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Southeast Asia Regional Report on Maternal Nutrition and Complementary Feeding

UNICEF East Asia and Pacific Region
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Cover photo:
A woman feeds her daughter nutritious food during a health outreach session supported by UNICEF. Phorsen village, Taoy district Saravan province, Lao People's Democratic Republic

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Acronyms

ASEAN	Association of Southeast Asian Nations
ANC	Antenatal care
BMS	Breastmilk substitutes
BPNT	Bantuan Penerima Non Tunai (non-cash recipient assistance, Indonesia)
CCT	Conditional cash transfer
DoH	Department of Health
EAPRO	East Asia Pacific Regional Office (of UNICEF)
FAO	Food and Agriculture Organization
FBDG	Food based dietary guideline
HFSS	High fat, salt and sugar (foods)
HMIS	Health Management Information System
IEC	Information, Education and Communication
IFA	Iron and folic acid
IYCF	Infant and young child feeding
IMCI	Integrated management of childhood illness
MoET	Ministry of Education and Training
MoH	Ministry of Health
MCH	Maternal and child health
MCCT	Maternal and Child Cash Transfer (Myanmar)
MMS	Multiple micronutrient supplement
MNP	Micronutrient powder
NGO	Non-governmental organisation
NIN	National Institute of Nutrition (Vietnam)
NNC	National Nutrition Council (Philippines)
NNS	National Nutrition Strategy
NPAN	Nutrition Plan of Action
RISING	Regional Initiatives for Sustainable Improvements in Nutrition and Growth
RNI	Recommended nutrient intake
RUTF	Ready to Use Therapeutic Foods
SBCC	Social and behaviour change communication
SOFI	State of Food Insecurity Report
SOWC	State of the World's Children Report
WASH	Water, sanitation and hygiene
WFP	World Food Programme
WHO	World Health Organisation

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Executive Summary

Malnutrition in all its forms is a persistent problem across Southeast Asia. Data reported by UNICEF, the World Health Organization and the World Bank shows that 27.4 per cent of children under 5 years of age in Southeast Asia are stunted, 8.2 per cent are wasted and 7.5 per cent are overweight (1). An estimated 1 in every 2 children in the region has at least one micronutrient deficiency.

Child malnutrition has many determinants that operate at different levels; household factors and caregiver practices, health status, socioeconomic status and maternal education, government policies and strategies all contribute to a child's nutrition status. Two major drivers of child malnutrition: maternal nutrition and complementary feeding, have historically been under-emphasized globally and in the region, with an incomplete understanding of the gaps in existing policies and programming, as well as the barriers, drivers and enabling factors which influence appropriate practices. In response, there has been a corresponding lack of progress in key indicators for both maternal nutrition and complementary feeding over the last decade.

This report focuses on renewed efforts to improve maternal nutrition and complementary feeding in six countries of Southeast Asia: Cambodia, Indonesia, Lao PDR, Myanmar, Philippines, and Vietnam.

The report describes the findings of a series of comprehensive landscape analyses on maternal nutrition and complementary feeding that were conducted in each of the six countries during the period of 2018-2019. Data collection methods for the in-country analysis included in-depth desk review, stakeholder mapping and key informant interviews. Based on these findings and through technical consultations with key stakeholders at the regional and country level, identified priority actions are outlined to improve both maternal nutrition and complementary feeding practices in Southeast Asia. The landscape analyses and the identified priority actions are based on a systems framework for improving maternal nutrition and complementary feeding. The systems approach addresses maternal and child nutrition through five key systems – **food, health, water, sanitation, and hygiene (WASH), social protection** and **education** (for maternal nutrition).

This work was implemented as part of the Regional Initiatives for Sustainable Improvements in Nutrition and Growth (RISING) programme funded by the Bill & Melinda Gates Foundation for the period 2018-2022. Under the RISING grant, UNICEF East Asia and Pacific Regional Office (EAPRO) aims to strengthen the technical leadership and institutional capacities of the Association of Southeast Asian Nations (ASEAN) and partners to raise commitment and investment for nutrition, and to institutionalize and scale up of key child nutrition interventions with a focus on maternal nutrition and complementary feeding.

Key findings

National policies and adequacy of maternal nutrition and complementary feeding practices

- Maternal nutrition and complementary feeding practices are sub-optimal across all six countries.
- Policies and strategies for maternal nutrition and complementary feeding are in place but implementation is inconsistent.

Behaviour, knowledge, and beliefs

- There is limited understanding about the importance of good nutrition during pregnancy, lactation and the complementary feeding period.
- The diets of women and young children often lack diversity and rely heavily on starchy staples such as rice.
- Practical barriers facing women driven by high rates of female employment outside the home, mean that women have less time for food shopping and preparation as well as to access ANC services including counselling.
- Food taboos persist across the region, particularly among ethnic minority populations, which restrict consumption of nutritious foods for women and young children.
- A pervasive belief in the superiority of milk formula together with aggressive advertising of breast milk substitutes (BMS) is contributing to early cessation of breastfeeding.
- Early marriage and childbirth are common among some parts of the community in all six countries and is associated with increased risk of low birth weight and subsequent malnutrition in young children.

Food system

- Few policies and programmes are in place to ensure that the food system delivers nutritious, affordable, and safe food to women and children.
- Affordability is a major barrier in providing nutritious diets to women and children at critical periods when nutrient requirements are high.
- Existing food-based dietary guidelines in place offer limited guidance for pregnant and lactating women and children 6-23 months of age.
- Marketing and consumption of breastmilk substitutes - particularly follow-on formula and growing up milks - coupled with limited enforcement of

national laws on marketing of BMS are contributing to declines in breastfeeding and are a source of a significant proportion of sugar consumption early in life.
- Aggressive marketing, low cost and increased availability of foods high in fat, sugar and sodium (HFSS) are contributing to the rise of overweight and obesity among women and young children.

Health system

- Policies and programmes specifically aiming to improve the delivery of services in support of maternal nutrition and complementary feeding are in place, but delivery is inconsistent.
- Nutrition counselling is implemented in all countries, but quality is inconsistent, and competencies of health workers can be weak.
- Training for health workers on infant and young child feeding (IYCF) and maternal nutrition has not been rolled out consistently and at scale, with some essential components not included in pre-and in-service training manuals.
- Delivery of micronutrient supplementation plays an important role in maintaining the nutrition status of women and young children but significant challenges in the supply chain and logistics remain.

Social protection system

- As a region, Southeast Asia is vulnerable to natural disasters and the impact of climate change with these factors negatively impacting the diets and nutrition status of young children and women.
- Poverty and inequality continue to affect large numbers of people, and evidence demonstrates the important role of social protection in improving maternal and child diets.
- In many countries, social protection schemes do not target nutritionally vulnerable women and young children. Where social protection schemes are specifically targeted at households with women and young children, they are not delivered at scale, though there are indications that this is changing.
- Many social protection programmes are not effectively linking recipients with services that could improve maternal nutrition and complementary feeding practices.

WASH system

- WASH policies are in place in all six countries but do not necessarily focus on the aspects critical for maternal nutrition and complementary feeding.
- Access to clean water, sanitation and hygiene varies in the region, between rural and urban populations and between wealth quintiles.
- Improvements in access to water and sanitation facilities are not translating to having an impact on environmental hygiene, as well as the exposure to pathogens that are dangerous for young children including from animal faeces.

Education system

- The education system is an underutilized platform for delivering essential nutrition services to adolescent girls.
- Governments have adopted policies for delivery of iron-folate supplements to adolescent girls through the education system but implementation of these policies at scale have been inconsistent.

Priority actions to improve maternal nutrition and complementary feeding in Southeast Asia

A set of 17 priority actions were identified at the regional level to achieve significant change in the status of maternal nutrition and complementary feeding key indicators. These actions, a subset of the Southeast Asia Action Frameworks for Complementary Feeding and Maternal Nutrition are summarized below.

Overarching actions

1. Develop innovative mass communication strategies including use of social media.
2. Improve collection and reporting of relevant indicators through routine monitoring.
3. Address research gaps on how to improve service delivery across multiple systems.
4. Highlight complementary feeding and maternal nutrition in national strategies and plans.

Food system actions

1. Adopt and enforce regulations to control the marketing and labelling of unhealthy foods and beverages to children under 18 years of age.
2. Develop a regional nutrient profile model for commercially available complementary foods to guide nutrient and labelling standard development at the country level.
3. Establish food-based dietary guidelines for pregnant and lactating women and children under 2 years.
4. Incentivise the production of nutritious and safe commercially available complementary foods.

Health system actions

1. Develop standards, guidelines, and tools for the delivery, monitoring and supervision of complementary feeding and maternal nutrition counselling.
2. Introduce mandatory skill-focused, pre-service, and in-service training on complementary feeding and maternal nutrition using mixed modalities including online for health workers.
3. Update guidelines and improve delivery of micronutrient supplements for young children and pregnant women including multiple micronutrient supplement (MMS) with linkages to SBCC for improved adherence.
4. Support mandatory assessment and monitoring of the nutritional status of pregnant women linked to targeted counselling.

Social protection system actions

1. Ensure social protection programme with a nutrition objective are targeted to the first 1000 days and designed to address financial and behavioural barriers to appropriate complementary feeding and maternal nutrition.
2. Establish linkages between social protection programmes and the health system to increase coverage, finance and delivery of essential nutrition services.

WASH system actions

1. Ensure coherence of WASH messages into maternal nutrition and complementary feeding counselling and SBCC messages at the healthy facility, community, and household level.
2. Integrate environmental hygiene actions into WASH services targeted to households with women and children.

Education system actions
(maternal nutrition only)

1. Strengthen universal iron and folic acid (IFA) supplementation for all adolescent girls.

Introduction

This report focuses on renewed efforts to improve maternal nutrition and complementary feeding in six countries of Southeast Asia: Cambodia, Indonesia, Lao PDR, Myanmar, the Philippines, and Viet Nam. It describes the findings of a series of comprehensive landscape analyses on maternal nutrition and complementary feeding conducted in each of the six countries in the period of 2018 and 2019. Based on these findings and through technical consultations with key stakeholders at the regional and country level, the report outlines the priority actions identified to improve maternal nutrition and complementary feeding in Southeast Asia. The work was implemented as part of the Regional Initiatives for Sustainable Improvements in Nutrition and Growth (RISING) programme funded by the Bill & Melinda Gates Foundation for the period 2018-2022. RISING aims to increase the effective coverage, at scale, of key evidence-based nutrition interventions, and in Southeast Asia focuses on the diets of pregnant and lactating women and young children in six countries.

Objectives

- To describe the current status of maternal nutrition and complementary feeding in the region.
- To present the drivers that influence maternal nutrition and complementary feeding status and practices.
- To outline the priority actions delivered through multiple systems to improve maternal nutrition and complementary feeding.

The report is divided into four sections:

Section 1 Background	This section provides a background, outlining the burden of malnutrition and the rationale for refocusing attention on maternal nutrition and complementary feeding as critical for preventing malnutrition.
Section 2 Methods	This part describes methods used in the landscape analyses and to identify the drivers and country-level priority actions. The landscape analyses are based on a systems framework for improving maternal nutrition and complementary feeding through five key systems – food, health, water, sanitation and hygiene (WASH), social protection and education (for maternal nutrition).
Section 3 Findings	This section reports on the findings of the landscape analyses examining through a systems lens how maternal nutrition and complementary feeding are reflected in national policies and programmes and identifies key drivers to maternal nutrition and complementary feeding status and practices.
Section 4 Priority actions	The final section presents the priority actions that have been identified for improving maternal nutrition and complementary feeding in the region and outlines the next steps for RISING in the East Asia Pacific Region.

01 Background

01

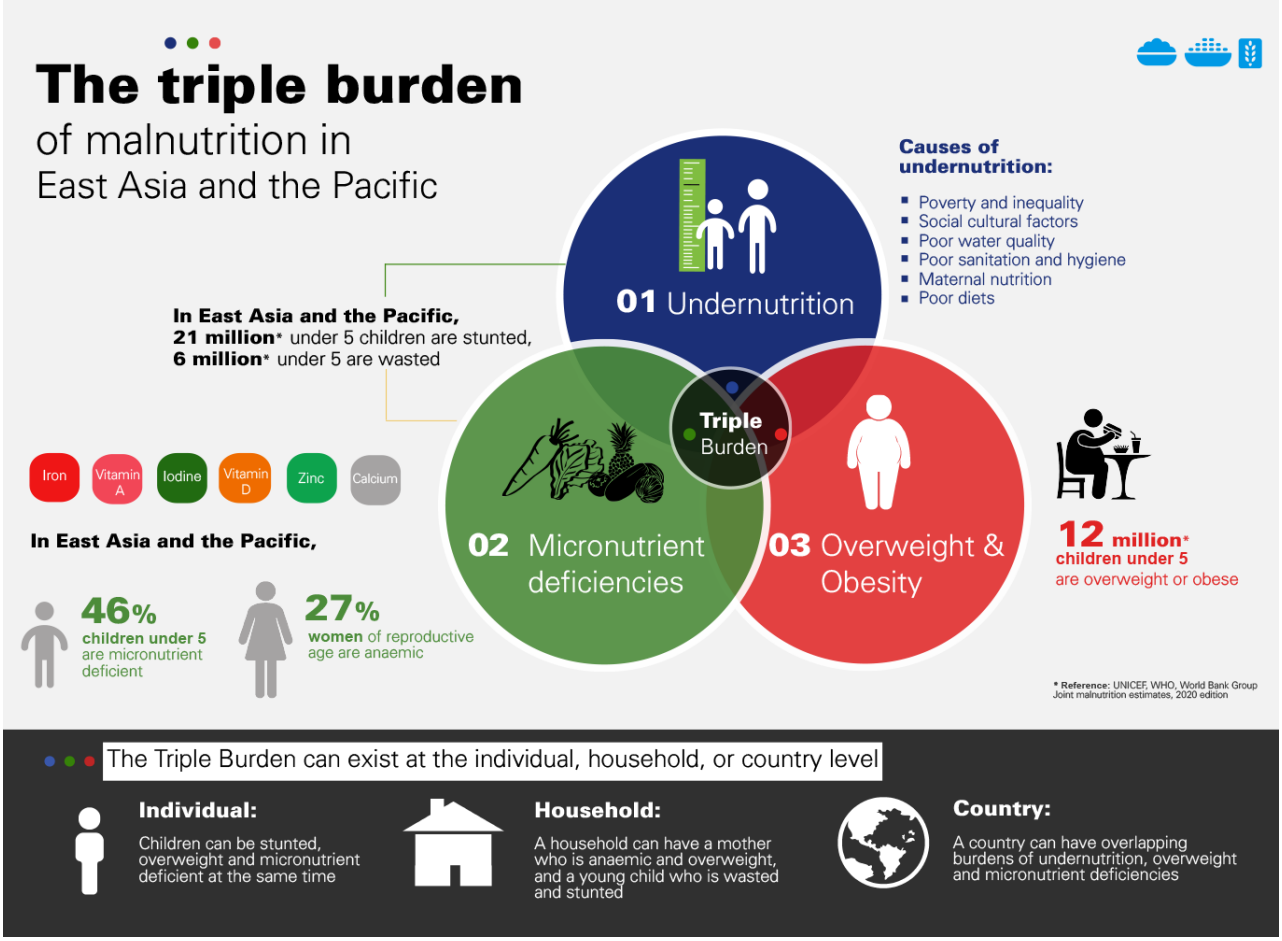
Background

Good maternal nutrition and complementary feeding are key to preventing the triple burden of malnutrition.

1.1 The triple burden of malnutrition

The triple burden of malnutrition – **undernutrition** in the form of stunting and wasting, **hidden hunger** (due to vitamin and mineral deficiencies) **and overweight** – threatens the survival, growth and development of children, young people, economies and nations in Southeast Asia (2). While there has been substantial economic growth in the region over the last few decades, the burden of malnutrition continues to hinder development and equitable economic growth.

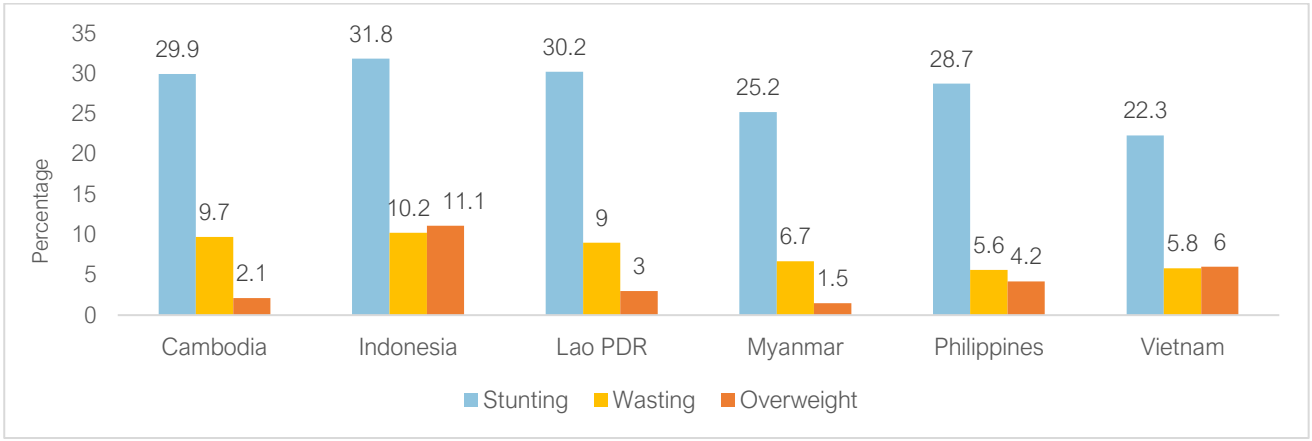
It is of paramount importance that governments take action to address malnutrition in all its forms as a fundamental human right and as an essential building block for progress in Southeast Asia.



1.2 The importance of maternal nutrition and complementary feeding

Traditionally, IYCF programming has concentrated on improving exclusive breastfeeding rates as an essential nutrition intervention to save lives and support healthy growth and development. It is estimated that increasing exclusive breastfeeding rates worldwide could save more than 800,000 deaths, equivalent to 13 per cent of deaths in all children under two years of age (3). However, while strategies for exclusive breastfeeding promotion have a major impact on survival rates, the effect on stunting and overweight, the most common forms of malnutrition in the region, is small (4). To address all forms of malnutrition, maternal nutrition, exclusive breastfeeding and complementary feeding all require equal focus and prioritization.

Figure 1. Prevalence of child stunting, wasting and overweight in the six countries (0-59 months old)

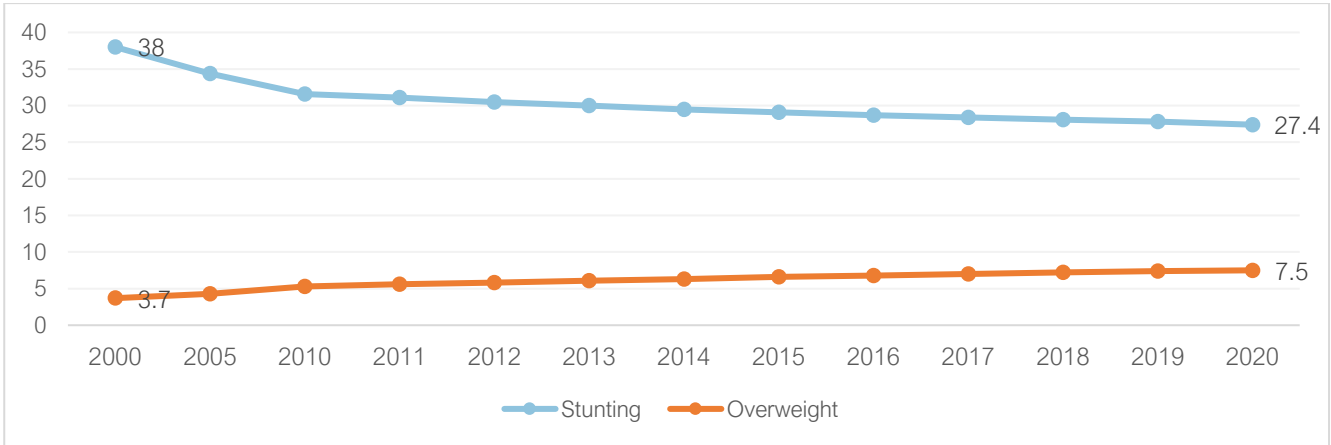


Sources: United Nations Children's Fund (UNICEF), World Health Organization, International Bank for Reconstruction and Development/The World Bank. Levels and trends in child malnutrition: key findings of the 2021 edition of the joint child malnutrition estimates. Geneva: World Health Organization; 2021.

Undernutrition

Undernutrition in the form of stunting is the most common type of malnutrition in Southeast Asia, affecting some 25 per cent of children under the age of five years, while wasting affects 9 per cent (1). Stunting rates have improved but remain persistently high in the region despite rapid economic growth and development. Wasting rates remain above 5 per cent in all countries, with little progress being made (*Figure 1* and *Figure 2*).

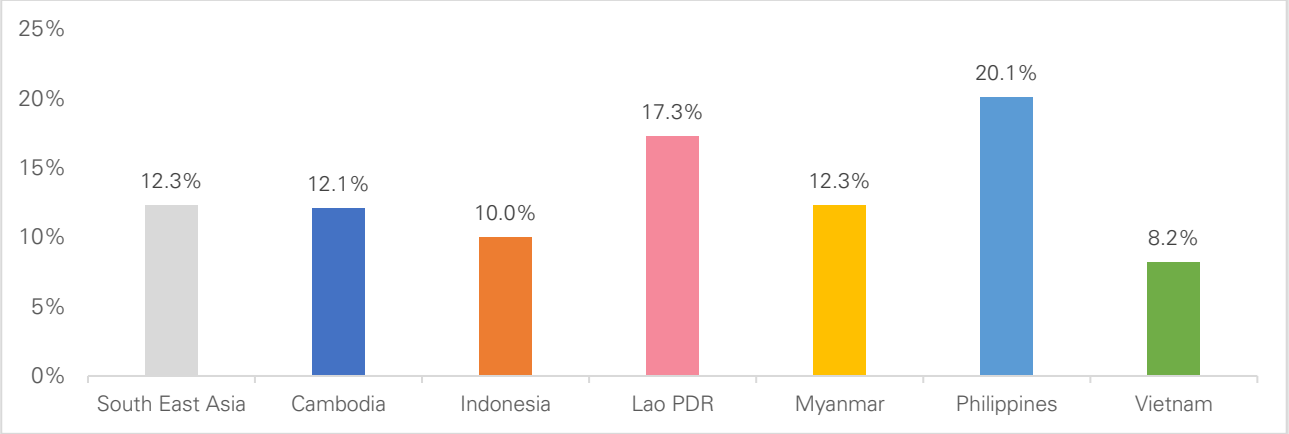
Figure 2. Trends in stunting and overweight prevalence in Southeast Asia 2000-2020



Source: United Nations Children's Fund (UNICEF), World Health Organization, International Bank for Reconstruction and Development/The World Bank. Levels and trends in child malnutrition: key findings of the 2021 edition of the joint child malnutrition estimates. Geneva: World Health Organization; 2021.

