta 12110, Indonesia

Phone: (62 21) 724-3372, 726-2991

Fax: (62 21) 739-8234, 724-3504

Email: public@asean.org

Catalogue-in-Publication Data

Minimum Standards and Guidelines for ASEAN School Nutrition Package

Jakarta, ASEAN Secretariat, August 2024

ASEAN: A Community of Opportunities for All.

The text of this publication may be freely quoted or reprinted, provided proper acknowledgment is given and a copy containing the reprinted material is sent to the Community Relations Division of the ASEAN Secretariat, Jakarta.

The Publication is produced with the support of



**World Food
Programme**

unicef 
for every child

General information on ASEAN appears online at the ASEAN Website: www.asean.org

Copyright Association of Southeast Asian Nations (ASEAN) 2024.

All rights reserved.

This document was prepared in consultation and coordination with ASEAN Member States through the ASEAN Health Cluster 1.

All reasonable precautions have been taken by ASEAN, World Food Programme (WFP), and the United Nations Children's Fund (UNICEF) to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either expressed or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall ASEAN, WFP or UNICEF be liable for damages arising from its use.

The boundaries, colours, denominations and other information shown on any map in this work do not imply any judgment on the part of ASEAN, WFP or UNICEF concerning the legal status of any territory or the endorsement or acceptance of such boundaries.

Financial support

This document has been produced with the financial assistance of WFP and UNICEF. UNICEF recognizes the support of the Bill & Melinda Gates Foundation for the development of this document. The views expressed herein can in no way be taken to reflect the official opinion of WFP and UNICEF.

Rights and permissions

The material in this work is subject to copyright. Because ASEAN, WFP and UNICEF encourage the dissemination of this knowledge, this work may be freely quoted or reprinted, in whole or in part, for non-commercial purposes, as long as full attribution to this work is given. The text of this publication may be freely quoted or reprinted, provided proper acknowledgement is given and a copy containing the reprinted material is sent to the Community Relations Division of the ASEAN Secretariat, Jakarta. Requests for permission to reproduce or translate publications, and any queries on rights and licences, including subsidiary rights, should be addressed to Office of the Publisher, ASEAN Secretariat, 70 A Jalan Sisingamangaraja Jakarta 12110 Indonesia, Telephone: +62-21-724-3372.

Suggested citation

ASEAN, WFP and UNICEF. 2024. Minimum Standards and Guidelines for ASEAN School Nutrition Package. Jakarta; UNICEF.

Photography credits

Cover page: © UNICEF/UN0311099/Verweij
page xi: © UNICEF/2019/ljazah
page 1: © World Food Programme/2021/Shells
page 2: © World Food Programme/2015/Maentz
page 3: © UNICEF/UN0445448/Lister
page 15: © World Food Programme/2015/Maentz
page 16: © UNICEF/UN0311098/Verweij
page 19: © World Food Programme/2017/Skullerud
page 28: © UNICEF Malaysia/2018
page 29: © UNICEF/2021/Fauzan
page 31: © World Food Programme/2015/Maentz
page 32: © UNICEF Cambodia/2017/Khoy
page 37: © UNICEF/UN04247/Estey
page 42: © UNICEF/2020/ ljazah
page 43: © World Food Programme/2021/Lopez
page 46: © UNICEF Thailand/2021/Preechapanich



Message from the ASEAN Health Ministers Meeting Chair

The ASEAN region places a high priority on the health and well-being of children. In our efforts to ensure that every child in the ASEAN Member States has access to a healthy and nutritious food environment, the development of the Minimum Standards and Guidelines for the ASEAN School Nutrition Package is a significant milestone. In this document, ASEAN demonstrates its commitment to address the pressing problem of malnutrition among school-age children in its region, as committed in the ASEAN Leaders Declaration on Ending All Forms of Malnutrition. These minimum standards are crucial for promoting the physical and cognitive development of our young generation, ultimately contributing to a healthier and more prosperous ASEAN community.

We are particularly grateful for the leadership and expertise provided by the Ministries of Health of Indonesia and Viet Nam, who led the development process, including the invaluable contributions of ASEAN Member States, and remarkable support from the external partners.

As we move forward, it is our hope that this document will be embraced and implemented with the urgency and dedication it deserves. It will serve as a valuable resource for policymakers, educators, and health professionals across the ASEAN region. The future of ASEAN lies in the hands of our children, and it is our collective responsibility to ensure that they grow up healthy and well-nourished.

We look forward to seeing the positive impact it will have on the lives of children throughout the ASEAN region.

Yours sincerely,

A handwritten signature in blue ink, appearing to read 'Bounfeng Phoummalaysith'. The signature is fluid and cursive, with a large initial 'B'.

Dr. Bounfeng PHOUMMALAYSITH
Minister of Health, Lao PDR
Chair of the ASEAN Health Ministers Meeting (AHMM)



Joint message from **UNICEF and WFP Regional Directors**

Schools play a crucial role in improving nutrition of school-aged children, by shaping dietary choices and practices and offering essential services, which can have lasting impact on their health and wellbeing. In East Asia and the Pacific, more than 90 percent of children are enrolled in primary schools, and over 70 percent in secondary schools. With such high enrolment rates, schools become a powerful and cost-effective platform to lay the foundation for good health and nutrition nurturing positive, lifelong dietary habits and practices among children.

The ASEAN school nutrition package offers a comprehensive set of guidelines tailored to the region's specific needs. It is grounded in a human rights-based, integrated approach, bringing together various elements of school nutrition from global frameworks and guidelines. The package encompasses offering nutritious school meals, creating healthy food environments, providing school health and nutrition services, nutrition literacy and promoting physical activity. The final minimum standard emphasizes the need for an enabling environment, which can be achieved by strengthening evidence, policies and governance, capacity, and resources.

Investing in the nutrition of school-age children not only enhances human capital but also drives economic growth for ASEAN Member States. Interventions such as healthy school meals and food and nutrition education improve school children's diets and promote healthier food practices that can influence their families and entire communities.

The WFP Regional Bureau for Asia and the Pacific and UNICEF East Asia and Pacific Regional Office are honoured to have supported the Indonesia Department of Health, the Vietnam Ministry of Health, and the ASEAN Secretariat in developing these Guidelines and Minimum Standards.

We look forward to continuing to work closely with ASEAN Member States, the ASEAN Secretariat, and partners to end all forms of malnutrition in children.

A handwritten signature in blue ink, appearing to read 'June Kunugi'.

June Kunugi
UNICEF
Regional Director for East Asia and the Pacific

A handwritten signature in black ink, appearing to read 'John Aylieff'.

John Aylieff
World Food Programme (WFP)
Regional Director for Asia and the Pacific

Contents

Message from the ASEAN Health Ministers Meeting Chair	i
Joint message from UNICEF and WFP Regional Directors	ii
Acknowledgements	v
Glossary	x
Acronyms	xiii
1 Introduction	2
1.1 Purpose	2
1.2 Intended audience	2
2 Rationale for the ASEAN School Nutrition Package	4
2.1 Regional returns on investing in the nutrition of school-age children	5
2.2 Regional burden of malnutrition among school-age children	5
2.3 Drivers of malnutrition in school-age children	8
2.4 Schools are a critical platform for improving nutrition in ASEAN region	13
2.5 Regional harmonized guidelines on school nutrition	13
3 Framework for the ASEAN School Nutrition Package	16
4 Minimum standards for the School Nutrition Package	20
4.1 Integrated school-based nutrition activities	21
4.2 Nutritious foods and diets	23
4.3 Healthy food environments	31
4.4 School health and nutrition services	34
4.5 Nutrition literacy	35
4.6 Physical activity	39
4.7 Monitoring, enforcement and evaluation	40
4.8 Enabling environment	41
5 School nutrition in response to shocks	44
5.1 Impact of shocks on food and nutrition security	45
Annex	48
Annex 1: School nutrition frameworks, standards and guidelines	49
Annex 2: Five keys to the safe preparation and handling of food	52
Annex 3: School food environment actions across ASEAN Member States	53
Annex 4: Nutrition education actions within ASEAN Member States	54
Annex 5: Physical education per week among students in ASEAN Member States	55
Annex 6: Laws, policies and regulations on mandatory standards in schools	56
Annex 7: Additional country-specific case examples on minimum standards	57
References	58

List of figures

Figure 1: Prevalence of thinness and overweight (including obesity) in children (5–19 years of age), 2016.	6
Figure 2: Trend in overweight (including obesity) (BMI-for-age >+1SD) prevalence in girls (5-19 years of age), 1976-2016	6
Figure 3: Trend in overweight (including obesity) (BMI-for-age >+1SD) prevalence in boys (5–19 years of age), 1976–2016	7
Figure 4: Proportion of school-age children with anaemia	7
Figure 5: Percentage of children (13–17 years) who ate fruits and vegetables five or more times per day ..	9
Figure 6: Percentage of schoolchildren (13–17 years) consuming fast food at least once a week	9
Figure 7: Percentage of schoolchildren (13–17 years) who usually drank carbonated soft drinks one or more times per day (%)	10
Figure 8: Provision of clean drinking water in schools	11
Figure 9: Prevalence of inadequate physical activity among school-age children (13–17 years)	11
Figure 10: Proportion of school-age children (13–17 years) who participate in sedentary activity ≥3 hours per day	12
Figure 11: School enrolment rate in primary and secondary school	13
Figure 12: School Nutrition Package framework.....	17

List of boxes

Box 1: Key global frameworks and guidance on school nutrition.....	14
Box 2: Healthy, balanced diet for school children	23
Box 3: What is improved sanitation?	33

Acknowledgements

The designated representatives from ASEAN Member States, WFP and UNICEF and ASEAN Secretariat jointly contributed to the development of the Minimum Standards and Guidelines for ASEAN School Nutrition Package.

The processes involved were the development and finalization of the concept note and report outline; drafting, review, and finalization of the Guidelines and Minimum Standards; and coordination with ASEAN Member States, authors and contributors to the report. These were undertaken with the overall guidance of lead country Indonesia, through the Ministry of Health, together with co-lead country Viet Nam, through the National Institute of Nutrition of the Ministry of Health, with overall coordination by the Health Division of the ASEAN Secretariat.

The Guidelines were approved by the ASEAN Health Cluster (AHC) 1 on Promoting Healthy Lifestyles and endorsed by the ASEAN Senior Officials Meeting on Health Development (SOMHD); and adopted by the ASEAN Health Ministers Meeting (AHMM).

The overall drafting, content and technical assistance for the development of the Guidelines was led by Joris van Hees, Sophia Dunn and Vasundhara Bijalwan (School Health and Nutrition Consultants of WFP Regional Bureau for Asia and the Pacific) under the supervision of Anusara Singhkumarwong (Regional Nutritionist at WFP Regional Bureau for Asia and the Pacific) and Fiona Watson (School Health and Nutrition Consultant of UNICEF East Asia and Pacific Regional Office). We would also like to extend thanks to our colleagues Alison Feeley (Nutrition Specialist, UNICEF East Asia & Pacific Regional Office) and Vera Mayer (Regional School Feeding Advisor, WFP Regional Bureau for Asia and the Pacific) who provided their expertise to further enrich the guidelines. Britta Schumacher (former Senior Regional Nutrition Adviser at WFP Regional Bureau for Asia and the Pacific) and Roland Kupka (Regional Nutrition Adviser, UNICEF East Asia & Pacific Regional Office) provided overall guidance and leadership to the process. The documents also received valuable inputs from experts in FAO, WHO, and Alive & Thrive.

The Guidelines were edited by Julia D'Aloisio and the design, layout and graphics were prepared by Cori Park, following the ASEAN corporate design manual.

The Guidelines received feedback from the ASEAN Member States during its consultation process.

Contributors from the Core Technical Working Group

Lead Country: Indonesia	Lovely Daisy	Director, Nutrition and Maternal and Child Health Directorate, Ministry of Health
	Rr Weni Kusumaningrum	Assistant Director in School age and adolescent Health, Nutrition and Maternal and Child Health Directorate, Ministry of Health
	Hera Nurlita	Senior Nutritionist, Nutrition and Maternal and Child Health Directorate, Ministry of Health
	Tiska Yumeida	Senior Nutritionist, Nutrition and Maternal and Child Health Directorate, Ministry of Health
	Nyimas Septiani Wulandari	Nutritionist, Nutrition and Maternal and Child Health Directorate, Ministry of Health

Co-lead Country: Viet Nam	Tran Thanh Duong MD., PhD	Director, National Institute of Nutrition
	Tran Khanh Van MD., MPH., PhD	Head of Micronutrients Department, National Institute of Nutrition
	Bui Thi Nhung MD., PhD,	Head of School and Occupational Nutrition, National Institute of Nutrition
Brunei Darussalam	Dr. Ernina Rani	Senior Medical Officer, Health Promotion Centre, Ministry of Health
	Dr. Faezah Amin	Medical Officer, Health Promotion Centre, Ministry of Health
	Roseyati Yaakub	Senior Dietitian, Health Promotion Centre, Ministry of Health
	Rusydiah Sudin	Health Education Officer, Health Promotion Centre, Ministry of Health
Cambodia	Ms.Chea Mary	Manager, National Nutrition Programme, National Maternal and Child Health Center, Ministry of Health
Lao People's Democratic Republic	Dr. Phonesavanh Keonakhone	Director General Centre of Nutrition, Ministry of Health
	Vilasith Mikhasith.MPH	Deputy Head Training Unit Centre of Nutrition, Ministry of Health
Malaysia	Ms. Rusidah Selamat	Director, Nutrition Division, Ministry of Health
	Ms. Zaiton Daud	Deputy Director (Family Nutrition), Nutrition Division, Ministry of Health
	Mr. Nazli Suhardi Ibrahim	Deputy Director (Community Nutrition & Inter Nutrition), Nutrition Division, Ministry of Health
	Ms. Noriza Zakaria	Senior Principle Assistant Director, Policy and Global Nutrition Sector, Nutrition Division, Ministry of Health
	Ms. Rashadiba Ibrahim Rahman	Senior Principle Assistant Director, Baby and Children Nutrition Under 5 Years Old Sector, Nutrition Division, Ministry of Health
	Ms. Fatimah Sulong	Senior Principle Assistant Director, Industry's Collaboration Sector, Nutrition Division, Ministry of Health
	Ms. Junidah Raib	Senior Principle Assistant Director, Maternal and Women of Reproductive Age Nutrition Sector, Nutrition Division, Ministry of Health
	Ms. Siti Adibah Ab. Halim	Principle Assistant Director, Children and Adolescent Sector, Nutrition Division, Ministry of Health
	Ms. Ainan Nasrina Ismail	Principle Assistant Director, Adult and Elderly Nutritional Sector, Nutrition Division, Ministry of Health
	Ms. Teh Wai Siew	Principle Assistant Director, Nutrition Surveillance Sector, Nutrition Division, Ministry of Health
	Ms. Nur Liana Abdul Latiff	Senior Assistant Director, Institutional Nutrition Sector, Nutrition Division, Ministry of Health
	Ms. Nor Hanisah Zaini	Senior Assistant Director, Policy and Global Nutrition Sector, Nutrition Division, Ministry of Health
	Ms Faridah Malik Shaari	Deputy Director, Food Safety and Quality Division, Ministry of Health

	Ms Norlida Zulkafly	Principal Assistant Director, Food Safety and Quality Division, Ministry of Health
	Ms Nur Anis Mohd Sani	Principal Assistant Director, Food Safety and Quality Division, Ministry of Health
	Mr. Hairunizad Haron	Assistant Director, Student Affairs Management Sector, School Management Division, Ministry of Education
	Ms. Siti Aisha Senawi	Assistant Director, Student Affairs Management Sector, School Management Division, Ministry of Education
Myanmar	Dr. Aye Mya Mya Kyaw	Deputy Director (Nutrition), Department of Public Health, Ministry of Health, Myanmar
	Dr. Hnin Darli Win	Assistant Director (Nutrition), Department of Public Health, Ministry of Health, Myanmar
Philippines	Azucena M. Dayanghirang, MD, MCH, CESO III	Assistant Secretary and Executive Director IV, National Nutrition Council
	Ellen Ruth F. Abella	Nutrition Officer IV and Officer-in-Charge, National Nutrition Council
	Jasmine Anne DF. Tandingan	Nutrition Officer III, National Nutrition Council
Singapore	Dr Chow Wai Leng	Director, Disease Policy & Strategy Division, Ministry of Health
	Ms Guo Siqi	Senior Assistant Director (Non-Communicable Diseases), Disease Policy & Strategy Division, Ministry of Health
	Mr Brandon Ng	Senior Manager (Non-Communicable Diseases), Disease Policy & Strategy Division, Ministry of Health
	Ms Jamaica Tan	Manager (Non-Communicable Diseases), Disease Policy & Strategy Division, Ministry of Health
	Ms Vasuki Utravathy	Director, School Health and Outreach, Health Promotion Board
	Ms Christina Low	Deputy Director (Educational Institutions), School Health and Outreach, Health Promotion Board
	Ms Eunice Pang	Deputy Director, Policy & Strategy Development, Health Promotion Board
	Dr Tan Ching Ting	Master Specialist, Pre-School Education Branch, Schools Division, Ministry of Education
	Ms Chng Miang Lyn Derlynn	Senior Curriculum Specialist, Nutrition & Food Science, Sciences Branch, Curriculum Planning & Development Division 1, Ministry of Education
	Ms Yeow Wei Cheng Irene	Senior Assistant Director / Senior Specialist, Physical, Sports & Outdoor Education Branch, Student Development Curriculum Division 2, Ministry of Education
Thailand	Ms. Saipin Chotivichien, MD. PhD.	Director, Bureau of Nutrition, Department of Health, Ministry of Public Health
	Ms. Pattamaporn Aksornchu, PhD	Nutritionist, Senior Professional Level, Bureau of Nutrition, Department of Health, Ministry of Public Health
	Ms. Narttaya Ungkanavin	Nutritionist, Professional Level, Bureau of Nutrition, Department of Health, Ministry of Public Health

Ms. Khanittha Rahothan	Public Health Technical Officer, Professional Level, Division of Physical Activity and Health, Department of Health, Ministry of Public Health
Pussdee Prasitsombut	Public Health Technical Officer, Practitioner level, Bureau of Food and Water Sanitation, Department of Health, Ministry of Public Health
Mr. Pasin Piriayahaphan	Foreign Relations Officer, Practitioner Level, Center for International Cooperation, Department of Health, Ministry of Public Health

Contributors from Partners and International Organizations

WFP (Partner)	Filippo Dibari	Senior Regional Nutrition Advisor, Regional Bureau for Asia and the Pacific
	Anusara Singhkumarwong	Regional Nutritionist, Regional Bureau for Asia and the Pacific
	Vasundhara Bijalwan	School Health and Nutrition Consultant, Regional Bureau for Asia and the Pacific
	Joris van Hees	School Health and Nutrition Consultant, Regional Bureau for Asia and the Pacific
	Sophia Dunn	School Health and Nutrition Consultant, Regional Bureau for Asia and the Pacific
	Vera Mayer	Regional School Feeding Advisor, Regional Bureau for Asia and the Pacific
UNICEF (Partner)	Roland Kupka	Regional Nutrition Adviser, UNICEF East Asia & Pacific Regional Office
	Fiona Watson	Consultant, UNICEF East Asia and Pacific Regional Office
	Alison Feeley	Nutrition Specialist, UNICEF East Asia and Pacific Regional Office
Alive & Thrive	Dr. Paul Zambrano	Associate Director (Technical), Alive & Thrive East Asia Pacific
	Dr. Nguyen Thanh Tuan	Regional Technical Advisor in Measurement, Learning and Evaluation, Alive & Thrive East Asia Pacific
FAO	Melissa Vargas	Technical Adviser, Nutrition Guidelines and Standards, FAO Headquarters
	Luana Swensson	Policy Specialist for Sustainable Public Procurement, FAO Headquarters
	Fatima Hachem	Team Leader, Nutrition Education and Consumer Awareness Group, FAO Headquarters
	Andrea Polo Galante	Senior Nutrition Consultant (former FAO)
	Dr. Warren Lee	Senior Nutrition Officer, FAO Regional Office for Asia and the Pacific
WHO	Dr. Juliawati Untoro	Technical lead nutrition of WHO Regional Office for the Western Pacific

Contributors from ASEAN Secretariat

Health Division	Ferdinal Fernando, MD, MDM	Assistant Director and Head of Health Division, Human Development Directorate, ASEAN Socio-Cultural Community Department
	Lina Rospita	Programme Coordinator for Nutrition/Senior Nutrition Consultant, Health Division, Human Development Directorate, ASEAN Socio-Cultural Community Department
Education Division	Amalia M. Serrano	Senior Officer, Education Division, Human Development Directorate, ASEAN Socio-Cultural Community Department
Food and Agriculture Division	Gemilang Haifa Khairinissa	Officer, Food, Agriculture and Forestry Division, Sectoral Development Directorate, ASEAN Economic Community Department

Glossary

Anaemia: A pathological condition characterized by low levels of haemoglobin or poor oxygen carrying capacity of the red blood cells. Anaemia is an indicator of poor nutrition, health and well-being.¹

Adolescence: The transitional phase of growth and development between childhood and adulthood. Adolescents are defined as those between the ages of 10 and 19 years. The age ranges of 10–14 years and 15–19 years are referred to as early adolescence and late adolescence, respectively.²

Body mass index: A measure for indicating nutritional status and an accepted measure of adiposity.² It is calculated as weight in kg/height in metres. BMI is gender- and age-specific. BMI-for-age is based on the WHO child and adolescent growth standards.³

Fast food: Food that can be prepared quickly and easily and is sold in restaurants and snack bars as a quick meal or to be taken out.⁴

Food safety: All measures to ensure that food will not cause harm to the consumer when it is prepared and/or eaten according to its intended use.⁵ In the context of school meals, food safety refers to conditions and practices that ensure food is not contaminated with physical, chemical and/or biological hazards that could cause harm to consumers. It encompasses the whole process of food production, selection, handling, storage, preparation, service and consumption of the food in ways that prevent contamination.

Food-based dietary guidelines: Context-specific advice and principles on healthy diets and lifestyles. Guidelines typically propose a set of recommendations regarding the foods, food groups and dietary patterns that are required for optimal health and to prevent chronic disease. They are rooted in sound evidence and respond to a country's public health and nutrition priorities, food production and consumption patterns, sociocultural influences, food composition data and accessibility, among other factors.⁶

Food-based standards: Specific quantities, portions or ranges of foods/food groups that should be included/excluded in a meal/snack. These may also stipulate frequency of provision and/or restriction or prohibition of certain foods. They may be in line with national food-based dietary guidelines or other food/meal recommendations.⁶

Healthy diet: High intake of minimally processed foods, such as fruits, nuts, seeds, non-starchy vegetables, beans/legumes, oils from these plants, whole grains, yoghurt and fish; moderate intake of unprocessed red meats, poultry, eggs and milk; avoidance of refined starches and sugars, processed meats and other ultra-processed foods high in sodium, added sugars or trans-fats.⁷

Home-grown school meals: School feeding models that are designed to provide children in schools with safe, diverse and nutritious food, sourced locally from smallholders. A school feeding programme can be considered as "home-grown" even if only a proportion of food is purchased locally from smallholder farmers, provided that local purchases support and foster local agriculture and food markets.⁶

Inclusive procurement: A deliberate way for governments to purchase goods or services from specific unfavoured or vulnerable supplier categories in order to advance social and economic development.⁸

Marketing: Any form of commercial communication or message that is designed to, or has the effect of, increasing the recognition, appeal and/or consumption of particular products and services.⁹ It comprises anything that acts to advertise or otherwise promote a product or service. This broad definition is intended to cover the range of marketing strategies, including, but not limited to, advertising (including advertising of corporate social responsibility), sponsorship, direct marketing (e.g., mail, text), product placement and brand marketing.

Middle childhood: The age range of 5–9 years.¹⁰

Nutrient-based standards: Specific minimum and/or maximum quantities or ranges of energy and nutrients that an average meal/snack should provide. These are mainly based on estimated individual dietary requirements.⁶

Nutrition literacy: The degree to which individuals have the capacity to obtain, process and understand nutrition information and the skills needed to make appropriate nutrition decisions.¹¹ Nutrition literacy is the ultimate goal of food and nutrition education.

Overweight: For middle childhood and adolescence, a BMI-for-age above +1 standard deviations of the WHO growth reference (2007) median for children of the same age and sex.³

Processed foods: Foods that have been commercially prepared or packaged using baking, canning, drying or freezing. Most processed foods have two or three ingredients. They are edible by themselves or, more often, in combination with other foods. The purpose of processing is to increase the durability of unprocessed or minimally processed foods or to modify or enhance their sensory qualities. Examples of processed foods include bottled vegetables, canned fish, fruits in syrup, cheeses and freshly made breads.¹²

Recommended dietary intake: Sometimes referred to as recommended daily intake, is the average daily intake level of particular nutrient that is likely to meet the nutrient requirements of most healthy individuals in a particular life stage or gender group.¹³

School-age children: For the purposes of this publication, school-age children are defined as children from 3–18 years of age. Pre-school-age children are those from 3–5 years of age. However, definitions vary across settings.¹⁴

School food environment: The spaces, infrastructure and conditions inside and around the school premises where food is available, obtained, purchased and/or consumed (for example, tuck shops, kiosks, canteens, food vendors, vending machines). It also includes the availability of foods for consumption, the nutritional content of these foods and the information available, marketing and promotion (advertisements, branding), food labelling, packaging and pricing of foods and food products.¹⁵

School meal programmes: Programmes that provide meals regularly to schoolchildren. These programmes make use of various operational models (including procurement and preparation). They can be implemented in tandem with complementary interventions, such as nutrition education, deworming, supplementation, etc. Also referred to traditionally as school feeding programmes.⁶

School nutrition environment: In an improved school nutrition environment all five action areas (nutritious foods and diets, healthy school food environments, school health and nutrition services, nutrition literacy and physical activity) are implemented.

Sedentary behaviour: Any waking behaviour characterized by an energy expenditure ≤ 1.5 metabolic equivalents, while in a sitting, reclining or lying posture.¹⁶

Stunting: Height-for-age below -2 standard deviations of the WHO growth reference (2007) median for children of the same age and sex.

Thinness: In middle childhood and adolescence, a BMI-for-age below -2 standard deviations of the WHO growth reference (2007) median for children of the same age and sex.³

Ultra-processed food and drink: Food and beverages that have undergone industrial formulations manufactured from substances derived from foods or synthesized from other organic sources. They typically contain little or no whole foods, are ready-to-consume or heat up, and are fatty, salty or sugary and depleted in dietary fibre, protein, various micronutrients and other bioactive compounds. Examples include: sweet, fatty or salty packaged snack products, ice cream, sugar-sweetened beverages, chocolates, confectionery, French fries, burgers and hot dogs, and poultry and fish nuggets.¹² Ultra-processed food and beverages are regulated by some ASEAN Member States under national food legislation to ensure the safety of the products.

Unhealthy foods and non-alcoholic beverages: Foods and non-alcoholic beverages considered to be harmful to health.¹⁷ These foods and beverages are classified as 'not-permitted' to be marketed to children according to WHO nutrient profile models^a.

^a A nutrient profile model is a tool to classify or rank foods according to their nutritional composition for reasons related to preventing disease and promoting health.

Acronyms

ASEAN	Association of Southeast Asian Nations
BMI	Body Mass Index
ECD	Early Childhood Development
FAO	Food and Agriculture Organization of the United Nations
GAIN	Global Alliance for Improved Nutrition
GSHS	Global School-based Student Health Survey
HGSF	Home-Grown School Feeding
IFA	Iron and folic acid
RDI	Recommended Dietary Intake
SBFP	School-based feeding programme
SME	Small and medium enterprises
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
WASH	Water, sanitation and hygiene
WFP	World Food Programme
WHO	World Health Organization



1

INTRODUCTION



1 Introduction

1.1 Purpose

The purpose of these ASEAN Minimum Standards and Guidelines is to assist Member States to uphold every school-age child's right to safe, healthy and adequate nutrition. The guidelines describe the rationale, framework and thematic areas for a comprehensive School Nutrition Package and set out the minimum standards for implementing, monitoring and enforcing this package. It covers children aged 3–18 years in schools. It brings together recommendations from existing international technical documents to provide harmonized guidelines specific to the ASEAN region. The implementation of the guidelines should depend on the country-context for each minimum standard. The guidelines are an identified priority in the ASEAN Strategic Framework and Action Plan on Nutrition 2018–2030.

1.2 Intended audience

The guidelines are intended for government representatives from relevant technical and policy departments, including Ministries of Education, Health, Agriculture, Early Childhood Development, Gender, Social Protection/Social Welfare, Interior, local government agencies and other relevant ministries. They are also intended for development partners who are engaged in the implementation of, and advocacy for school nutrition policies and programmes in ASEAN Member States.





2

RATIONALE FOR
ASEAN SCHOOL
NUTRITION PACKAGE

2 Rationale for the ASEAN School Nutrition Package

► Summary

Every child has a right to safe, healthy and adequate nutrition throughout their childhood. Investing in the nutrition of school-age children is essential to uphold these rights and will result in substantial returns in human capital and economic growth for ASEAN Member States.¹⁸

Holistic and coherent school policies and programmes are key to achieve children's human rights to food, health and education. Interventions such as healthy school meals and food and nutrition education can improve schoolchildren's diets, foster healthier food practices and extend these same benefits to their families and communities.

The regional burden of malnutrition among school-age children is significant and the prevalence of overweight and obesity is rising steeply.

The multiple drivers of malnutrition in school-age children demand an integrated systems approach to address the immediate causes of inadequate diets and decreased physical activity and the underlying broader systemic drivers.

Schools, including pre-schools and childcare centres (where applicable), are an opportune setting for improving children's diets and nutrition practices, and for delivering essential services to improve nutrition outcomes (thinness, overweight and micronutrient deficiencies) in schoolchildren, as regional school enrolment rates are high and children spend a large proportion of their time in schools.

The ASEAN School Nutrition Package is a harmonized guideline specific to the region, which takes a human rights-based approach to bring together the different aspects of school nutrition covered in a range of global frameworks and guidelines.



2.1 Regional returns on investing in the nutrition of school-age children

Every child has a right to health, and to safe, healthy and adequate food throughout their childhood. Investment in the nutrition of school-age children is essential to protect their rights and will result in substantial returns in terms of human and economic capital.

ASEAN Member States recognize the importance of good nutrition for optimal growth and development during the first 1,000 days of a child's life, from conception to age 2 years. Some progress has been made in addressing malnutrition in young children, especially through reducing stunting^b. The ages of 3 to 19 years are also a critical period for rapid growth, development and establishment of healthy eating habits.

Good nutrition throughout the school years can address early nutritional deficits and support children and adolescents to reach their developmental potential.¹⁹ Nutritious diets and the maintenance of good health and a healthy weight reduce the risk of malnutrition and its negative consequences during childhood and in adulthood.

Data indicate that school-age children are increasingly consuming meals outside their homes²⁰ and are exposed to outside influences from peers, the media and celebrities who start to play a stronger role in children's food choices.²¹ Children at this age are exposed to high volumes of persuasive marketing of unhealthy foods and beverages as they go about their daily lives. This includes marketing on transport routes, television, digital devices, in and around schools, in retail environments and at sports and cultural events.²² Creating healthy food environments for school-age children is therefore critical. Affordability, availability, and accessibility of nutritious foods should be considered as critical factors in ensuring food security and optimum nutrition outcomes among school-age children and their households.

Improving the nutrition of school-age children can have a measurable positive impact on cognition, linear growth and other health outcomes.²³ Children who consume healthy meals, snacks and beverages in school have been shown to perform well in class²⁴ and to adopt healthy eating habits and behaviours.²⁵ Well-nourished children learn better, have higher earning potential as adults, put less strain on the health system and contribute to the economy.¹⁸ A recent assessment suggests that undernutrition, micronutrient deficiencies and overweight cost the global economy US\$3.5 trillion and up to 3 per cent of gross domestic product in some countries.²⁶ Some of this cost can be off-set with greater investment in supporting the nutrition of school-age children.

2.2 Regional burden of malnutrition among school-age children

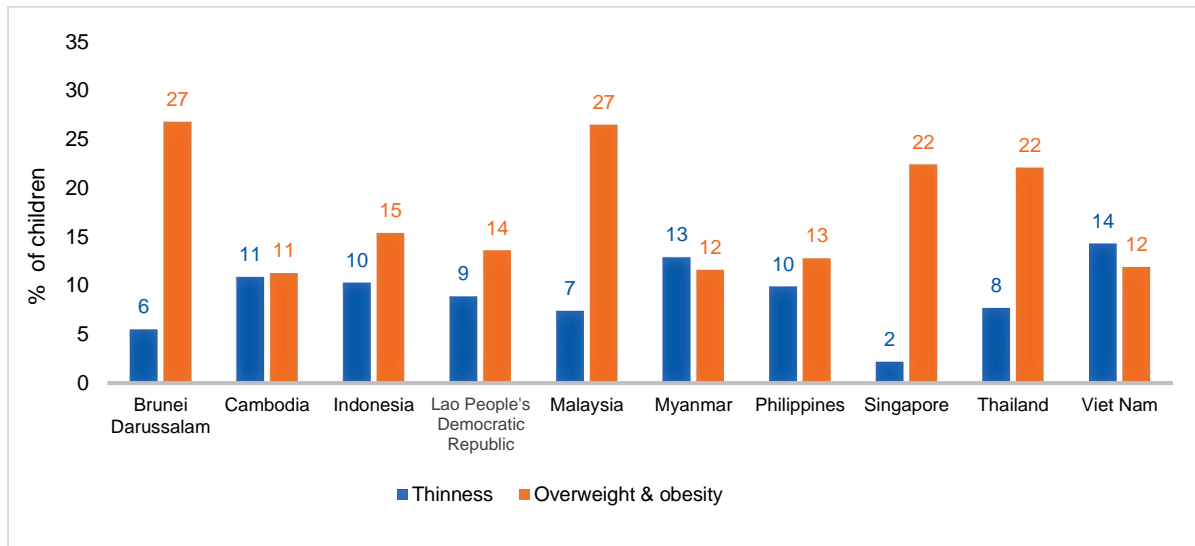
This section presents data for children aged 5–19 years of age. Although the guideline includes pre-school children aged 3–5 years, data on this age group are well documented and are available in the recently published ASEAN Food and Nutrition Security Report; as such, they are not presented here.²⁷

The available information, though limited, suggests that school-age children are experiencing a triple burden of malnutrition: undernutrition in the form of thinness, micronutrient deficiencies, and overweight and obesity. The estimated prevalence of thinness is below 15 per cent but still affects around 1 in 10 children in the ASEAN region (Figure 1).

The estimated prevalence of overweight and obesity has now overtaken thinness in all ASEAN Member States with the exception of Myanmar and Viet Nam. Across all ASEAN Member States (with the exception of girls in Singapore), there has been a rapid rise in the prevalence of overweight and obesity among school-age children in the past two decades (Figures 2 and 3). The steep rise is particularly worrying because obesity is associated with increased risk of diet-related non-communicable diseases, depression and poor school performance.²⁸

^b Stunting is defined as height for age Z (HAZ) scores below –2 standard deviations of the World Health Organization (WHO) growth reference standard.

Figure 1: Prevalence of thinness and overweight (including obesity) in children (5–19 years of age), 2016



Source: WHO, Global Health Observatory (2016)

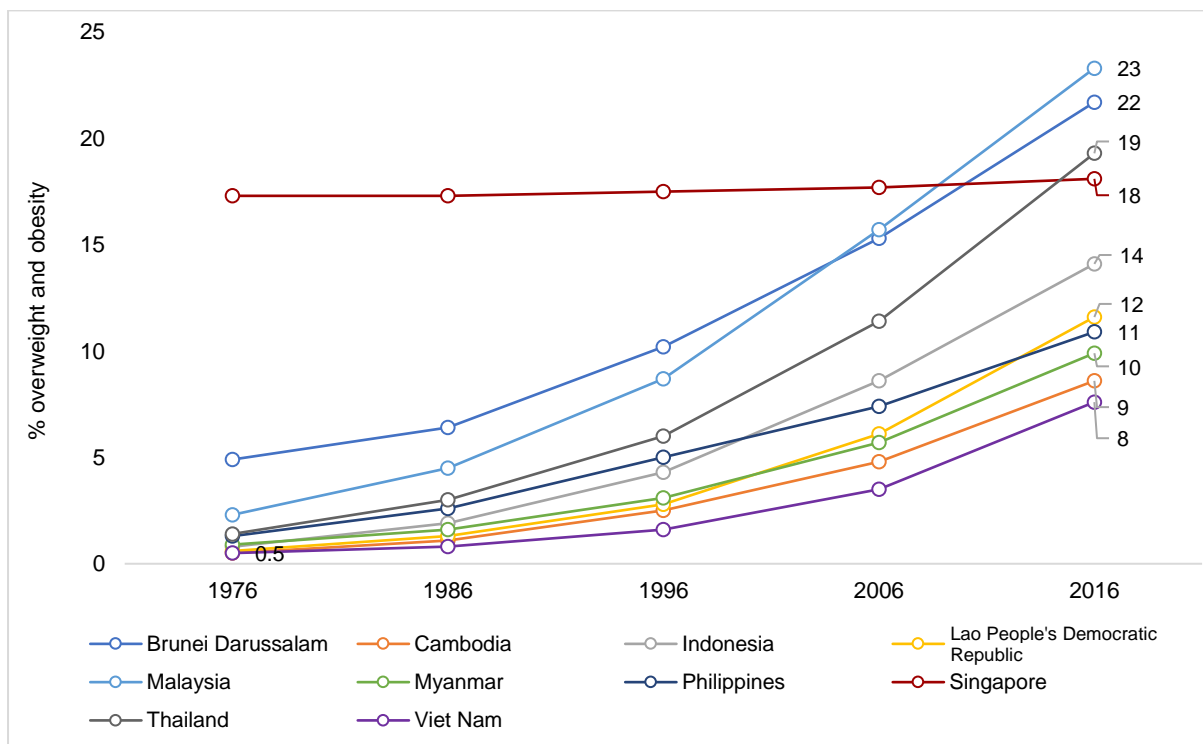
Note-1. Thinness: BMI-for-age < -2 standard deviations below the median (crude estimate).

2. Overweight (and obesity): BMI-for-age > +1 standard deviations above the median (crude estimate).

3. Viet Nam's General Nutrition Survey (2020) indicated that 12 per cent of children aged 5–10 years are underweight and 19 per cent of children aged 5–19 years are affected by overweight (including obesity).

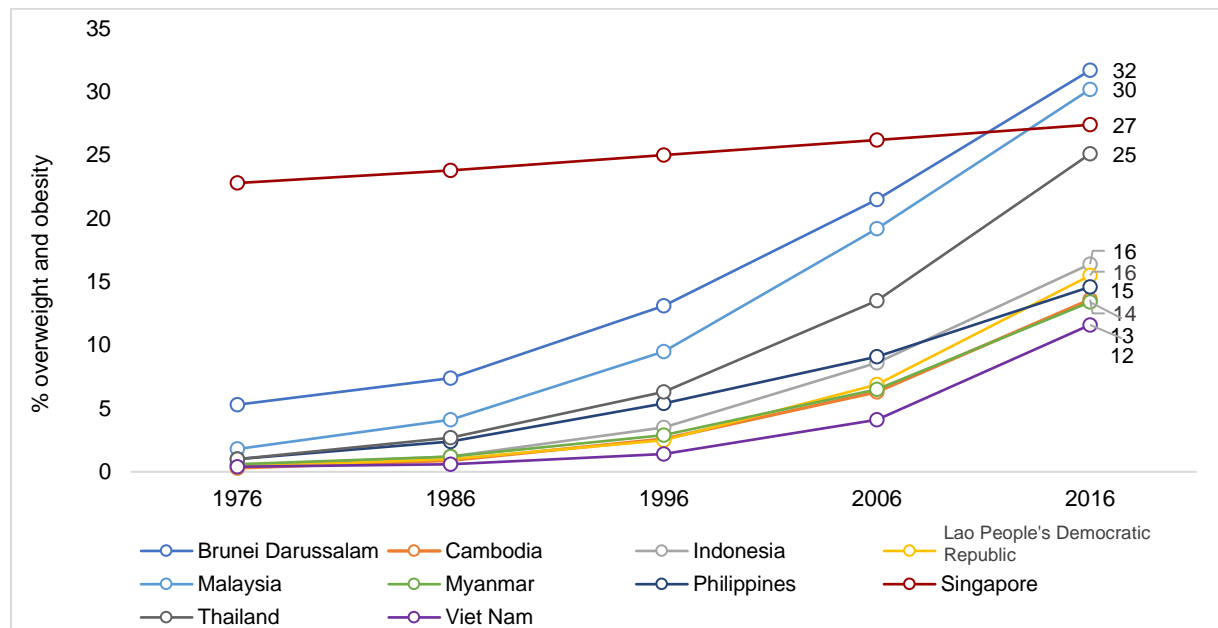
4. Myanmar's Micronutrient and Food Consumption Survey (MMFCS) 2017–2018 reported on thinness and overweight children aged 5-14 years old. The survey indicated that 14.6 per cent of children (5–9 years) were thin and 3.3 per cent were overweight. Among adolescent girls aged 10–14 years, 18.8 per cent were thin and 5.2 per cent were overweight. The sub-set age analysis of 15–19 years old girls from women of reproductive age (15-49 years) showed that 34.7 per cent were thin and 5.6 per cent were overweight.