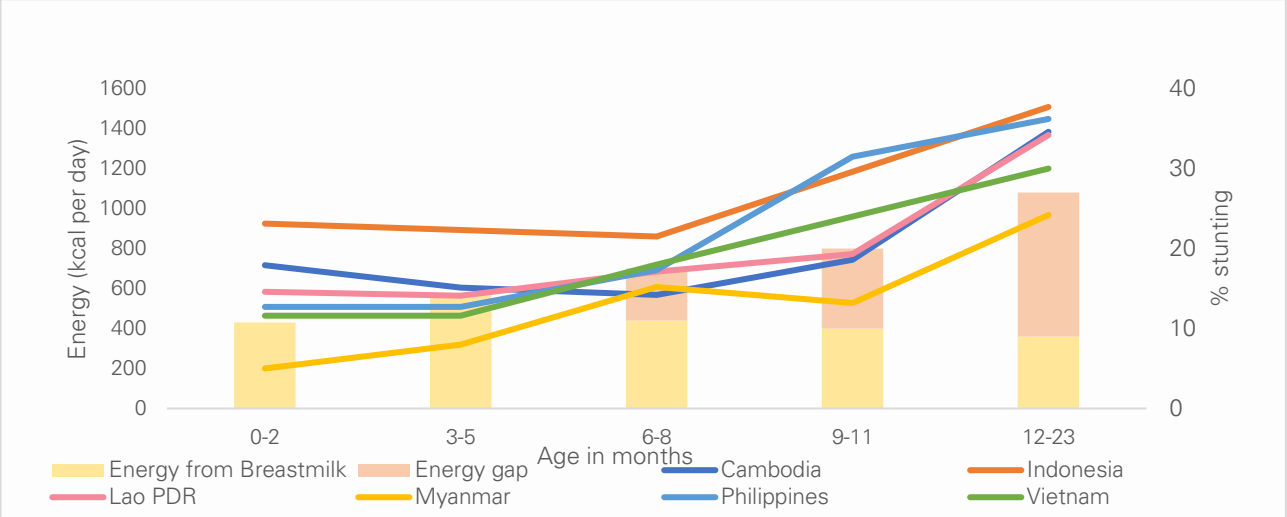
Good maternal nutrition and complementary feeding play an essential role in prevention of stunting. Good maternal nutrition, before and during pregnancy and during breastfeeding ensures babies are born and stay well-nourished in early life, thereby enabling them to thrive during the critical early development period. In the region, the leading risk factor for stunting is being born with a low birth weight (<2,500 grams) which is strongly related to maternal nutritional status (5). Mothers who are undernourished during pregnancy or are short in stature due to poor nutrition before pregnancy are more likely to have low birth weight babies (6). Overweight mothers are also more likely to have very low birth weight babies as a result of premature birth (7). One in four low birth weight children (24 per cent) born in the region will never achieve catch up growth and will remain stunted and disadvantaged for the rest of their lives (8). Although it is difficult to obtain accurate birth weight data as many mothers give birth at home and babies are not weighed immediately, it is estimated that some 12 per cent of children are low birth weight in the Southeast Asian region, ranging from a high of 20 per cent in the Philippines to 8 per cent in Vietnam (9) (Figure3).

Figure 3. Low birth weight in Southeast Asia Countries, 2015



Source: WHO and UNICEF. "UNICEF - WHO Low Birthweight Estimates: Levels and Trends 2000–2015." Geneva, 2019.

Figure 4. Increase in energy needs and stunting of children in the six countries



Sources: CDHS2014, RISKESDAS 2018, LSIS II 2017, MDHS2015-2016, ENNS 2015, NNS 2017. WHO, Complementary feeding family foods for breastfed children; WHO, Geneva, 2000. *Note: Vietnam stunting data calculated using slightly different age groups based on data availability.

As Figure 4 shows, a dramatic rise in stunting occurs between 6 and 23 months of age when breastmilk alone is insufficient to provide all energy, protein, vitamin and mineral needs to sustain growth and development. The increase in stunting at this age is due to many factors, of which an important determinant

is the quality and quantity of complementary foods introduced to young children and the feeding practices adopted. Good complementary feeding is critical in the period from 6 months of age to prevent stunting.

Hidden Hunger

Hidden hunger, in the form of micronutrient deficiencies, continues to affect large numbers of children in the region with an estimated 46 per cent of children in Southeast Asia suffer from at least one micronutrient deficiency (2). Deficiencies in iron, zinc, B vitamins (B1, B2, B3, B9 and B12), calcium, vitamin D, vitamin C and iodine are prevalent throughout the region with the youngest children carrying the highest burden (10) (*see Table 1*).

Table 1. Anaemia and Vitamin A deficiency in six countries

	Anaemia	Iron Deficiency	Vitamin A	Vitamin D	Zinc	MUIC Status
Age	**6-59m**	**6-59m**	**U5**	**U5**		
Cambodia	55.5%	<5%	9.20%	15.30%	64.40%	Insufficient
Indonesia	38.5%	10.3-15.3*	0.0-1.5%*	34.6-42.8%*		Adequate
Lao PDR	44.1%					Adequate
Myanmar	49.6%					Adequate
Philippines	12.5%		16.9%		21.60%	Adequate
Vietnam	19.6%	50.3%	9%	21-37%	58%	Insufficient

Sources: Improving Quality of Complementary Foods in Southeast Asia (COMMIT Initiative) Micronutrient Desk Review. UNICEF EAPRO Internal document.

Appropriate maternal nutrition, exclusive breastfeeding and diverse complementary feeding are essential to prevent hidden hunger in young children. During pregnancy and breastfeeding, nutrient needs rise, particularly for vitamins and minerals such as iron and zinc (*see Figure 5*).

Mothers who are anaemic are more likely to have babies who are iron deficient and born with low birth weight.

In low-income countries, 25 per cent of low birth weight is attributable to maternal anaemia during pregnancy (16). While breastmilk meets 100 per cent of children's nutrient requirement for the first six months of life, once a child reaches six months of age, breast milk alone cannot supply the range of micronutrients required for optimal growth as iron stores are depleted, and both iron and zinc concentration in human milk is low relative to requirements (17,18).

Introduction of iron and zinc rich complementary foods at six months is essential to ensure young children meet their dietary requirements.


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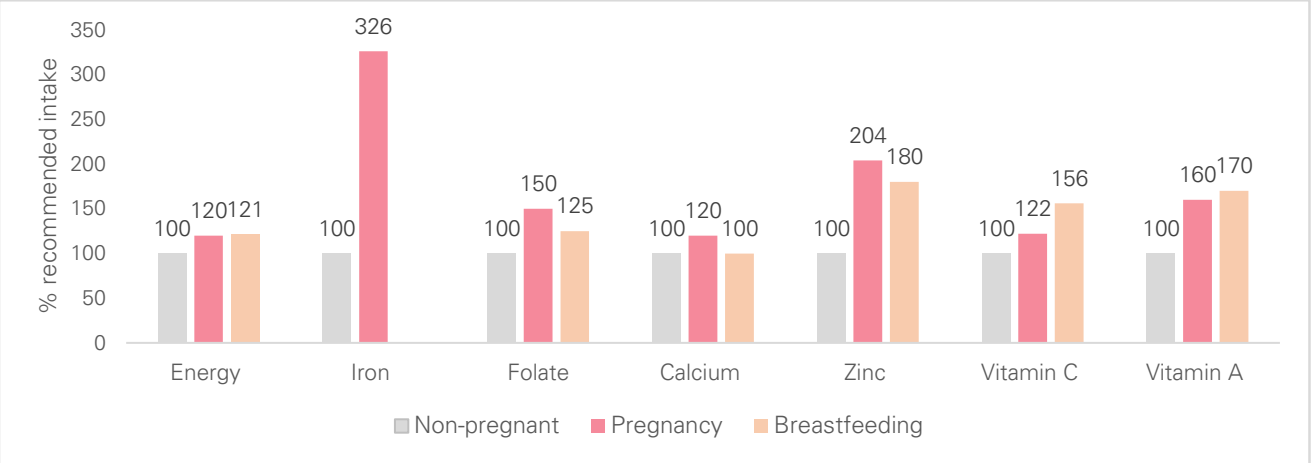
Figure 5. Increase in recommended nutrient intakes during pregnancy and breastfeeding



Source: FAO/WHO. Human Vitamin and Mineral Requirements. Report of a joint FAO/WHO expert consultation Bangkok, Thailand, 2001. FAO/WHO. Human Energy Requirements. Report of a joint FAO/WHO/UNU expert consultation, Rome, Italy, 2001.

Note: There are no recommended iron requirements during pregnancy. The current recommendation is that non-anaemic pregnant women should receive 100mg of iron as a supplement and the graph is based on this estimation.

Overweight

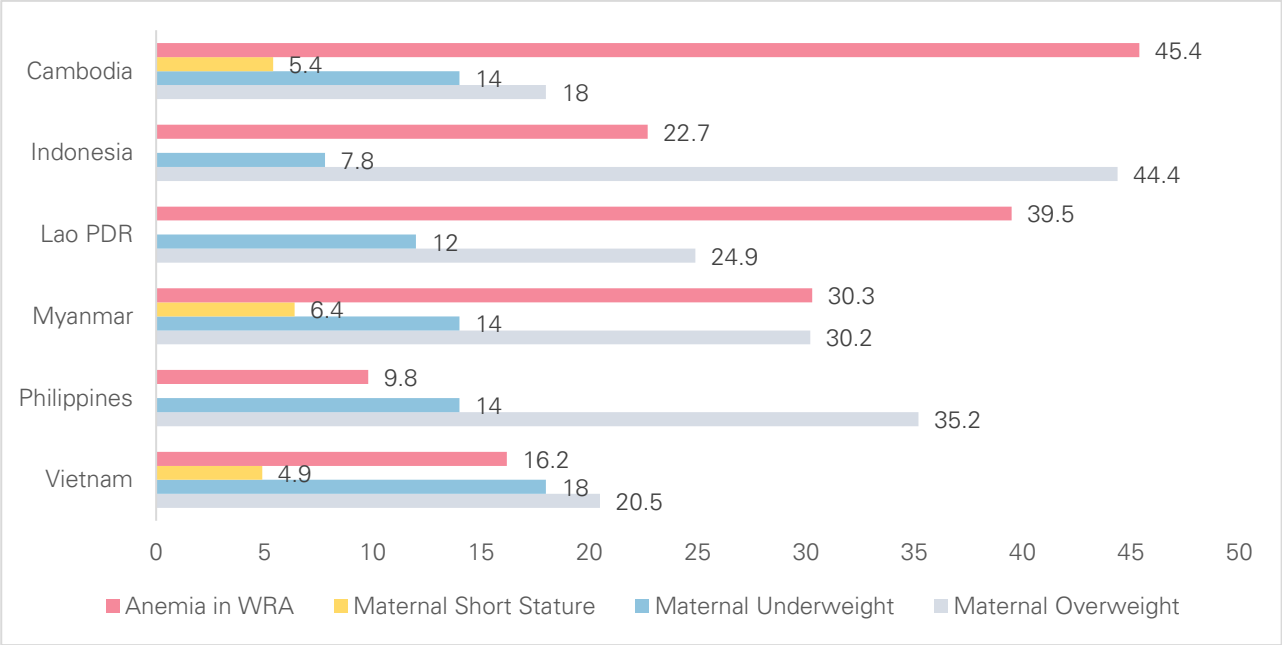
Overweight is a serious concern in Southeast Asia, fuelled by an increasingly obesogenic environment where processed foods high in saturated fat, sugar and sodium, are increasingly marketed, sold and consumed, and are replacing traditional diets rich in essential nutrients and fibre (2). While nearly 8 per cent of children under five years of age are estimated to be overweight in the region *(see Figure 1)* (1), rates are consistently rising, particularly among older children, adolescents and adults. The percentage of overweight children aged five to nine years old in the region has nearly tripled in sixteen years from 10 per cent in 2000 to 28 per cent in 2016 (19).

The risk of overweight starts in utero with poor maternal nutrition. Low birth weight babies, often born as a result of maternal under- or overweight, are more likely to become overweight or obese later in life and to have increased rates of coronary heart disease, stroke, hypertension, non-insulin-dependent diabetes and various cancers (20). Rates of overweight among women of reproductive age are already high in many of the six countries (*see Figure 6*).

While underweight is still an issue of concern in Cambodia and Myanmar, more women are overweight than underweight in all countries.

Establishing good nutrition and dietary habits during pregnancy and breastfeeding for the mother, as well as the introduction of appropriate complementary foods for the young child are important opportunities to establish healthy eating habits that will last a lifetime and ensure that children do not become overweight and develop non-communicable diseases later in life.

Figure 6. Maternal nutrition status in six countries in Southeast Asia

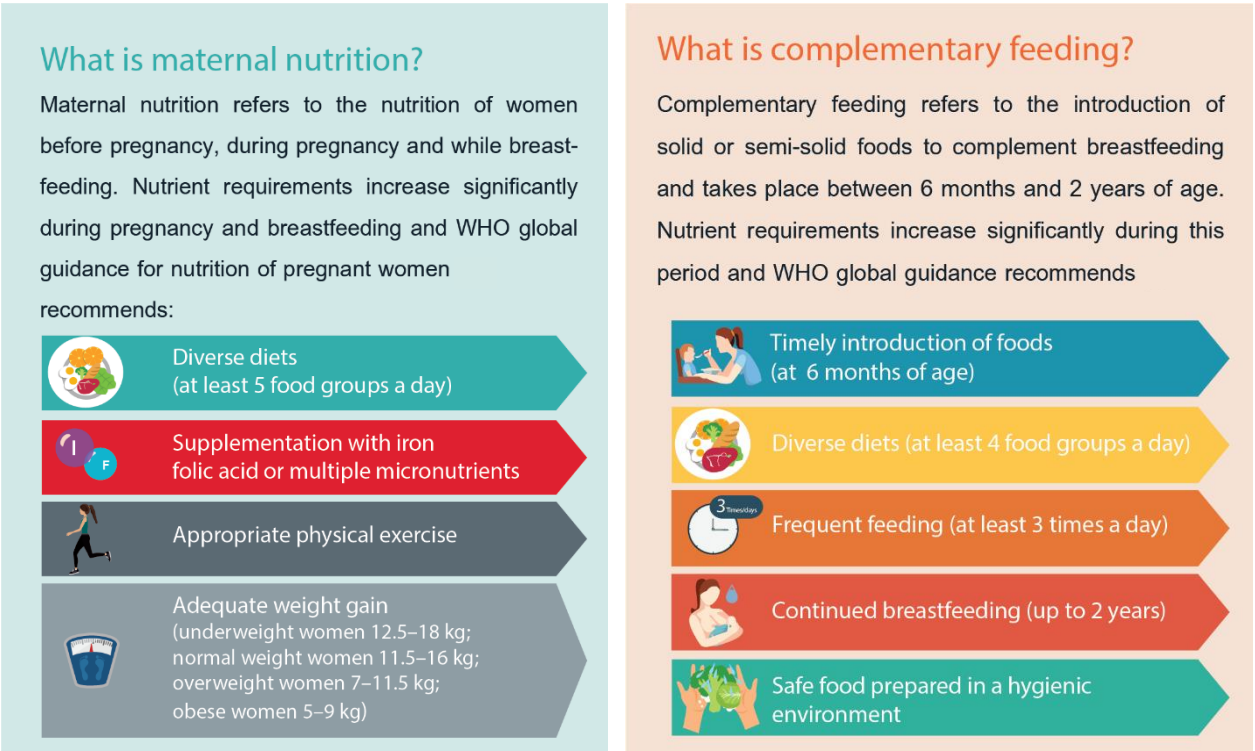


Source: ASEAN Nutrition Surveillance System 2021

1.3 Global guidance

WHO has set out a global guidance on optimal maternal nutrition during pregnancy (21) and on complementary feeding (22,23). UNICEF has also recently released programmatic guidance on complementary feeding (24). The essential components are summarised in Figure 7.

Figure 7. Essential components of optimal maternal nutrition and complementary feeding



02
Methods

02

Methods

Adopting a mixed methods approach ensured that data collection was comprehensive, and prioritisation of actions was based on consensus among key stakeholders.

2.1 Mixed methods application

Data collection, analysis, interpretation of findings, identification and dissemination of the priority actions took place between June 2018 and February 2020 for the six countries.

a. Landscape analyses

Landscape analyses of maternal nutrition and complementary feeding in each country were conducted applying a mixed methods approach to collect quantitative and qualitative data. Standardized data collection procedures were developed and followed in each of the six countries to compile comprehensive data sets. Data collection consisted of desk reviews, key informant interviews and bottleneck analyses. All collected data were recorded through a series of standardized Excel matrices for each country including: (a) country profiles with relevant statistical data; (b) enabling environment matrices that summarized relevant formative research; (c) policy matrices that identified all relevant legislation, policies, plans and guidelines in place; (d) programme matrices that identified all relevant programmes being implemented; and (e) bottleneck matrices that identified key system gaps and barriers in policies and programmes. An inception paper describing the methods in detail can be found here.

b. Technical consultations

Technical consultations were held at both regional and national levels.

Regional level technical consultations
A regional technical consultation on complementary feeding was convened by UNICEF East Asia and Pacific Office in January 2019. Participants represented 14 regional development partners and organisations that are part of the Nutrition Security Coordination Committee for East Asia and the Pacific. Over the two and a half days of consultation, participants were introduced to UNICEF's Global Framework for Action for improved access to, and consumption of, nutritious, affordable, safe, and sustainable diets for young children aged 6-23 months old. Using a systems approach and taking account of the initial findings from the landscape analyses in the six Southeast Asia countries, participants worked together to identify regional priority actions to improve the diets of young children in the region. The outcome of the workshop was a Southeast Asia Action Framework for Complementary Feeding, endorsed by all the partners, setting out the priority policies and programmes to improve complementary feeding across health, food, WASH and social protection systems. These priority actions were used as the basis for identifying specific country level actions. A full report of the workshop can be found here.

National level technical consultations
Following the regional technical consultation and finalization of country level landscape analyses, national level technical consultations were held in Myanmar, the Philippines, Indonesia and Vietnam to review the findings of the landscape analyses for each country. Technical consultations were

anticipated to take place in Cambodia and Lao PDR in 2020, however were delayed due to the COVID 19 Pandemic. The style of consultation differed between countries. In Myanmar and Vietnam, a single workshop brought together key stakeholders from government and development partners over two days to discuss the landscape findings in detail and prioritise a set of actions for moving forward. In Indonesia and the Philippines, a series of meetings with key stakeholders were undertaken. The outcome of all technical consultations was the identification of a set of context-specific priority actions to improve maternal nutrition and complementary feeding and develop an outline of the next steps for implementation of these actions.

c. Advocacy materials

Advocacy materials that summarized the major results of the landscape analyses and priority actions for improving maternal nutrition and complementary feeding were produced for each of the six countries. The materials included:

- Short eight-page narrative briefs that were targeted at policy makers both within and outside government. A total of 12 briefs were produced covering maternal nutrition and complementary feeding in each country. Access here.
- Two-page statistical profiles summarizing current status of key indicators, policies and programmes relating to maternal nutrition and complementary feeding. Statistical profiles were designed for policy makers. A total of 12 profiles were produced. Access here.
- Videos to highlight the importance of maternal nutrition and complementary feeding for prevention of malnutrition. Two videos of six minutes each were produced and translated into the national language for each of the six countries. The initial audience for the videos was key national stakeholders but they were made to be adaptable for alternative audiences including caregivers and families of pregnant women and those caring for children 6-23 months of age. Access here.

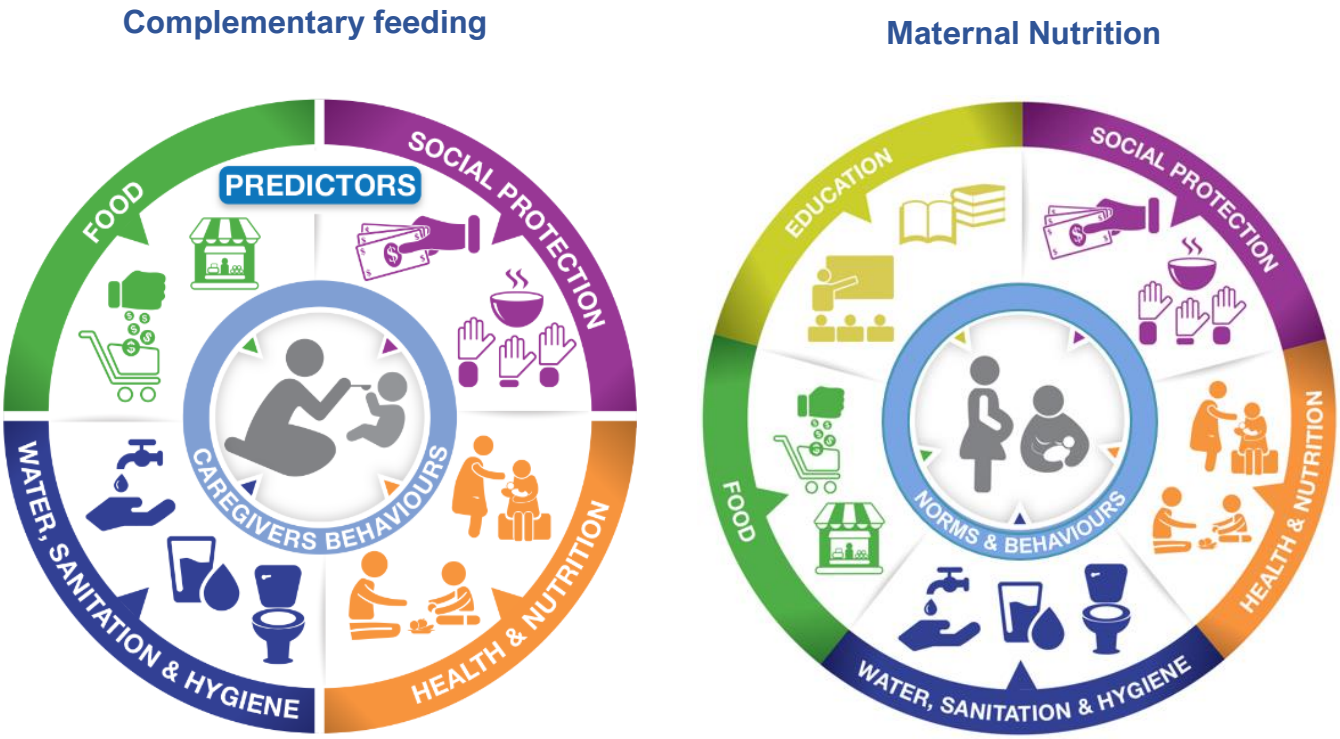
2.2 Systems approach to improving nutrition

UNICEF has adopted a systems approach to address maternal and child nutrition which aims to make five key systems – **food, health, water, sanitation and hygiene (WASH), social protection** and **education** – better equipped and more accountable for improving the nutrition of children, adolescents and women. A systems approach to nutrition aims to activate systems with the potential to deliver nutrition-specific interventions at scale and leverage them to deliver nutrition results that go beyond their own sectoral objectives (25). To achieve positive outcomes and improvements in maternal nutrition and complementary feeding, action is required across the five systems.

The methods for the landscape analyses were based on the systems frameworks. To guide work in the region and contextualize the systems approach for Southeast Asia, Frameworks for Action were developed for both maternal nutrition and complementary feeding by UNICEF EAPRO.

The frameworks illustrate how behaviour, socio-cultural beliefs and knowledge are the central determinants for the nutrition and diets of women and young children (*see Figure 8*). Behaviours (in the centre) are influenced in turn by drivers in four systems (food, health, social protection and WASH) and in the case of maternal nutrition, an additional system - education. It is essential that actions to improve maternal nutrition and complementary feeding be implemented across all systems to modify behaviour and address key drivers of poor maternal nutrition and complementary feeding.

Figure 8. Systems based approach of the Southeast Asia Frameworks for Action for Complementary Feeding and Maternal Nutrition



03 Landscape analyses findings

03

Landscape analyses findings

This section of the report provides a synthesis of the landscape analyses from each of the six countries. The landscape analyses were conducted to support countries to identify key opportunities and actions to improve maternal nutrition and complementary feeding. The findings are structured around the regional frameworks for action, and present the current status, trends, drivers and barriers by each of the systems.

3.1 National policy and coordination

KEY FINDINGS

1. Policies and strategies for maternal nutrition and complementary feeding are in place for the most part but implementation of programmes is inconsistent.
2. Key complementary feeding practices and maternal nutrition practices and behaviours are sub-optimal in all six countries based on WHO criteria.

Maternal and infant and young child nutrition strategies are a critical component of national nutrition policies and plans of action aiming to prevent and address malnutrition in all its forms. The landscape analyses compiled information on national policies and strategies in the six countries to establish how maternal nutrition and complementary feeding are incorporated into national plans.

As *Table 2* shows, complementary feeding and maternal nutrition is comprehensively covered in national nutrition policies in all six countries. The Philippines and Cambodia have up to date national IYCF policies in place and Philippines, Cambodia and Myanmar have multi-sectoral national coordination mechanisms specifically for IYCF acknowledging the importance of a multi-system approach.

For maternal nutrition, all six countries have incorporated some maternal nutrition components into national nutrition strategies, although key interventions are still missing in some countries. Standalone maternal nutrition policies were less common, instead maternal nutrition outcomes and interventions were embedded into the broader nutrition framework documents.

> Maternal nutrition and complementary feeding practices in Southeast Asia are inadequate and inappropriate.

Table 2. National policy and coordination for IYC

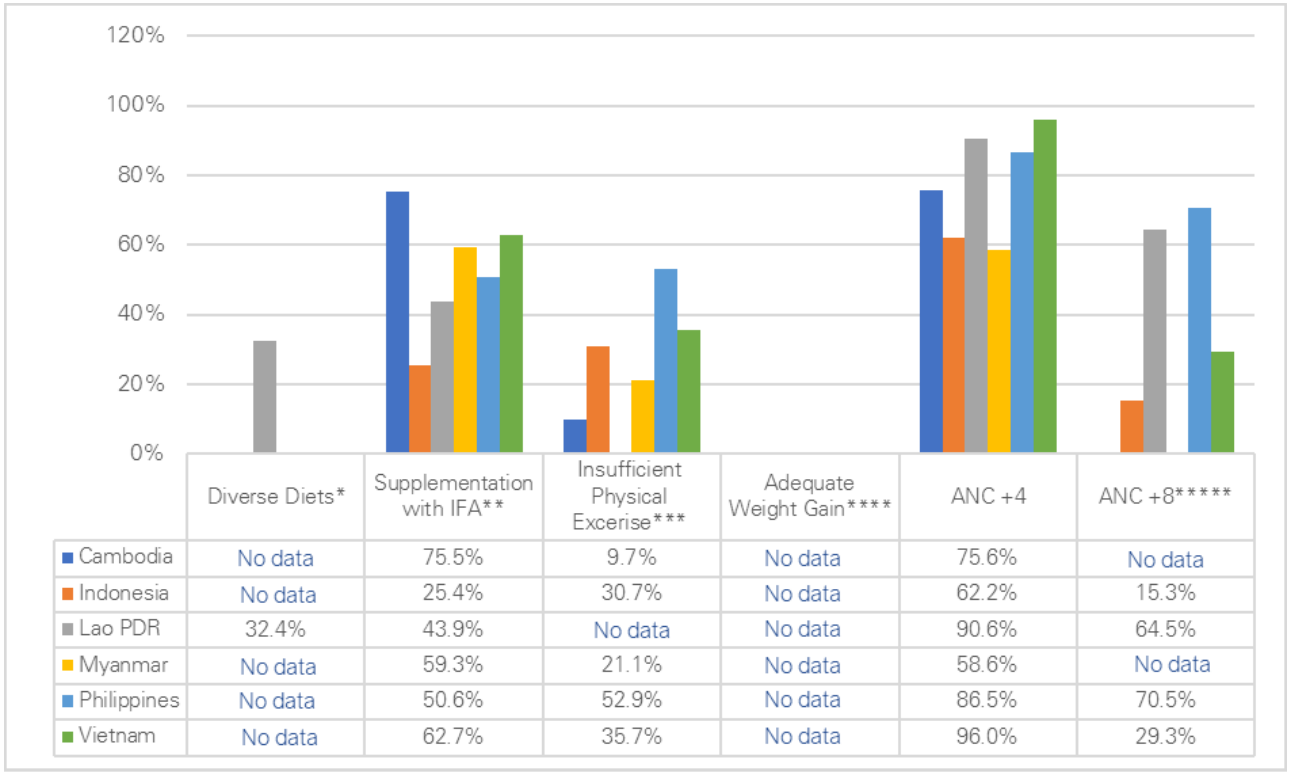
Country	National nutrition policies and plans include complementary feeding		National nutrition policies and plans include maternal nutrition		IYCF policy with comprehensive coverage of complementary feeding		Multi-stakeholder coordination mechanism for IYCF	
Cambodia	✓	National Strategy for Food Security and Nutrition (2019-2023) includes specific objective to improve complementary feeding.	✓	National Strategy for Food Security and Nutrition (2019-2023)	✓	National Policy on IYCF (revised 2018). Comprehensive coverage of complementary feeding.	✓	Nutrition Technical Working Group of the MoH National Nutrition Programme coordinates IYCF activities and consists of representatives from government organizations, development partners, and NGOs.
Indonesia	✓	National Development Plan for Food and Nutrition (2015 – 2019) includes improvement of complementary feeding. National Action Plan for Food and Nutrition 2020-2024 under development	✓	National Development Plan for Food and Nutrition (2015 – 2019 National Action Plan for Food and Nutrition 2020-2024 under development	Partial	No specific IYCF policy but covered in National Development Plan and comprehensive coverage of complementary feeding in IYCF Counselling Module (2014).	Partial	No specific coordination mechanism for IYCF. National and sub-national coordination for Nutrition in place. National Development Plan is coordinated by different ministries.
Lao PDR	✓	National Strategy for Food Security and Nutrition (2019-2023) includes infant and young child feeding as one of 22 nutrition interventions.	✓	Lao PDR National Nutrition Strategy to 2025 and Plan of Action (2016–2020)	Partial	IYCF reflected in National Nutrition Strategy and Plan of Action and in National Strategy and Action Plan for Integrated Services on Reproductive, Maternal, Newborn and Child Health (2016-2025). Comprehensive coverage of complementary feeding.	Partial	National Nutrition Committee which is multi-sectoral and multi-stakeholder established to take responsibility for all aspects of nutrition strategy in 2013. No specific coordination mechanism for IYCF.
Myanmar	✓	Multi-sectoral National Plan of Action on Nutrition (2018-2023) includes improvement of complementary feeding.	✓	Myanmar National Plan of Action for Food and Nutrition	Partial	National Strategy for Maternal, Infant and Child Nutrition is currently being drafted. Guidance on complementary feeding is comprehensive.	✓	National Steering Committee for Nutrition Promotion in Myanmar coordinates IYCF activities, represented by four ministries and chaired by the Health Minister. National Alliance for IYCF has also been formed and led by MoH.
Philippines	✓	Philippine Plan of Action for Nutrition (2017-2022) includes improvement in complementary feeding.	✓	Philippine Plan of Action for Nutrition (2017-2022)	✓	Philippine IYCF Strategic Plan of Action (2019-2030). Comprehensive coverage of complementary feeding.	✓	National Technical Working Group convened by DoH has overall responsibility for IYCF.
Vietnam	Partial	National Nutrition Strategy and the National Action Plan for Nutrition (2017-2020) do not specifically include objectives to improve complementary feeding, but included as a solution to stunting.	✓	National Nutrition Strategy and the National Action Plan for Nutrition (2017-2020)	Partial	No specific IYCF policy or guidelines. There are MoH IYCF training manuals that were updated in 2014.	Partial	No specific IYCF coordination group but Nutrition Coordination Group under the umbrella of NNS and NPAN lead by MoH

3.2 Current status of nutrition practices in six Southeast Asian countries

The landscape analyses collected the latest data from national surveys to establish the adequacy of current maternal nutrition and complementary feeding practices. A major finding is that despite some variation across countries, maternal nutrition and complementary feeding practices are universally inadequate and inappropriate. Figure 9 highlights country level data for the essential maternal nutrition indicators laid out by WHO global guidance (*see Figure 7*).

There is limited data available for key maternal nutrition practices, particularly for women's dietary diversity and weight gain during pregnancy. The data that is available shows that coverage of key maternal nutrition interventions is inadequate in all six countries.

Figure 9. Essential components for optimal maternal nutrition in six countries



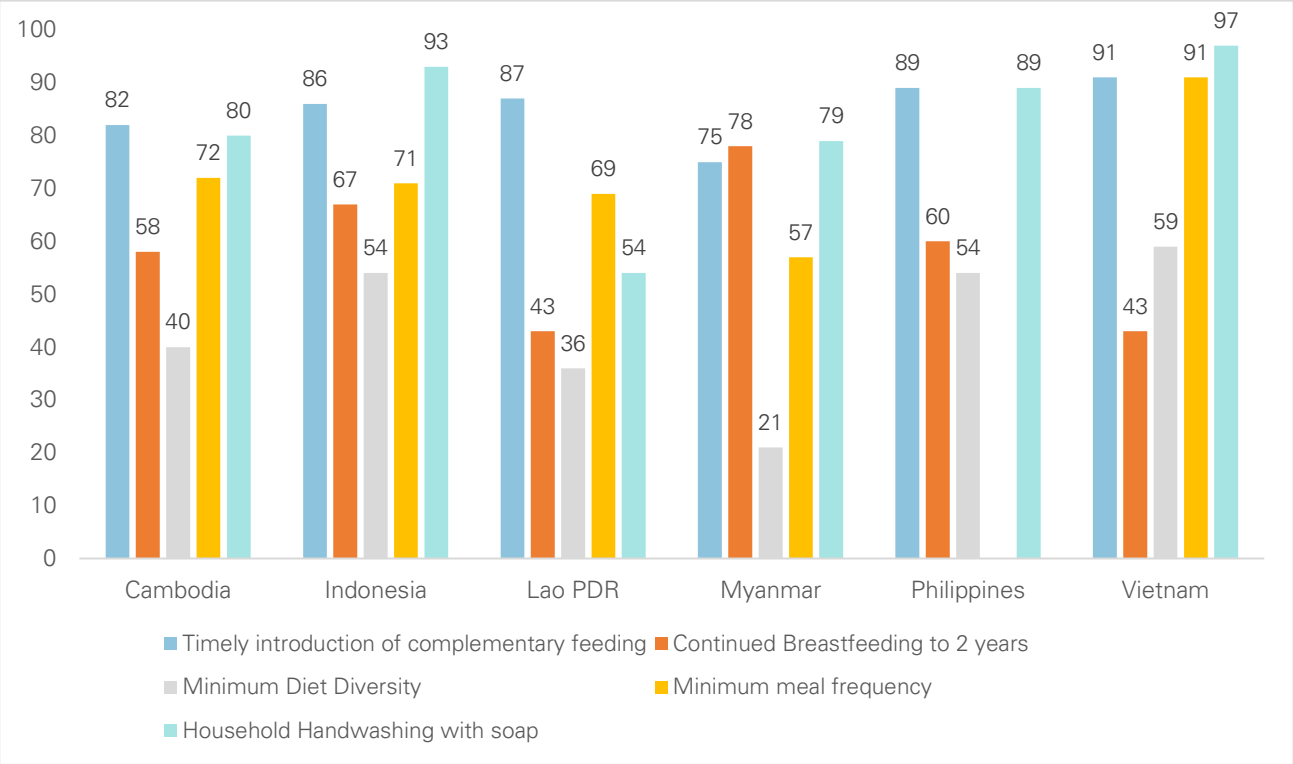
	Diverse Diets*	Supplementation with IFA**	Insufficient Physical Excerise***	Adequate Weight Gain****	ANC +4	ANC +8*****
Cambodia	No data	75.5%	9.7%	No data	75.6%	No data
Indonesia	No data	25.4%	30.7%	No data	62.2%	15.3%
Lao PDR	32.4%	43.9%	No data	No data	90.6%	64.5%
Myanmar	No data	59.3%	21.1%	No data	58.6%	No data
Philippines	No data	50.6%	52.9%	No data	86.5%	70.5%
Vietnam	No data	62.7%	35.7%	No data	96.0%	29.3%

Source[1]. * Women consume at least 5 food groups a day; ** Pregnant women receive 90+ days of IFA supplements; *** Women > 20 years of age are not physically active; **** Pregnant women gain between 5-18 kgs depending on original body weight; ***** Pregnant women achieve at least 8 ANC visits.

[1] **Data on IFA Supplementation and ANC**– CDHS 2014, Lao Social Indicator Survey (LSIS II) 2017, Indonesia DHS 2017, Myanmar DHS2015-2016, Philippines National DHS, 2017, Vietnam Micronutrient Survey 2015.
Dietary Diversity Data for Lao PDR. LSIS 2017 II
Data on Physical Exercise from: Ministry of Health Cambodia and University of Health Sciences (2010) - Prevalence of Non-Communicable Disease Risk Factors in Cambodia, Steps Survey, Indonesia RISKESDAS 2018, Philippines NNS 2015, Vietnam STEPS Survey 2015. Report on National Survey of Diabetes Mellitus and Risk Factors for Non-communicable Diseases in Myanmar (2014), MOH, WHO, WDF

More data are available for key indicators of complementary feeding (*see Figure 10*), although a similar picture of suboptimal practices emerges across the six countries. Children's diets lack diversity and children are not fed frequently enough to meet their growth and development requirements. In four out of six countries, too few children are given breastmilk for the recommended first two years of life and in all countries, complementary foods are frequently introduced too early. The national data in all countries masks significant inequities related to factors such as socio-economic status, residence, maternal education, and ethnicity.

Figure 10. Essential Complementary Feeding Components in the 6 countries (Percentage %)



Source: United Nations Children's Fund (UNICEF). Fed to Fail? The Crisis of Children's Diets in Early Life. 2021 Child Nutrition Report. UNICEF, New York, 2021.

3.3 Drivers of maternal nutrition and complementary feeding

As Figure 8 illustrates, the central determinants of the nutrition and diets of women and young children are behaviour, socio-cultural beliefs, and knowledge. These behaviours are influenced in turn by drivers in four systems (food, health, social protection, and WASH) and in the case of maternal nutrition of an additional system: education.

This section reviews the policies, programmes and formative research gathered through the landscape analyses to determine the specific drivers across the multiple systems of maternal nutrition and complementary feeding in the six Southeast Asian countries.

3.3.1 Behaviours, knowledge, and beliefs

Behaviours are the main direct determinants of inadequate maternal nutrition and complementary feeding practices.

KEY FINDINGS

1. There is limited understanding about the importance of good nutrition during pregnancy, lactation and the complementary feeding period.
2. The diets of women and young children often lack diversity and rely heavily on starchy staples such as rice.
3. Food taboos persist across the region, particularly among ethnic minority populations, which restrict consumption of nutritious foods for women and young children.
4. A pervasive belief in the superiority of milk formula together with aggressive advertising of breast milk substitutes (BMS) is contributing to early cessation of breastfeeding.
5. Practical barriers facing women driven by high rates of female employment outside the home, mean that women have less time for food shopping and preparation as well as to access ANC services including counselling.
6. Early marriage and childbirth are common among some parts of the community in all six countries and is associated with increased risk of low birth weight and subsequent malnutrition in young children.

Behaviours directly influence the nutrition and diets of women and young children and are determined in turn by socio-cultural beliefs, knowledge and the practical constraints that affect people's lives.

Knowledge and socio-cultural beliefs

There is limited understanding of the importance of diverse diets for women and children across the region. In addition, there is a range of beliefs about the types of foods suitable for pregnant and breastfeeding women, and when and how to feed young children. While practices and beliefs vary in different communities, there are some commonalities across the region.

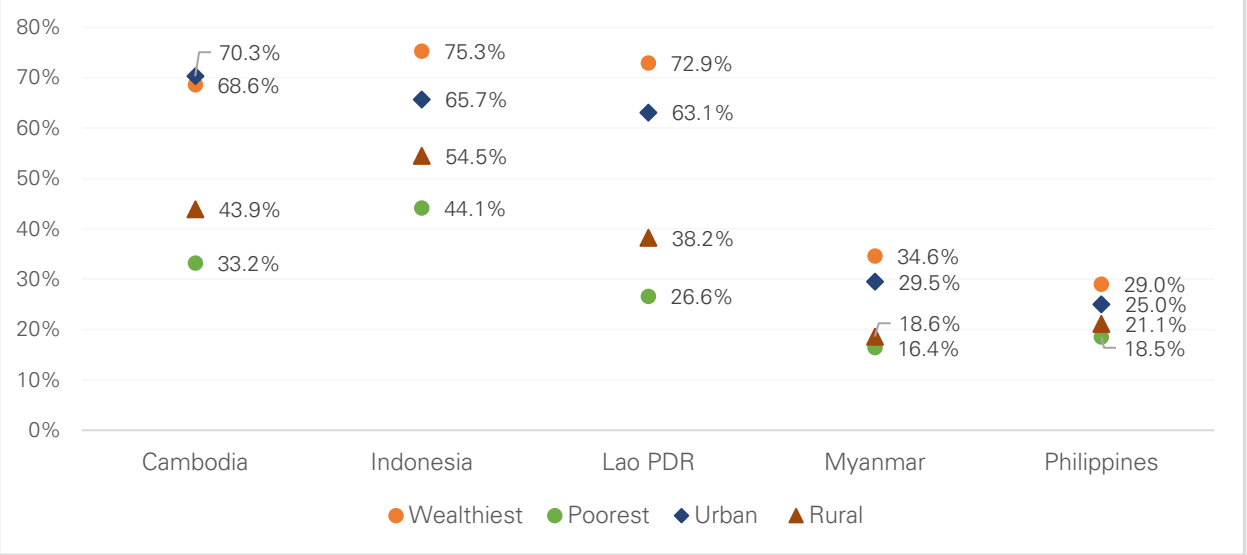
A major finding of the landscape analyses was that there is generally limited understanding of the nutrient requirements for women, particularly the increased requirements during pregnancy and lactation.

Cultural preferences for rice mean that women's diets tend to be high in carbohydrates with limited consumption of other nutrient-rich foods. 'Eating well' in pregnancy typically means increasing intake of routinely consumed foods, namely rice, as opposed to seeking foods with a higher protein and micronutrient content, such as meat, eggs, vegetables, and fruit. Deeply ingrained cultural practices, such as women eating last in the household (26) with protein rich foods saved for men and compromising on food purchases to save money for childbirth expenses (27) are still observed in some communities. Several studies have found that pregnant women practice 'eating down' which is when they limit the amount and type of food they eat to ensure that the baby does not weigh more than 3 kg to guarantee an 'easy' delivery (28–30).