Figure 2: Trend in overweight (including obesity) (BMI-for-age >+1SD) prevalence in girls (5-19 years of age), 1976-2016



Source: WHO, Global Health Observatory (2016)

Figure 3: Trend in overweight (including obesity) (BMI-for-age >+1SD) prevalence in boys (5–19 years of age), 1976–2016

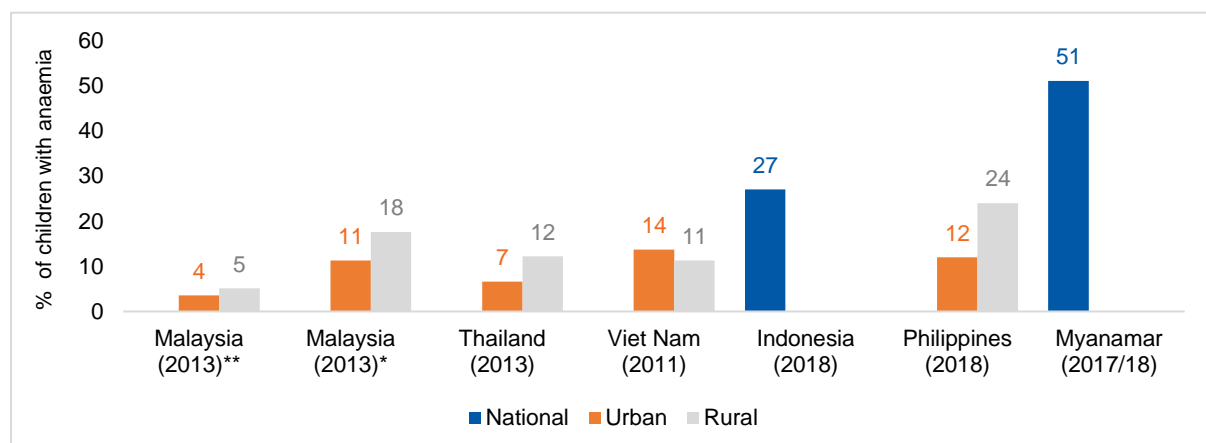


Source: WHO, Global Health Observatory (2016)

A few national surveys reported prevalence of overweight and obesity using different cut-offs (such as the cut-offs used by the Centers for Disease Control and Prevention) and are not comparable across countries. In Singapore, the overweight prevalence for children in mainstream schools aged 6–19 years was 16 per cent in 2021 as per the Ministry of Education, where overweight refers to BMI-for-age ≥ 90 th percentile based on a local reference population of children of the same age and gender.

There is very limited information on micronutrient deficiencies among school-age children in the ASEAN region. The most comprehensive data available are for the prevalence of anaemia and iodine deficiency, but there are very limited data for other micronutrient deficiencies, including for vitamins A, B, and D, folate, and zinc for the whole age group. Based on the available data, anaemia prevalence ranges from 4 per cent among urban 7–12-year-olds in Malaysia, to 51 per cent of children aged 5–9 years in Myanmar (Figure 4).

Figure 4: Proportion of school-age children with anaemia



Source: Malaysia –South East Asian Nutrition Surveys (SEANUTS) 2013; Thailand – SEANUTS 2013; Indonesia – Basic Health Research 2018; Philippines – ENNS 2018; Viet Nam - SEANUTS 2011; Myanmar – MMFCS 2017/18
Note: The data presented are for different age ranges in each country: Malaysia* age range is 4–6 years; Malaysia** age range is 7–12 years; Thailand age range is 6–13 years; Indonesia age range is 5–14 years, among older age group (15–24 years) anaemia was 32 per cent; Philippines age range is 6–10 years; Viet Nam age range is 6–12 years; and Myanmar age range is 5–9 years.

A 2010 review found that the average prevalence of iron deficiency among 6–12 years olds in Southeast Asia was 20 per cent.²³ In addition, a 2021 literature review on the nutritional status of school-age children and adolescents in low- and middle-income countries found that anaemia ranges widely within the countries, as well as between countries in the region.²⁹

Data available on iodine intake show that the intake among children aged 6–12 years in Malaysia and Thailand is sufficient. There are limited data available on the burden of other micronutrient deficiencies, making it impossible to know whether these deficiencies are a problem or not. Though the exact magnitude of micronutrient deficiencies in this age group is unknown, persistent underweight, and growing rates of overweight and obesity indicate that deficiencies of essential micronutrients could be widely prevalent in this age group.

The major data gaps on the nutritional status of school-age children mean that ASEAN Member States are frequently dependent on modelled, rather than actual, survey data. Filling these data gaps is essential to understand the true prevalence of malnutrition, the population groups most affected and the trends in nutritional deficiencies over time. This will help Member States to make informed decisions on the priority actions to address malnutrition in this age group.

Despite the data limitations, the evidence suggests that large numbers of school-age children are suffering from malnutrition, particularly in the form of overweight and obesity, which is rapidly increasing. It is imperative that action be taken to reverse this trend to protect children's health and learning potential.

2.3 Drivers of malnutrition in school-age children

The multiple drivers of malnutrition among school-age children living in the ASEAN region demand a comprehensive response. Inadequate diets, diseases and decreased physical activity are the immediate causes of malnutrition in this age group. These, in turn, are influenced by broader food, health, water and sanitation, and social protection systems.

2.3.1 Inadequate diets

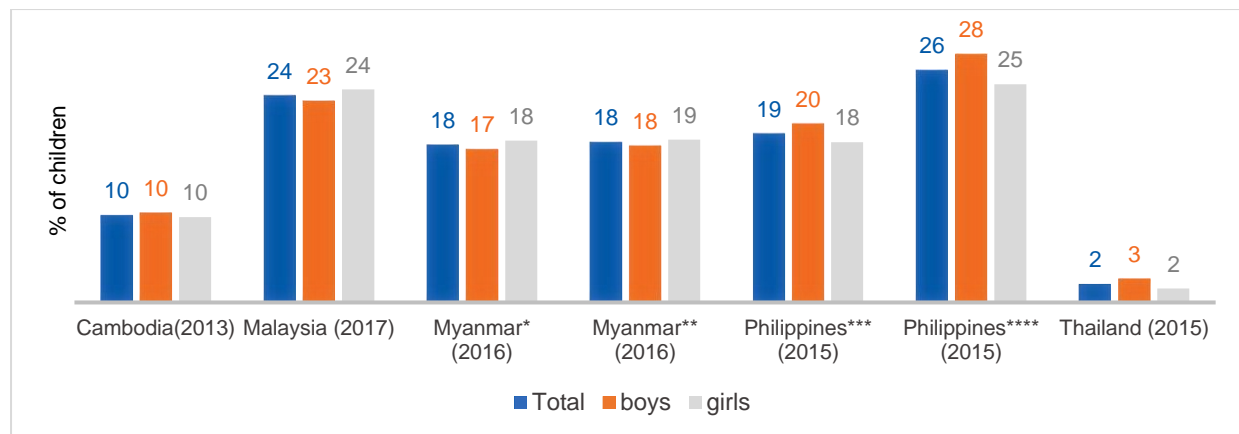
Data on the dietary intake of school-age children within ASEAN Member States are scarce. As most of the dietary studies in the region are conducted in small areas and exist only for subgroup of the broader age group 5–18 years, the data are not nationally representative for school-aged children. There are indications, however, that the diets of many children in Southeast Asia are of limited diversity, with minimal consumption of animal-source foods, fruits and vegetables, and inadequate energy intake, especially in children living in vulnerable households.³⁰

There is substantial evidence that schoolchildren in ASEAN Member States are not eating enough fruit and vegetables. WHO recommends consuming more than 400g of fruits and vegetables (i.e., at least five portions per day), to improve overall health and reduce the risk of micronutrient deficiencies and certain non-communicable diseases.³¹

Data based on self-reporting by schoolchildren shows that less than a third of children in Malaysia (23.5 per cent)³² aged 13–17 years meet the recommendation of consuming fruits and vegetables at least five times per day. Less than 10 per cent of children aged 13–17-year-olds in Thailand (2.1 per cent)³³ and Cambodia (9.9 per cent³⁴) are consuming fruits and vegetables at least five times per day (Figure 5). In Myanmar³⁵ and the Philippines³⁶, the percentage of children eating fruits (two or more times per day) and vegetables (three or more times per day) are reported separately.

Fruits and vegetables are important contributors of micronutrients and fibre. Low intakes are associated with micronutrient deficiencies and increased risk of non-communicable diseases.^{37, 38}

Figure 5: Percentage of children (13–17 years) who ate fruits and vegetables five or more times per day



Source: Global School-based Student Health Surveys (GSHS) (<https://www.cdc.gov/gshs/>)

Malaysia's Adolescent Nutrition Survey Report, National Health and Morbidity Survey, Institute for Public Health, Ministry of Health (2017) adopted GSHS methodology.

Note: 1. No data are available for the Lao People's Democratic Republic and Viet Nam.

2. Singapore's Student Health Survey (2012) showed that 20 per cent of students (boys 21 per cent, girls 19 per cent) aged 13–17 consumed at least two servings of fruit (including a maximum of one serving of fruit juice) and at least two servings of vegetables every day.

3. Brunei Darussalam's GSHS (2019) indicated 6.7 per cent of students ate fruits five or more times per day and 2 per cent of students ate vegetables five or more times per day, respectively.

4. In Indonesia, GSHS 2015 indicates 23 per cent of children aged 12–19 years are consuming fruits and vegetables at least five times per day. Based on Riskesdas, only 3 per cent of children aged 5–18 years are consuming five servings of fruits and vegetables per day.³⁹

5. The age range for the Philippines is 13–15 years.

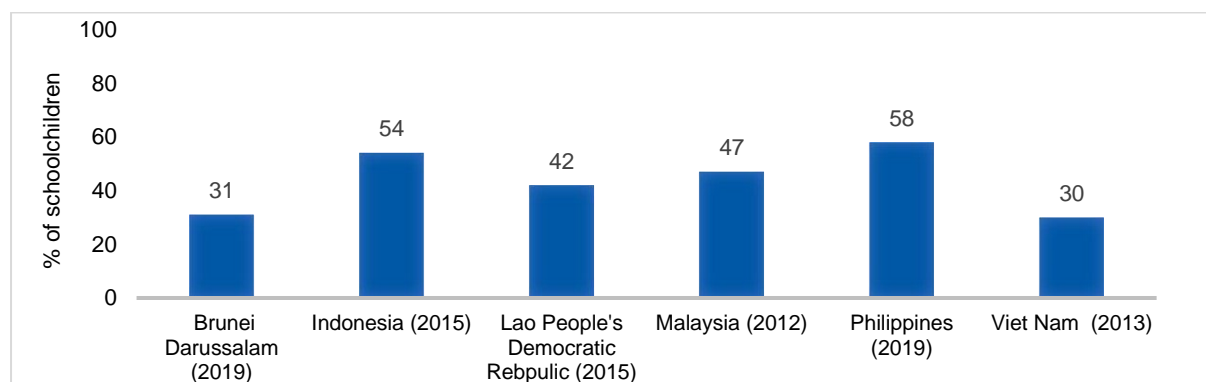
6. A population-based household survey on fruit and vegetable consumption of Thai people by Institute for Population and Social Research, Mahidol University (2021) showed that 19.8 per cent of students (boys 23.1 per cent, girls 15.2 per cent) aged 13–17 years consumed at least 400g of fruits and vegetables based on WHO recommendation. In addition, based on Thailand's recommendation on eating at least 250g of fruits and vegetables (two servings of fruits and two servings of vegetables) a day for each student, 34 per cent of students (boys 36 per cent, girls 31.1 per cent) aged 13–14 years consumed at least 250g of fruits and vegetables.

7. *Vegetables three or more times per day during the past seven days, **Fruits two or more times per day during the past seven days***Fruits three or more times per day, ****vegetables three or more times per day.

Diets are shifting rapidly, with traditional diets being replaced by higher-energy diets including more ultra-processed foods and drinks that contain large amounts of added sugar, unhealthy fats and salt.⁴⁰ Globalization and urbanization have contributed to this transition resulting in greater access to Western-style supermarkets, convenience stores and 'fast food'.

There is increasing evidence that school-age children are consuming too much unhealthy food and drink. The percentage of school children reporting eating fast food at least once a week is highest in the Philippines (58 per cent) and common in most ASEAN Member States (Figure 6).

Figure 6: Percentage of schoolchildren (13–17 years) consuming fast food at least once a week



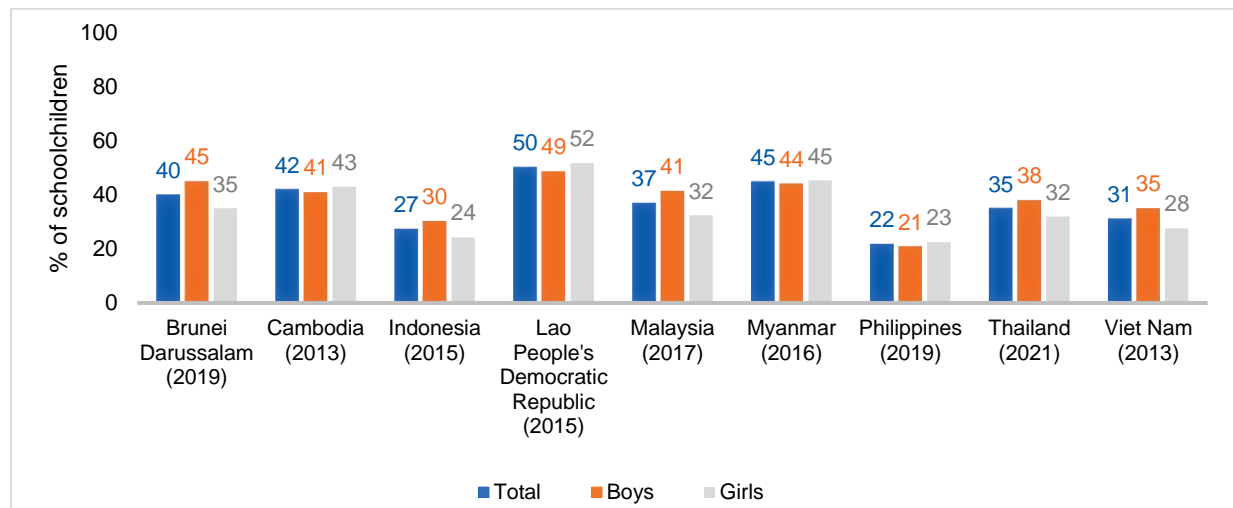
Source: GSHS (<https://www.cdc.gov/gshs/>)

Note: 1. No data are available for Myanmar

2. A few national surveys use indicators with varying definitions. For example, Singapore's Student Health Survey (2012) indicated that 46 per cent of students aged 13–17 consumed deep fried food twice a week or less frequently. Thailand's GSHS (2021) indicated that 39 per cent of children aged 13–17 ate fast food at least three days per week. Cambodia's GSHS (2013) indicated that 3 per cent of students ate food from a fast-food restaurant on three or more days during the past seven days.

Regular consumption of carbonated soft drink contributes to overweight and obesity by adding excess calories to the diet.⁴¹⁻⁴³ About 40 per cent of schoolchildren aged 13–17 years within ASEAN Member States report consuming carbonated soft drinks at least once a day, while more than half report consuming fast food at least once a week.⁴⁴ The percentage of students who reported usually drinking carbonated soft drinks one or more times per day during the past 30 days ranged from 22 per cent in the Philippines to 50 per cent in the Lao People's Democratic Republic (Figure 7).

Figure 7: Percentage of schoolchildren (13–17 years) who usually drank carbonated soft drinks one or more times per day (%)



Source: GSHS (<https://www.cdc.gov/gshs/>)

Malaysia's Adolescent Nutrition Survey Report, National Health and Morbidity Survey, Institute for Public Health, Ministry of Health (2017) adopted GSHS methodology.

Note: Singapore's Student Health Survey (2012) found that 74 per cent of students (boys 71 per cent and girls 77 per cent) aged 13–17 consumed sweetened drinks on average once a day or less frequently. Data are not included in the graph as they are not comparable due to differences in the indicator and the methodologies of both surveys.

The availability and marketing of unhealthy foods in and around schools are considered major drivers of these trends. School-age children are exposed to high volumes of marketing unhealthy foods and beverages, which increase their purchasing and consumption of unhealthy foods.⁹ Even in low-income countries, such as Cambodia, more than 50 per cent of surveyed school-age children reported seeing advertisements for carbonated soft drinks or fast foods “most of the time” or “always” when they watched television, videos or movies.⁴⁵

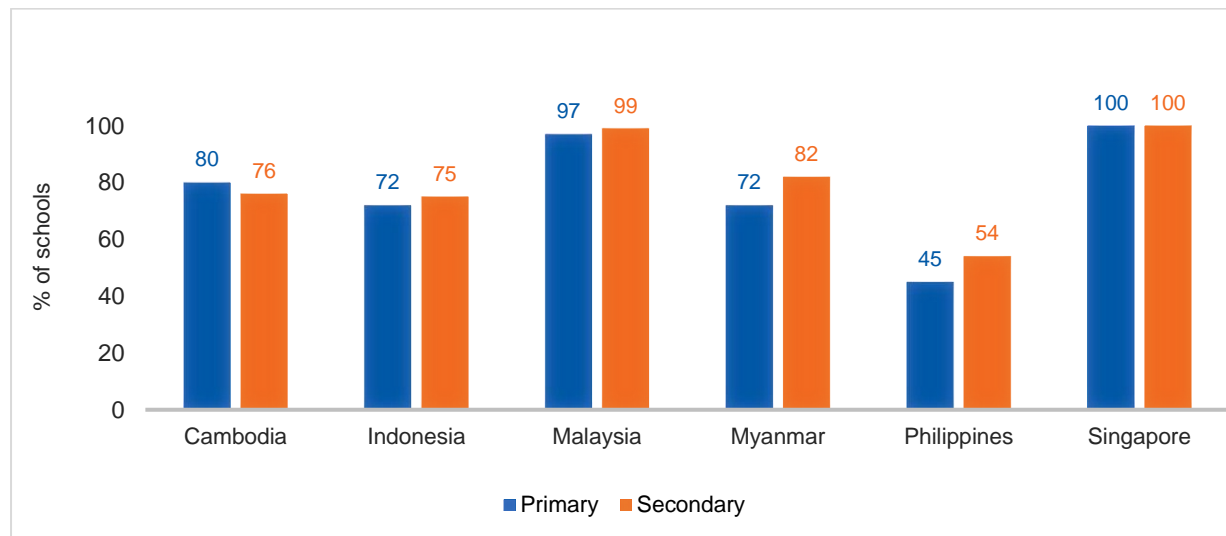
2.3.2 Diseases

Persistent infections in the early years of life can trap children in the vicious cycle of malnutrition and diseases. Nutrient requirements increase during disease episodes but can often go unmet due to low- or poor-quality intake of essential nutrients. Infectious diseases, such as helminthic infections, diarrhoea, respiratory infections, malaria, tuberculosis and HIV can affect a child's appetite, ability to assimilate nutrients in the body, attendance at school or ability to learn.^{14, 38, 46}

The outbreak of food-borne diseases in and around schools is also of concern across ASEAN Member States. Southeast Asia has one of the highest burdens of food-borne diseases in the world, with more than 150 million cases and 175,000 deaths a year. Globally, half of the people who are infected and die from either typhoid fever or hepatitis A reside in the Southeast Asia region.⁴⁷

School canteens and street food vendors are often common settings for food-borne outbreaks.⁴⁸ The risk of food-borne diseases can be linked to inadequate conditions in food production and storage, food preparation with unsafe water, poor hygiene and weak legislation and implementation of food safety standards.⁴⁰ A number of schools in ASEAN Member States do not provide safe drinking water for children to enable them to stay hydrated and to provide a healthy alternative to sugary drinks (Figure 8).

Figure 8: Provision of clean drinking water in schools



Source: UNICEF 2020 (<https://data.unicef.org/topic/water-and-sanitation/drinking-water/>)

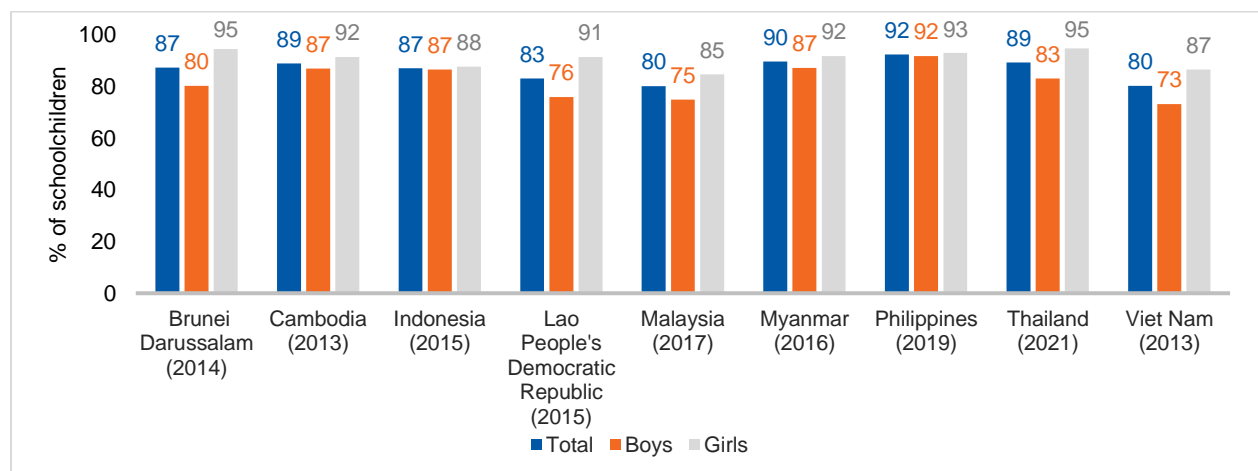
Note: No data available for Brunei Darussalam, Lao People's Democratic Republic, Thailand or Viet Nam

Mental illnesses, including eating disorders (anorexia nervosa, bulimia nervosa), anxiety and depression, commonly emerge during adolescent years and can lead to abnormal eating behaviours, alcohol and substance abuse and social withdrawal, which can have a profound impact on school attendance and learning.⁴⁹

2.3.3 Inadequate physical activity

School-age children within the ASEAN Member States are not getting enough exercise. WHO recommends that children and adolescents aged 5–17 years should do at least 60 minutes per day of moderate to vigorous physical activity throughout the week. Vigorous-intensity aerobic activities, as well as those that strengthen muscle and bone, should be incorporated at least three days a week.⁵⁰ Physical activity contributes to prevention of diet-related non-communicable diseases as well as to mental well-being. The vast majority of students in ASEAN Member States report that they do not achieve the WHO recommendation for physical activity (Figure 9).