Caregiver's knowledge about infant and young child feeding practices has a significant positive association with the diversity of complementary

diets (31). In Southeast Asia, complementary diets are usually rice-based and tend to contain small amounts of animal source foods. There is a widespread belief that rice is nutritious enough to support weight gain and avoid illness (32). Rice-based diets are rich in carbohydrates but are poor sources of fat, protein, and micronutrients. Poorer and rural children tend to have worse dietary diversity compared to their urban and wealthiest counterparts (*see Figure 11*).

Figure 11. Dietary diversity by wealth quintile and location



Source: CHDS2014, IDHS 2017, LSISII 2017, MDHS2015-2016, ENNS 2018.

Diet quality of young children is further exacerbated by the high content of anti-nutrients, like phytate, in the diets of young children in the region. Anti-nutrients compromise the absorption of essential micronutrients such as iron and zinc leading to deficiencies (33). While the quality of complementary foods is often poor, quantity is also a factor with poorer families often feeding watery porridges to children under two years of age. This restricts the amount of food they can consume because of their limited gastric capacity and increases their risk for inadequate intakes of energy and nutrients. A literature review conducted in Indonesia found that only 52 per cent of mothers had adequate knowledge of appropriate child feeding practices, including knowing the age of introduction for complementary foods and appropriate food consistency, the use of local or manufactured complementary foods, the consequences of early complementary food introduction, consequences of early weaning, and signs of insufficient child food intake (34).

Food taboos that limit what pregnant and breastfeeding women can consume are common, especially among ethnic groups living in remote areas (29,30,35,36). Specific food restrictions differ between areas and ethnic groups and include avoidance of some types of meat, fruit and vegetables. Food taboos for young children are also prevalent in some communities, particularly ethnic minorities, such as only giving small quantities of food to prevent 'big stomachs' and avoiding spicy foods, meat, fish, eggs and certain vegetables because of fears of choking, indigestion, fever, diarrhoea, worm infestation or because children do not have teeth (28,30,37–40).

In the six countries, there is a tendency to introduce complementary food and drinks early (before six months old) due to strong beliefs that children require solid foods to fill their stomach, and water to meet their hydration needs. This is one of the reasons exclusive breastfeeding rates are low and decreasing across the region – exclusive breastfeeding declined from 43 per cent (2000-2007)(41) to 30 per cent (2013-2018)(2). Breastfeeding is frequently discontinued or supplemented with solid foods, breastmilk substitutes or other liquids because breastmilk is perceived as being insufficient to satisfy the hunger and growth needs of the child.

The opinions of senior female members of the family, especially the paternal grandmother frequently plays an important role in the decision of mothers to introduce solid, semi-solid, or soft foods at an early age (37,42).

A major reason for early cessation of breastfeeding is a pervasive belief in all six countries that formula is superior to breastmilk. Follow-on formula (targeted at children of six months and over) and growing-up milks (targeted at children between 12 and 36 months) are being used as a substitute for continued breastfeeding and as a source of nutrients in place of complementary food and drink. Many of these milks are high in sugar, contributing to "hooking" infants to sugar early on in life, and they are unnecessary as part of a nutritious infant diet. The move is being fuelled by aggressive advertising from breastmilk substitute companies, despite the existence of legislation in all six countries to control the marketing of breastmilk substitutes (*see Box 1*). Early introduction of complementary foods and breastmilk substitutes is also tied to insufficient medical and community level support and lack of support for women to continue breastfeeding after they return to work.

Knowledge of responsive feeding and feeding during illness is also lacking. In one study from Indonesia, 9 per cent of mothers surveyed believed that giving foods during illness would cause the child to become more unwell, and that children are less hungry when they are ill (43). In Lao PDR, there is some evidence to suggest that mothers continue to breastfeed during periods of illness but limit sour and spicy foods (37).

BOX 1. GROWTH IN SALES OF GROWING-UP AND FOLLOW-ON MILK FORMULA

WHO has explicitly stated that growing-up and follow-on milks are not necessary and are unsuitable when used as a breast-milk replacement from six months of age onwards.[1] Nevertheless, global sales of these milks are dramatically increasing. In 2018, the global breastmilk substitute industry was worth US$ 47 billion of which growing-up milks represented US$ 19 billion (40 per cent) and follow-on milks a further US$ 10 billion (21 per cent).[2] The Asia Pacific region is forecast to generate the vast majority of global sales growth over 2017-2022 equivalent to 73 per cent of the world's total.

Euromonitor International reported that manufacturers are increasingly focusing on growing-up and follow-on formula to offset "the potential threat of a rise in breastfeeding rates."[2] In addition, a growing number of parents see formula as a convenient and healthy food especially when products are positioned as a nutrition aid to improve a child's immune system and brain development. A further stimulus to the increase in sale of growing-up and follow-on milks is the impact of women's employment. In the Asia Pacific region, there is a clear correlation between sales of these products and female employment as women returning to work abandon or reduce breastfeeding in large part due to lack of workplace protections for continued breastfeeding.

[1] WHO. Ending inappropriate promotion of foods for infants and young children. WHA 69.9. May 2016.
[2] Euromonitor International Passport. Baby food: Unveiling global growth drivers and premiumisation strategies. April 2018.

Practical barriers facing working women

Many adult women work outside the home in the region (75 per cent in Cambodia, 52 per cent in Indonesia, 77 per cent in Lao PDR, 48 per cent in Myanmar, 46 per cent in the Philippines and 73 per cent in Vietnam) (44). Working women frequently cite lacking the time to prepare healthy meals for themselves or their children. Working women also have less time to attend antenatal care (ANC) sessions during their pregnancies and take their child for routine health check-ups, eventually missing the opportunity to receive nutrition counselling and support. Studies have found mothers' work adversely affects their children's well-being by decreasing the time mothers spend with their children (45).

For many women, the return to work means leaving their homes and their children in the care

of others – frequently grandparents. Continuing to breastfeed after returning to work becomes impractical due to the expense of breastmilk pumps, lack of both space and cold chain to store pumped breastmilk while at work, ineffective workplace protections and time constraints. Alternative caregivers may have many children to care for and often lack the resources and knowledge to provide good quality complementary foods and the time to feed children especially when they are sick. There is some evidence to suggest that working mothers lack confidence in performing child-care and good feeding practices (including continued breastfeeding, scheduled feeding, monitored food intake, and purchase of healthy foods, among others), depending increasingly on alternative caregivers (46). The same study indicated that working mothers of underweight and obese children who had family caregivers had low confidence in terms of food preparation, stating that their children had unregulated feeding schedules.

Early childbearing and lack of female empowerment

Early marriage before 18 years of age, sometimes arranged by parents is common in many countries in the region. As a result, teenage pregnancy remains a serious concern in some communities – 12 per cent of girls in Cambodia(47), 10 per cent in Indonesia(48), 19 per cent in Lao PDR(49), 6 per cent in Myanmar,(50) 7 per cent in the Philippines,(51) and 8 per cent in Vietnam(52) give birth during adolescence. Young mothers face higher risks of infection during pregnancy and are more likely to have low birth weight babies, preterm births and to deliver children who become stunted, and have diarrhoea, and anaemia (53–55).

Despite the higher risks faced by adolescent mothers, these vulnerable pregnant girls are often more isolated during pregnancy and less likely to access ANC due to social stigma, lack of awareness and gender norms (56). Less than half of women in Cambodia (11), Indonesia (48) Myanmar (50) and Philippines (51) reported making decisions about their own health care – meaning choosing when and where to seek care, including ANC, is not always within their control. While ANC rates are quite high for all women (*Figure 9*), women's limited ability to make decisions about their own health care and service use is an important barrier to adequate use of services.

Conclusions

Lack of knowledge and harmful taboos, beliefs and customs are major contributors to poor diets and feeding practices among women and young children in the six countries assessed through the landscape analyses.

Women, particularly those who are poorer and living in rural areas tend to rely on information from family. Besides health care services, there are few platforms that are available for women and caregivers to receive information about healthy eating during pregnancy and breastfeeding, and to learn about the suitability of complementary foods and feeding practices.

A comprehensive social and behaviour change communication (SBCC) campaign targeted to different audience categories, including alternative caregivers and grandparents, would help to raise awareness about the importance of nutritious diets for women and children and supplement counselling received through the health centre. Innovative methods that take into account current pathways for accessing information are needed. Given the widespread use of social media in Southeast Asia, online forms of SBCC and counseling should be explored in addition to strengthening the provision on counselling and communication through health centres and in the community.

3.3.2 Food system drivers

Food systems are failing to provide nutritious diets for women and young children.

KEY FINDINGS

1. Few policies and programmes are in place to ensure that the food system delivers nutritious, affordable, and safe food to women and children.
2. Affordability is a major barrier in providing nutritious diets to women and children at critical periods when nutrient requirements are high.
3. Existing food-based dietary guidelines in place offer limited guidance for pregnant and lactating women and children 6-23 months of age.
4. Marketing and consumption of breastmilk substitutes - particularly follow-on formula and growing up milks - coupled with limited enforcement of national laws on marketing of BMS are contributing to declines in breastfeeding and are a source of a significant proportion of sugar consumption early in life.
5. Aggressive marketing, low cost and increased availability of foods high in fat, sugar and sodium (HFSS) are contributing to the rise of overweight and obesity among women and young children.

Women and children across the region have poor diets as a result of a failing food system. Access to a range of affordable, nutritious, safe, sustainable foods is often lacking. A 'nutrition transition' is apparent in which communities are leaving behind traditional diets and practices in favour of modern diets comprised of processed foods, high in saturated fat, sugar and sodium, and low in essential nutrients and fibre (2).

Limited legislation is in place to regulate the food system and enable healthy practices such as fortification of staple foods and processed complementary foods, use of incentives and taxes to encourage purchasing behaviour and the control of the marketing of unhealthy food and beverages (*see Table 3*).

Table 3. Food system policies and programmes

Country	Breastmilk substitute code controls[2]		Controls on marketing of unhealthy food[3]		Age specific dietary guidelines		Provision of fortified complementary foods[4]	
Cambodia	Partial	Controls/legislation moderately Aligned with the Code (2005, 2007)	X	No controls in place	Partial	Dietary guidelines for pre-school and school age children. Not specific to children under 2	X	Government developing locally fortified and Ready to use therapeutic foods (RUTF) products currently not distributed.

[2] Source: WHO. Marketing of Breast-milk substitutes: National implementation of the international code: status report 2020.
[3] Marketing controls refer to legislation on the advertising and promotion of food and drink high in fat, sugar and salt.
[4] Complementary foods that are fortified with multiple micronutrients, especially iron and zinc, that can be used as a safe replacement for local complementary foods.

Indonesia	Partial	Provisions are moderately aligned with Code (2012, 2013)	X	No controls in place	✓	"Balance Nutrition Guideline, MoH 2014 (Pedoman Gizi Seimbang, Kemenkes 2014)". This document includes all age groups. For children under two section, it follows the global guideline principles of complementary feeding. "IYCF Guideline, MoH 2020 (Pedoman PMBA, Kemenkes 2020)". This document also refers to the global recommendation for IYCF and guideline principles of complementary feeding. "Maternal Child Health Book, MoH 2018 (Buku KIA, Kemenkes 2018)". This book is kept by the mothers for their reference and recording.	X	Fortified biscuits are distributed through the MoH to underweight children. This is not a replacement for a complementary diet, however.
Lao PDR	Partial	Provisions are moderately aligned with the Code (2019)	X	No controls in place	X	No guidelines in place	X	Not in place
Myanmar	Partial	Provisions are moderately aligned with the Code (2014)	X	No controls in place	✓	Food Based Dietary Guidelines (2013) and (2016) have age-specific recommendations which include frequency and diversity of food, hygiene and food safety, and use of fortified food.	X	Fortified rice is distributed through the social safety net programme. However, this is not a replacement for a complementary diet.
Philippines	✓	Provisions are substantially aligned with the Code (1986, 2006)	X	No controls in place	Partial	Daily Nutritional Guide Pyramid for Children 1-6 years of age (2012) covers calorie content of food required by different age groups.	Partial	DOST PINOY (Package for the Improvement of Nutrition of Young Children) aims to reduce underweight in 6 to 35 month olds through 120 day feeding with special complementary food blends and snack curls.
Vietnam	Partial	Provisions are moderately aligned with the Code (2014)	Partial	Directive No. 46/CT-TTg issued on December 21, 2017 requesting line ministries to enhance nutrition in new circumstance. Ministry of Education is requested to disallow advertisement and trading of alcoholic drinks, carbonated soft drinks and unhealthy foods in schools.	Partial	There is a food pyramid for children aged only 3-5 years but not for children under 2 years. National Institute of Nutrition (NIN) and other parents have developed specific guidelines on complementary foods but no national guidelines exist.	Partial	NINFOOD has ECOSUN product line of fortified complementary foods for sale at affordable prices. Main products are CHAO NGON instant rice porridge fortified with iron and zinc, and VICA vegetable powders fortified with multiple micronutrients. Distribution very limited.

Sources: Marketing of breast-milk substitutes: national implementation of the international code, status report 2020. Geneva: World Health Organization; 2020.

Note: WHO made changes to measurement and verification of Code alignment between 2016 and 2020. For Further detail on coding please review the 2020 Report.

Lack of access to a diverse diet

Food availability and affordability are major barriers for many families in the region, which reduces their access to nutritious and safe diets.

Studies have found that many households in the six countries are unable to afford a nutritious diet. In Cambodia, Indonesia, Lao PDR, Myanmar and the Philippines, 21 per cent (57), 38 per cent, (58), 45 per cent (59), 24 per cent (60) and 32 per cent (61) of households respectively cannot afford a nutritious diet.

The cost of a nutritious diet for young children and pregnant and breastfeeding women are particularly high for poor families. Even when access and affordability are not a concern, knowledge and behavioural factors impact food choices with even the wealthiest children in the six countries lacking dietary diversity. As a result, less than half of children aged 6-23 months old reach the minimum dietary diversity of five food groups per day (40 per cent in Cambodia(11), 54 per cent in Indonesia(48), 36 per cent in Lao PDR(12), 21 per cent in Myanmar(50), 54 per cent in the Philippines (62) and 59 per cent in Vietnam(52) (*see Figure 10*).

A strong association has been demonstrated between lack of dietary diversity during the complementary feeding period and both stunting and wasting (45). The first foods introduced to children tend to be constrained by limited access to and affordability of a variety of foods and strong cultural beliefs and practices regarding appropriate foods for young children. These first foods in the region are most often watery porridges made of rice. Providing nutrient dense complementary foods is crucial as young children have very high nutrient requirements. They must consume over nine times as much iron per 100g of food compared to an adult male (17). These high nutrient requirements make it difficult for children to meet their nutrient needs for iron, zinc, calcium, niacin and folate, even when nutrient-dense local foods are available and affordable (*see Box 2*).

Nutrient needs - particularly for vitamins and minerals, rise dramatically during pregnancy and lactation. Nutrient needs are so high for women that the highest proportion of household food expenditure is needed to meet the nutritional needs of adolescent girls, pregnant and breastfeeding women (57–60). Throughout the region, pregnant and lactating women consume higher amounts of rice than recommended to meet the increased calorie requirements, rather than adding meat, poultry, fish, eggs, vegetables, fruits and beans. A predominately rice-based diet is preferred due to lower cost and strong cultural practices (57,59,61,63–65) however it leads to inadequate intake of nutrients during pregnancy. In an examination of the diets of pregnant women in three large cities in Vietnam, less than half the women met the recommended nutrient intake (RNI) for energy intake and very few women met RNIs for iron (0.5 per cent), zinc (18 per cent), calcium (2.5 per cent), folate (15.4 per cent) (64).

Limitations of food based dietary guidelines

Food based dietary guidelines (FBDGs) are a useful tool that governments can use to guide nutrition, health, agriculture, and education policies to foster healthy eating habits and lifestyles. FBDGs provide advice on preferable foods, food groups and dietary patterns to the general public to promote overall health and prevent chronic diseases. FBDGs should include specific guidance for children under 2 years of age, and for pregnant and breastfeeding women as these groups have specific nutrient needs. Currently Vietnam, Cambodia, the Philippines, and Indonesia, have developed FBDGs, with FBDG's targeted to children under 2 years under development in Myanmar. Of the developed FBDG's Indonesia only has specific guidelines for children under two, the Cambodian guidelines are targeted to pre-school and school aged children, while the FBDGs for Vietnam and Philippines cover the whole population with specific information for population groups.

Limited controls on the marketing of breastmilk substitutes

Since the World Health Assembly adopted the International Code of Marketing of Breast-milk Substitutes (hereafter referred to as "the Code") in 1981 to protect, promote and support

breastfeeding, UNICEF has provided technical assistance to various governments in their efforts to implement the Code into legally enforceable measures. The available evidence clearly shows that continued and aggressive marketing of breastmilk substitutes is a major factor undermining efforts to improve breastfeeding rates (66).

As a result, it is incredibly important that countries enact and enforce legislation to stop the inappropriate marketing of breastmilk substitutes that compete with breastfeeding and often negatively affect optimal infant feeding practices. As of March 2020, the promotion and marketing of breastmilk substitutes, including 'follow on' formula and 'growing up' milks for children under two years of age are regulated under legislation in all six countries: Cambodia(67), Indonesia (up to one year of age)(68), Myanmar (up to 36 months) (69) the Philippines(70) Vietnam(71), and Lao PDR (up to 36 months) (72).

Despite legislation being in place, illegal and aggressive advertising tactics to promote breastmilk substitutes are common throughout the region and vast amounts of money is spent on BMS marketing (*see Box1*). The robust and growing market for breastmilk substitutes, mostly for 'growing up' milks and 'follow on' formula marketed to children older than 6 months of age, has not only negatively impacted exclusive breastfeeding rates in the region, but also negatively affected the market for fortified complementary foods. These foods, most often in the form of baby cereals, comprise a small share of the overall baby food market. While well-fortified commercial complementary foods such as infant cereals can be an important source of essential nutrients for young children, there is a lack of guidance stipulating what constitutes a well formulated fortified complementary food and minimum standards for commercial complementary foods, through the development of a nutrient profile model, have not been put in place across the region.

Legislation alone is insufficient to protect children from marketing of BMS and infant foods, especially when weaknesses and challenges in implementation of the Code persist and monitoring and enforcement efforts are often non-existent.

There are many instances of lack of enforcement for existing legislation in all countries. This includes Code violations in the health care system and at retail points of sale which are not reported through monitoring mechanisms. It also includes the failure to conform to nationally mandated product labelling requirements for BMS and commercially available complementary foods, as well as lax control by food and drug authorities on recommended serving sizes that often exceed the recommended daily energy intake (74–80).

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BOX 2. DIFFICULTY IN REACHING NUTRIENT REQUIREMENTS THROUGH LOCAL FOODS

Studies from all six countries have found a lack of dietary diversity in children's diets that result in an inadequate consumption of nutrients, including protein, energy, and a range of minerals and vitamins. Even when children are given optimal complementary diets based on locally available foods, it is very difficult to achieve the recommended nutrient intakes (RNIs), especially iron and zinc.

INADEQUATE CONSUMPTION OF **NUTRIENTS, PROTEIN, ENERGY, MINERALS** AND **VITAMINS**

Cambodia

Secondary data analysis was conducted on a cross-sectional dietary study of 6-11 month old children living in seven communes of Prey Veng Province of Cambodia(81). With an optimal diet, RNIs could be achieved for vitamin A, vitamin B6 and vitamin C. Intakes of all other micronutrients including thiamine, riboflavin, vitamin B3 and B12, calcium, iron and zinc fell below RNIs. Iron only reached 14 per cent of RNI, zinc reached 50 per cent and calcium reached 57 per cent.

Indonesia

Dietary data was analysed from surveys covering all 33 provinces in Indonesia (82). With the exception of those in higher wealth groups living in urban areas, iron, zinc, calcium, and niacin were 'problem nutrients' in the diets of children aged from 6-23 months old and that RNIs could not be met.

Lao PDR

An optimal diet modelled for children aged 12-23 months old in Lao PDR found that while RNIs for all nutrients could just be met, this would require a considerable shift in the diet away from heavy consumption of carbohydrates to a greater consumption of vegetables, pulses and seeds. The most common limiting nutrients were calcium, vitamin B1, folic acid, iron and zinc (59).

Myanmar

A food consumption study of 12-23-month-old Myanmar children from the Ayeyarwady region assessed weekly dietary consumption patterns (83). The findings showed that even with an optimal diet using local foods, calcium, zinc, niacin, folate and iron were 'problem nutrients' and that RNIs could not be met.

Philippines

A national food consumption survey conducted in Philippines as part of the 2013 National Nutrition Survey found that amongst infants 6-12 months of age, energy intake was higher than the estimated energy requirement (84). However, infants consumed inadequate vitamin A (84 per cent of children), iron (76 per cent), zinc (63 per cent) as well as for protein (43 per cent), thiamine (52 per cent), riboflavin (45 per cent) and niacin (58 per cent). Adequacy of children's diets for older children 12-23 months of age was also poor with high prevalence of inadequate intake for iron (78 per cent of children), folate (68 per cent), vitamin B6 (61 per cent) vitamin A (60 per cent), calcium (62 per cent), and zinc (52 per cent). The main sources of energy amongst children 6-23 months old were refined rice, breastmilk, cow's milk, formula, and cookies.

Vietnam

A small study based on dietary intake data was carried out in Son La province of Vietnam with 12-23-month-old children (85). The study found that even with optimal local diets, iron and zinc could not reach 100 per cent of RNIs, while fat, calcium, vitamin C, vitamin B1, vitamin B2, vitamin B3, vitamin B6, folate, vitamin B12 and vitamin A could achieve 100 per cent RNIs in best-case scenarios, but remained below 70 per cent RNIs in worst-case scenarios.