Figure 9: Prevalence of inadequate physical activity among school-age children (13–17 years)



Source: GSHS (<https://www.cdc.gov/gshs/>).

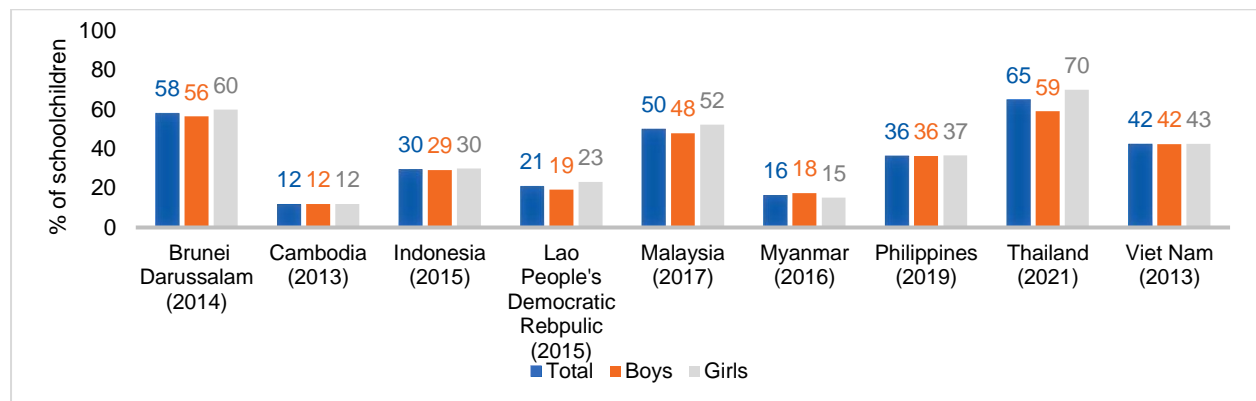
Malaysia's Adolescent Nutrition Survey Report, National Health and Morbidity Survey, Institute for Public Health, Ministry of Health (2017) adopted GSHS methodology.

Note: Inadequate physical activity is defined as <60 mins per day on all seven days.

No data are available for Singapore.

Similarly, schoolchildren report that they spend large amounts of time in sedentary activity (Figure 10). Sedentary behaviour is particularly high among schoolchildren in Brunei Darussalam (58 per cent) and Thailand (65 per cent) where more than half report sitting for more than three hours per day when not in school or doing homework. Students commonly report watching television, playing computer games or talking with friends when not in school or doing homework during a typical day.⁵¹ The lack of physical activity both in and out of school, combined with sedentary behaviour, are putting school-age children at increased risk of overweight and obesity.

Figure 10: Proportion of school-age children (13–17 years) who participate in sedentary activity ≥3 hours per day



Source: GSHS (<https://www.cdc.gov/gshs/>). Malaysia's Adolescent Nutrition Survey Report, National Health and Morbidity Survey, Institute for Public Health, Ministry of Health (2017) adopted GSHS methodology. Note: No data are available for Singapore.

2.3.3 Multiple system influences

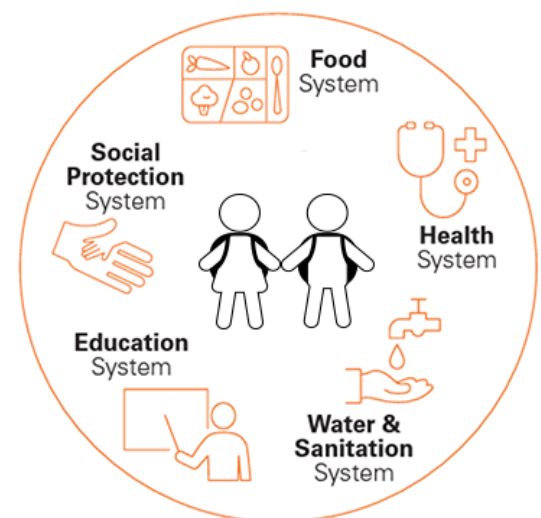
Multiple systems influence children's diets and physical activity, and ultimately their nutritional outcomes. The **food system** plays a central role in determining whether children have access to nutritious, affordable and sustainable diets. In addition, the food system needs to operate in ways that empower school-age children and their families to demand nutritious foods.

The **health system** plays a crucial role in delivering health and nutrition services such as micronutrient supplements, deworming treatment, growth monitoring, routine health check-ups, treatment, counselling and referral to children in schools.

The **education system** has a vital role as schools are an opportune setting for effective delivery of nutritious meals, essential nutrition services and nutrition education to support healthy food practices.

The **social protection system** has an essential role in protecting **vulnerable school-age** children and improving their access to education and nutrition.

The **water, sanitation and hygiene systems** need to ensure children have access to safe food and water in schools in order to maintain good health, prevent food- and water-borne diseases and practice appropriate hygiene. The multiple drivers of malnutrition require an integrated and comprehensive approach to support good nutrition for school-age children.

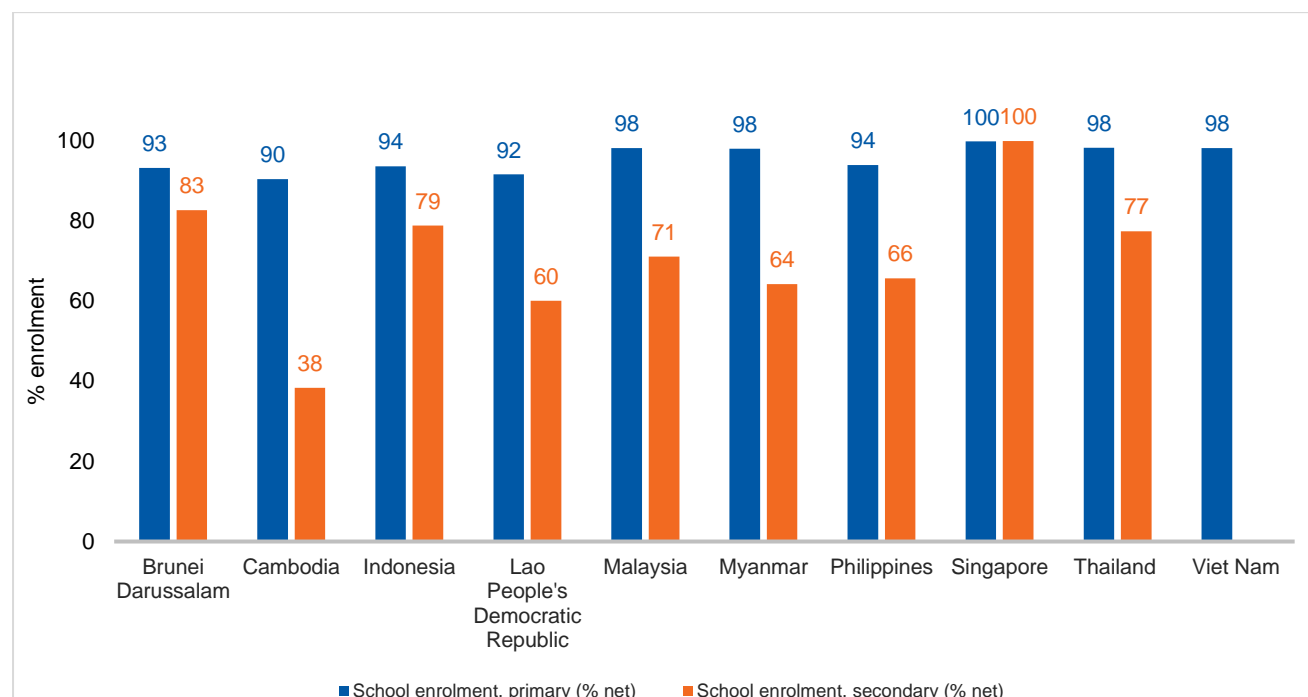


Source: Nutrition, for Every Child: UNICEF Nutrition Strategy 2020–2030. UNICEF, UNICEF, New York

2.4 Schools are a critical platform for improving nutrition in ASEAN region

Schools offer an effective setting for improving the nutrition and health of children.⁵² In ASEAN Member States, where enrolment rates are high, schools provide a means of reaching most children. All ASEAN Member States have over 90 per cent enrolment at primary schools. Although the regional average for secondary school enrolment is not as high (71 per cent), secondary schools remain an important entry point for reaching adolescents with nutrition programmes and services (Figure 11)⁵³, such as nutritious school meals, safe drinking water, micronutrient supplementation, nutrition education and physical activity.

Figure 11: School enrolment rate in primary and secondary school



Source: World Bank Development Indicators (<https://databank.worldbank.org/source/world-development-indicators>).

Note: Data are from 2017 or 2018 except for primary enrolment data from Thailand (2009) and Viet Nam (2013) and secondary enrolment data from Cambodia (2008), Philippines (2015) and Thailand (2015).

2.5 Regional harmonized guidelines on school nutrition

This regional harmonized guideline brings together the different aspects of school nutrition covered in a range of global frameworks and guidelines. It sets out a comprehensive set of actions for a School Nutrition

Package that is context specific for the ASEAN region. While some ASEAN Member States already have nutrition policies, standards, legislation and programmes in place to support school-age children, others do not. Where standards are in place, there is often no mechanism to monitor their implementation, and there may be weak enforcement and few evaluations of their impact. The result is that the food, snacks and drinks provided in schools often remain nutritionally inadequate, school-based nutrition services are insufficient and there are limited opportunities to engage schoolchildren in regular physical activities and quality nutrition education to achieve nutrition literacy.

United Nations agencies have developed an extensive range of global guidance documents, resources and tools on school nutrition to support governments, institutions and partners in advancing school-based and school-linked actions to prevent and address malnutrition in all contexts. These guidance materials cover school feeding, provision of safe drinking water and handwashing infrastructure, nutrition education and behaviour change strategies, micronutrient supplementation and physical activity, and the provision of healthy school food environments.

There are also several frameworks for the implementation of integrated health and nutrition packages, including the Focusing Resources on Effective School Health (FRESH) framework, the Home-Grown School Feeding approach, the Global School Initiative, Health Promoting Schools, Nutrition-Friendly Schools, Child-Friendly Schools and the School Policy framework on Diet, Physical Activity and Health.⁵⁴

These global frameworks and guidance form the foundation of the ASEAN School Nutrition Package. This document synthesizes the key messages from the existing global frameworks and guidance on diet, physical activity, and health (refer to Box 1) to provide a comprehensive minimum package of nutrition actions. A more comprehensive list of school nutrition frameworks and nutrition guidance materials are provided in Annex 1.

Box 1: Key global frameworks and guidance on school nutrition

Food and Agriculture Organization of the United Nations (FAO)	School Food and Nutrition Framework 2019
FAO	Nutrition guidelines and standards for school meals, 2019
FAO	Strengthening sector policies for better food security and nutrition results through education systems, 2019
FAO	Legal guide on school food and nutrition: Legislating for a healthy school food environment, 2020
UNICEF	Programming Guidance: Nutrition in Middle Childhood and Adolescence, 2021
UNICEF, GAIN	Food systems for children and adolescents, 2019
UNESCO, et al	UN Framework for reopening schools, 2020
WFP, FAO	Home-Grown School Feeding Resource Framework 2018
WHO	School Policy Framework 2008
WHO, UNESCO	Global standards for Health Promoting Schools, 2021

A young girl with dark hair tied back, wearing a white short-sleeved shirt and a blue skirt, is smiling warmly at the camera. She is sitting at a wooden table in a school cafeteria, eating a meal from a white tray with a red border. The tray contains white rice, a small portion of meat, and some green vegetables. In the background, other students in similar uniforms are seated at tables, some smiling and talking. Large windows in the background let in bright, natural light, creating a bright and cheerful atmosphere.

3

FRAMEWORK FOR
THE ASEAN SCHOOL
NUTRITION PACKAGE

3 Framework for the ASEAN School Nutrition Package

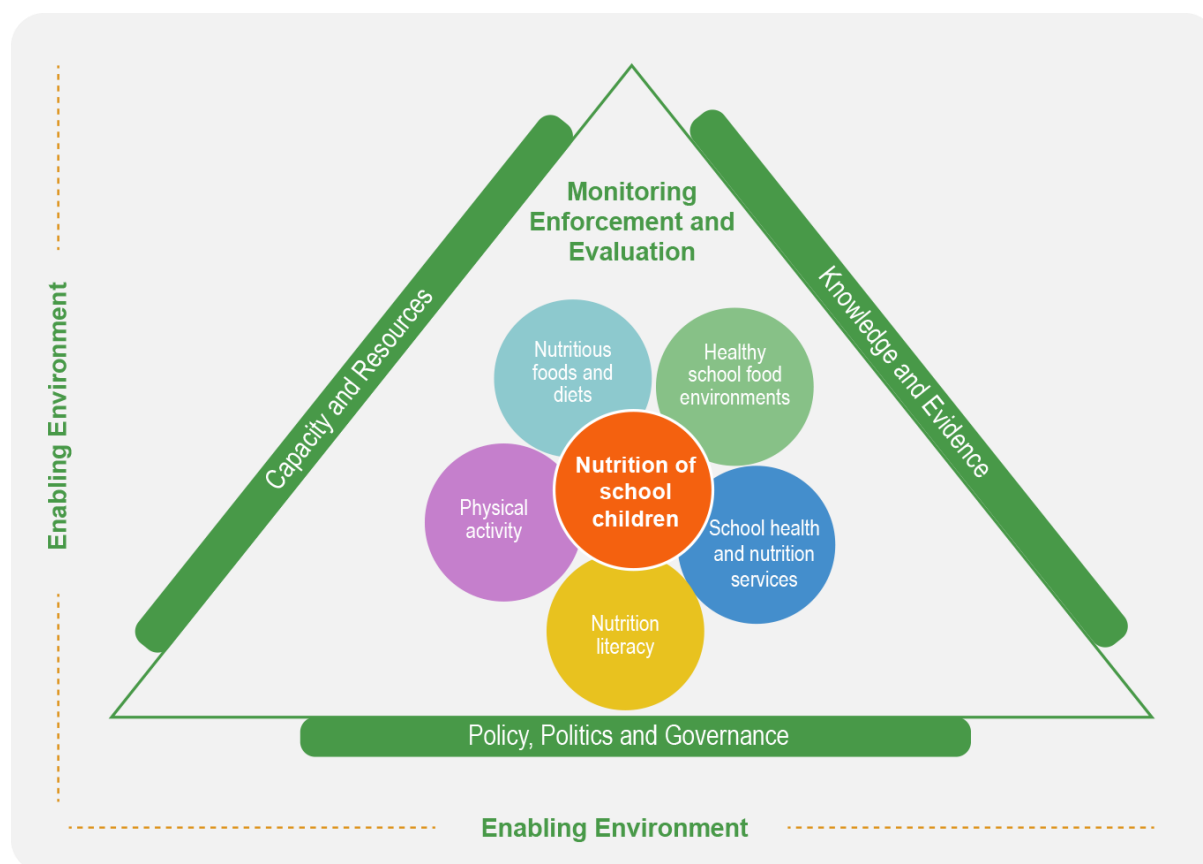
► Summary

- A framework for the ASEAN School Nutrition Package represents the logical foundation for the guidelines and minimum standards.
- The first minimum standard emphasizes the need for a comprehensive and integrated approach.
- Subsequent minimum standards are grouped under the five thematic areas for improving the nutrition of schoolchildren: i) nutritious foods and diets; ii) healthy school food environments; iii) school health and nutrition services; iv) nutrition literacy; and v) physical activity.
- A further set of minimum standards relate to monitoring, enforcement and evaluation to ensure that actions are effectively implemented and sustained over time.
- The final minimum standard relates to an enabling environment. This includes creating favourable environments related to i) knowledge and evidence; ii) policy, politics and governance; and iii) capacity and resources.



An overarching framework for the ASEAN School Nutrition Package has been developed to organize the logical foundation for the guidelines and minimum standards (Figure 12).

Figure 12: School Nutrition Package framework



The nutrition of school-age children is at the centre, surrounded by five action areas: nutritious foods and diets, healthy school food environment, school health and nutrition services, nutrition literacy and physical activity. These action areas are interlinked and emphasize the need for a comprehensive approach to support good nutrition among school-age children. The action areas operate within an enabling environment that incorporates different elements required for effective action. An essential element is strong monitoring, enforcement and evaluation mechanisms to ensure effective implementation, compliance and impact. Overarching government policies and strategies are needed to ensure government accountability and multisectoral coherence. The capacity and resources needed to implement policy are essential, as well as the knowledge and evidence of what works, based on available data and information.

The minimum standards reflect the framework and are grouped under the following headings:

- 1. Integrated package of interventions:** The first standard highlights the need for a comprehensive and integrated approach across all interlinked thematic areas.
- 2. Nutritious foods and diets:** These minimum standards aim to improve the diets of children in school. The standards cover energy and nutrient requirements for school meals, snacks and drinks provided at school. The standard provides limits for the intake of saturated fats, sugar and salt. Guidelines on local procurement and food safety regulations and standards for selection, storage, preparation and serving of food are also included.
- 3. Healthy school food environments:** These standards address the spaces, infrastructure, human capacity training and conditions in and around schools to support the purchase and consumption of healthy and safe foods and promote healthy food norms. They also include availability and pricing of nutritious foods, restriction of unhealthy food marketing and reducing availability of unhealthy foods

and beverages in and around schools (while providing healthy catering training for caterers/ canteen operators), and provision of safe drinking water and appropriate sanitation and handwashing services.

4. **School health and nutrition services:** These standards aim to prevent anaemia, protect children from helminth (intestinal worms) infections and improve the health of school children. Guidance is provided on essential health and nutrition services such as micronutrient supplementation, deworming tablets in schools (includes information on providing the right dosage in various settings), nutrition screening and overweight/obesity prevention activities, routine health check-ups, treatment, counselling and referral services.
5. **Nutrition literacy:** These standards relate to enhancing school nutrition curricula, education activities (through nutrition curricula, school gardens) to improve nutrition knowledge, complemented with behavioural nudges in the school environment to drive behaviour change. The standards include development of well-designed and effective food and nutrition education curricula to train teachers to deliver nutrition education and behavioural nudges to encourage children to make healthy food choices and practice appropriate water, sanitation and hygiene (WASH) behaviours.
6. **Physical activity:** These standards focus on increasing access to physical activity and relevant curricula.
7. **Monitoring, enforcement and evaluation:** These standards focus on actions required for effective monitoring of school nutrition policies and programmes. Guidance is provided for monitoring mechanisms to ensure school nutrition policies and programmes are adequately implemented and enforced and to ensure they are having their intended impacts.
8. **Enabling environment:** This standard recognizes that there are broader conditions and processes that are required for effective and sustainable implementation of school nutrition actions. These include creating favourable environments related to i) knowledge and evidence; ii) policy, politics and governance; and iii) capacity and resources.



4

MINIMUM STANDARDS
FOR THE SCHOOL
NUTRITION PACKAGE

4 Minimum standards for the School Nutrition Package

► Summary

There are 10 minimum standards recommended within the School Nutrition Package that are grouped under eight headings. The guidelines for meeting each standard are outlined.

1. Integrated package of interventions

Minimum Standard 1: Implement an integrated package of interventions to improve school nutrition environments.

2. Nutritious foods and diets

Minimum Standard 2: Set school food standards that contribute to children having healthy, balanced diets.

Minimum Standard 3: Procure school foods locally for school meals/snacks, where possible.

Minimum Standard 4: Set food safety and drinking water standards to protect schoolchildren from food- and water-borne diseases in schools.

3. Healthy school food environments

Minimum Standard 5: Implement actions to safeguard children from exposure and access to unhealthy foods and beverages and increase their access to healthy foods and beverages.

4. School health and nutrition services

Minimum Standard 6: Strengthen micronutrient supplementation, deworming treatment and essential health services through the school setting.

5. Nutrition literacy

Minimum Standard 7: Develop or strengthen nutrition education curricula, complemented with behavioural nudges in the school environment.

6. Physical activity

Minimum Standard 8: Ensure schools provide access to sufficient and appropriate physical activity.

7. Monitoring, enforcement and evaluation

Minimum Standard 9: Ensure policy and programme monitoring mechanisms are established and appropriately resourced.

8. Enabling environment

Minimum Standard 10: Foster an enabling environment for quality school nutrition policies and actions.

4.1 Integrated school-based nutrition activities

Minimum Standard 1: Implement an integrated package of interventions to improve school nutrition environments

- Align and integrate actions across thematic areas (nutritious foods and diets, healthy food environments, health and nutrition services, nutrition literacy and physical activity).^{55 56} Align and coordinate actions across sectors for provision of services, including food, health⁵⁷, nutrition and physical education and WASH.
- Position school nutrition within a broader approach to ensure food systems promote healthy and sustainable diets for school-age children.

Schools are a practical setting to support good nutrition for children. Improving school nutrition environments requires a comprehensive, multi-pronged strategy that acts across all five thematic areas within the School Nutrition Package framework (Figure 8). An integrated approach will have a greater impact on children's nutrition status than stand-alone actions⁵⁸ (see case example 1).