Limited fortification of foods with essential micronutrients

Commercial fortification of foods with essential micronutrients – such as iron, folic acid, iodine, and vitamin A are some of the most cost-effective methods for preventing micronutrient deficiencies and improving nutrition status in the general population. Wheat flour fortification with folate is one of the most commonly fortified commodities globally. While wheat flour fortification is mandatory in Vietnam, Indonesia, and the Philippines, the staple food is rice, so many of the benefits of fortification are not reaching those most in need (the poor, the youngest, and women). Coverage of fortified flour, even in countries where fortification is mandatory is low or data is not available. Fortification of staple goods – such as rice, flour and oil- is a good mechanism for improving micronutrient intakes in the general population. However, fortification is not targeted to meet the nutrient needs of the most vulnerable, including young children, and pregnant and lactating women. As such, while national, well implemented fortification programmes can provide essential nutrients, they are not sufficient to meet the nutrient needs of children and women. In the region, there is limited implementation, and thus limited impact of food fortification programmes. Table 4 below includes the status and coverage of various food fortification efforts in the six countries.[5]

Table 4. Type and coverage of selected food fortification in six Southeast Asian countries

	Wheat flour		Rice		Salt Iodization	
	Status	Coverage[6]	Status	Coverage	Status	Coverage[7]
Cambodia	Not in place		Not in place		Mandatory	68.2%
Lao PDR	Not in place		Not in place		Mandatory	94%
Indonesia	Mandatory Fortified with Folate, Thiamine, Iron, Riboflavin and Zinc	87%	Not in place		Mandatory	92%
Myanmar	Not in place		Not in place		Mandatory	80.9%
Philippines	Mandatory Fortified with Vitamin A And Iron		Mandatory Fortified with Iron	No data	Mandatory	52.4%
Vietnam	Mandatory Fortified with Iron, Vitamin A, Zinc, Folate, b12	No data	Not in place		Mandatory	60.9%

Source: Global Fortification Data Exchange, https://fortificationdata.org/ Salt Iodization- The State of the World's Children 2019 (1)

Increased marketing of unhealthy food and drinks

Modern diets that are high in saturated fat, sodium, and sugar, and low in essential nutrients and fibre are increasingly common in the region as a result of economic growth, urbanisation, lifestyle changes and marketing of unhealthy foods and drinks. The fast food and processed food industries are thriving, driven by the demand for greater convenience and higher purchasing power, especially in urban areas but increasingly in rural areas too. These changes in dietary

[5] Fortification of cooking oil with Vitamin A is mandatory in the Philippines and Viet Nam, and voluntary in Indonesia
[6] Percentage of wheat flour fortified
[7] This data refers to households consuming salt with any iodine.

habits are being fuelled by advertising and marketing that promotes unhealthy foods, snacks and soft drinks (75,81,82).

Although data is still scarce, studies suggest that many pregnant women eat irregularly, skip meals, or snack on sugary desserts and packaged food. In one study from Myanmar, pregnant women who worked in the garment industry mentioned regularly drinking sweetened beverages between meals and consuming low-cost snacks purchased at local shops that are deep-fried, artificially sweetened, processed, and/or high in sugar or salt content (83). These foods are inexpensive, convenient, and perceived to provide quick energy boost during short work breaks. Another study noted that in general women who work in the garment industry have poor quality diets – restricting food intake and not eating preferred foods, though healthy foods were available (84). As a result of increased consumption of unhealthy foods, overweight among women is rising dramatically and now stands at 24 per cent in Southeast Asia (85).

Throughout the region, unhealthy sugary and salty snacks are commonly given to young children as a way of pacifying them when there is no time to give them attention (28,59,76,86). In Lao PDR, a survey in 2012 found that 53 per cent of children under the age of five years and 45 per cent under the age of two years had eaten a packaged snack food in the preceding day (87). Increasingly, these snack foods, such as shrimp crackers, crisps, cookies and candies, are being imported from Thailand and Vietnam and not labelled in local languages (88). Snacks are not only unhealthy but costly. A Cost of the Diet Study in Cambodia found unhealthy snack consumption increased the cost of the diet for a child aged from six months old to two years by 38 per cent (57).

Legislation to control the marketing of unhealthy foods to children is scarce. None of the six countries have robust legislation to control the advertising and promotion of unhealthy foods to children. Taxes on sugary food and drinks, frequently consumed by children and women, have only been introduced into one of the six countries, the Philippines, where a 14 per cent rise in the price of sugar-sweetened beverages was introduced in January 2018.

Conclusions

There is strong evidence to demonstrate that large numbers of young children in Southeast Asia are unable to consume a diet that meets their full nutrient requirements as a result of poor knowledge and behaviours, availability, and/or affordability and widespread marketing of unhealthy foods.

This suggests that counselling alone will not be effective in improving children's diets and that additional strategies need to be pursued. Potential solutions include incentivising the production of fortified complementary foods that are safe, affordable and easy to prepare, and provision of micronutrient supplementation through food and health systems which is acceptable to both children and their caregivers. At the same time, there is clear global evidence that robust and enforceable legislation can effectively control the marketing of unhealthy food and drink targeted at women and children (2). Strong advocacy is needed to ensure that governments enforce all aspects of the Code and introduce legislation to reduce the marketing, sale and consumption of unhealthy food and beverages to children.

3.3.3 Health system drivers

Health systems are not effectively delivering counselling and micronutrient supplementation services to women and children.

KEY FINDINGS

1. Policies and programmes specifically aiming to improve the delivery of services in support of maternal nutrition and complementary feeding are in place, but delivery is inconsistent.
2. Nutrition counselling is implemented in all countries, but quality is inconsistent, and competencies of health workers can be weak.
3. Training for health workers on infant and young child feeding (IYCF) and maternal nutrition has not been rolled out consistently and at scale, with some essential components not included in pre-and in-service training manuals.
4. Delivery of micronutrient supplementation plays an important role in maintaining the nutrition status of women and young children but significant challenges in the supply chain and logistics remain.

Health systems are responsible for delivering essential nutrition services including nutrition counselling and micronutrient supplementation to both pregnant women and to the caregivers of young children. Health systems are the main delivery platform for the prevention and treatment of malnutrition as they provide multiple contact points with young children and women through antenatal and postnatal care services, well-child check-ups, immunization visits, community-based services, and facility-based care (25). However, nutrition services are not always effectively integrated into health services, and there are short-comings in provision of services across the six countries that undermine the quality and coverage of service delivery to women and young children. As Table 5 shows, only one country in the region, the Philippines, has a policy relating to the nutrition of all women of reproductive age. Other countries have policies specific to the nutrition of pregnant and breastfeeding women, but which do not cover all women of reproductive age.

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Table 5. Health system policies and programmes: Maternal Nutrition

Country	Policies and guidance on maternal nutrition		Micronutrient supplementation for pregnant women[8]		Counselling on nutrition for pregnant women		ANC visits[9]	
Cambodia	Partial	2013-2018 National Food Security and Nutrition Strategy included maternal nutrition. 2019-2023 Strategy in draft	✓	Included in the National Strategy. The policy is for women to receive 90 tablets during pregnancy and 42 post-partum. (60mg Fe & 400µg FA daily). 60 given at first contact, second contact 30 tablets, and 42 post-partum.	✓	Guidelines on Minimum Package of Activities for Health Center Development (revised in 2018) and Manual and Job Aids set out health centre staff role to provide counselling during antenatal contact on nutrition and self-care during pregnancy as well as counselling on follow up particularly via mother card and record book.	Partial	2014 Policy recommended at least four visits. Revised 2019-2023 Policy is awaiting release.
Indonesia	✓	Minister of Health Regulation No. 97 in 2014 about pre-pregnancy, pregnancy, childbirth, and postnatal services. Contraception and Sexual Health Service Maternal Child Health Book, MoH 2018 (Buku KIA, Kemenkes 2018) Guideline of Integrated Antenatal Service, MoH 2010	✓	Guidelines for Integrated Antenatal Services (2010) and maternal and child health (MCH) handbook (2016) states that all pregnant women should receive a minimum of 90 tablets IFA from first ANC contact (60mg Fe & 400µg FA daily).	✓	Guideline of Integrated Antenatal Service (2010) and MCH Handbook (2016) sets out responsibility of health sector to counsel pregnant women on personal hygiene, light exercise, weight gain and adequate and balanced diet.	Partial	MoH Regulation No. 97 on pre-pregnancy, pregnancy, childbirth, and postnatal services, contraception and sexual health service (2014) specifies four ANC visits during pregnancy. MoH is in the process of updating the standards to include eight +ANC visits
Lao PDR	Partial	National Strategy and Action Plan for Integrated Services on Reproductive, Maternal, Newborn and Child Health (RMNCH) (2016-2025).	✓	Micronutrient Supplementation and Deworming Guidelines for Lao PDR (2018) states minimum of 90 tablets IFA for pregnant women from first ANC contact (60mg Fe & 400µg FA daily).	Partial	RMNCH (2016-2025) and ANC Guidelines (2018) include counselling on improved consumption of safe nutritious and diverse food for pregnant women. No inclusion of exercise or weight gain.	✓	ANC Guidelines (2018) state minimum of eight ANC contacts.
Myanmar	Partial	National Guidelines for Antenatal Care for Service Providers (2018) and National Strategy for Maternal, Infant and Child Nutrition, Myanmar are currently being drafted.	✓	Nutrition Manual for Basic Health Staff (2013) recommends tablets from first ANC contact to 7 months pregnancy (60mg Fe & 400µg FA daily). MMS introduced in 2017 (containing 30mg Fe). Both systems currently in use.	✓	National Guidelines for Antenatal Care for Service Providers (2018) provides guidance for healthy eating during pregnancy and breastfeeding, physical activity and weight gain.	✓	National Guidelines for Antenatal Care for Service Providers (2018) state minimum of eight ANC contacts.

[8] Micronutrient supplementation refers to iron and folic acid (IFA) supplements and/or multiple micronutrient supplements.
[9] ANC visits refers to eight recommended ANC contacts during pregnancy.

Philippines	✓	National Nutrition Guidelines for Women of Reproductive Age approved for dissemination in 2020.	✓	Administrative Order No. 119 (2003) advises a tablet containing (60mg Fe & 400µg FA daily) daily for 6 months or 180 days during pregnancy. Two tablets recommended daily if prenatal consultations start during 2nd or 3rd trimester.	✓	Administrative Order on Health Education, Advice, and Counselling (2016) covers nutrition during pregnancy, and weight gain. Information, Education and Communication (IEC) materials developed and disseminated on physical activity during pregnancy.	Partial	Administrative Order on Health Education, Advice, and Counselling (2016) states minimum of four ANC contact during pregnancy.
Vietnam	Partial	National Guidelines on Reproductive Health services (2009) and National Guidelines on Nutrition Care for Pregnant and Lactating women (2017) including nutrition care for normal and special situations, recommendation on milk consumption.	Partial	National Guidelines on Prevention of Micronutrient Deficiencies (2014) recommends minimum of 90 tablets IFA from first ANC contact (60mg Fe & 400µg FA daily). IFA can be purchased from pharmacies and health centres. Free IFA provision through social protection programmes or through Health Insurance but limited to 7-day prescription.	✓	National Guidelines on Nutrition Care for Pregnant and Lactating women (2017) include nutrition counselling covering dietary diversity, weight gain and brief mention of exercise.	Partial	National Guidelines on Reproductive Health services (2009) state minimum of four ANC contact during pregnancy.

Table 6. Health system policies and programmes: Complementary Feeding

Country	Complementary feeding in minimum package of health facility services		Multiple micronutrient supplementation[10]		Counselling on complementary feeding	
Cambodia	✓	Guidelines on Minimum Package of Activities for Health Center Development (revised in 2018) include support for complementary feeding.	Partial	Zinc, vitamin A, iron supplementation included in national policy. MNP included in guidelines but not currently implemented.	✓	Guidelines on Minimum Package of Activities for Health Center Development (revised in 2018) include support for complementary feeding.
Indonesia	X	Regulation 43 on Minimum Standards of the Health Service (2016) includes no specific services for complementary feeding.	Partial	Management Guide for MNP (taburia) Administration (2013) prioritises children 6-24 months old for provision of MNPs (1 sachet every 2 days). No budget allocated for procurement.	✓	IYCF Counselling Module (2014), MCH Book (2016) and integrated management of childhood illnesses (IMCI) Guideline (2015) all provide guidance to health workers for provision of counselling on complementary feeding through health services.
Lao PDR	Partial	IYCF Counselling included as part of minimum package of services but implementation is not yet at scale.	Partial	Infant and young child feeding guidelines for Lao PDR (2012) acknowledge role of MNPs but no national programme.	✓	IYCF Counselling Package is up to date. Focus is 'nutrition education' of caregivers during integrated health outreach and at health facility contact points for well-child services, immunization and growth monitoring.

[10] Micronutrient supplementation refers to micronutrient powders (MNPs) or syrups that include iron and zinc, as well as other essential micronutrients.

Myanmar	✓	Nutrition Manual for Basic Health Staff (2013); Standardized Health Messages for Health Care Providers; and National Strategic Plan for Newborn and Child health Development (2015-2018) specify complementary feeding support services.	Partial	"MNS Manual Revised 2015" stated "MNS sprinkle for all children 6 months to 3 years age (4 months a year) and in emergency 6 months to 5 years age" with the purpose of increasing iron status in children.	✓	Nutrition Manual for Basic Health Staff (2013) specifies that counselling on complementary feeding should be provided through MCH contact points by basic health staff and is complemented by NGOs.
Philippines	X	No complementary feeding included in minimum package for health services.	Partial	Micronutrient Supplementation Manual of Operations states that MNPs are distributed during emergencies prioritising children aged 6-23 months old.	✓	IYCF Counselling Guide (2011) focuses on breastfeeding and complementary feeding counselling provided through health services. 2019 harmonized. Maternal nutrition and infant and young child feeding training package includes intensive training on complementary food counselling.
Vietnam	X	No minimum package for health services.	X	No free distribution of MNPs	✓	National Project on Maternal Child Nutrition (1998-present) includes counselling to caregivers of children aged 6-23 months old through health services.

While complementary feeding is comprehensively covered in national policy documents (*see Table 4*), it is not included in the package of basic services to be delivered at health facilities in four out of six of the countries (Table 6). As a result, there is a lack of clarity about whether health workers are mandated to deliver services in support of complementary feeding and little accountability for the delivery of these services. Even when policies and strategies are included in national plans, training of health workers on maternal and infant and young child feeding has not been conducted at scale in all six countries due to budget constraints and lack of prioritization. Trained health workers are often not supported to conduct quality counselling, and opportunity to refresh and renew skills may be limited. Additionally, the counselling services are not mandatory and not required to be reported in the health management information system (HMIS).

Limited pre-service and in-service training of health workers on Maternal and Infant and Young Child Nutrition

The quality of pre-service training on counselling for IYCF varies across different nursing and medical schools within countries. A review of course content in pre-service training for healthcare professionals in Indonesia, Lao PDR, Myanmar and the Philippines showed gaps that included non-standardized training curricula, limited teaching time, limited nutrition counselling concepts and skills, outdated resource materials, limited qualification and training of educators. Opportunities for practical application of counselling skills were also found to be limited. In the Philippines, most schools training health workers reported that their pre-service curriculum included lectures on micronutrient supplementation, nutritional assessment, and key nutrition counselling messages, but there was considerable variability in the skill level required by students (89). A summary of the content from the reviewed courses is included in the Appendix A.

In-service training modules on maternal nutrition and complementary feeding have been developed and are in the process of being rolled out in countries. However, coverage is not yet universal and because of high staff turnover, regular additional training is needed. IYCF training using the UNICEF developed IYCF curriculum has been adopted and rolled out in four countries – while Cambodia and Vietnam use hybrid materials. Although it is a 5-day comprehensive training, the financial and human resources required to roll out the training are a limiting factor. Cascade trainings are not always effective, and if there is lack of support for mentoring and supervision, and the intervention is not mandated to be provided and reported on, health workers may not be able to effectively translate the training into practice.

Table 7. Health system training

Country	Pre-service training				In-service training			
	Maternal nutrition		Complementary feeding		Maternal nutrition[11]		Complementary feeding[12]	
Cambodia	X	Maternal nutrition not included in pre-service training for health workers and midwives.	X	National Policy on IYCF (revised 2008) recommends IYCF training of health providers in government and private facilities but it is not yet included in curricula.	Partial	Government working to standardise package for maternal nutrition training. Current packages include maternal nutrition but some elements may be missing.	Partial	National Policy on IYCF (revised 2008) recommends IYCF training of health providers in government and private facilities.
Indonesia	✓	Maternal nutrition is part of pre-service training for nutritionists and mid wives.	X	Diploma IV Nutrition Education Core Curriculum, Health Human Resources Education Centre (2016). Nutrition counselling is part of the pre-service curricula but complementary feeding is not specifically included.	✓	IYCF Counselling Module (2014) includes comprehensive coverage of maternal nutrition with the exception of guidance on appropriate weight gain. Maternal nutrition topics included in the Integrated Maternal Neonatal Training Module, MoH 2017	✓	IYCF Counselling Module (2014) includes comprehensive coverage of complementary feeding.
Lao PDR	✓	Included in nursing and midwives curriculum.	X	No pre-service training on complementary feeding.	✓	Included in includes health workers and midwives curriculums.	✓	IYCF Counselling Package is used for in-service training with comprehensive coverage of complementary feeding.
Myanmar	Partial	Nutrition Manual for Basic Health Staff (2013) is used for some pre-service training and covers maternal nutrition.	Partial	Nutrition Manual for Basic Health Staff (2013) is used for some pre-service training and covers complementary feeding.	✓	Nutrition Manual for Basic Health Staff (2013) has comprehensive coverage of maternal nutrition.	✓	Facilitator Guide for Community based IYCF Counselling (2018) has comprehensive coverage of complementary feeding.
Philippines	Partial	Maternal nutrition is integrated into health providers pre-service curricula but coverage is not comprehensive.	Partial	IYCF Counselling: An Integrated Course (2011) covers all aspects of complementary feeding but is weak.	Partial	Maternal nutrition is integrated into health providers in-service training but coverage is not comprehensive.	Partial	IYCF Counselling: An Integrated Course (2011) covers all aspects of complementary feeding but is weak.
Vietnam	Partial	MoET Decision on Curriculum of Pre-service Education on Health Sciences (2001). Maternal nutrition included in pre-service education of health providers but is not comprehensive.	X	Universities vary in how IYCF is covered through pre-service curricula is through universities and complementary feeding is barely covered.	Partial	NIN Training Manual on Nutrition Care for Mothers and Children (2016) integrates maternal nutrition into in-service training as part of the National Project on Child Nutrition Improvement, but is not comprehensive.	✓	NIN Training Manual on Nutrition Care for Mothers and Children (2016) integrates complementary feeding into in-service training as part of the National Project on Child Nutrition Improvement and is comprehensive.

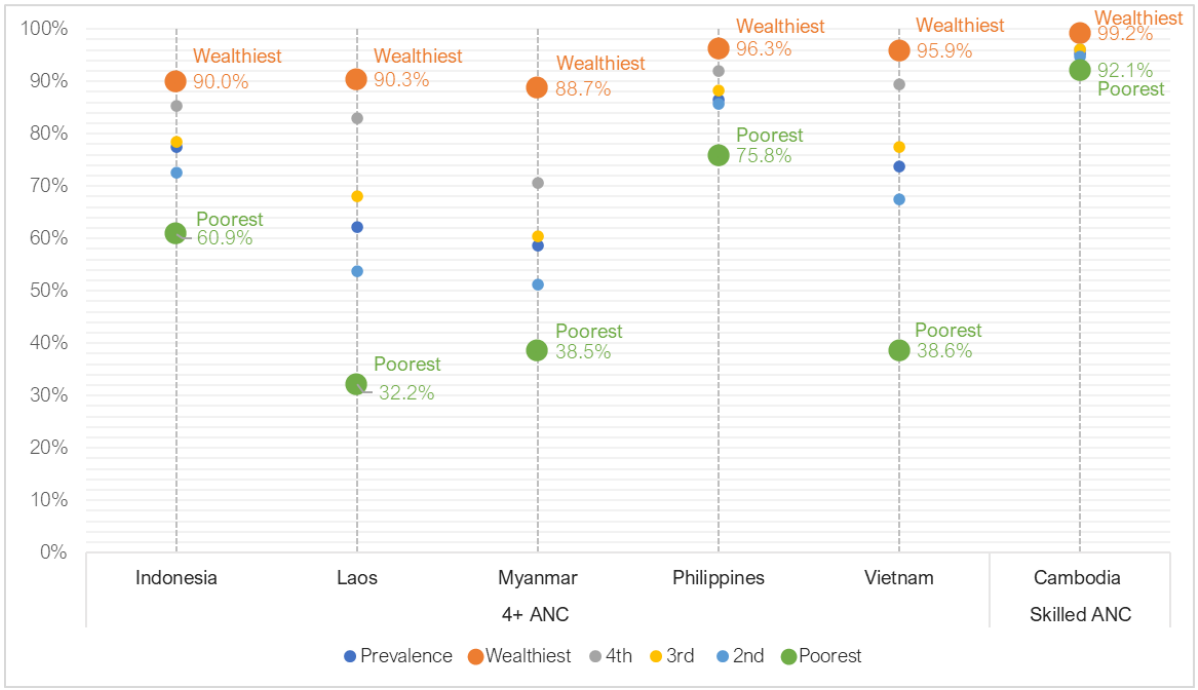
[11] Comprehensive coverage of maternal nutrition refers to training on: promotion of healthy eating; promotion of physical activity; supplementation with iron and folic acid; and guidance on appropriate gestational weight gain.
[12] Comprehensive coverage of complementary feeding refers to training on: timely introduction; continued breastfeeding; nutrient dense/diverse diet; safe preparation and storage; appropriate feeding frequency, consistency and quantity; responsive feeding; use of supplements and fortified products; and feeding during and after illness.

Inconsistent quality of nutrition counselling

Counselling on maternal nutrition and complementary feeding by health workers is included in the national guidelines as part of reproductive health care, ante-natal care, and IYCF support in Cambodia(90), Indonesia (91,92), Lao PDR(93,94), Myanmar(95), Philippines (96), and Vietnam(97,98). However, the coverage of counselling for pregnant women, particularly on appropriate weight gain and exercise is not consistently delivered across the countries. In addition, the quality of nutrition counselling on maternal nutrition and complementary feeding varies, and competencies can be weak. Health workers are frequently short of time and do not regularly receive supportive supervision. Poor skills and limited time and support mean that counselling is often unclear, inconsistent, and dependent on individual skills. In a study from Cambodia, the majority of pregnant women reported that they did not receive nutrition advice during ANC visits (28). Health workers stated that the health centres were heavily crowded and that they were unable to spend enough time with expectant mothers to discuss nutrition information. In another study from the Philippines, of the mothers who confirmed having attended nutrition education activities during prenatal care, only 36 per cent and 53 per cent knew the correct duration of exclusive breastfeeding and timing of introducing complementary food, respectively (45). This suggests that nutrition information conveyed to mothers during counselling is not retained and may not be well timed to support the adoption of optimal behaviours.

ANC is the primary platform to reach pregnant women with nutrition information. Since 2016, the WHO has recommended that women should have at least eight ANC visits during pregnancy. However, this recommendation has not yet been adopted in policy guidelines in all countries. At present, only Indonesia, Lao PDR and Myanmar mandate eight ANC visits. ANC coverage is quite good across the six countries (*see Figure 9).* However, poor, and marginalized women are less likely to seek ANC and attend 8 or more visits. In Lao PDR, ANC coverage (at least four visits) is 90 per cent in the highest wealth group of pregnant women compared to 32 per cent in the lowest wealth group (12). Similar differences are found in other countries in the region. Figure 12 below highlights the inequality across wealth quintiles for different ANC indicators in the six countries. After a child reaches six months old, there are fewer opportunities for mothers to interact with health workers, resulting in fewer occasions to deliver nutrition counselling and information.

Figure 12. ANC across wealth quintiles in six countries



Source: IDSH2017, Lao LSIS II 2017, MDHS 2015-2016, Philippines NDHS 2017, Vietnam MICS2014, Cambodia DHS 2014

Inadequate use and delivery of micronutrient supplements

Pregnant and lactating women and young children have higher biological requirements for nutrients but do not always consume foods rich in micronutrients. As a result, many will need to use micronutrient supplements during pregnancy, lactation, and complementary feeding period.

The micronutrient deficiencies of particular concern are iron, zinc, and vitamin B1 in many areas of the region.

Following WHO guidance, the current policy in Cambodia (99), Indonesia (100), Lao PDR (101) and the Philippines (102) is to provide all pregnant women with preventative iron folic acid (IFA) supplements. In Myanmar, the policy is to provide women with either IFA (103) or multiple micronutrient supplements (MMS), depending on the supply. MMS provides additional micronutrients such as vitamin B1 that traditional diets lack. Supplements are provided for free through the health service in Cambodia, Indonesia, Lao PDR, Philippines and Myanmar. In Vietnam, there is robust policy in place for IFA supplementation for pregnant women (104) but there is no programme for free provision IFA through ANC services. Instead, pregnant women are recommended to buy IFA supplements from pharmacies and health centres. Poor women can receive IFA through the Health Insurance Scheme but only with a prescription and only for seven days per prescription.

The coverage of 90+ tablets of IFA remains low throughout the region as highlighted in Table 8. There are a variety of reasons for low coverage including lack of compliance due to the side-effects of taking IFA tablets, as well as the cost of procurement and supply through health centres. Studies in Indonesia and the Philippines found a significant association between having good knowledge of IFA and compliance, as well as attending at least four ANC services, and not experiencing side-affects (105,106). Assessments in Cambodia (107), Indonesia (108), and the Philippines (109) on the distribution and consumption of IFA through ANC identified four common 'falter points' – (i) failure to attend at least one ANC visit, (ii) failure to receive or purchase at least one IFA tablet, (iii) failure to consume any IFA, (iv) failure to consume 180 or more tablets. For the Philippines and Indonesia, falter points (ii) and (iv) were most critical, and in Cambodia it was point (iv).

To improve delivery, countries need to address gaps in supply management and health worker practices, as well as focus on behaviour change interventions to improve awareness on the importance of IFA/MMS during pregnancy.

Research on falter points globally found that the main reasons for failure to consume 180 IFA tablets (or even 90) are to do with supply issues – either providers have inadequate supply, or women do not access enough tablets, along with the failure to provide adequate advice on side effects and the importance of IFA. Delivery of IFA through community services and health workers has been an effective way to increase compliance and access to IFA (105).

Table 8. Use of IFA in six Southeast Asian countries

Country (source)	Any IFA	IFA +90
Cambodia(11)	95.6%	75.50%
Lao PDR (12)	49.5%	25.4%
Indonesia (48)	82.2%	43.9%
Myanmar (50)	87.7%	59.3%
Philippines (51)	80.6%	50.6%
Vietnam(111)	48% (during 1st trimester of pregnancy)	62.7% (previous 3 months)

The potential for improving the micronutrient status of children 6-23 months old through supplementation with micronutrient powders (MNPs) has been recognised in several countries in the region, however there is limited distribution of free MNPs through health facilities. Free distribution is limited to emergencies in Indonesia, Myanmar, and the Philippines. In Vietnam, MNPs are not provided under the Health Insurance Scheme and must be purchased at a cost. In Lao PDR, the 1,000 Day Project, distributes SuperKid (MNP) sachets either as a free provision for children 6-23 months old, or as subsidized provision for children 2-5 years of age. This programme has not yet been scaled up by the Government - feasibility, cost, and access by the poorest are challenges that need to be addressed.

Lack of commitment to scale up, and inadequate supply means that the coverage of MNPs is low. In Myanmar, only 27 per cent of children aged 6 months old to 3 years of age received MNPs or other point of use fortification in 2017-2018 (Personal Communication, MOHS NNC 2019). Part of the problem is the lack of an organized distribution system from state and regional level to health centres. In addition, the workload of health workers means that caregivers do not always receive the correct information about the use of MNPs and do not provide sufficient counselling to caregivers. In the Philippines, MNP supply is insufficient due to problems with procuring MNPs that reach quality standards. The limited use of social and behaviour change to support MNP distribution and health worker training is also a major barrier to the uptake of MNPs (112) resulting in relatively low compliance due to mothers not wanting to add MNPs to children's foods as they believe it changes the appearance and taste when not properly mixed.

Conclusions

While some essential nutrition services are included as part of the maternal and child health packages and generally provided free of charge in Southeast Asian countries, there are gaps in training content and the quality and coverage of trainings are uneven.

Solutions lie both in improving the capacity of health care staff and in reviewing the bottlenecks to delivery of counselling and supplementation services through health centres. These reviews may inform advocacy for the full set of nutrition interventions, including mandatory counselling to be fully integrated as part of the essential health service package and be adequately budgeted for. Improving pre-service and in-service training as well as increased monitoring and supervision of health workers on counselling and care for the nutrition of women and children will result in higher quality service delivery. Curricula and training materials need to be updated and consistent across medical schools and colleges. Continual support and mentoring of health workers are required to ensure that counselling and other services are provided reliably and to a high standard as part of the essential health package and are regularly monitored through administrative health systems.

Countries need to ensure the supply chains can support adequate supply of IFA, MMS and MNPs. Supportive social and behaviour change activities to improve knowledge around the importance of nutrition during pregnancy, complementary feeding and key interventions are also critical. Replacing IFA supplements for pregnant women with MMS may help improve coverage and compliance while addressing additional micronutrient deficiencies and low birth weight. Evidence also shows that MMS is more cost-effective compared to existing IFA programmes in low and middle-income countries (113). A recent Cochrane review to evaluate the benefits of MMS during pregnancy found that MMS resulted in a significant decrease in the number of low birth weight and small for gestational age infants in addition to a reduced rate of stillbirth (114). Different forms of micronutrient supplements for young children also deserve attention. While MNPs may be accepted in some communities, alternatives such as micronutrient syrups could be explored with joint public sector and private sector distribution where MNPs are less accepted.

3.3.4 Social protection system

Social protection system can provide an alternative platform for delivering nutrition services to the most vulnerable women and children.

KEY FINDINGS

1. As a region, Southeast Asia is vulnerable to natural disasters and the impact of climate change with these factors negatively impacting the diets and nutrition status of young children and women.
2. Poverty and inequality continue to affect large numbers of people, and evidence demonstrates the important role of social protection in improving maternal and child diets.
3. In many countries, social protection schemes do not target nutritionally vulnerable women and young children. Where social protection schemes are specifically targeted at households with women and young children, they are not delivered at scale, though there are indications that this is changing.
4. Many social protection programmes are not effectively linking recipients with services that could improve maternal nutrition and complementary feeding practices.

Social protection programmes represent a potential platform for supporting the nutrition of the most vulnerable women and children who are least able to access mainstream services. Social protection programmes can improve health and diets, increase, and stabilize household income and improve care practices, contributing to improved overall nutrition status for populations.

Social protection programmes in most Southeast Asian countries are limited as presented in Table 9. An analysis conducted by UNICEF, Food and Agriculture Organization (FAO) and World Food Programme (WFP) in the 2019 Asia and the Pacific Regional Report on Food Security and Nutrition found that countries in the Asia Pacific region spend only 14 per cent of the total budget on social protection compared to 42 per cent in Europe (115). In addition, few countries explicitly provide support for maternal nutrition or complementary feeding through counselling services or alternative delivery systems for micronutrient supplementation. However, recent investments by the World Bank, UNICEF and other international NGOs in the region are changing the current situation.

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Table 9. Social protection policies and programmes

Country	Social protection system policy	Social protection programmes targeting women and children	
Cambodia	National Social Protection Policy Framework (2016-2025)	Partial	A cash transfer project was introduced with USAID funding that targeted pregnant women and children under two years old living in poverty. The project provided cash transfers based on attendance at antenatal and postnatal clinics. Nutrition counselling and micronutrient supplementation are not explicitly linked to the programme but assumed to be provided as part of the health service delivery. The programme is being expanded with World Bank Support in 2020.
Indonesia	Regulation 1 on Indonesian Conditional Cash Transfer Programme(2018) .	Partial	The conditional cash transfer programme known as Programme Keluarga Harapan (PKH) targets the 20 per cent of poorest families with pregnant and breastfeeding women, and/or children under 6 years of age. There are no specific interventions to improve maternal nutrition or complementary feeding linked to the programme. PKH is a poverty targeted conditional cash transfer (CCT).
Lao PDR	The Eighth National Social Economic Development Plan (NSEDP) 2016–2020	Partial	Conditional cash transfer component of World Bank nutrition project. This is not yet a national programme but limited to coverage of 12 districts in 4 provinces.
Myanmar	Myanmar National Social Protection Strategic Plan (2014)	Partial	Maternal and Child Cash Transfer began as a pilot and is now active in four states and one region. With support from the World Bank, the pilot is expanding to two of the biggest states, Shan and Ayerawaddy in 2020-2021.
Philippines	The Philippine Social Protection Operational Framework and Strategy	Partial	The '4Ps' programme is a conditional cash transfer programme targeted to poor households, and is not specifically targeted to 1000 days households
Vietnam	Decree 136 on Social Protection Policies (2013).	Partial	The Ministry of Labour, Invalids and Social Affairs (MoLISA) have responsibility for a set of social protection policies including micro-finance, social welfare programmes and Women's Unions. However, the current social protection system is fragmented with limited coverage, an inadequate range of benefits, and limited support for complementary feeding and maternal nutrition. While there is free health insurance for children under 6 years of age, iron supplements are not included as essential medicines and not provided free for women or young children.

Frequent emergencies and limited resilience to disasters

Southeast Asia is one of the world's most emergency-prone regions. Natural and man-made disasters lead to transitory food insecurity, and climate change is increasing this vulnerability. Delivery of consistent social protection to communities vulnerable to multiple risks has proven to be an effective means of building resilience before disasters occur, preventing households from falling into poverty and reducing the need for negative coping strategies that can affect the diets of mothers and children (116).

Poverty and lack of access to social protection services

Southeast Asia has experienced rapid economic growth and significant reductions in poverty in the last two decades. Between 1990 and 2015, the percentage of people living in poverty fell from 47 per cent to 14 per cent[1] though there is significant variation across the region. Despite the region's rapid economic growth, inequalities have grown with widening gaps between the rich and the poor. Governments across the region have provided social protection platforms to address some of the inequality and ensure citizens have access to services, though the percentage of households receiving any sort of social protection programme varies widely by country. In Indonesia, 48.7 per cent of the population received some form of social safety net benefit in 2015, as well as 33.8 per cent in

the Philippines in 2015 and 17.5 per cent in 2014 in Vietnam (117).

Regionally, inequality is observed in the large numbers of families unable to afford a nutritious diet. In Cambodia, Indonesia, Lao PDR, Myanmar and the Philippines 21 per cent, 38 per cent, 45 per cent, 24 per cent and 32 per cent (52-56) of households respectively cannot afford a nutritious diet.

The costs of a nutritious diet for young children and pregnant and breastfeeding women are particularly high for poor families. Social protection programmes in the form of cash, and/or-in kind transfers can alleviate some of this burden. Indonesia is testing the use of an e-voucher programme which provides a voucher for households to purchase rice and eggs (115).

Social protection programmes can play a crucial role in protecting the most vulnerable from poverty and enable and encourage them to utilize existing services. There are a range of social protection policies and programmes in place in the six countries that could be used to support quality maternal nutrition and complementary feeding. Cambodia developed a social protection policy framework (118) with a conditional cash transfer project that targets pregnant women and children under two years living in poverty, conditional on attendance at antenatal and postnatal clinics.[2] In Indonesia, a range of social protection programmes are in place. These include the Programme Keluarga Harapan or PKH which provides conditional cash transfers to the poorest 20 per cent of households with vulnerable family members including pregnant women. The Rastra, which provides 15 kgs of rice at subsidized prices to the poorest 25 per cent of households, now includes the provision of eggs. Indonesia has also introduced a new programme called Bantuan Penerima Non Tunai (BPNT) or Non-Cash Recipient Assistance, an e-voucher programme which will replace Rastra. Under BPNT, households are able to spend up to 110,000 IDR (~US$ 8) on rice and eggs a month, and the government is considering adding vegetables and supplementary foods to improve dietary diversity and age appropriate complementary feeding (115). In Lao PDR, there are national social protection schemes for pensions and health, but currently there are no regular nationwide regular social protection programmes (119). In Myanmar, the National Social Protection Strategic Plan identified eight social assistance programmes that could contribute to improved nutrition(120). The Maternal Child Cash Transfer (MCCT) in Myanmar has been rolled out in five regions with plans for expansion into two more starting in 2020.[13] MCCT provides pregnant and lactating women a cash benefit of 15,000 MMK (~US$ 10) per month during pregnancy and up until the child is 24 months old. The benefit is intended to allow pregnant and lactating women to spend more money on food and health expenses, and in turn the recipients participate in nutrition awareness raising activities. In the Philippines, the government flagship social protection programme (4Ps) provides conditional cash transfers for vulnerable families. In Vietnam, the Ministry of Labour, Invalids and Social Affairs has a set of social protection policies that includes micro-finance, social welfare, Women's Unions and early childhood development programmes (121).

Evidence from the region shows that social protection programmes can effectively improve dietary diversity of women and children especially when combined with social behaviour change communication (SBCC), increase health seeking behaviours, improve care practices through empowering women and increase household incomes (115).

However, these programmes are not being optimized for their full potential. Many programmes are not implemented at national scale, and nutritionally vulnerable women and children are not always directly targeted. Nutrition support is rarely included as a specific component of programmes, which can limit the impact on nutrition. An evaluation of the 4Ps in the Philippines found a mixed impact on nutrition; households had more money to purchase a variety of foods, but the transfers were not able to

[13] MCCT currently active in Chin, Rakhine State, Narga self-administrative region, Kayin and Kayah. In 2020-2021 it will expand into Ayeyarwaddy and Shan (1 region, 1 state) with plans to expand into Kachin, Mon, Sagaing and Magwe in the coming years.

compensate for other factors contributing to nutrition outcomes, such as weak health systems and shortage of free medicines and supplies and limited economic opportunities(122). Recent evaluation of the MCCT in Myanmar found that the cash transfer and SBCC interventions had a significant positive impact of women's and children's dietary diversity (123). However, an earlier programme review of the MCCT also found some unintended consequences, for example that households purchased more BMS, sugary beverages and snacks.

Conclusions

Widening inequalities across the Southeast Asia region mean that large numbers of families struggle to find enough money to eat well and care for their children.

A review of evidence on cash-transfer programmes in the Asia-Pacific region found positive impacts on health seeking, nutrition status and food consumption.

Households who benefitted from the 4Ps in the Philippines, PKH in Indonesia, and the MCCT in Myanmar reported their children consuming more nutritious foods (115). However, while social protection programmes exist, they are generally not designed specifically to address maternal and child nutrition and health outcomes, and do not always provide specific services or links with other programmes to support complementary feeding and maternal nutrition, and in many countries coverage is still limited.

Evidence also suggests that the transfer amounts are too low to allow for noticeable consumption increases (124). Investments from governments and donors is improving the current-status – with the World Bank investing in scaling up nutrition-sensitive social protection programmes in Myanmar, Cambodia and Lao PDR. Social protection programmes have an untapped potential that offer huge opportunities for governments to accelerate improvements in maternal and young child diets and care.

3.3.5 WASH system

A WASH system that focuses on improving environmental and personal hygiene is essential for maternal and child nutrition.

KEY FINDINGS

1. WASH policies are in place in all six countries but do not necessarily focus on the aspects critical for maternal nutrition and complementary feeding.
2. Access to clean water, sanitation and hygiene varies in the region, between rural and urban populations and between wealth quintiles.
3. Improvements in access to water and sanitation facilities are not translating to having an impact on environmental hygiene, as well as the exposure to pathogens that are dangerous for young children including from animal faeces.

Water, sanitation, and hygiene are major underlying determinants of malnutrition. Inadequate food hygiene, as well as use of unsafe drinking water in food preparation accounts for a significant proportion of diarrhoeal disease among infants and young children in low-income countries (125). It can also cause diarrhoea and food poisoning in women, which during pregnancy can have an adverse impact on birth outcomes. Keeping food free from faecal contamination is essential to limit faecal-oral disease transmission and good food hygiene practices reduce the risk of diarrhoea. While many factors influence food-borne contamination, environmental hygiene due to lack of sanitation, use of contaminated water to wash serving utensils, and not washing hands prior to cooking and feeding are critical determinants. Table 10 shows that while national WASH policies are in place, it is not clear whether these specifically focus on the importance of environmental and personal hygiene for optimum maternal nutrition and complementary feeding.

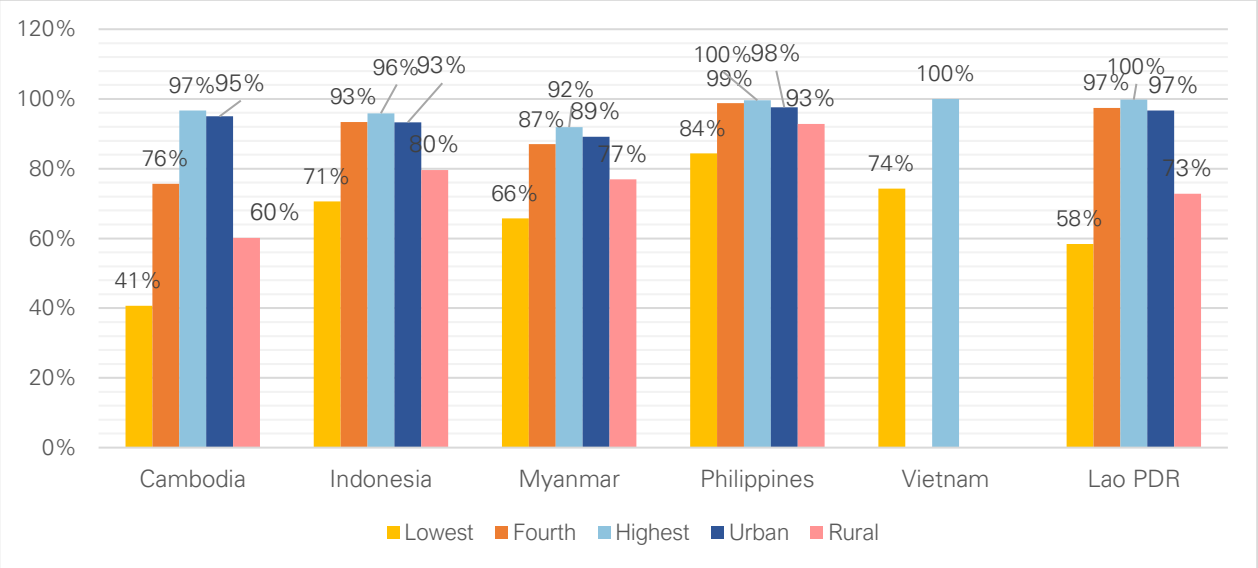
Table 10. WASH system policies and programmes

Country	WASH system policy	
Cambodia	✓	Rural WASH National Action Plan (2019-2023)
Indonesia	✓	Regulation 3 on Community-Led Total Sanitation (2014) and Regulation 122 on Drinking Water Supply Systems (2015).
Lao PDR	✓	WASH policy 2019 and National Plan of Action 2012 for Rural Water Supply, Sanitation and Hygiene is currently being updated.
Myanmar	✓	National Investment Plan for Rural Water Supply, Sanitation and Hygiene (WASH) in Schools and Health Facilities (2016-2030)
Philippines	✓	Philippine Approach to Sustainable Sanitation and Philippine National Standards for Drinking Water
Vietnam	✓	National Strategy for Rural Clean Water Supply and Hygiene (2000-2020)

Inadequate environmental hygiene

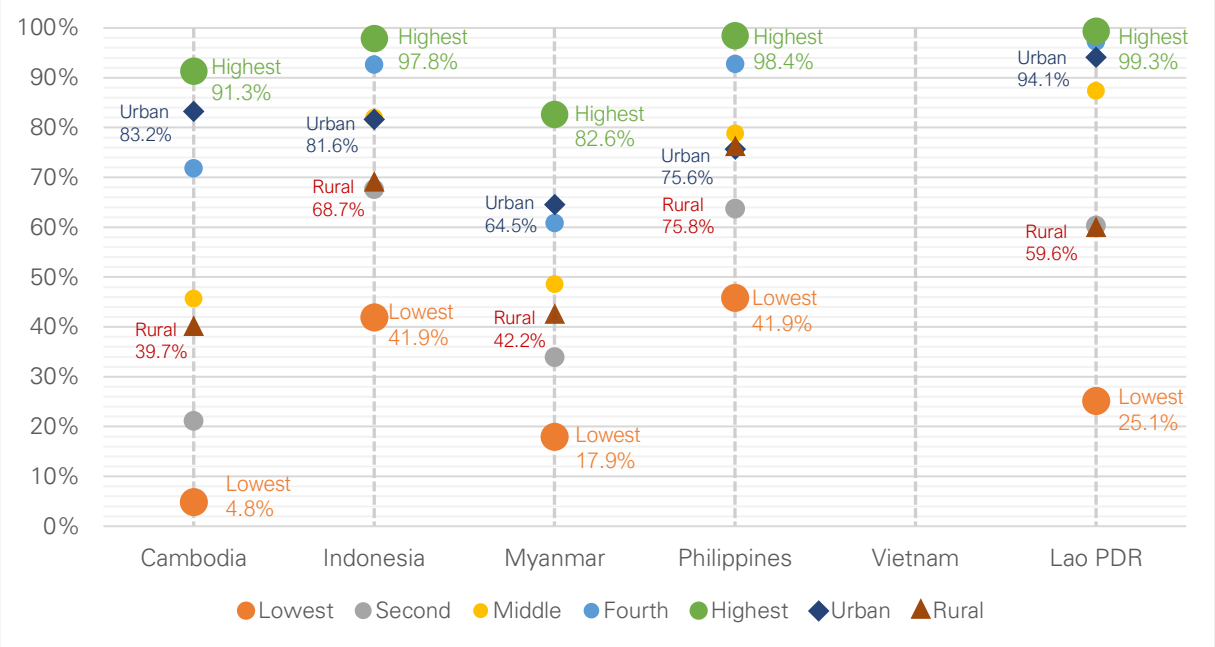
While there have been improvements in access to clean water and sanitation, access is generally worse among rural populations and the poorest households (*Figure 13* and *Figure 14*). Significant percentages of households still practice open defecation: 43 per cent in Cambodia (11), 9 per cent in Indonesia (126), 24 per cent in Lao PDR (12), 11 per cent in Myanmar (50), 5 per cent in the Philippines (51) and 5 per cent in Vietnam (127). Exposure to faecal contamination through improper disposal of children's stools is a concern throughout the region with 70 per cent of households in Cambodia (11), 64.7 per cent in Indonesia (128) and 46.7 per cent of households in the Philippines (51). In Lao PDR, 18.6 per cent of households safely disposed children's stools (57). Many households lack a specific place for handwashing where soap, water or another cleaning agent is present: 35 per cent in Cambodia (51), 24 per cent in Indonesia (128), 20 per cent in Myanmar (44), 15 per cent in Vietnam (127), and 46 per cent in Lao PDR (57).