Case example 1: Multi-pronged approach in the Republic of Korea

The Republic of Korea has taken a multi-pronged approach to promoting healthy diets in schools. Initiated in 2002, a series of strategies were developed that addressed student health, including the National Obesity Prevention Programme and the Five-Year Policy for Children and Adolescents (2008–2012). In 2006, the School Meals Act was amended to incorporate nutrition education into school curricula, and since 2007, sugary drinks have been banned in schools. Nutrition labelling was mandated for school meals in 2008. The Special Act on the Safety Management of Children's Dietary Life was implemented in 2009, establishing "Green Food Zones" within 200 metres of schools, currently operational at over 10,000 schools nationwide, where the sale of "high calorie foods with low nutritional value" is prohibited. From 2005 to 2009, students reported an overall decline in weekly consumption of fast food, instant noodles, confectionaries, and most notably, carbonated beverages, which dropped from 77.6 per cent to 66.5 per cent.⁵⁹

While schools are an important setting for supporting good nutrition among school-age children, they are only one setting within a much larger food and health system, with multiple layers that need to work effectively together to secure healthy diets for the whole population, including for school-age children. A lack of action to support healthy and nutritious diets for children outside of schools will undermine efforts to improve children's nutrition within schools.

School health services, as defined by the WHO guideline, are services provided by a health worker to students enrolled in primary or secondary education, either within school premises or in a health service situated outside the school. These may include regular nutrition screenings, referral for nutrition problems (anaemia, thinness, overweight, obesity), counselling on nutrition and physical activity and other services.

A food system approach addresses the direct and underlying system, actors, drivers and dynamics that affect food, people and the planet.⁶⁰ Actors across the food system, including food producers and suppliers, typically do not account for the nutritional needs of children and adolescents when determining what foods to produce, distribute and sell. Less nutritious foods are skillfully marketed and widely available and affordable, while nutritious foods are sometimes more expensive and unaffordable. The broader food environment does not lend itself to nutritious diets for children and adolescents, nor is it incentivized to do so. Actions to promote, nutritious, affordable and sustainable diets are required across the food system. This will mean holding local, national and global actors accountable to ensure healthy and nutritious foods and drinks are more available, affordable, attractive to children and adolescents compared to unhealthy foods and drinks.⁶¹

The same principles of the integrated package of interventions are applicable to pre-school settings. As per the UNICEF Programme Guidance for Early Childhood Development (ECD), three aspects of interventions have been identified, which are:

1. The identification of service delivery platforms through which multisectoral interventions can be delivered to children 3 to 5 years of age, either through the health system or via the education system.
2. The promotion of a national policy and implementable budgeted action plan for ECD, which can foster convergence of interventions for multisectoral programming.
3. Management arrangements, in particular, a clear accountability framework that states how a multisectoral approach will be implemented, outlining roles and responsibilities within the office (whether coordinated by the Deputy Representative or other senior managers).

The delivery of ECD services requires systems to ensure that the workforce, including frontline workers in humanitarian settings, are adequately trained in the essential aspects of nurturing care. Health workers, nutrition counsellors, and social workers should be trained in the care for child development approach to improve the quality of care, with adaptations addressing the identification and care of young children with disabilities.⁶⁰

Key references for Minimum Standard 1

UNICEF, GAIN	Food Systems for Children and Adolescents, 2019
UNICEF, WFP	School Health and Nutrition: Ensuring a better future for all children, 2021
UNESCO, FAO	Stepping up effective school health and nutrition, 2021

4.2 Nutritious foods and diets

Minimum Standard 2: Set school food standards that contribute to children having healthy, balanced diets

- Align school food standards with national dietary guidelines for nutritious diet.

Within the school premises, meals can be provided as breakfast, lunch or snacks, or as milk or fruit provision. Nutrition standards must ensure all school meals are safe and nutritionally adequate through the inclusion of locally-available diverse and micronutrient-rich foods and/or fortified staples to support school children to consume a healthy diet. School meals have been shown to improve academic performance, enhance children's dietary intake, and protect against obesity and other negative health outcomes.¹⁸

All school meals, snacks and drinks should contain energy, protein, fats, vitamins and minerals in stipulated amounts to meet the proportion of recommended nutrient intake of school-age children as per the national dietary guidelines. They should contain minimal amounts of sugar, unhealthy fat and salt and not contain ultra-processed foods and beverages. The provision of school meals should be timed so that children do not go for more than 3–4 hours without eating.¹⁴

The recommended diet for school-age children aged 5–18 years is shown in Box 2.

Box 2: Healthy, balanced diet for school children

- At least five servings of fruit and vegetables per day, excluding potatoes, sweet potatoes, cassava and other starchy roots).
- Age-appropriate intake of unrefined starchy foods (such as brown rice/unpolished rice, corn, sweet potatoes or other starchy roots).
- Some meat, fish, eggs, beans, milk and dairy products and other non-dairy sources of protein.
- Only very small amounts of food and drink that are high in unhealthy fat, sugar (less than six teaspoons per day) and salt (less than 5g per day).
- Plenty of safe, unflavoured drinking water.



National food-based dietary guidelines should serve as the basis for developing nutrition standards for school meals, foods and beverages. Cambodia, Indonesia, Malaysia, the Philippines, Thailand and Viet Nam have developed food-based dietary guidelines based on their nutrition situation, food availability, culinary cultures and eating habits.⁶²

Within these national guidelines, it is essential that school-age children are included as a separate target population group¹⁴ (see case examples 2 and 3). Countries review evidence for the age group, quantify diet patterns and use different ways to represent recommended diets, including pyramids as shown in Cambodia and Viet Nam case examples, flags in Thailand, or healthy meal 'MyPlate' as available in Indonesia.⁶²

Case example 2: Food-based dietary guidelines for school-age children in Cambodia, the Philippines and Viet Nam

In 2017, **Cambodia** introduced 'Food-Based Dietary Guidelines for School-Aged Children', intended for children 6 to 17 years old. The Guidelines were developed using the evidence by the Ministry of Health with the participation of representatives from relevant government agencies, international organizations and non-governmental organizations. The development process started with a nationwide food consumption survey, which targeted 136 schools and was carried out with technical assistance from the Foundation for International Development/Relief. Cambodia's food-based dietary guidelines are a good example of how school-age children can be included as a separate target population group.



The Cambodian food pyramid is designed in the shape of Angkor Wat, divided into six food groups based on the recommended proportions. The condiments on the top are recommended for sparse consumption. Food items in the pyramid are selected from the most common foods consumed by the children surveyed. The graphics were sketched by young Cambodian artists. Key messages in the box emphasize the importance of (1) eating foods from all food groups every day; (2) consuming calcium-rich foods, such as whole small fish, milk, and milk products; (3) eating protein-rich foods, such as fish, meat, eggs or beans at least two to three times a day; (4) eating plenty of fruits and vegetables regularly; (5) eating cereals and starchy foods, such as rice, noodles, bread and its alternatives in an adequate amount; (6) reducing foods high in salt, sugar and fat; and (7) measuring body weight and height regularly to track growth.⁶³

In 2016, the **Philippines** launched a simple visual food guide- Pinggang Pinoy that uses a familiar food plate model to convey the right food groups in right proportions on a per-meal basis to meet the energy and nutrient needs of children (3-12 years) and teenagers (13-18 years). It is a visual tool that delivers effective dietary and healthy lifestyle messages to Filipino children, assisting them in adopting healthy eating habits. The food guide/tool has been developed by the Food and Nutrition Research Institute (FNRI) of the Department of Science and Technology (DOST) in collaboration with the World Health Organization (WHO), the Department of Health (DOH), and the National Nutrition Council (NNC).

The guide shows the recommended proportion by food group, namely; Go, Grow and Glow on a per-meal basis. By just looking at the plate, children and their families will know that half of the plate represents Glow foods (for body regulation) consisting of fruits and vegetables. One-sixth of the plate shows proportion for Grow foods (for body building) such as meats, eggs, poultry, fish, beans, and legumes. One-third of the plate is Go foods (for energy giving) like rice, corn, bread, oatmeal, bread, and root crops. In addition, it recommends drinking lots of water every day for adequate hydration, limiting intake of sugar-sweetened beverages to reduce the risk of obesity and tooth decay, eating less salty, fried, fatty, and sugar-rich foods to prevent chronic diseases and staying physically active.⁶⁴



Similarly, in 2016, **Viet Nam** developed a food pyramid for schoolchildren aged 6–19 years based on food guidelines and recommendations on nutrition allowances for the Vietnamese population.



Case example 3: Thailand sets energy standards to regulate school meals for children

In 2020, Thailand revised the Thai recommended dietary intake (RDI) standards for schoolchildren. RDIs for energy exist for children aged 4–8 years (1,200–1,400kcal), and 9–18 years (1,600–2,400 kcal). The recommendations stipulate that school meals and snacks should make up 40 per cent of the RDI. A distribution ratio of 55–60 per cent carbohydrates, 10–15 per cent protein and 25–30 per cent fat is recommended. In addition, the RDIs set maximum levels of protein, fat, total carbohydrate, and cholesterol, and contain recommended levels of vitamins (A, B1, B2, C), folate and calcium. The guidelines are intended to prevent the triple burden of malnutrition, including overweight and obesity, undernutrition and micronutrient deficiencies.

In addition, in 2022, Thailand developed food-based dietary guidelines that provide basic guidelines for the general population as well as specific guidelines for school-aged children and adolescents. Key messages for school-aged children and adolescents include:

1. Eat varieties of food from all of six main food groups based on the recommended proportions in the Thai nutrition flag and maintain proper weight and height for age.
2. Eat rice as the main energy source, especially brown rice and half-milled rice, and eat alternative starchy food sometimes.
3. Eat fish, eggs, lean meat, nut, and nut products regularly.
4. Eat plenty of vegetables and fruits, especially colourful vegetables and fruits regularly, and avoid high sugar fruits.
5. Drink plain milk and consume high-calcium food.
6. Avoid high fat, sugar, and salt food.
7. Eat clean and safe food, and freshly prepared meals.
8. Drink an adequate amount of clean water and avoid sweetened beverages.
9. Avoid alcoholic beverages.

Key references for Minimum Standard 2

FAO	Nutrition guidelines and standards for school meals, 2019
UNICEF	Food-Based Dietary Guidelines, 2021
WFP, FAO	Home-Grown School Feeding Resource Framework 2018
WHO	Healthy diet principles fact sheet, 2020

Minimum Standard 3: Procure foods locally for school meals/snacks, where possible, and align procurement with public procurement legislation

- Align procurement of foods, snacks, and drinks in schools with public procurement legislation⁶⁵ that favours the access of small holders and local producers, if appropriate.
- Establish complementary policies and technical support to enable local producers and small and medium enterprises (SMEs) to sustain food supply to school meal programmes.

Linking schools' institutional demand for safe and nutritious foods to local smallholder production has potential multifaceted benefits on nutritional and education outcomes, agricultural production, local livelihoods and the economy.⁶⁵ Local food procurement has been shown to support healthier school meals and food offerings through provision of local vegetables, fruits and legumes.^{66, 67}

Many countries now implement "home-grown"^c school feeding programmes where children are provided with safe, diverse foods that are sourced locally, often using inclusive procurement practices. The local procurement practices support small holder producers (both farmers and SMEs) to diversify and enhance their production and gain access to stable and reliable markets through school meals programmes, which boost livelihood opportunities for local communities and contribute to economic development, while providing schools with fresh, local ingredients and foods.

To enable local producers to produce and deliver adequate quantity and quality of safe foods to school meal programmes, complementary policies and actions^d coherent with nutrition, food quality and safety standards are warranted.

In addition, aligning procurement of food in schools with public procurement policies can further contribute to food and nutrition security of schoolchildren and their communities. As a policy tool, public procurement through market-based interventions can increase the availability and access of healthy, nutritious and safe food products, balance the demand and the supply of healthy and nutritious foods by strengthening the entire food chain and safeguard vulnerable groups, such as schoolchildren and vulnerable producers facing a high risk of food insecurity.⁶⁸

Another initiative being conducted in the ASEAN region is the Guidelines on Home Yard Food Garden, which aim to utilize the home yard as a source of food and nutrition for families, including children, to ensure food security and nutrition in ASEAN Member States. These Guidelines consist of principles, components and an enabling environment to enforce the Home Yard Food Garden Area.⁶⁹

^c Refers to the provision of fresh foods which is locally purchased and produced in a community or country to the extent possible, with a focus on food safety, food diversity, and nutrition for children in school.

^d Technical, infrastructure, and technological support, technical and entrepreneurial advice, public procurement, food safety regulations and assurance along the food supply chain).

Case example 4: Local procurement of food under Cambodia's Home-Grown School Feeding programme

In January 2020, the Royal government of Cambodia launched the national Home-Grown School Feeding (HGSF) programme in 205 schools in six provinces. The programme envisaged a model that encompasses local procurement processes to enhance the nutrient quality and diversity of primary school meals by adding locally-sourced vegetables and animal-source protein foods. The programme also benefits local farmers by providing them with a stable and reliable market to sell their produce.

Local procurement under the national HGSF programme increased the supply of vegetables, as farmers started producing more to meet the demands of schools and selling the surplus in local markets. Farmers also produced a variety of vegetables that had previously not been available locally and fetched relatively good prices. In addition, there was also an increase in the number of fishponds. Most of the ponds belong to the suppliers themselves, who reported financing the creation or expansion of ponds with profits made from supplying food commodities to schools.⁶

Key references for Minimum Standard 3

- | | |
|----------------------|--|
| FAO & WFP | Home-Grown School Feeding Resource Framework. Technical Document, 2018 |
| FAO | Public food procurement for sustainable food systems and healthy diets, 2021 |
| FAO | Public food procurement for sustainable food systems and healthy diets-
Volume 1 and 2, 2021 |
| WHO | Action framework for developing and implementing public food procurement and services
policies for a healthy diet, 2021 |

Minimum Standard 4: Set food safety and drinking water standards to protect schoolchildren from food and water-borne diseases in schools

- Apply, promote and enforce the five keys for safer food.⁵
- Harmonize food safety standards with international standard of FAO/WHO Codex Alimentarius Commission.⁷⁰

Food safety refers to the conditions and practices that ensure food is not contaminated with physical, chemical and/or biological hazards that could cause harm to consumers. Food-borne diseases, such as salmonellosis, typhoid, hepatitis A, enterocolitis (E. coli) can seriously damage children's health. It is vital that food and water safety and quality standards be implemented in schools, including canteens and kitchens and along the school food supply chain, to provide children with foods, snacks and drinks that are safe for consumption (see case examples 5 and 6).^{70, 71}

The five keys for the preparation and handling of food are:

- **Key 1** - Keep clean (all surfaces, utensils/equipment, dishes, and hands)
- **Key 2** - Separate raw and cooked food
- **Key 3** - Cook food thoroughly
- **Key 4** - Keep food at safe temperatures
- **Key 5** - Use safe water and raw food materials

Case example 5: Malaysia's teaching of healthy food preparation and food safety handling standards to caterers and canteen operators

Since 2005, the Malaysian Ministry of Health has initiated the Healthy Catering Initiative, which provides training for food outlets and canteen operators on healthy eating, preparing healthy menus, and the effects of unhealthy eating habits. Although this training is compulsory for food operators providing services at health care facilities, school canteen operators are also required to attend this training as it is one of the elements under Healthy School Canteen Management Guide. This training is conducted in separate sessions with a compulsory Food Handlers Training for all food handlers as stipulated in the Food Hygiene Regulations 2009.⁷²



Case example 6: Indonesia food safety standard for school-age children

In 2012, the Government of Indonesia released the law No 18/2012 on Food. The Law mandates that food management should be carried out to meet basic human needs that provide fair, equitable and sustainable benefits based on food sovereignty, food independence and national food security. The law also targets school-age children.

Food safety supervision in school is carried out together by Ministry of Health, Ministry of Education and Indonesia Food and Drug agency. In 2024, the agency plans to continue providing supervision and guidance to 3400 schools on Food safety and quality of snacks for school children in 400 out of 514 districts.

The Recommended International Code of Practice on General Principles of Food Hygiene highlights key controls at each stage of the food chain, from primary production to final consumption. The stages include food handling, storage and transport, layout of food establishments, cooking equipment, supply of water, facilities for heating, cooling, cooking, refrigerating and freezing food and food storage facilities and personal hygiene. More detailed information can be found in FAO/ WHO “Codex Alimentarius – General Principles of Food Hygiene (CXC 1-1969) latest revision.”⁷³

Key references for Minimum Standard 4

FAO	Legal Guide on School Food and Nutrition, 2020
WFP	Golden rules for safer school meals, 2020
WHO	Five keys to safer food manual, 2006
FAO, WHO	Codex Alimentarius Food Hygiene, 2009



4.3 Healthy food environments

Minimum Standard 5: Implement actions to safeguard children from exposure and access to unhealthy foods and beverages and increase their access to healthy foods and beverages

- Protect children from the harmful impacts of unhealthy food and beverage marketing in and around schools.
- Prohibit the sale of unhealthy foods in and around schools.⁹
- Ensure access to safe drinking water, sanitation and handwashing facilities in schools.⁷⁴

The school food environment refers to the spaces, infrastructure and conditions inside and around the school premises where food is available, obtained, purchased and/or consumed.¹⁵ It manifests through the availability of foods for consumption, the nutritional content of these foods and the information, marketing and promotion (advertisements, branding), food labelling, packaging and pricing of foods and food products.^{15, 75}

A healthy school food environment provides children with access to affordable, nutritious, safe and diverse foods and safeguards them from unhealthy foods and drinks. Healthy school food environments contribute to social norms related to healthy and nutritious dietary patterns and are critical for lifelong healthy food practices and the achievement and maintenance of a healthy body weight.

To create a healthy school food environment, a wide range of policies, standards and programmes need to be applied in and around schools. These include protecting children from the marketing of unhealthy foods and non-alcoholic beverages in and around schools, the provision of safe drinking water, access to healthy foods and beverages in vending machines, tuck shops and private vendors around school. Case examples 7, 8 and Annex 3 provide examples of actions by ASEAN Member States to improve school food environments.

Marketing refers to any form of commercial communication or message that is designed to, or has the effect of, increasing the recognition, appeal and/ or consumption of particular products and services. There are several forms of unhealthy food marketing that children be exposed to while at school, including through:

- Advertising (e.g., vending machine exteriors, signs or posters)
- Sponsorship (e.g., branded posters or uniforms at sports events, branded educational materials or unhealthy food vouchers for educational achievements)
- Direct marketing (e.g., free giveaways, scholarships)

Children should be protected from all types of marketing and promotion gimmicks of unhealthy foods and beverages in or around schools. Regulations on the sale of foods in schools must comply with nutrition standards set for schoolchildren. All unhealthy foods and sugar-sweetened beverages should also be prohibited from sale in and around schools as they do not contribute to good health and nutrition of children. This includes ultra-processed foods that are high in fat, salt and sugar. Examples of foods that should not be sold within or around schools include soft drinks, hot dogs, fast food, packaged cookies, cakes and salty snacks.

Case example 7: Philippines setting standards to ban unhealthy foods in schools

In the Philippines, policies and guidelines on healthy food and beverage choices in schools and in Department of Education offices were introduced in 2017. Foods are classified as ‘red’, ‘amber’ and ‘green’ based on energy, saturated fat, trans fat, sugar and sodium content. Schools and school activities are prohibited from marketing unhealthy (‘red’) foods and beverages through advertising, sponsorship or promotion. The marketing restrictions are mandatory in all schools and the Department of Education. The order is enforced by the Department of Education. Some local government units have gone further and banned the sale and distribution of unhealthy foods in schools and within a given distance from the school premises.



Case example 8: Regulations to prohibit the sale of unhealthy foods and beverages in Thai schools

In Thailand, a notification of the office of Basic Education Commission, announced on 22 June 2021, prohibited schools from serving unhealthy foods and beverages high in sugar, salt and fat such as instant noodles, energy drinks, alcoholic beverages and caffeinated drinks.

Another notification of the Ministry of Education: Measures and Approaches to Enhance Knowledge and Skills Related to Oral Health Care and Selection of Dental Services, announced on 11 June 2020, introduced a ban on marketing promotion activities of all types of foods and beverages in educational institutions. Schools were directed to avoid selling sugary drinks with a high sugar content (more than 5 per cent) as well as sweet and crispy snacks, to avoid making them available for consumption in educational institutions, and to raise awareness among retail shops outside the school compound to gain the cooperation of sellers.

Schools must provide access to safe drinking water for their students and ensure that proper sanitation and hygiene facilities are accessible to all children while in school. The following criteria are important:

- The main source of drinking water needs to be from a free and improved water source.
- School sanitation services must be classified as “improved” (refer Box 3). They should be single-sex and usable.
- Handwashing facilities should have soap and water.

Box 3: What is improved sanitation? ⁷⁵

An ‘improved’ sanitation facility is one that hygienically separates human excreta from human contact.

The following kind of toilets are classified as “improved”:

- Connection to a piped sewer system
- Connection to a septic system
- Pour flush to a pit latrine
- Simple pit latrine
- Ventilated improved pit latrine

Key references for Minimum Standard 5

ASEAN	Minimum standards and guidelines on actions to protect children from the harmful impact of the marketing of food and non-alcoholic beverages in the ASEAN region, 2024
WHO	Framework for implementing the set of recommendations on the marketing of foods and non-alcoholic beverages to children, 2012.
WHO	Set of recommendations on the marketing of foods and non-alcoholic beverages to children, 2010
WHO	Be smart drink water, 2016
WHO/UNICEF	Drinking Water, Sanitation and Hygiene in Schools, 2018



4.4 School health and nutrition services

Minimum Standard 6: Strengthen micronutrient supplementation, deworming treatment and essential health services through the school setting

Collaborate with local health service providers to deliver micronutrient supplementation, deworming, nutrition screening and overweight/obesity prevention activities, routine health check-ups, treatment, counselling and referral services.