Figure 13. Access to improved drinking water by quintile and location in six countries



Source: CHDS2017, IDHS2017, MDHS2015-2016, NDHS2017, Vietnam MICS 2015, LSIS II 2017.

Figure 14. Access to improved sanitation (non-shared) by wealth quintile and location



Source: HDS2017, IDHS2017, MDHS2015-2016, NDHS2017, LSIS II 2017.

Raising animals near household dwellings is common throughout the region. Young children who are crawling or walking in unhygienic surroundings are at an increased risk of developing diarrhoea and suffering from intestinal helminths which in turn has an impact on the bioavailability of and absorption of the nutrients they consume through complementary foods (129). Unsanitary environments and exposure to pathogens can also cause environment enteric dysfunction (EED)– a subclinical disorder that leads to chronic inflammation of the intestines and reduces the child's ability to absorb nutrients. While the exact pathways are unclear, there are strong associations between EDD, stunting and iron deficiency (130). While the data shows that access to clean water and sanitation facilities is better in urban areas *(Figure 13*), urban poor populations often have limited access to good WASH facilities. Populations in the six countries are rapidly urbanizing, bringing more people to crowded, informal communities. In these conditions, WASH factors – poor hygiene practices, limited access to safe drinking water, and unclean environments have a strong impact on food safety and quality, as well as a direct influence on child health status.

Unsafe foods and unhygienic behaviour

Contamination of foods and beverages due to toxins or unhygienic behaviours are also a concern in the six countries. Consumption of unsafe foods and beverages can have a detrimental effect on both maternal nutrition and complementary feeding. Unhygienic behaviours that lead to contamination of food are still common.

The majority (84 per cent) of people living in rural areas in Cambodia do not wash their hands before preparing food and 45 per cent do not wash their hands after using the toilet (131).

One study found that caregivers – especially grandmothers - do not wash their grandchildren's hands before eating or snacking because they lack time or are tired (28). In Indonesia, only 34 per cent of people wash their hands after going to the toilet and 73 per cent before a meal (132). In Lao PDR, only one third of the population uses soap after going to the toilet or handling food (78). In Vietnam, nearly half (48 per cent) the population does not wash their hands before handling food, and 21 per cent do not wash their hands after using the toilet (133). While the scale or scope of aflatoxin contamination is not known in Southeast Asia, contamination by aflatoxin of grains used in complementary foods is also known to be associated with stunting in Africa and parts of Asia (135).

Conclusions

There have been major improvements in access to clean water and adequate sanitation across the region. Despite the improvements, poor environmental and individual hygiene still contribute to poor child nutrition and diets through illness and food consumption pathways. Integrated programming that includes promotion of good nutrition and good WASH practices is essential.

While the evidence base is still being built around the contribution of WASH to reducing child stunting, activities focusing on improving environmental hygiene and improved WASH conditions to limit disease transmission are needed.

Reducing rates of open defecation and improving access to sanitation facilities in urban areas will contribute to reducing exposure to harmful pathogens, but more considered approaches to reducing exposure to animals and their faeces are essential in rural and urban areas. This may include identifying and introducing feasible and acceptable ways of separating animals and children and social and behaviour change communication.

3.3.6 Education system

The education system offers a unique opportunity as both a delivery platform for nutrition services for adolescent girls, and an educational platform to increase knowledge about healthy diets and good nutrition.

KEY FINDINGS

1. The education system is an underutilized platform for delivering essential nutrition services to adolescent girls.
2. Governments have adopted policies for delivery of iron-folate supplements to adolescent girls through the education system but implementation of these policies at scale have been inconsistent.

All countries have more schools and teachers compared to health facilities and health workers, making the education system a powerful ally particularly for addressing adolescent nutrition, and improving knowledge about healthy diets and good nutrition. More broadly, better educated mothers tend to have better nourished, healthier children, and have better nutrition themselves.

Table 11. Education system policies and programmes

Country	Policy for micronutrient supplementation of adolescent girls		Programmes for delivery of micronutrient supplements through the education system	
Cambodia	✓	National Policy and Guidelines for Micronutrient Supplementation to Prevent and Control Deficiencies in Cambodia	Partial	Weekly IFA supplementation for 12-25 years of age (60mg Fe & 400µg FA weekly). Implementation limited.
Indonesia	✓	Guideline for Prevention and Control of Anaemia among Adolescent Girls and Women of Reproductive Age (2016)	✓	Adolescent girls and women of reproductive age should receive a weekly IFA tablet (60mg Fe & 400µg FA) through schools and facilities. Delivered at scale but coverage and compliance are sub-optimal.
Lao PDR	✓	Micronutrient Supplementation and Deworming Guidelines for Lao PDR (2018)	Partial	Provision of weekly IFA tablets for girls 12-25 years of age (60mg Fe). Limited implementation.
Myanmar	✓	Nutrition Manual for Basic Health Staff (2013)	✓	Supplementation twice a week to girl students in middle and high schools. Nationwide delivery.
Philippines	✓	Memorandum 290 (2017)	✓	All Grade 7-10 female adolescents in public high schools and in the alternative learning systems receive 2 rounds of IFA supplementation (July to September) and (January to March) (60mg Fe & 400µg FA weekly)
Vietnam	✓	National Guidelines on prevention of micronutrient deficiencies (2014)	Partial	Recommends IFA supplementation for adolescent girls (60mg Fe & 400µg FA weekly) with 3 months on, and 3 months off cycle. IFA must be purchased and is not available for free. It is not available through schools.

Limited delivery of micronutrient supplements to adolescent girls

Table 12. Adolescent anaemia in selected countries

Country (source)	Adolescent Anaemia
Cambodia (11)	49.4%
Lao PDR (12)	42.6%
Myanmar (50)	45.4%

Anaemia is one of the most common and intractable nutrition problems globally, and adolescent girls are at a heightened risk as their iron requirements are at a peak between the ages of 12-15(136). Although information is limited, the data available suggest that a large number of adolescent girls in the region are anaemic (Table 12). Based on the high levels of anaemia among women of reproductive age in several countries, we can expect that adolescent anaemia might be similarly high. Anaemia in girls during adolescence affects their well-being, academic performance, and productivity. It also leads to increased mortality and morbidity for adolescents who become pregnant and increases the risk of having a low-birth weight baby.

The education system is an optimal platform to reach adolescent girls with iron and other essential micronutrients. Currently, all six countries have policies in place to provide IFA supplements to adolescent girls through schools or health facilities. In five countries, supplements are free while in Vietnam, supplements are not universally free (*see Table 11*). While there is limited data on supplementation coverage among adolescent girls, available data shows coverage rates are variable. For example, 76 per cent of girls in Indonesia (137) and 46 per cent in Myanmar receive IFA (personal communication, NNC, MOHS).

There are many known barriers to implementing IFA supplementation to adolescents – limited capacity of health and education staff to deliver the supplement, supply side challenges, lack of demand and understanding around the importance of adolescent nutrition, lack of adherence, limited resource mobilization and prioritization by governments. Evidence from Indonesia indicates that social media can be an effective tool to improve knowledge and awareness among adolescent girls (138,139).

IFA can also be delivered to adolescents through the health system, a better avenue for girls who are not attending school, however supply and demand are still issues and adolescent-friendly public services are needed.

Conclusions

School attendance among adolescent girls in Southeast Asia is generally quite high. Enrolment of girls at the lower secondary level is 64 per cent in Cambodia, 93 per cent in Indonesia, 60 per cent in Lao PDR, 59 per cent in Myanmar, 91 per cent in the Philippines and 93 per cent in Vietnam (140).

Schools therefore offer an ideal platform for delivery of IFA supplements to adolescent girls to prevent anaemia before pregnancy, but few countries have adopted an effective policy for delivery.

To date, efforts have been limited with insufficient attention to supply and demand side issues, supportive social and behaviour change approaches and limited scale-up across the six countries.

04

Priority actions and next steps

04

Priority actions and next steps for RISING in Southeast Asia

A comprehensive set of actions across all systems has the potential to improve maternal nutrition and complementary feeding practices.

4.1 Priority actions for the region

There are many actions governments and development partners can take across the five systems – Food, Health, Social Protection, WASH and Education - to improve maternal nutrition and complementary feeding practices. UNICEF hosted a regional technical consultation in January 2019 with regional development partners to define priority actions for complementary feeding; the meeting resulted in an endorsed set of priority regional actions for improving maternal nutrition and complementary feeding in the Southeast Asian region. The actions are included in Figure 15 and Figure 16. These actions served as a basis for each country to contextualize the priorities for their context and determine which were most appropriate based on their existing programmes and policies.

Technical consultations were held in Myanmar, the Philippines, Vietnam, and Indonesia to review the findings of the landscape analyses for each country. Technical consultations are anticipated to take place in Cambodia and Lao PDR in 2020 however plans were delayed due to the COVID-19 pandemic. The style of consultation differed between countries. In Myanmar and Vietnam, a single workshop brought together key stakeholders from government and development partners over two days to discuss the landscape findings in detail and prioritise a set of actions for moving forward. In the Philippines, a series of meetings with key stakeholders were undertaken. In Indonesia, an initial long list of actions was identified as part of the process to prepare for the launch event (*see below*) and will inform the forthcoming technical consultations. Through the outcome of all technical consultations, a set of context-specific priority actions was identified to improve maternal nutrition and complementary feeding and develop an outline of the next steps for implementation of these actions.

Figure 15. Southeast Asia Regional Action Framework for Complementary Feeding

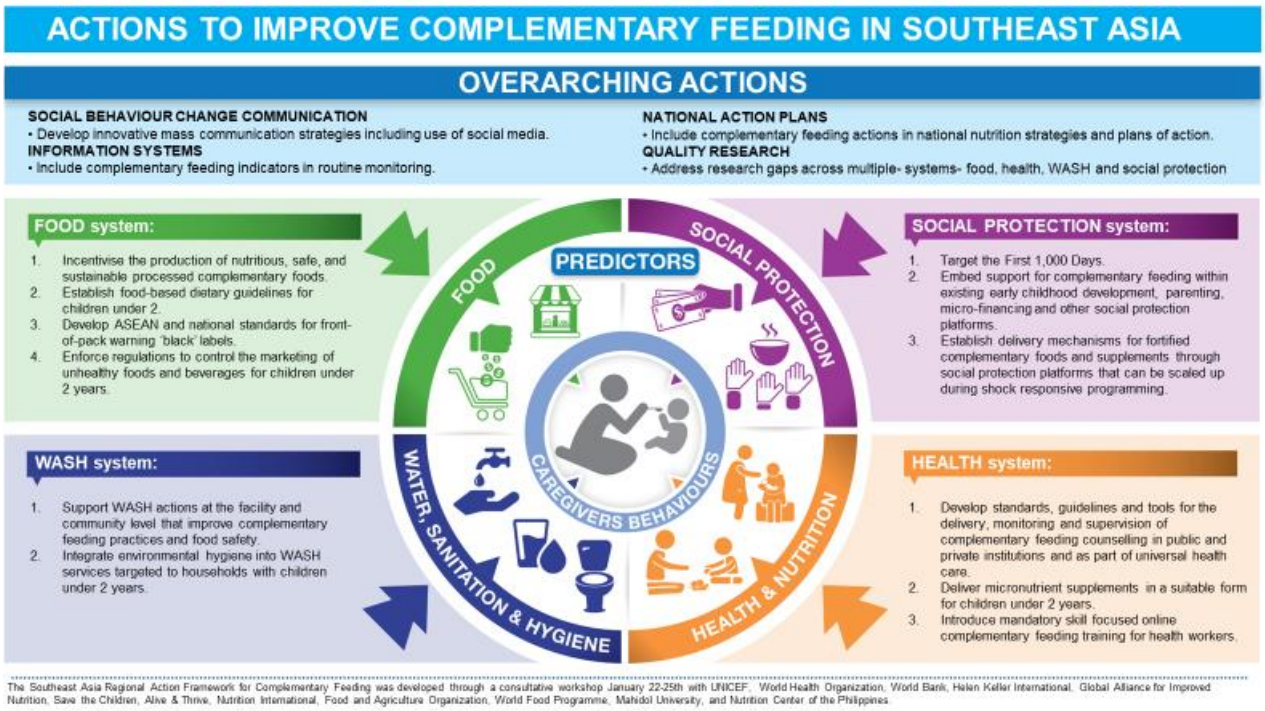
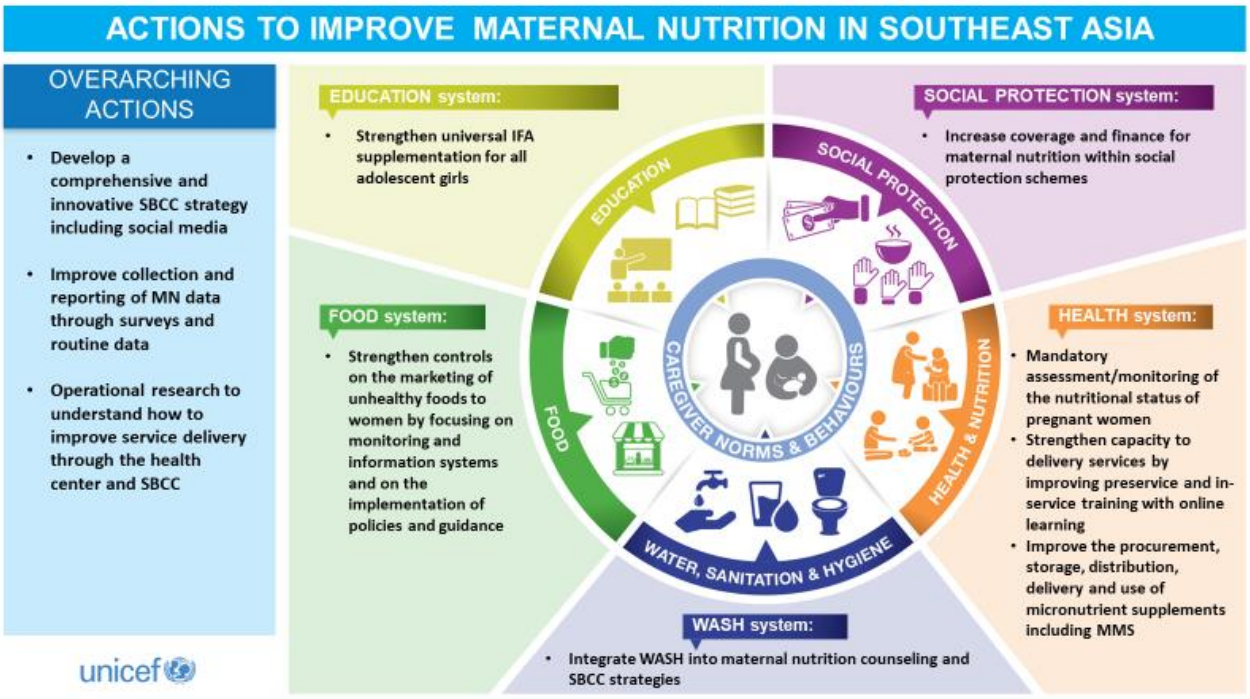


Figure 16. South East Asia Regional Action Framework for Maternal Nutrition



The priority actions identified at regional and country level were similar for both maternal nutrition and complementary feeding. The tables below present the combined set of priority actions for the region and for the different countries. For Cambodia and Indonesia, technical consultations have not yet been completed and priority actions will be identified during 2021. In Lao PDR, only two overarching priority actions were identified, but progress is being made on integrating relevant actions into new National Nutrition plans.

4.1.1 Overarching actions

1 Develop innovative mass communication strategies including the use of social media.

2 Improve collection and reporting of relevant indicators through routine monitoring.

3 Address research gaps on how to improve service delivery across multiple systems.

4 Highlight complementary feeding and maternal nutrition in national strategies and plans.

Four actions were identified at regional level that apply across the five systems of food, health, social protection, WASH and education. These 'overarching actions' and four regional priorities were identified relating to communication, monitoring, research and inclusion of complementary feeding and maternal nutrition in national strategies and plans.

Mass communication of essential messages highlighting the importance of maternal nutrition and complementary feeding was identified in three countries - Myanmar, Philippines, and Vietnam - as a priority action. Participants in the technical consultations emphasized the need to develop innovative ways of communicating key messages based on the growing use of social media in the region, and its elevated role as a source of health and parenting information, particularly by young people. Participants also acknowledged that some groups such as those living in hard to reach areas, did not necessarily have constant access to the internet or to mobile devices. It is important to improve current forms of communication and tools for community engagement as well as develop more innovative approaches.

In Lao PDR, the single priority action identified for both maternal nutrition and complementary feeding was related to the explicit inclusion of maternal nutrition and complementary feeding in national plans, and the importance of building sub-national capacity to deliver services through all systems to improve maternal nutrition and complementary feeding.

4.1.2 Food system actions

1 Adopt and enforce regulations to control the marketing and labelling of unhealthy foods and beverages to children under 18 years of age.

2 Develop a regional nutrient profile model for commercially available complementary foods to guide nutrient and labelling standard development at the country level.

3 Incentivise the production of nutritious and safe commercially available complementary foods.

4 Establish food-based dietary guidelines for pregnant and lactating women and children under 2 years.

.

The box above presents the four priority actions for food systems identified at regional level.

For three countries – Myanmar, Philippines, and Vietnam - controlling the marketing of unhealthy food and drink to children was identified as a top priority for improving the complementary diets of children. It was also selected in Myanmar as a priority for improving maternal nutrition.

These regulations include mandatory labelling with clear front-of-pack warning labels in addition to the development of a specific regional nutrient profile model for commercially available complementary foods marketed for children 6-36 months of age. In Vietnam, incentivising the production of nutritious complementary foods was prioritised. Vietnam already produces complementary foods that are affordable, fortified, and nutritious through the ECOSUN product line, however distribution systems are inadequate. Improving access to these existing products was thus viewed as a priority.

4.1.3 Health system actions

1

Develop standards, guidelines, and tools for the delivery, monitoring and supervision of complementary feeding and maternal nutrition counselling.

2

Introduce mandatory skill-focused, pre-service, and in-service training on complementary feeding and maternal nutrition using mixed modalities including online for health workers.

3

Update guidelines and improve delivery of micronutrient supplements for young children and pregnant women including multiple micronutrient supplement (MMS) with linkages to SBCC for improved adherence.

4

Support mandatory assessment and monitoring of the nutritional status of pregnant women linked to targeted counselling.

The box above presents the four priority actions identified for the health system at the regional level.

Improving the delivery of micronutrient supplements to pregnant women was a priority in three countries - Myanmar, Philippines and Vietnam – and Myanmar also recognised it is crucial for the health of children.

The introduction of MMS as a replacement for IFA was considered during the technical discussions as having potential for improving the nutrient status of women, particularly with respect to reduction of low birthweight. A focus on improving training for counselling was prioritised in Vietnam only, while the Philippines focused on supervision and support to health workers providing counselling services and weight gain monitoring in women.

4.1.4 Social protection system actions

1

Ensure social protection programme with a nutrition objective are targeted to the first 1000 days and designed to address financial and behavioural barriers to appropriate complementary feeding and maternal nutrition.

2

Establish linkages between social protection programmes and the health system to increase coverage, finance, and delivery of essential nutrition services.

At regional level, the priority actions were to ensure social protection programmes with a nutrition objective targeted the First 1,000 Days and to establish linkages between social protection programmes and the health system to provide essential nutrition services.