Provide iron supplementation for school-age children (aged 5–12 years) and non-pregnant adolescent girls (10–19 years) in areas where the prevalence of anaemia is 20 per cent or higher.⁷⁶

Supplement school meals with micronutrient powders for school-age children (aged 5–12 years) in areas where prevalence of anaemia is 20 per cent or higher.⁷⁷

Provide deworming services for school-age children (aged 5–14 years) and non-pregnant adolescent girls (aged 10–19 years) in areas where the prevalence of worm infections is 20 per cent or higher.⁷⁸

Provide vitamin A supplements to pre-school children aged 12–59 months every 4–6 months per WHO guidelines on vitamin A supplementation in areas where the prevalence of night blindness is 1 per cent or more in children aged 24–59 months, or where the prevalence of vitamin A deficiency is 20 per cent or higher in infants and children aged 6–59 months.

Schools have been identified as important delivery platforms for nutrition interventions, such as iron supplementation to improve iron intake, deworming treatment to prevent soil-transmitted helminthic infection. While schools are not the only setting for the delivery of these services to children, they are an important setting and have been shown to be effective.

A meta-analysis using data from 15 studies in seven different countries showed that supplementation with iron and folic acid (IFA) tablets through schools may reduce the prevalence of anaemia among adolescent girls.⁷⁹ Current recommendations are for intermittent IFA supplementation to all women during pregnancy; women of reproductive age (15–49 years of age), including adolescents; and school-aged children (5–12 years of age) where the prevalence of anaemia exceeds 20 per cent (see case example 9).

Similarly, a meta-analysis involving eight studies and more than 1 million school children, found a significant increase in haemoglobin levels and reduction in anaemia in schoolchildren after deworming medication.⁸⁰ Studies have also shown that children who were previously infected with intestinal parasites and then dewormed demonstrate catch-up physical and cognitive growth and attend school more regularly.

81

Case example 9: Indonesia delivering iron and folic acid supplements and deworming tablets through schools

IFA supplementation and regular deworming are effective initiatives to reduce anaemia and soil-transmitted helminth infections. In Indonesia, the IFA supplementation programme for adolescent girls and women of reproductive age was initiated in 1997. In 2016, the Ministry of Health, following WHO guidance, started weekly IFA supplementation in schools with the support of the Ministry of Health, Ministry of Education, Ministry of Religious Affairs and Ministry of Home Affairs. The school-based programme aimed to improve adherence and reduce possible side effects without lowering the efficacy.⁸²

Started as a pilot, in 2022, “Aksi Bergizi” became a national programme to strengthen weekly IFA supplementation for girls, which is administered alongside a home-brought breakfast, weekly

interactive and fun nutrition and health awareness sessions, and a comprehensive social and behaviour change intervention to improve healthy eating and physical activity.

In addition, as part of the integrated school health programme, Indonesia conducts mass drug administration of albendazole or mebendazole to pre-school and school-age children through the school platform to control soil-transmitted helminthic infections. In 2021, the coverage of deworming was 71.5 per cent.

Key references for Minimum Standard 6

- UNICEF** Programming Guidance: Nutrition in Middle Childhood and Adolescence, 2021
- WHO** Guideline: Daily Iron Supplementation in Infants and Children, 2016
- WHO** Daily Iron Supplementation in Adult Women and Adolescent Girls, 2016
- WHO** Guideline: Preventive chemotherapy to control soil-transmitted helminth infections in at-risk population groups, 2017
- WHO** Point-of-use fortification of foods with micronutrient powders containing iron in children of preschool and school age, 2017

4.5 Nutrition literacy

Minimum Standard 7: Develop or strengthen nutrition education curricula

- Ensure food and nutrition education curricula are needs-based, competence-oriented and used as an effective learning model.⁸³
- School food and nutrition education should aim to include various actors who influence the food choices of school-age children, including schoolchildren themselves, parents, school staff, caterers, canteen food operators and other members of the community.^{84, 85}
- Develop and strengthen the nutrition education curriculum and train and empower teachers and/or community public health workers/nutritionists to deliver it to school children
- Complement nutrition education with behavioural nudges in the school environment to drive behaviour change to make healthy food choices and practice appropriate WASH behaviour.

Beyond adequate access to healthy foods, school children also require easy access to unbiased information on food and nutrition in order to make informed choices in an environment full of pervasive advertisements and gimmicks to promote unhealthy food and beverages. Nutrition education in schools can be a pre-emptive response to address nutrition challenges, such as unhealthy snacking behaviour, skipping meals, excessive consumption of sugar-sweetened beverages and excessive food waste in schools.⁸³

School-based food and nutrition education should aim to foster long-lasting knowledge, practices and habits that promote resilience and that are conducive to better nutrition in children and their families.⁸⁴ The school curriculum provides an opportunity to promote healthy eating through nutrition education. School-based food and nutrition education is more likely to be effective when it focuses on behaviour change and action rather than on knowledge alone.¹⁴

Nutrition education helps school-age children become more nutrition literate and supports both them and their parents to make healthier food choices.⁸⁶ It should help raise awareness and knowledge to better understand existing tools, such as labelling standards to help make healthy food choices where applicable.

To be effective, school food and nutrition education should comprise a combination of evidence-based and behaviour-focused educational strategies that are context-specific and stimulate observation, discussion and action. They should have opportunities to put their knowledge into practice in real-life settings where most learning takes place. Family and community support and involvement (i.e. parents, school staff, local smallholder farmers and rural enterprises, community leaders) can also help reinforce enabling food environments. Nutrition education should also be culturally appropriate, supported by an evidence-based curriculum delivered with intensity, regularity and practical focus.⁸⁴ For instance, in Cambodia, health, nutrition and physical education are mandatory courses requiring two hours per week of study for primary and secondary students.⁸⁴

Three steps are recommended to develop or strengthen the school-based food and nutrition education curriculum:⁸³

- Establish the aims of the school-based food and nutrition education curriculum and the roles of the curriculum developers and teachers delivering it.
- Adapt and follow standard procedures to develop and revise the curriculum.
- Identify research gaps: promote research, conduct assessments and use evidence and data.

Nutrition education may increase awareness but can be limited in sustaining positive behaviour change unless it is complemented by an evidence-based social behaviour change strategy, including behavioural nudges in the school environment.⁸⁷ To promote behaviour change towards uptake of healthy diets and WASH practices, there is a need to allocate adequate investment and resources to design and implement long-term social behaviour change strategies.

In addition, nutrition education should not be limited to regular education settings; rather, it should be expanded to religious schools (such as ‘madrasah’) and schools catering to students with special needs. For instance, Indonesia has integrated nutrition and health education into the education curriculum for children with special needs (e.g., those with autism, intellectual disabilities, deafness, visual impairment, quadriplegia, etc.) in primary schools. Under the school health programme, health workers in primary health care, together with teachers in special needs schools, engage parents in nutrition and health education.

Case example 10 and Annex 4 provide examples of nutrition education actions within ASEAN Member States.

Case example 10: Nutrition education in Indonesia

In Indonesia, Usaha Kesehatan Sekolah school health programme provides health and nutrition education, along with physical education and health services in schools with the aim of developing a healthy school environment. Nutrition education is also provided through the “little doctor” programme, where students act as peer counsellors and educators to fellow students for health and nutrition. Indonesia has several guidelines and information, education and communication materials (i.e., a video, booklet, flipchart, ‘buku raportku’-home based health record for students) that are used in implementing nutrition education in schools to increase the knowledge and capacities of students, teachers and health workers.

Indonesia also has a strategy for engaging adolescents in its school-based nutrition programme. The Government of Indonesia, supported by UNICEF, implemented a gender-responsive adolescent nutrition programme known as Aksi Bergizi, or Action on Nutrition, to address the triple burden of malnutrition among adolescent girls and boys in Indonesia. Aksi Bergizi uses a multi-pronged approach with adolescent empowerment at its core. The intervention package consists of three components: strengthening weekly IFA supplementation for girls, which is administered alongside a home-brought breakfast; a weekly interactive and fun nutrition and health awareness session and a comprehensive social and behaviour change intervention to improve healthy eating and physical activity.

Close involvement of adolescents in all critical steps of the programme design, implementation, and monitoring was one of the strategies to strengthen adolescent engagement and encourage adolescents' sense of belonging. The establishment of peer support further encouraged student participation while building cross-student learning, individual leadership, gender sensitivity, communication skills and confidence. School mobilization activities also encouraged participation from girls and boys, dispelling cultural norms of cooking being only for girls and sports for boys.

During the COVID-19 pandemic, peer supporters have been leading the way in ensuring their friends continue to receive and consume IFA tablets during school closures while following social distancing, mask-wearing and handwashing precautions. The district government aired an Aksi Bergizi radio talk show to reach adolescents and their families at home. Teachers conducted quizzes and other engaging nutrition education activities online with the students, and students themselves launched Aksi Bergizi competitions via social media. The programme has demonstrated the importance of adolescents' engagement and empowerment to ensure the effectiveness and sustainability of school-based nutrition programmes.

Case example 11: School gardens to support nutrition education in the Philippines

In 2007, the Philippines' Gulayan Sa Paaralan- a nationwide school-based vegetable gardening project was initiated by the Department of Agriculture (DA) in partnership with the Department of Education (DepED) and the Local Government Unit (LGU) targeting all public elementary and secondary schools in rural as well as urban settings. The project aims to:

- Promote vegetable production
- Establish supplementary source of vegetables to school-based feeding programme (targeting undernourished school children) and eventually increase vegetable consumption
- Serve as a learning laboratory for learners to inculcate values of gardening, good health and nutrition

Key references for Minimum Standard 7

- FAO** School-based food and nutrition education, 2020
- FAO** Setting up and running a school garden. A manual for teachers, parents and communities, 2005
- FAO** Capacity needs assessment tool – School-based food and nutrition education, 2021
- UNICEF** Programming Guidance: Nutrition in Middle Childhood and Adolescence, 2021



4.6 Physical activity

Minimum Standard 8: Ensure schools provide access to a safe and inclusive environment that supports physical activity for all students

- Ensure that physical activity education is implemented using structured curriculum and supported by the physical environment in and around schools.
- Ensure that the physical environment of the school is equipped with appropriate space, infrastructure and facilities, including classrooms, playgrounds and sports facilities, to encourage physical activity.⁸⁸
- Allocate curriculum time to physical education⁸⁹ and mandate 150 minutes of physical education every week for primary students, and 225 minutes every week for middle school and high school students as part of the core school curriculum.⁸⁸

For children and young people, physical activity includes play, games, sports, walking or cycling to school, chores, recreation, physical education or planned exercise that can be done in the context of the school.⁵⁰ Adequate physical activity supports cognitive development and enhances academic achievement. When combined with nutrition education, participation in physical activity can lead to a healthier bodyweight among children.¹⁴ Physical activity in the context of school curricula refers to a structured period of directed physical activity.⁸⁹

Physical activity education should aim at habituation of daily light physical exercise for children, for instance, choosing to walk to school over any other sedentary options, time-tabling adequate rest times and limiting screen-time. More importantly, physical activity standards need to be embedded through other lesson subjects and the school culture.

Schools can support children to take sufficient physical exercise through provision of equipment and allocated time during the school day for physical education (see case example 11).

Case example 12: Promoting active, healthy living in schools in Singapore

Through physical education lessons in Singapore, all students are given the opportunity to acquire the knowledge and skills to lead a healthy lifestyle and sustain it after they leave school. Schools promote active, healthy living by providing opportunities for students to be physically active. Sports facilities, playgrounds and activities are made accessible to students before and after formal school hours. This encourages greater personal ownership of physical activity by the students, with the aim to cultivate more intrinsically motivated and sustainable participation.

Supplementing schools' efforts, since 2015, the Health Promotion Board has been conducting the Active Youth Programme, which offers participants a range of low- to high-intensity workouts that promote fundamental movement skills and encourage regular exercise to meet nationally recommended physical activity levels. The programme consists of a variety of activities, such as dance and cardio workouts, muscle and bone strengthening exercises, sports and games, as well as self-defense exercises.

Students outside the healthy range for physical growth are supported by the school to adopt healthier behaviours using strategies such as journaling, goal-setting and action planning in physical activities and nutrition to bring about gradual improvement in their BMI. Schools partner with parents on developing healthy habits among children. Students who are severely overweight or underweight are referred to the Health Promotion Board's Student Health Centre for medical screening and counselling.

Key references for Minimum Standard 8

UNESCO	Quality Physical Education: Guidelines for policy makers, 2015
WHO	School policy framework: implementation of the WHO global strategy on diet, physical activity and health, 2008

4.7 Monitoring, enforcement and evaluation

Minimum Standard 9: Ensure policy and programme monitoring mechanisms are established and appropriately resourced

- Establish a compliance monitoring system when the implementation of a school nutrition policy is mandated by law with appropriate sanctions for non-compliance.
- Regularly monitor the impacts of programmes and policies to ensure they are having the intended effects and to strengthen actions, if required.

Monitoring of school nutrition policies and programmes should be conducted for two reasons:

- To ensure the policy or programme is adequately implemented (compliance monitoring) and inform course corrective actions.
- To ensure the package of school nutrition policies and programmes is having the intended impact and to review any shortcomings that may be revised to maximize effectiveness (evaluation monitoring).

Compliance monitoring is important for school nutrition policies where adoption is mandatory by law (e.g., a mandatory ban on unhealthy food marketing in and around schools). When establishing a compliance monitoring system, the following should be considered:

- Indicators for compliance with policy should be clearly defined and widely communicated to all key stakeholders, including definitions for violations and sanctions.
- Designated institution at national level and subnational levels to monitor compliance
- Targets and monitoring tools should be clearly defined and widely communicated to all key stakeholders.
- Procedures should be determined for the collection of information and disaggregated data related to the implementation and compliance at all levels.
- A range of penalties for non-compliance should be defined (e.g., fines, name and shame, suspension of licence, prosecution) under enforcement legislation and regulations.
- Responsible agencies for compliance monitoring should be appointed and should possess a wide range of powers and a full mandate to enforce legislation and regulations, including imposing sanctions. It is important that monitoring and enforcement is independent and transparent with safeguards to protect from any conflict of interest. Compliance monitoring may be undertaken by a government agency and supplemented with a civil society complaints system.
- Mechanisms for enforcement communication with the public should be appropriately resourced and implemented for ongoing engagement and to encourage civil society ownership of the issue.

Evaluation should be incorporated into a monitoring and evaluation system with the following considerations:

- An appropriate budget should be allocated to carry out monitoring and should be reviewed periodically so that monitoring can be sustained over time.
- Responsibilities for undertaking monitoring activities must be clear and comprehensive training should be provided to ensure robust data collection. Monitoring and evaluation may be allocated to an independent agency in collaboration with government to identify appropriate data sources and to develop methods for data collection.
- Data indicators should be clearly defined and relevant to the intended objectives of the policy or programme (possible unintended consequences should also be considered and monitored). Data collection should be a standardized process, using data collection templates to allow for comparisons over time.

- Data should be collected regularly (at least annually) with baseline data collected prior to policy or programme implementation.
- Mechanisms of reporting back to government, schools and the public should be established.

4.8 Enabling environment

Minimum Standard 10: Foster an enabling environment for quality school nutrition policies and programmes

- Create an enabling knowledge and evidence environment by collecting and communicating relevant data for different stakeholders.
- Integrate school nutrition actions within a broader national policy framework and appoint a lead government agency to strengthen accountability.
- Consider all engagements with the private sector and avoid or manage any perceived or actual conflicts of interest.
- Build capacity of individuals and organizations and ensure appropriate financing for effective advocacy and programme or policy development, implementation and monitoring.
- Advocate for strong political commitment for strengthening the policy and legal framework required to implement the nutrition programme in schools.

An enabling environment consists of the conditions and processes required for effective and sustainable implementation of school nutrition actions. The requirements for an enabling environment can be summarized across three key areas:

01

Knowledge and evidence: Knowledge and evidence are important throughout the policy or programme development process, from communicating the issues to support advocacy efforts for increasing political or institutional priorities, through to the generation of evidence on what works, in what context and how (see section 4.7 for more details on monitoring and evaluation). The knowledge and evidence must be timely and credible, and the data collected for these purposes may relate to health, educational, economic and/or other outcomes.

Across all ASEAN Member States there are major data gaps in describing the issues related to school nutrition environments and the nutritional status of school-age children as well as what actions are already in place to support school nutrition across national, subnational and institutional levels. Collecting this data may be an important first step to create an enabling knowledge and evidence environment across the region.

02

Policy, politics and governance: Improving school nutrition environments requires diverse actors, often with different or competing agendas, to work cooperatively and coherently together. At the national level, a lead agency should be nominated and held accountable for supporting actions to improve school nutrition environments, with other agencies providing technical support, as required. Accountability and policy and programme coherence can also be strengthened with a national school nutrition policy framework, which incorporates actions across all levels of governance. This should also clearly outline key accountability mechanisms, funding sources and a monitoring and evaluation mechanism.

The roles of all stakeholders should be considered, including civil society and the private sector. When doing so, conflicts of interest should be identified and managed or avoided. Various examples of conflicting priorities caused by processed food companies funding school feeding programmes, educational resources and school infrastructure exist for branding purposes.⁴⁰ While the private sector may be involved in some aspects of improving school nutrition environments (e.g., fortification of school foods with micronutrients, social marketing) there are other areas where there are clear conflicts of interest and private sector involvement should be

avoided (e.g., policy development for restricting unhealthy food and beverage marketing in and around schools).

03

Capacity and financial resources: Individuals and organizations must be equipped with the knowledge and skills to advocate, design and implement school nutrition programmes and policies. This requires technical expertise, but also skills related to leadership, alliance building and communication with diverse stakeholders. Different skills will be required for different stakeholders. Appropriate financing of school nutrition actions is required to support effective and sustainable programme and policy development, implementation and monitoring.

School-based food and nutrition interventions require capacity development across the board. Teachers and other school personnel need to gain knowledge and skills to become successful agents of change for positive nutritional behaviours. They have the opportunity not only to influence eating habits through food and nutrition education, but also to address other issues, including the nutritional needs of adolescent girls and pregnant women, and mother and childcare. Other actors, such as parents, caterers, food operators and farmers can benefit from educational sessions too. To successfully implement these programmes, school-based intervention should:⁸⁵

- Ensure that teachers and other implementers have the capacity and competence to become change agents for healthy diets and a healthy lifestyle.
- Ensure that schools are well equipped to implement the intervention.
- Ensure that capacity development is tailored to the special roles the various actors play, including the promotion of education via crosscutting subject matter.

Table 1: Key considerations for capacity building of stakeholders

Group	Type of capacity building	Main content
Teacher	<ul style="list-style-type: none"> • Formal training • Expanded capacity for integrating nutrition concepts into the curriculum 	<ul style="list-style-type: none"> • Nutrition and cognitive development • Conceptual framework • Nutrition across the life course • Multisectoral approach to nutrition • Food systems and healthy diets
Pupils	<ul style="list-style-type: none"> • Formalized school curricula • Peer-to-peer approach • Practical application (sustainable food production, meal preparation, use of handwashing stations) 	<ul style="list-style-type: none"> • Intergenerational cycle of malnutrition • Healthy diets • Lifestyle and nutrition
Parents and parent-teacher associations	<ul style="list-style-type: none"> • Supportive supervision • Sensitization on the importance of nutrition, identification of challenges and opportunities of implementing nutrition-promoting behaviour • Collaborative efforts between schools and households 	<ul style="list-style-type: none"> • Nutrition and cognitive development • Healthy diets
Caterer	<ul style="list-style-type: none"> • Formal training • Certification and regular monitoring 	<ul style="list-style-type: none"> • Safety in food handling, preparation, and storage • Healthy diets • Healthy food preparation
Food vendors	<ul style="list-style-type: none"> • Supportive supervision 	<ul style="list-style-type: none"> • Food hygiene and safety • Food handling and storage • (Social) Responsibility
Farmers (producers) for school meals	<ul style="list-style-type: none"> • Supportive supervision • Agricultural extension 	<ul style="list-style-type: none"> • Food systems and healthy diets • Sustainable production of a variety of foods to support dietary diversity • Agricultural practices supporting local biodiversity and resource efficiency



5

SCHOOL NUTRITION
IN RESPONSE TO
SHOCKS



5 School nutrition in response to shocks

► Summary

This section presents the impacts of shocks, including the COVID-19 pandemic, on nutrition security, diets and the food environment in the ASEAN region.

- School meal programmes act as a social safety net for vulnerable schoolchildren, especially those from low-income and disadvantaged households.
- School-based programmes delivering an integrated package of services are an important strategy for safeguarding the health and nutrition of school-age children and supporting their families to become more resilient.
- School nutrition must be an integral part of emergency response plans backed by sufficient resources and trained human resources.



5.1 Impact of shocks on food and nutrition security

The ASEAN region is prone to climate-induced shocks, which can have negative impacts on households, including on their dietary diversity and overall quality of diet. Natural disasters frequently strike countries in the region, with climate change increasing the frequency and severity of disasters.²⁶ This can dramatically alter the quantity, quality and price of the food available, resulting in increased food and nutrition insecurity and food crises. To respond to this wide range of shocks and conditions, delivery of integrated school-based programmes is an important strategy for safeguarding the nutritional well-being of school-age children and supporting their families to become more resilient.⁹⁰

01

The COVID-19 pandemic

The COVID-19 pandemic acted as an additional shock that undermined the already precarious nutrition situation of vulnerable school-age children by disrupting closely knitted food, health, education, social protection and WASH systems, which are critical to achieving healthy diets. There is evidence that some households from ASEAN Member States changed their diets during the COVID-19 pandemic, shifting to less expensive food items, including starchy staples, cereals, oils and/or non-perishable ultra-processed foods, and reduced their consumption of nutrient-rich fruit and vegetables and animal-sourced foods, such as dairy, meat and fish.⁹¹

Sales of nutrient-poor packaged food items are likely to have increased during pandemic lockdowns as they provide a reliable, often inexpensive, source of food, with a longer shelf-life than fresh foods, such as fruits, vegetables, dairy, meat and fish. Movement restrictions, isolation and school closures reduced physical activity for many, causing more sedentary lifestyles, which may lead to increased risk of children becoming overweight. These factors are changing food environments and access to essential, quality nutrition services.

The closure of schools due to the COVID-19 pandemic not only affected the education of millions of children, but also deprived many children of access to free school meals and other school-based nutrition services, such as provision of iron supplements, deworming tablets and nutrition education. The disruption of these services compromised the health and nutrition of school children.⁹²

In some ASEAN Member States, in-school feeding programmes were redesigned to provide vulnerable children with take-home food packages to continue to support their food and nutrition security.⁹³

Case example 13: Adapting the school feeding programme in the Philippines

The Philippines' national School-Based Feeding Programme (SBFP) was adapted from September 2020 to enable vulnerable children to continue to receive food through the education system, despite school closures due to the COVID-19 pandemic. The SBFP was modified to include all students from kindergarten to grade 6, instead of targeting only the children with acute malnutrition (wasting). Enhanced Nutribuns^e were provided as take-home ration for at least 60 feeding days, and fresh or sterilized milk for 50 days. This was less than the regular stipulated duration of providing learners with meals for at least 120 days due to the change in school calendar. The adaptation to the SBFP in the Bangsamoro Autonomous Region in Muslim Mindanao comprised take-home ration for 120 days.

^e Nutribun is a bread product made from white and wholewheat flour mixed with yeast and non-fat dried milk powder. It may also be fortified with soyflour or with other highly nutritious foods such as squash, moringa leaves, and eggs. Enhanced Nutribun contains more nutrients including iron and Vitamin A.

02

Mitigating the effects of the COVID-19 pandemic

Despite the disruption of essential services for children in schools, there are still several actions that can be taken to mitigate the effects of the COVID-19 pandemic on the food and nutrition of school children. Actions can be taken both in settings where schools are open, and where schools are closed. To mitigate the effects of the COVID-19 pandemic on food and nutrition of schoolchildren WFP, FAO and UNICEF recommend the following actions be taken (Table 2).⁹⁴

Table 2: Recommendations to enhance food and nutrition security during the COVID-19 pandemic

WHERE SCHOOLS ARE CLOSED	WHERE SCHOOLS ARE OPEN
Maintain flexibility and responsiveness to changing conditions for supply and distribution of food and provision of nutrition services, while ensuring compliance with COVID-19 protocols.	Comply with COVID-19 prevention protocols. Comply with COVID-19 vaccination protocols as per specific country's rules and regulations.
Use available resources to safeguard schoolchildren's food security and nutrition.	Promote optimal water, sanitation and hygiene services and ensure optimal hygiene and other key behaviours of children, teachers and foodservice staff/volunteers, school canteens and regulation of food vendors. Emphasize the facilitation, enforcement, and monitoring of proper handwashing practices, cough-sneezing-spitting etiquettes, and physical-distancing measures in schools (including during break times).
Build upon existing safety net structures to cover vulnerable schoolchildren.	Ensure and continue the provision of the essential school health and nutrition package (school feeding, micronutrient supplementation, deworming, malaria prevention and oral hygiene).
Ensure food and nutrition needs of vulnerable schoolchildren are considered when designing any large-scale national response to COVID-19.	Avoid potential deterioration in food safety standards.
Plan for reopening of schools, if possible, with specific benchmarks.	Ensure adequate nutrition content of meals.
	Create contingency plans for the distribution of meals/food baskets in preparation for potential rapid closure of schools.

An analysis by WFP and Oxford Policy Management investigated the impact of COVID-19 on school feeding programmes.⁹³ This research provides insights on responses and programme readjustments in Asia and the Pacific region. The following overarching recommendations were formulated for governments:

1. Government policy, planning and budgeting must account for repeated disruptions to schooling and associated impacts on child health and nutrition in the medium- to long-term.
2. Governments should continue to prioritize investments in school feeding as part of a multisectoral effort to address school health and nutrition. This is especially important in the aftermath of the pandemic, which has worsened child-level outcomes.
3. Governments can learn valuable lessons from each other in how to better adapt school feeding during repeated school closures.

Key references for reopening schools after the COVID-19 pandemic

- UNESCO, UNICEF** Framework for reopening schools, 2020
UNICEF Nutrition and Education Collaboration - Checklist for Reopening Schools, 2020
WFP Policy Brief: School feeding amidst a pandemic: Preparing for the new normal in Asia and the Pacific. August, 2021
WFP Contribution of School Feeding Programming to Resilience Building, 2021
WFP, FAO, UNICEF Mitigating the effects of the COVID-19 pandemic on food and nutrition of school children, 2021



Annex 1: School nutrition frameworks, standards and guidelines

Frameworks on school nutrition ⁴	Year	Responsible agency / partnership	Description	Adopted in policies and programmes in ASEAN
Global School Health Initiative & Health Promoting School	1995	WHO, UNESCO	The Global School Health Initiative aims to increase the number of Health Promoting Schools, characterized by six key features: 1) Healthy school policies; 2) Physical school environment; 3) Social school environment 4) Health skills and education; 5) Links with parents and community; 6) Access to (school) health services.	Indonesia, Malaysia, Philippines, Singapore and Thailand
The FRESH Framework (Focusing Resources on Effective School Health)	2000	WHO, UNICEF, UNESCO, World Bank, United States Agency for International Development, WFP, Pan American Health Organization, Save the Children	The FRESH framework provides the context for effective collaboration and reflects the shared goals of multi-component approaches, such as health promoting schools, child-friendly schools, school health & nutrition, community schools, safe schools, education in emergencies and many others.	Indonesia, Malaysia, Philippines, Singapore and Thailand
Nutrition-Friendly Schools Initiative	2006	WHO	Nutrition-Friendly Schools Initiative is a framework for integrated school-based programmes that address the double-burden of malnutrition. The framework builds upon and complements other United Nations-level child health initiatives, particularly health promoting schools.	Brunei Darussalam, Indonesia, Philippines and Cambodia
School Policy Framework: Implementation of the WHO Global Strategy on Diet, Physical Activity and Health	2008	WHO	The World Health Assembly adopted the “Global Strategy on Diet, Physical Activity and Health” in 2004. This framework is a guide for policymakers to develop policies that promote healthy eating and physical activity in the school setting through changes in environment, behaviour and education.	Thailand, Malaysia, Singapore
Recommendations on the Marketing of Foods and Non-Alcoholic Beverages to Children	2010	WHO	The set of recommendations on the marketing of foods and non-alcoholic beverages to children was endorsed by WHO Member States at the Sixty-third World Health Assembly in May 2010 (WHA63.14). It includes the recommendation for schools to be free from all forms of marketing of foods high in saturated fats, trans-fatty acids, free sugars or salt. Supported by the framework for implementing the set of recommendations on the marketing of	Singapore Thailand

			foods and non-alcoholic beverages to children, 2012.	
Home-Grown School Feeding Resource Framework Synopsis	2018	WFP, FAO, International Fund for Agricultural Development, New Partnership for Africa's Development, Global Child Nutrition Foundation and Partnership for Child Development (Imperial College London)	The Home-Grown School Feeding Resource Framework is intended as a guidance tool for the design, implementation and monitoring of home-grown school feeding programmes.	Philippines, Thailand, Cambodia, Malaysia, Lao People's Democratic Republic, Indonesia and Viet Nam
FAO School Food and Nutrition Framework	2019	FAO	The FAO School Food and Nutrition Framework is based on a systemic approach in four areas. These are: promoting a healthy school food environment and adequate and safe school food; integrating effective food and nutrition education throughout the whole school system; stimulating inclusive procurement and value chains for school food; and creating an enabling political, legal, financial and institutional environment.	Indonesia, Viet Nam, Philippines and Singapore
Food Systems for Children and Adolescents	2019	UNICEF in partnership with GAIN	The Innocenti Framework on Food Systems elaborates on drivers of food systems for children (including school-age children and adolescents). The framework highlights challenges and opportunities to transform the food system to improve the diets of children and adolescents now and in the future.	
Regional Action Framework on Protecting Children from the Harmful Impact of Food Marketing in the Western Pacific	2019	WHO	The Regional Action Framework calls on the WHO to support Member States, as appropriate to their national context, in: ending inappropriate promotion of foods for infants and young children; reducing children's exposure to marketing of food and drinks high in saturated fats, trans fats, free sugars or salt; and minimizing the persuasive appeal to children of marketing for food and drinks high in saturated fats, trans fats, free sugars or salt.	Brunei Darussalam, Cambodia, Lao People's Democratic Republic, Malaysia, Philippines, Singapore, Viet Nam
UN Framework for Reopening Schools	2020	UNESCO, UNICEF, World Bank, WFP, United Nations High Commissioner for Refugees	This framework serves to inform the decision-making process on when to reopen schools following widespread school closures due to the COVID-19 pandemic. It supports national preparations and guides the implementation process, as part of the overall public health and education planning processes.	

			The four main dimensions of the framework focus on safe operations, learning, well-being and protection and reaching the most marginalized.	
Global Standards for Health Promoting Schools	2021	WHO, UNESCO	<p>The Global Standards for Health Promoting Schools provide a resource for education systems to foster health and well-being through stronger governance.</p> <p>Building on a large body of evidence, eight global standards are proposed who are intended to function as a system, while the accompanying implementation guidance details 13 implementation areas, associated strategies and a process that will enable country-specific adaptation.</p>	Singapore Thailand
Programming Guidance: Nutrition in Middle Childhood and Adolescence	2021	UNICEF	This guidance articulates UNICEF's programme priorities for children during this age period. The programming priorities are: (1) nutritious foods, in schools and beyond; (2) healthy food environments, in schools and beyond; (3) micronutrient supplementation and deworming; (4) nutrition education in school curricula; and (5) healthy dietary practices for school-age children and adolescents. This guidance is based on a strategic framework and provides technical and operational guidance for the design, implementation, monitoring and evaluation of these priorities.	

Annex 2: Five keys to the safe preparation and handling of food

Source: WHO. Five keys to safer food manual. 2006

- **Key 1 - Keep clean:** Ensure hands are washed before handling food, and wash them often during food preparation. Wash hands after going to the toilet. Wash and sanitize all surfaces and equipment used for food preparation. Protect kitchen areas and food from insects, pests and other animals.
- **Key 2 - Separate raw and cooked foods:** Separate raw meat, poultry and seafood from other foods. Use separate equipment and utensils such as knives and cutting boards for handling raw foods. Store food in containers to avoid contact between raw and prepared foods.
- **Key 3 - Cook food thoroughly:** Cook food thoroughly, especially meat, poultry, eggs and seafood. Bring foods like soups and stews to boiling to make sure that they have reached 70°C. For meat and poultry, make sure that juices are clear, not pink. Ideally, use a thermometer. Reheat cooked food thoroughly.
- **Key 4 - Keep food at safe temperatures:** Do not leave cooked food at room temperature for more than 2 hours. Refrigerate promptly all cooked and perishable food (preferably below 5°C). Keep cooked food piping hot (more than 60°C) prior to serving. Do not store food too long even in the refrigerator. Do not thaw frozen food at room temperature.
- **Key 5 - Use safe water and raw food materials:** Use safe water or treat it to make it safe. Select fresh and wholesome foods. Choose foods processed for safety, such as a pasteurized milk. Wash fruits and vegetables, especially if eaten raw. Do not use food beyond its expiry date.

Annex 3: School food environment actions across ASEAN Member States

The following examples illustrate some of the guidance, standards and legislation in ASEAN countries:

- **All ASEAN countries** reported having school garden activities in place at national and subnational level. These activities have education purposes and provide nutritious foods to children in schools.⁹⁵ In Singapore, eco-gardens facilitate learning, but do not serve as a food source for school children.
- **Brunei Darussalam** has operational guidance on school canteens in place (2017) including guidance on foods and beverages to be provided.⁹⁵
- **Cambodia** introduced Food-Based Dietary Guidelines for School-Aged Children 6 to 17 years old in 2017.⁶³ Key messages in these guidelines include eat foods from all food groups everyday as part of a well-balanced diet; consume calcium-rich foods; reduce foods high in salt, sugar and fat; and measure body weight and height regularly to track growth.
- **Cambodia, Philippines, Indonesia^f, and Lao People's Democratic Republic** have national school feeding policies established.⁹⁶ **Viet Nam** approved a school health programme with the objective of delivering healthy school meals along with nutrition education, physical activity.
- **Malaysia** developed a guide for Healthy School Canteen Management in public schools in 2011 and the subsequent circular letters. The revised guide categorizes food items into two categories: (1) allowed to be sold and (2) not allowed to be sold in school canteens.⁹⁷
- **The Philippines** passed legislation to limit the types of foods sold in the school canteen. Only root crops, noodles, rice, corn products, fruits and vegetables and fortified food products with labelling should be sold. Iodized salt in controlled quantities should be used for all food preparation. The policy also allows only the sale of water, milk and juices from fresh fruit and vegetables. The 2005 legislation additionally requires all schools to have a canteen regardless of size and discourages students in secondary school from going off campus for lunch and break periods.⁶⁴
- **The Philippines** also developed food safety standards and nutrient content requirements according to WHO guidelines as part of their national school feeding policy. Viet Nam, Malaysia and Cambodia have national food safety policies.
- **Singapore** launched the voluntary Healthy Meals in Schools Programme in 2011, which became mandatory in 2017. The programme aims to encourage children to adopt healthy eating habits from a young age and consume a healthy and balanced diet in school. Canteen vendors are expected to follow food service guidelines, which aim to reduce the amount of saturated fat, sugar and salt in school meals, and make available whole grains, fruit and vegetables as part of a balanced meal. Nutritionists and dietitians are engaged to conduct assessment and ensure compliance to the guidelines. Revised food service guidelines came into effect on 1 January 2016.⁶³
- **Thailand** implemented the voluntary Thai School Lunch Programme in 1999, recommending schools to provide meals and snacks in line with dietary reference intake for Thais. The guidelines are intended to prevent both undernutrition and overweight/obesity.⁶³

Thailand also announced a voluntary ban of soda and sugary packaged snacks in elementary and secondary schools in 2008. It has been implemented by the majority of schools under the Ministry of Education's Office of the Basic Education Commission. In June 2020, the notification from the Ministry of Education introduced a ban on marketing promotion activities of all types of foods and beverages in educational institutions.

^f Indonesia provisioned in-school meals to children aged 6–12 years until 2019, however, the programme was suspended in 2020.

Annex 4: Nutrition education actions within ASEAN Member States

The following examples illustrate some of the guidance, standards and legislation in ASEAN countries:

- In **Malaysia**, as part of the formal curriculum, pupils in primary and secondary schools learn about the Malaysian Food Pyramid, the importance of fruit and vegetables, a balanced diet and active living in Physical and Health Education. Nutrition is also taught informally through activities in school sports clubs, academic associations and youth organizations such as scouts and cadets.

The Malaysian Ministry of Health has also initiated a Healthy Catering Initiative since 2005, which provides training for food outlet and canteen operators on healthy eating, preparing healthy menus and the effects of unhealthy eating habits. Most of the caterers are those serving food to government authorities or institutions. School canteen operators are encouraged to take the training course alongside the mandatory Food Handlers Training course.⁹⁸

- In **Viet Nam**, the Vietnamese Ministry of Education and Training is responsible for incorporating nutrition education into the school curriculum at all levels and providing capacity building for teachers as part of the Viet Nam National Nutrition Strategy (2011–2020).⁶³
- In **Singapore**, health, nutrition and physical education is mandatory for all primary and secondary schools. It includes the study of nutrients, water and dietary fibres and their relationship to health. The curriculum aims to develop students to be discerning consumers who make appropriate lifestyle and food choices. The curriculum framework for pre-school children aged 4 to 6 years includes the importance of cultivating healthy eating habits, good personal hygiene practices and regular exercise to maintain a healthy lifestyle.
- In **Brunei Darussalam**, the nutrition education curriculum includes: lessons on healthy diets to prevent overweight and obesity and lessons on the links between nutrition and health. The curriculum is mandatory in all primary schools and all secondary schools covered by this programme.⁶³
- In **Cambodia**, health, nutrition and physical education is compulsory coursework required for two hours per week for primary and secondary students.¹⁴
- In **Indonesia**, the nutrition education curriculum for primary and secondary schools is mandatory. It includes: lessons on healthy diet to prevent undernutrition; lessons on healthy diet to prevent overweight and obesity; lessons on the links between nutrition and health and hands-on gardening skills.⁹⁵
- In **Thailand**, nutrition education is linked to the promotion of fruit and vegetable consumption as part of a school fruit and vegetable scheme.⁹⁵

Annex 5: Physical education per week among students in ASEAN Member States

Minutes of physical education per week among primary and secondary students

Country	Minutes of physical education per week	
	Primary students	Secondary students
Cambodia	85	115
Indonesia	75	85
Lao People's Democratic Republic	80	80
Malaysia	50	No data
Myanmar	100	25
Viet Nam	65	85

Source: GSHS Cambodia, Indonesia, Lao People's Democratic Republic, Malaysia, Myanmar, Viet Nam

Note- Brunei Darussalam, Philippines, Singapore and Thailand were not included in this survey

Singapore- Physical Education curriculum time is at least 120 min per week for primary and secondary level as per Ministry of Education, Singapore

Thailand- Physical Education curriculum time is at least 50 min per week for primary and secondary level as per Ministry of Education, Thailand

Annex 6: Laws, policies and regulations on mandatory standards in schools

Country examples of laws, policies and regulations on mandatory standards in schools

Country	Law, policies, regulations (instrument)	Measure (legislative)
United States	Smart Snacks in School Regulation 2014	<p>All foods sold at school during the school day are required to meet nutrition standards. The standards require any foods sold in schools to meet dietary requirements of “whole grain” or have fruit, vegetable, dairy or protein as the first ingredient.</p> <p>There are calorie, sodium, sugar and fat limits to each snack and meal item and restrictions against the sale of sugar-sweetened drinks. Beverages sold through schools are limited to water, low fat milk, 100 per cent fruit and vegetable juice and low-calorie flavoured water and carbonated beverages for high school students. The regulation includes foods sold through vending machines, snack shops on school campus and during fundraising on school property.</p>
Colombia	Resolution No. 29452 of 2017 Establishing the Technical- Administrative Guidelines, Standards and Minimum Conditions of the School Feeding Programme	<p>Article 2 establishes that the technical and administrative guidelines, standards and minimum conditions for the provision of the service and execution of the school feeding programme are mandatory for territorial entities, operators and all actors of the programme.</p> <p>Article 5 establishes that the distribution of the total caloric value for the ration prepared on-site will be as follows: Protein: 14 per cent, fat: 30 per cent, carbohydrates: 56 per cent. For the industrialized ration, the distribution of the total caloric value will be divided in the following way: Protein: 12 per cent, fat: 28 per cent, carbohydrates: 60 per cent.</p> <p>The food supplement morning/afternoon must provide at least 20 per cent of the daily recommendations for energy and nutrients, according to age group.</p>
Canada	School food and beverage policy in 2010	<p>Nutrition standards are applied for all food and vegetables sold in school through cafeterias, vending machines, snack shops and through all events held in the school, such as bake sales and sports events.</p> <p>The nutrition standards for schools in Canada are organized into three categories: (1) items to be sold most often (80 per cent of available foods); (2) items to be sold less often (20 per cent of available foods); and (3) foods not permitted for sale.</p> <p>Food groupings are based on the nutrition content of selected foods, with fat, sodium, fibre and protein taken into consideration as well as quality of food ingredients.</p> <p>Restricted foods that fall in category 3 include candy, chocolates, energy bars, soft drinks, coffee and tea, energy drinks and flavoured waters. Caffeine is restricted in all schools, although low-calorie soft drinks and flavoured waters are allowed for high school.</p>
Paraguay	Resolution S.G. No. 17, 2020, establishing the requirements and conditions for the preparation or provision of food in the framework of school feeding and approving the sanitary surveillance plan, designating the authority responsible for monitoring it and establishing its powers	<p>The Resolution establishes requirements and conditions to be met by anyone who prepares or provides food for school.</p> <p>These requirements include the mandatory Certificate of Training for Food Handlers in Good Manufacturing Practices issued by the National Food and Nutrition Institute.</p> <p>It also designates the Institute as responsible for the enforcement of these requirements, as well as for the implementation of the Sanitary Surveillance Plan for school feeding, including the responsibility of carrying out controls and inspections, coordinating the tasks of supervision and control with other competent institutions, including the taking of food samples within the framework of school feeding and providing training in good manufacturing practices and issuing the document that accredits the participation in such training.</p>