In three countries – Myanmar, Philippines, and Vietnam - the importance of improving the coverage, financing and delivery of nutrition services to women and children across all forms of social protection programmes was highlighted. In particular, the opportunity for delivering micronutrient supplements was highlighted in the Philippines and Vietnam.

4.1.5 WASH system actions

1 Ensure coherence of WASH messages into maternal nutrition and complementary feeding counselling and SBCC messages at the healthy facility, community, and household level.

2 Integrate environmental hygiene into WASH services targeted to households with women and children.

At the regional level, the priorities identified above were related to ensuring coherence of WASH messages with nutrition and focusing particularly on the importance of environmental hygiene.

Priority actions in the WASH sector were highlighted in both Myanmar and the Philippines and viewed as particularly critical for improving complementary feeding. In terms of maternal nutrition, it was not identified as a top priority compared to other priorities, however, actions that improve WASH conditions for children are likely to have a beneficial effect for mothers as well.

4.1.6 Education system actions

1 Strengthen universal IFA supplementation for all adolescent girls.

The priority action for education identified at regional level is to strengthen IFA supplementation for adolescent girls through the school system.

Only the Philippines prioritised this as an action at national level.

Appendix

Appendix A

Overview of country level national level technical consultations and dissemination events

In four of the six countries, launch events were held to raise awareness, and prompt action to be taken to renew efforts to improve maternal nutrition and complementary. The events were also used to disseminate the briefs, profiles and videos that had been produced based on the findings of the landscape analyses in each country. The exact format of the launch events varied in different countries, as does the current status of follow up activities. UNICEF EAPRO will continue to support country and regional level actions for better adoption of maternal nutrition and complementary feeding initiatives in 2020.

1. Vietnam

Launch event

A high-level half-day event was held on 16th October 2019 in Hanoi. The objectives of the event were:

- To launch UNICEF's flagship publication State of the World's Children (SOWC) 2019
- To launch a set of Vietnam-specific materials that highlight the importance of complementary feeding and maternal nutrition based on the findings of the landscape analyses.
- To endorse a Statement of Commitment to implement four priority actions to improve maternal nutrition and complementary feeding.

Over 200 participants attended from the Ministry of Health, other key Ministries, provincial departments and development partners. There was extensive press coverage of the event which was broadcast through T.V., websites, print newspapers and on the radio. Deputy Prime Minster Vu Duc Dam provided opening remarks followed by a speech by Rana Flowers, UNICEF Representative in Vietnam. A formal signing of a Statement of Commitment was led by the Deputy Prime Minister which committed the government and partners to support four priority actions to improve complementary feeding and maternal nutrition in Vietnam. This official endorsement of priority actions paves the way for their inclusion in the next National Strategy and Plan of Action on Nutrition due to be developed in 2020.

Christiane Rudert, Regional Nutrition Advisor for UNICEF EAPRO presented the SOWC 2019 report together with an introduction to the RISING project. Dr Phuong Huynh of the National Institute of Nutrition (NIN) presented the findings of the RISING landscape analyses and further detail on the four priority actions for improving complementary feeding and maternal nutrition in Viet Nam. A panel session, moderated by NIN, with five panellists provided an opportunity for further discussion on the four priority actions and how they could be integrated with on-going initiatives. The Deputy Minister of Health provided the closing remarks and an end to the formal presentations for the morning.

A technical workshop to share experiences on implementing nutrition interventions and the Scaling Up Nutrition (SUN) Networks took place in the afternoon with a smaller group of technical participants.

Next steps

The Nutrition Technical Working Group, chaired jointly by National Institute of Nutrition (NIN) and UNICEF, will take responsibility for further developing the joint plan of action, and encouraging sub-groups to define specific steps to implement the priorities.

2. Philippines

Technical consultation and dissemination event

A full day technical consultation and dissemination event was held on 20th September 2019 in Manila. The objectives of the event were:

- To highlight the importance of complementary feeding and maternal nutrition in the Philippines.
- To disseminate the Philippines country profiles and Frameworks for Action on complementary feeding and maternal nutrition.
- To establish how the identified priority actions will be integrated into existing policies, structures and programmes (based on analysis of opportunities and challenges).
- To identify key players who will take responsibility for leading implementation of the priority actions.
- To solicit commitment of each agency to improve maternal nutrition and complementary feeding in the Philippines.

Around 50 participants attended the event with representation from government partners including from social welfare, agriculture and health. It was noted that no participants from WASH were able to participate. The National Nutrition Council (NNC) moderated the meeting and took leadership of notetaking and organization throughout. After introduction from both NNC and the Department of Health, UNICEF provided overview presentations on the global and regional basis for the action frameworks for complementary feeding and maternal nutrition and then the specific identified drivers and determinants of both complementary feeding and maternal nutrition in Philippines as identified from the landscape analyses. Participants were then led through an exercise to identify opportunities and challenges for identified priority actions for their organization. Key organizations leading the priority actions were also identified. Due to active discussion, only complementary feeding was discussed during the dissemination meeting with maternal nutrition delayed until a future meeting is organized.

Next steps

A similar dissemination event for maternal nutrition is planned. The lead agencies and actions identified for complementary feeding and maternal nutrition (not yet achieved) will be incorporated into a workplan with specific areas of support from UNICEF identified.

3. Myanmar

UNICEF Myanmar in partnership with the Ministry of Health Sports (MoHS) held a dissemination meeting for the Frameworks of Action on February 2020. The meeting was attended by members of the nutrition and development community in Myanmar. The objective was to disseminate the key findings from the landscape analysis and introduce the frameworks to the audience. The launch featured presentations from Christiane Rudert, UNICEF Regional Advisor, Dr. Kyaw Win Sein, UNICEF Nutrition Specialist, Dr. Aye Thwin (UNICEF consultant) and Dr Lwin Mar Hlaing, NNC, MoHS. The presentations were followed by two panel discussions. The first panel included representatives from key ministries involved in the Multi-Sectoral Plan of Action who discussed contributions that each sector could make to building a systems approach to nutrition. The second panel included donors and members of the Myanmar Scaling Up Nutrition network.

Next steps

The findings of the landscape analyses and frameworks of action have already fed into national action plans and will contribute to the Maternal and Infant Young Child Nutrition Strategy which is currently under development.

4. Indonesia

UNICEF Indonesia in partnership with Bappenas (Indonesia's Ministry of National Development Planning) launched the Complementary Feeding and Maternal Nutrition Frameworks for Action in Jakarta on December 11, 2019. Dr.Ir Subandi Sardjoko, Deputy for Human and Societal Development and Cultural Affairs, Bappenas, opened the meeting with an overview of the nutrition situation in Indonesia and reminded the audience of the commitment needed to meet the Government of Indonesia's nutrition targets. Dr Kirana Pritasari, Director General for Public Health, Ministry of Health, provided an overview of current priority programmes in the Public Health Nutrition Directorate Technical presentations highlighted the key findings of the Landscape Analysis on Maternal Nutrition and Complementary Feeding in Indonesia. Presented by two Indonesian nutrition experts, Dr. Umi Fahmida from SEAMEO-RECFON and the Faculty of Medicine, University of Indonesia's Dr. Rina Agustina, the findings highlighted that there are significant gaps in maternal and child diets. UNICEF present draft recommendations that were discussed with partners that will be used to develop specific measures for implementation across Indonesia. The recommendations covered a broad set of drivers of poor diets and nutrition practices, from restricting the marketing of unhealthy foods and improving nutrition labelling, to ensuring that health workers have the skills they need to provide nutrition advice to mothers and families. Approximately 100 participants attended the meeting. A write up of the event was posted on the UNICEF blog.

Next steps

This meeting was the first in a series of systems level consultations to be hosted in 2020. UNICEF and Bappenas will coordinate four consultations to refine the priority actions and ways forward for Indonesia beginning in Quarter 2 20202.

Appendix B

Information on curriculum content in selected countries based on Alive and Thrive paper (93).

Table a. Curriculum content checklist for midwifery

Topics	Philippines	Lao PDR	Myanmar
Knowledge of nutrition-specific interventions			
Maternal health and nutrition			
Nutritional assessment of pregnant and lactating women (dietary assessment, MUAC, gestational weight gain, clinical assessment for micronutrient deficiencies)	✓	X	✓
Iron and folic acid supplementation for pregnant and lactating women	✓	✓	✓
VA supplementation for lactating women	✓	✓	✓
Calcium supplementation for pregnant women	✓	✓	✓
Iodine supplementation for pregnant and lactating women	✓	✓	✓
Birth spacing and the lactation amenorrhea method	✓	X	X
Key messages in nutrition counseling for pregnant women			
- - One extra meal per day	✓	X	✓
- - Micronutrient supplements/treatment (or protein-energy supplements for undernourished mothers)	✓	X	✓
- - Water, sanitation and hygiene	✓	✓	✓
Key messages in nutrition counseling for lactating women			
- - Two extra meals per day	✓	X	✓
- - Micronutrient supplements/treatment (or protein-energy supplements for undernourished mothers)	✓	X	✓
- - Vitamin A supplementation (from birth to 6 weeks post-delivery according to national protocol)	✓	X	✓
- - Water, sanitation and hygiene	✓	✓	✓
Infant and Young Child Feeding			
Importance of IYCF and recommended practices			
- - Importance of skin-to-skin with newborn	✓	X	✓
- - Good positioning and attachment	✓	X	✓
- - Early initiation of breastfeeding (give colostrum)	✓	X	✓
- - Exclusive breastfeeding from birth up to 6 months	✓	X	✓
- - Breastfeeding on demand – up to 12 times day and night	✓	X	✓
- - Water, sanitation and hygiene	✓	X	✓
Physiological basis of breastfeeding	✓	X	✓
Advantages of breastfeeding	✓	✓	✓
Disadvantages of formula/ replacement feeding	✓	✓	✓
Common breast conditions			
-- Inverted nipple	✓	X	X
-- Breast engorgement	✓	X	X
-- Mastitis and breast abscess	✓	X	X
Complementary feeding			
- - Timing, amount, frequency, consistency	✓	X	X
- - Risks of starting complementary feeding too early	✓	X	X
- - Risks of starting complementary feeding too late	✓	X	X
- - Nutritional care of infants and children with diarrhea	✓	X	X
Continuing support for IYCF	✓	X	X
Appropriate feeding in exceptionally difficult circumstances			
- - Low birth weight	✓	X	X
- - Severe acute malnutrition	✓	X	X

Topics	Philippines	Lao PDR	Myanmar
- - Infants of HIV-positive mothers	✓	X	X
- - Sick child <6 months of age	✓	X	X
- - Relactation	✓	X	X
Nutritional care and support during emergencies			
- - Establishing safe 'corners' for mothers and infants	X	X	X
- - One-to-one counseling	X	X	X
- - Mother-to-mother support	X	X	X
- - Mental and emotional support for traumatized women having difficulty responding to their infants	X	X	X
- - Ways to breastfeed infants and young children who are separated from their mothers	X	X	X
- - Timely registration of newborns to support early initiation and exclusive breastfeeding	X	X	X
- - Early identification and management of infants and children with acute malnutrition to prevent serious illness and death	X	X	X
- - Nutritional adequacy and suitability of the general food ration for older infants and young children	X	X	X
- - Ensuring and easing access to basic water and sanitation facilities, cooking, food and non-food items	X	X	X
Policies and laws relevant to the protection, promotion and support of breastfeeding	✓	X	X
Essential nutrition actions			
Prevention of vitamin A deficiency	✓	✓	✓
Prevention of iron-deficiency anemia	✓	✓	✓
Prevention of iodine deficiency	✓	✓	✓
Use of Micronutrient Powder by children 6 - 23 months old	✓	✓	X
VA supplementation in children <5 years	✓	✓	✓
VA supplementation in children with measles	✓	✓	✓
Daily iron supplementation in 6-23 months old children	✓	X	✓
Zinc supplementation for diarrhea management	✓	✓	✓
Optimal iodine nutrition in young children	✓	✓	✓
Nutritional care and support of HIV-infected 6 months old - 14 yr old children	✓	X	X
Diagnosis and management of Severe Acute Malnutrition			
- - Use of MUAC and/or WFH as per WHO child growth standards	✓	X	X
- - Clinical nutrition assessment	✓	X	X
- - Outpatient management of SAM without complications (2013 Guidelines)	✓	X	X
- - Inpatient care of severe acute malnutrition (SAM) with medical complications (2013 Guidelines)	✓	X	X
- - Individual monitoring and follow-up	✓	X	X
Diagnosis and management of Moderately Acute Malnutrition	X	X	X
Food fortification			
- - Wheat / maize	X	X	X
- - Rice	X	X	X
- - Salt and condiments	X	X	X
Practical Skills / Role Plays / Demonstrations / Exercises			
Communication and support skills			
- - Establishing rapport with the mother	applied	X	applied
- - Assessing the child's growth and breastfeeding practices	applied	X	applied
- - Analyzing the information provided	applied	X	applied
- - Acting on the information provided by the caregiver	applied	X	applied
- - Listening and learning skills	applied	X	applied
- - Building confidence and giving support skills	applied	X	applied
Maternal health assessment and counseling			
- - Assessing gestational weight gain	applied	X	applied
- - Counseling pregnant and lactating women on a healthy, adequate diet	applied	X	applied
IYCF demonstration			

Topics	Philippines	Lao PDR	Myanmar
- - How to help a mother position and attach her baby	applied	X	applied
- - How to express breast milk by hand	applied	X	X
- - How to cup feed a baby	applied	X	X
Assessment of IYCF practice			
- - How to take feeding history, 0 - 6 months old	X	X	X
- - How to take feeding history, 6 - 23 months old	X	X	X
Counseling			
- - Using GALIDRAA checklist	X	X	X
- - Assessing and classifying (analyzing) IYCF	X	X	X
- - Measuring and assessing growth and counseling on growth and feeding	applied	X	X
Assessing the child's growth			
- - How to weigh a mother and baby using an electronic scale	X	X	applied
- - How to measure baby's length or height	applied	X	applied
- - How to plot weight and height in a child growth chart	applied	X	applied
- - How to interpret the results of the child's growth using the weight for age growth curve	applied	X	applied
- - How to calculate the weight for height Z score	applied	X	applied
- - How to interpret the weight for height Z score	applied	X	applied
- - How to take MUAC	applied	X	applied
- - How to assess for bilateral pitting Odema (kwashiorkor)	applied	X	applied
Nutrition program management skills for acute malnutrition, stunting, breastfeeding and other IYCF problems			
Assess the burden, prevalence, and distribution of acute malnutrition, stunting, and other IYCF problems	X	X	X
Map, mobilize, and consult partners and stakeholders	X	X	X
Perform bottleneck analysis for nutrition programs	X	X	X
Develop a multi-sectoral plan to address malnutrition	X	X	X
Develop a monitoring and evaluation plan to track IYCF and nutrition indicators	X	X	X
Clinical management skills			
Management and support for infant feeding in maternity facilities (EINC and lactation management up to 3 days post-partum)	X	X	X
Management of breast conditions and other breastfeeding difficulties			
- - How to manage inverted nipples	X	X	X
- - How to manage breast engorgement	X	X	X
- - How to manage breast mastitis and breast abscess	X	X	X
Diagnosis and management of SAM			
-- Assessment	X	X	X
-- Outpatient therapeutic care	X	X	X
-- In patient therapeutic care	X	X	X
-- Individual monitoring and follow-up	X	X	X
Management of MAM	X	X	X

Table b. Curriculum content checklist for nursing

Topics	Philippines	Lao PDR
Knowledge of nutrition-specific interventions		
Maternal health and nutrition		
Nutritional assessment of pregnant and lactating women (dietary assessment, MUAC, gestational weight gain, clinical assessment for micronutrient deficiencies)	√	X
Iron and folic acid supplementation for pregnant and lactating women	√	X
VA supplementation for lactating women	√	X
Calcium supplementation for pregnant women	√	X
Iodine supplementation for pregnant and lactating women	√	X
Birth spacing and the lactation amenorrhea method	√	X
Key messages in nutrition counseling for pregnant women		
- - One extra meal per day	√	X
- - Micronutrient supplements/treatment (or protein-energy supplements for undernourished mothers)	√	X
- - Water, sanitation and hygiene	√	√
Key messages in nutrition counseling for lactating women		
- - Two extra meals per day	√	X
- - Micronutrient supplements/treatment (or protein-energy supplements for undernourished mothers)	√	X
- - Vitamin A supplementation (from birth to 6 weeks post-delivery according to national protocol)	√	X
- - Water, sanitation and hygiene	√	X
Infant and Young Child Feeding		
Importance of IYCF and recommended practices		
- - Importance of skin-to-skin with newborn	√	X
- - Good positioning and attachment	√	X
- - Early initiation of breastfeeding (give colostrum)	√	√
- - Exclusive breastfeeding from birth up to 6 months	√	√
- - Breastfeeding on demand – up to 12 times day and night	√	√
- - Water, sanitation and hygiene	√	X
Physiological basis of breastfeeding	√	√
Advantages of breastfeeding	√	√
Disadvantages of formula/ replacement feeding	√	√
Common breast conditions		
-- Inverted nipple	√	√
-- Breast engorgement	√	√
-- Mastitis and breast abscess	√	√
Complementary feeding		
- - Timing, amount, frequency, consistency	√	X
- - Risks of starting complementary feeding too early	√	X
- - Risks of starting complementary feeding too late	√	X
- - Nutritional care of infants and children with diarrhea	√	X
Continuing support for IYCF	√	X
Appropriate feeding in exceptionally difficult circumstances		
- - Low birth weight	√	X
- - Severe acute malnutrition	√	X
- - Infants of HIV-positive mothers	√	X
- - Sick child <6 months of age	√	X
- - Relactation	√	X
Nutritional care and support during emergencies		
- - Establishing safe ‘corners’ for mothers and infants	√	X
- - One-to-one counselling	√	X
- - Mother-to-mother support	√	X
- - Mental and emotional support for traumatized women having difficulty responding to their infants	√	X
- - Ways to breastfeed infants and young children who are separated from their mothers	√	X
- - Timely registration of newborns to support early initiation and exclusive breastfeeding	√	X
- - Early identification and management of infants and children with acute malnutrition to prevent serious illness and death	√	X

Topics	Philippines	Lao PDR
- - Nutritional adequacy and suitability of the general food ration for older infants and young children	√	X
- - Ensuring and easing access to basic water and sanitation facilities, cooking, food and non-food items	√	X
Policies and laws relevant to the protection, promotion and support of breastfeeding	√	X
Essential nutrition actions		
Prevention of vitamin A deficiency	√	X
Prevention of iron-deficiency anemia	√	X
Prevention of iodine deficiency	√	X
Use of Micronutrient Powder by children 6 - 23 mo old	√	X
VA supplementation in children <5 years	√	X
VA supplementation in children with measles	√	X
Daily iron supplementation in 6-23 month old children	√	X
Zinc supplementation for diarrhea management	√	X
Optimal iodine nutrition in young children	√	X
Nutritional care and support of HIV-infected 6 month - 14 year old children	√	X
Diagnosis and management of Severe Acute Malnutrition		
- - Use of MUAC and/or WFH as per WHO child growth standards	√	X
- - Clinical nutrition assessment	√	X
- - Outpatient management of SAM without complications (2013 Guidelines)	√	X
- - Inpatient care of severe acute malnutrition (SAM) with medical complications (2013 Guidelines)	√	X
- - Individual monitoring and follow-up	√	X
Diagnosis and Management of Moderately Acute Malnutrition (MAM)	√	X
Food fortification		
- - Wheat / maize	√	X
- - Rice	√	X
- - Salt and condiments	√	X
Practical skills / Role plays / Demonstrations / Exercises		
Communication and support skills		
- - Establishing rapport with the mother	applied	X
- - Assessing the child's growth and breastfeeding practices	applied	X
- - Analyzing the information provided	applied	X
- - Acting on the information provided by the caregiver	applied	X
- - Listening and learning skills	applied	X
- - Building confidence and giving support skills	applied	X
Maternal health assessment and counseling		
- - Assessing gestational weight gain	applied	X
- - Counseling pregnant and lactating women on a healthy, adequate diet	applied	X
IYCF demonstration		
- - How to help a mother position and attach her baby	applied	X
- - How to express breast milk by hand	applied	X
- - How to cup feed a baby	applied	X
Assessment of IYCF practice		
- - How to take feeding history, 0 - 6 months old	applied	X
- - How to take feeding history, 6 - 23 months old	applied	X
Counseling		
- - Using GALIDRAA checklist	applied	X
- - Assessing and classifying (analyzing) IYCF	applied	X
- - Measuring and assessing growth and counseling on growth and feeding	applied	X
Assessing the child's growth		
- - How to weigh a mother and baby using an electronic scale	applied	X
- - How to measure baby's length or height	applied	X
- - How to plot weight and height in a child growth chart	applied	X
- - How to interpret the results of the child's growth using the weight for age growth curve	applied	X
- - How to calculate the weight for height Z score	applied	X
- - How to interpret the weight for height Z score	applied	X
- - How to take MUAC	applied	X
- - How to assess for bilateral pitting Odema (kwashiorkor)	applied	X
Nutrition program management skills for acute malnutrition, stunting, breastfeeding and other IYCF problems		

Topics	Philippines	Lao PDR
Assess the burden, prevalence, and distribution of acute malnutrition, stunting, and other IYCF problems	X	X
Map, mobilize, and consult partners and stakeholders	X	X
Perform bottleneck analysis for nutrition programs	X	X
Develop a multi-sectoral plan to address malnutrition	X	X
Develop a monitoring and evaluation plan to track IYCF and nutrition indicators	X	X
Clinical management skills		
Management and support for infant feeding in maternity facilities (EINC and lactation management up to 3 days post-partum)	applied	X
Management of breast conditions and other breastfeeding difficulties		
- - How to manage inverted nipples	applied	X
- - How to manage breast engorgement	applied	X
- - How to manage breast mastitis and breast abscess	applied	X
Diagnosis and management of SAM		
-- Assessment	applied	X
-- Outpatient therapeutic care	applied	X
-- In patient therapeutic care	applied	X
-- Individual monitoring and follow-up	applied	X
Management of MAM	applied	X

✓= Included
X=Not included

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