Annex 7: Additional country-specific case examples on minimum standards

Country	Minimum standard	Case examples
Malaysia	Minimum Standard 2: Set school food standards that contribute to children having healthy, balanced diets	<p>Malaysia's Healthy School Meal Programme 'Hidangan Berkhasiat di Sekolah' (HiTS) initiative aims to ensure school children receive nutritious meals according to the recommended nutrient intake for their age. This programme also aims to increase knowledge, inculcate healthy eating habits among the school children, and provide a supportive environment towards healthy eating.</p> <p>This initiative has been implemented on a voluntary basis since 2007 in Malaysia. The HiTS programme provides nutritious meals consisting of cereals, protein sources, vegetables, fruits and safe drinking water for schoolchildren during recess. Nutritionists plan menus, taking into account 18-25 per cent of the calorie needs of the school children. Through this programme, the parents pay weekly or monthly fees as decided by the Parents and Teachers Association, the school administrator and the canteen operators. The price of each meal is less than RM4 (US\$0.89). Apart from parents, HiTS also relies on the private funds.</p>
Indonesia	Minimum standard 4: Set food safety and drinking water standards to protect school children from food- and water-borne diseases in schools	<p>In 2012, the Government of Indonesia released law No 18/2012 on food safety. The law mandates that food management should be carried out to meet basic human needs that provide fair, equitable and sustainable benefits based on food sovereignty, food independence and national food security that also targets school children.</p>
Thailand		<p>-Notification of the Department of Health on Criteria for Recommendation of Drinking Water Quality Surveillance, B.E. 2563 (A.D. 2020)</p> <p>- Notification of Ministry of Public Health B.E. 2561 on food hygiene for "place to sell food" consists of four categories: 1) hygiene rules for dining area and kitchen; 2) hygiene rules for raw and cooked foods, cooking method, storage, and selling food; 3) food hygiene for containers and equipment; and 4) personal hygiene for food business operators and food handler, including training on food sanitation every year and annual health check-ups.</p> <p>-For health promoting schools, the monitoring and surveillance of food contamination are done by coliform bacteria test kits in cooked foods, food containers and food handlers. Specifically, the quality of drinking water is tested by coliform bacteria test kit and laboratory (i.e., physical, chemical, and biological parameters) based on the notification of the Department of Health: quality of tap water, B.E.2563</p>
Thailand	Minimum standard 8: Ensure schools provide access to a safe and inclusive environment that supports physical activity for all students	<p>In 2020, Thailand launched guidelines on the promotion of physical activity for school-aged children. The guidelines aimed to make school children aware of adequate physical activity, improve physical fitness, have fun, maintain weight and increase height, naming the campaign "Caping and having fun for at least 60 minutes daily".</p> <p>In 2020, Thailand's division of Physical Activity and Health launched a campaign to promote physical activity known as "Kao-Ta-Jai". The campaign is aimed to promote physical activity and reduce sedentary lifestyle.</p>

References

1. Baker SJ, DeMaeyer EM. Nutritional anemia: its understanding and control with special reference to the work of the World Health Organization. *Am J Clin Nutr.* 1979;32(2):368-417.
2. World Health Organization. Global accelerated action for the health of adolescents (AA-HAI): Guidance to support country implementation. WHO, Geneva; 2017.
3. de Onis M, Onyango AW, Borghi E, Siyam A, Nishida C, Siekmann J. Development of a WHO growth reference for school-aged children and adolescents. *Bull World Health Organ.* 2007;85(9):660-7.
4. De Vogli R, Kouvonen A, Gimeno D. The influence of market deregulation on fast food consumption and body mass index: a cross-national time series analysis. *Bull World Health Organ.* 2014;92(2):99-107, a.
5. World Health Organization. Five Keys to Safer Food Manual. Department of Food Safety Zoonoses and Food Borne Diseases. WHO, Geneva; 2006.
6. Food and Agriculture Organization (FAO) of the United Nations. Nutrition guidelines and standards for school meals. A report from 33 low and middle-income countries. FAO, Rome; 2019.
7. Mozaffarian D. Dietary and policy priorities to reduce the global crises of obesity and diabetes. *Nature Food.* 2020;1(1):38-50.
8. Brooks JJ, Commandeur D, Vera E, editors. Inclusive procurement and transparency--connecting smallholder farmers to school feeding. 2019.
9. World Health Organization. A Framework for Implementing the Set of Recommendations on the marketing of foods and non-alcoholic beverages to children. 2012.
10. Bundy DAP, de Silva N, Horton S, Patton GC, Schultz L, Jamison DT, et al. Investment in child and adolescent health and development: key messages from Disease Control Priorities, 3rd Edition. *Lancet.* 2018;391(10121):687-99.
11. Silk KJ, Sherry J, Winn B, Keesecker N, Horodyski MA, Sayir A. Increasing nutrition literacy: testing the effectiveness of print, web site, and game modalities. *J Nutr Educ Behav.* 2008;40(1):3-10.
12. Monteiro CA, Cannon G, Moubarac JC, Levy RB, Louzada MLC, Jaime PC. The UN Decade of Nutrition, the NOVA food classification and the trouble with ultra-processing. *Public Health Nutr.* 2018;21(1):5-17.
13. Food and Nutrition Board IoM. Dietary Reference Intakes: A Risk Assessment Model for Establishing Upper Intake Levels for Nutrients. Washington D.C.: National Academy Press; 1998.
14. United Nations Children's Fund (UNICEF). Nutrition in middle childhood and adolescence: Programming guidance. UNICEF, New York; 2021.
15. Food and Agriculture Organization (FAO) of the United Nations. Healthy food environment and school food Rome: FAO; 2021 [Available from: <https://www.fao.org/school-food/areas-work/food-environment/en/>].
16. Tremblay MS, Aubert S, Barnes JD, Saunders TJ, Carson V, Latimer-Cheung AE, et al. Sedentary Behavior Research Network (SBRN) – Terminology Consensus Project process and outcome. *International Journal of Behavioral Nutrition and Physical Activity.* 2017;14(1):75.
17. Association of Southeast Asian Nations and United Nations Children's Fund (UNICEF). Minimum standards and guidelines on actions to protect children from the harmful impact of marketing of food and non-alcoholic beverages in the ASEAN region. Jakarta: UNICEF; 2024.
18. Bundy DAP, N. de Silva, S. Horton, D. T. Jamison, and G. C. Patton. Re-Imagining School Feeding: A High-Return Investment in Human Capital and Local Economies. Washington DC: World Bank; 2018.
19. Alderman H BJ, Glewwe P, Fernald L, Walker S. . Evidence of Impact of Interventions on Growth and Development during Early and Middle Childhood. In: Bundy DAP SN, Horton S, Jamison DT, Patton GC, editor. *Child and Adolescent Health and Development.* 3rd ed. Washington DC: The International Bank for Reconstruction and Development / The World Bank; 2017.
20. Mendez MA, Popkin BM. Globalization, Urbanization and Nutritional Change in the Developing World. *The Electronic Journal of Agricultural and Development Economics.* 2004;1(2):220-41.

21. Leandro CG, Fonseca E, de Lim CR, Tchamo ME, Ferreira ESWT. Barriers and Enablers That Influence Overweight/Obesity/Obesogenic Behavior in Adolescents From Lower-Middle Income Countries: A Systematic Review. *Food Nutr Bull.* 2019;40(4):562-71.
22. Boyland E, Tatlow-Golden M. Exposure, Power and Impact of Food Marketing on Children: Evidence Supports Strong Restrictions. *European Journal of Risk Regulation.* 2017;8(2):224-36.
23. Best C, Neufingerl N, van Geel L, van den Briel T, Osendarp S. The nutritional status of school-aged children: why should we care? *Food Nutr Bull.* 2010;31(3):400-17.
24. Murphy JM, Pagano ME, Nachmani J, Sperling P, Kane S, Kleinman RE. The relationship of school breakfast to psychosocial and academic functioning: cross-sectional and longitudinal observations in an inner-city school sample. *Arch Pediatr Adolesc Med.* 1998;152(9):899-907.
25. Micha R, Karageorgou D, Bakogianni I, Trichia E, Whitsel LP, Story M, et al. Effectiveness of school food environment policies on children's dietary behaviors: A systematic review and meta-analysis. *PLoS One.* 2018;13(3):e0194555.
26. FAO IFAD UNICEF WFP and WHO. *The State of Food Security and Nutrition in the World 2020. Transforming food systems for affordable healthy diets.* Rome: FAO; 2020.
27. Association of Southeast Asian Nations UNC'sFaWFP. *ASEAN Food and Nutrition Security Report 2021, Volume 1 and 2.* Jakarta: UNICEF; 2021.
28. World Health Organization. *Fact Sheet Obesity and Overweight: WHO; 2021 [June 2021].* Available from: <https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight>.
29. Wrottesley SV, Mates E, Brennan E, Bijalwan V, Menezes R, Ray S, et al. Nutritional status of school-age children and adolescents in low- and middle-income countries across seven global regions: a synthesis of scoping reviews. *Public Health Nutr.* 2023;26(1):63-95.
30. FAO UNICEF WFP and WHO. *Asia and the Pacific Regional Overview of Food Security and Nutrition 2020: Maternal and child diets at the heart of improving nutrition.* Bangkok: FAO; 2021.
31. World Health Organization. *Increasing fruit and vegetable consumption to reduce the risk of noncommunicable diseases [cited 2021 June 2021].* Available from: <https://www.who.int/tools/elena/interventions/fruit-vegetables-ncds>.
32. Institute for Public Health MoH. *Malaysia's Adolescent Nutrition Survey Report, National Health and Morbidity Survey adopted GSHS methodology.* Malaysia 2017.
33. Department of Health & WHO. *Global School-based Student Health Survey.* Thailand; 2015.
34. Ministry of Health MoE, Youth and Sport, WHO and CDC,. *Global School-based Student Health Survey.* Cambodia; 2013.
35. Ministry of Health and Sport & WHO. *Report of second Global School-based Health Survey (2016).* Myanmar; 2018.
36. Department of Health. *Global School-based Student Health Survey, Philippines 2015. Country Report.* . Republic of Philippines; 2015.
37. Ju SY, Park YK. Low fruit and vegetable intake is associated with depression among Korean adults in data from the 2014 Korea National Health and Nutrition Examination Survey. *J Health Popul Nutr.* 2019;38(1):39.
38. Health effects of dietary risks in 195 countries, 1990-2017: a systematic analysis for the Global Burden of Disease Study 2017. *Lancet.* 2019;393(10184):1958-72.
39. Indonesian Ministry of Health (Kementerian Kesehatan RI). *Laporan Nasional Riskesdas 2018.* Badan Penelitian Dan Pengembangan Kesehatan; 2018.
40. Thow A FP, Helble M, Rachmi C. *Eating in developing Asia: Trends, Consequences and Policies.* Asian Development Bank; 2020.
41. Luger M, Lafontan M, Bes-Rastrollo M, Winzer E, Yumuk V, Farpour-Lambert N. Sugar-Sweetened Beverages and Weight Gain in Children and Adults: A Systematic Review from 2013 to 2015 and a Comparison with Previous Studies. *Obes Facts.* 2017;10(6):674-93.
42. Ochola S, Masibo PK. Dietary intake of schoolchildren and adolescents in developing countries. *Ann Nutr Metab.* 2014;64 Suppl 2:24-40.
43. Malik VS, Pan A, Willett WC, Hu FB. Sugar-sweetened beverages and weight gain in children and adults: a systematic review and meta-analysis. *Am J Clin Nutr.* 2013;98(4):1084-102.

44. Global School-based Health Survey database [Internet]. 2023. Available from: <https://www.who.int/teams/noncommunicable-diseases/surveillance/systems-tools/global-school-based-student-health-survey>.
45. World Health Organization. Global School-based Health Survey Cambodia Country Report. 2014.
46. Christian P, Smith ER. Adolescent Undernutrition: Global Burden, Physiology, and Nutritional Risks. *Ann Nutr Metab*. 2018;72(4):316-28.
47. Montesclaros JML, Caballero-Anthony M, Schlundt J. The Burden of Food-Borne Diseases in Southeast Asia. S. Rajaratnam School of International Studies; 2018.
48. Dewanti-Hariyadi R, Gitapratwi D. Foodborne Diseases: Prevalence of Foodborne Diseases in South East and Central Asia. In: Motarjemi Y, editor. *Encyclopedia of Food Safety*. Waltham: Academic Press; 2014. p. 287-94.
49. World Health Organization. Adolescent Mental Health. Geneva: WHO; 2022.
50. World Health Organization. Guidelines on physical activity and sedentary behaviour. Geneva: WHO; 2020.
51. Global School-Based Student Health Surveys for Brunei and Thailand. [Internet]. 2021 [cited 2021]. Available from: Global School-Based Student Health Surveys for Brunei and Thailand.
52. Bundy DAP, Schultz L, Sarr B, Banham L, Colenso P, Drake L. The School as a Platform for Addressing Health in Middle Childhood and Adolescence. In: Bundy DAP, Silva ND, Horton S, Jamison DT, Patton GC, editors. *Child and Adolescent Health and Development*. Washington (DC): The International Bank for Reconstruction and Development / The World Bank; 2017.
53. School enrolment rate in primary and secondary school [Internet]. World Bank. 2018 [cited 2020]. Available from: <https://data.worldbank.org/indicator/SE.SEC.NENR?end=2018&locations=BN-KH-MY-PH-TH-ID-LA-VN-SG-MM&start=2008>.
54. United Nations Standing Committee on Nutrition (UNSCN). School nutrition: An inventory of the United Nations System global guidance, resources and tools on school nutrition. Rome: UNSCN Secretariat; 2020.
55. United Nations Children's Fund (UNICEF) & World Food Programme (WFP). School Health and Nutrition: ensuring a better future for all children. 2021.
56. UNESCO FAO, GPE, UNICEF, UNSCN, World Bank Group, WFP, WHO. Stepping up effective school health and nutrition. A partnership for healthy learners and brighter futures. 2021.
57. World Health Organization. WHO guideline on school health services. Geneva: WHO; 2021.
58. HLPE. Nutrition and food systems. A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security. Rome; 2017.
59. World Health Organization. Drinking water fact sheet. 2022. Available from: <https://www.who.int/news-room/fact-sheets/detail/drinking-water>.
60. Raza A, Fox EL, Morris SS, Kupka R, Timmer A, Dalmiya N, et al. Conceptual framework of food systems for children and adolescents. *Global Food Security*. 2020;27:100436.
61. UNICEF and GAIN. Food systems for children and adolescents: Working together to secure nutritious diets. New York: UNICEF; 2019.
62. Food-based Dietary Guidelines [Internet]. Available from: <https://www.fao.org/nutrition/education/food-based-dietary-guidelines>.
63. Nourishing Framework [Internet]. Available from: <https://www.wcrf.org/policy/nutrition-policy/nourishing-framework/>.
64. Healthy Food Plate for Filipinos [Internet]. Available from: <https://www.fnri.dost.gov.ph/index.php/tools-and-standard/pinggang-pinoy>.
65. Food and Agriculture Organization (FAO) and World Food Programme. Home-Grown School Feeding Resource Framework. Technical Document. 2018.
66. Shrestha RM, Schreinemachers P, Nyangmi MG, Sah M, Phuong J, Manandhar S, et al. Home-grown school feeding: assessment of a pilot program in Nepal. *BMC Public Health*. 2020;20(1):28.
67. Soares P, Davó-Blanes MC, Martinelli SS, Melgarejo L, Cavalli SB. The effect of new purchase criteria on food procurement for the Brazilian school feeding program. *Appetite*. 2017;108:288-94.

68. Food and Agriculture Organization (FAO) of the United Nations Alliance of Bioversity International and CIAT and Editora da UFRGS. Public food procurement for sustainable food systems and healthy diets – Volume 1 Rome; 2021.
69. Association of Southeast Asian Nations. Guideline on Home Yard Food Garden Area. ASEAN; 2022.
70. Food and Agriculture Organization (FAO) of the United Nations. Legal Guide on school food and nutrition - Legislating for a healthy school food environment. Rome: FAO; 2020.
71. World Food Programme. Golden rules for safer school meals. 2020.
72. Food Safety and Quality, editor Food Hygiene Regulations 2009; Malaysia: Ministry of Health.
73. Food and Agriculture Organization (FAO) of the United Nations and World Health Organization. Codex Alimentarius – Food Hygiene: General Principles of Food Hygiene (CXC 1 -1969) 2022.
74. World Health Organization Regional Office for the Western Pacific. Be smart drink water: a guide for school principals in restricting the sale and marketing of sugary drinks in and around schools. 2016.
75. World Health Organization and United Nations Children’s Fund. Joint Monitoring Programme for Water Supply and Sanitation Definitions WHO & UNICEF; 2021.
76. World Health Organization. Intermittent iron supplementation in preschool and school-age children. Geneva: WHO; 2011.
77. De-Regil LM, Jefferds MED, Peña-Rosas JP. Point-of-use fortification of foods with micronutrient powders containing iron in children of preschool and school-age. Cochrane Database Syst Rev. 2017;11(11):Cd009666.
78. World Health Organization. Report of the WHO Advisory Group on deworming in girls and women of reproductive age. Geneva; 2017.
79. Salam RA, Hooda M, Das JK, Arshad A, Lassi ZS, Middleton P, et al. Interventions to Improve Adolescent Nutrition: A Systematic Review and Meta-Analysis. J Adolesc Health. 2016;59(4s):S29-s39.
80. Girum T, Wasie A. The Effect of Deworming School Children on Anemia Prevalence: A Systematic Review and Meta-Analysis. Open Nurs J. 2018;12:155-61.
81. Poverty Action Lab. School-Based Deworming 2015. Available from: <https://poverty-action.org/impact/school-based-deworming>.
82. Apriningsih A MDC, Crostita Y, Madanijah S. School Readiness in Weekly Iron Folic Acid Supplementation Program in Urban Area, West Java, Indonesia. Amerta Nutrition. 2020(4):291-8.
83. Food and Agriculture Organization (FAO) of the United Nations. School-based food and nutrition education – A white paper on the current state, principles, challenges and recommendations for low- and middle-income countries. Rome: FAO; 2020.
84. Food and Agriculture Organization (FAO) of the United Nations. School Food and Nutrition Framework. 2019. Contract No.: Licence: CC BY-NC-SA 3.0 IGO.
85. United Nations Standing Committee on Nutrition (UNSCN). Schools as a System to Improve Nutrition. A new statement for school-based food and nutrition interventions. UNSSCN; 2017.
86. World Health Organization. Report of the commission on ending childhood obesity. Geneva: WHO; 2016.
87. Huang HC, Le N, Battle M, Villasenor JM, Maule L. Nudging Handwashing among Primary School Students in the Philippines: Evidence from a Cluster Randomized Trial. Am J Trop Med Hyg. 2021;105(6):1806-15.
88. World Health Organization. School policy framework: implementation of the WHO global strategy on diet, physical activity and health. WHO; 2008.
89. United Nations Educational Scientific and Cultural Organization (UNESCO). Quality Physical Education (QPE): guidelines for policymakers. 2015.
90. World Food Programme, Food and Agriculture Organization of the United Nations & United Nations Children’s Fund. Mitigating the effects of the COVID-19 pandemic on food and nutrition of schoolchildren 2021 [2021]. Available from: <https://www.wfp.org/publications/mitigating-effects-covid-19-pandemic-food-and-nutrition-schoolchildren>.
91. Osendarp S, Akuoku JK, Black RE, Headey D, Ruel M, Scott N, et al. The COVID-19 crisis will exacerbate maternal and child undernutrition and child mortality in low- and middle-income countries. Nat Food. 2021;2(7):476-84.

92. United Nations Children's Fund (UNICEF) East Asia Pacific Regional Office. Nutrition and Education Collaboration - Checklist for Reopening Schools A coordinated response for children to return to school 2020. [Available from: <https://reliefweb.int/report/world/nutrition-and-education-collaboration-checklist-reopening-schools-coordinated-response>].
93. World Food Programme. Policy Brief: School feeding amidst a pandemic: Preparing for the new normal in Asia and the Pacific. WFP; 2021.
94. World Food Programme, Food and Agriculture Organization of the United Nations & United Nations Children's Fund. Interim guidance note – mitigating the effects of the COVID-19 pandemic on food and nutrition of school children. 2020.
95. WHO Global Database on the Implementation of Nutrition Action (GINA) [Internet]. Available from: <https://extranet.who.int/nutrition/gina/en/home>.
96. GCNF Resource Library [Internet]. Available from: <https://gcnf.org/resources/>.
97. Government of Malaysia. Panduan Pengurusan Kantin Sekolah Sihat (Healthy School Canteen Guide). In: Education Mo, editor. 2011.
98. Government of Malaysia. Modul Latihan Katering Sihat (Healthy Catering Training Module). Ministry of Health Malaysia; 2021.



one vision
one identity
one community

ASEAN Secretariat

Community Relations Division (CRD)
70A Jalan Sisingamangaraja
Jakarta 12110, Indonesia
Phone: (62 21) 724-3372, 726-2991
Fax: (62 21) 739-8234, 724-3504
E-mail: public@asean.org
www.asean.org



for every child

United Nations Children's Fund

UNICEF East Asia and Regional Office (EAPRO)
19 Phra Atit Road,
Bangkok 10200, Thailand
<https://www.unicef.org/eapro>
Email: asiapacificinfo@unicef.org



**World Food
Programme**

World Food Programme

WFP Regional Bureau for Asia and the Pacific (RBB)
L7, Wave Place, 55 Wireless Road, Lumpini,
Pathumwan, 10330 Bangkok, 10330
<https://www.wfp.org/>
Email: WFP.Bangkok@wfp.org