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# Special Compilation **Complementary feeding in emergencies**

A collaboration between  
ENN and UNICEF

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# Editorial

## Dear readers,

Together with colleagues from UNICEF, we are delighted to present this special Field Exchange (FEX) compilation of complementary feeding programming in fragile and emergency contexts. Following on from our successful 'Special Section' focusing on this topic in issue 68<sup>1</sup>, we felt that it was important to expand upon the evidence presented, given the wealth of experiences of complementary feeding programming in such contexts, and provide an array of additional experiences documenting actions for improving the diets of young children in fragile settings. We simply couldn't cram this all into a single issue – let alone a special section. It quickly became clear that we had to build something more comprehensive. The idea for this compilation was born.

With the special section in issue 68, we provided a snapshot of recent developments related to complementary feeding, involving research, experiences, and guidance development. We included an overview of the latest UNICEF actions at the **global, regional, and country level** to support complementary feeding in fragile settings. We presented experiences that show how the UNICEF action framework for improving young children's diets<sup>2</sup> has been applied and used in contexts such as in **Sudan, Nigeria, Myanmar and Yemen**. We featured **examples** of the first step in the action framework, which consists of conducting a landscape analysis of drivers and determinants at both the regional and country level. We featured country experiences of

the multi systems approach to improving diets in early childhood, including through the health system in **Egypt** and the Social Protection system in **Kenya**. We also presented specific emergency response actions, such as in Cox's Bazar in **Bangladesh**, the State of **Palestine** and **Brazil**, and innovative approaches such as the complementary feeding bowl and **spoon**.

All of this can still be found in this compilation, plus we include an array of novel content which makes for essential reading. Examples from **Burundi, Ethiopia and Tanzania** show us that cash transfers delivered alongside additional interventions can help address barriers to optimal feeding by addressing financial constraints, access to nutritious foods, and improving care and feeding practices, especially when interventions are jointly designed and implemented by social protection and nutrition colleagues. UNICEF highlight in their new programming **guidance** that small-quantity lipid-based nutrient supplements (SQ-LNS) should be used as part of an integrated approach targeting younger children in fragile contexts, especially those with high burdens of undernutrition, to support optimal complementary feeding by improving nutrient density of the diet. UNICEF also provides guidance<sup>3</sup> on home fortification using SQ-LNS and micronutrient powders highlighting the importance of an integrated approach.

A cost-of-the-diet assessment in Nigeria found that the availability of nutrient-rich foods is not the main barrier to typically poor households obtaining a nutritious diet, rather that there was an affordability gap of around 120% of their income for both nutritious food and non-food **items**. In addition, a systematic review found that exclusively breastfed infants did not require additional water, even in hot weather, but that hot temperatures

may negatively influence feeding practices due to misconceptions and circumstances that make exclusive breastfeeding **difficult**. Meanwhile regarding communication around, and support for, complementary feeding, in India it was found that while digital messaging is a promising model to reach women with critical messages, for example around infant and young child feeding, it cannot replace the critical interpersonal communication offered by frontline **workers**. In addition, a study in Rwanda highlighted the positive contribution of peer-to-peer activities in improving IYCF **practices** (this article was previously available online only).

There is a critical need to understand and share learning about complementary feeding programming, especially in challenging contexts. This is particularly timely given the recent release of the updated WHO Guideline for Complementary Feeding of Infants and Young Children 6-23 Months of Age<sup>4</sup>, the multiple crises we are facing around the world and the compounding effects of climate-induced emergencies (including droughts and environmental degradation), widespread conflict including the war in Ukraine and conflict in the State of Palestine, and the continuing socioeconomic impacts of the COVID-19 pandemic. We hope that this compilation will help you in your efforts to design ambitious and effective programmes to protect and improve the diets of children in early childhood, especially within emergency contexts and protect our most vulnerable populations from malnutrition. Happy reading!

<sup>1</sup> <https://www.enonline.net/fex/68/en>

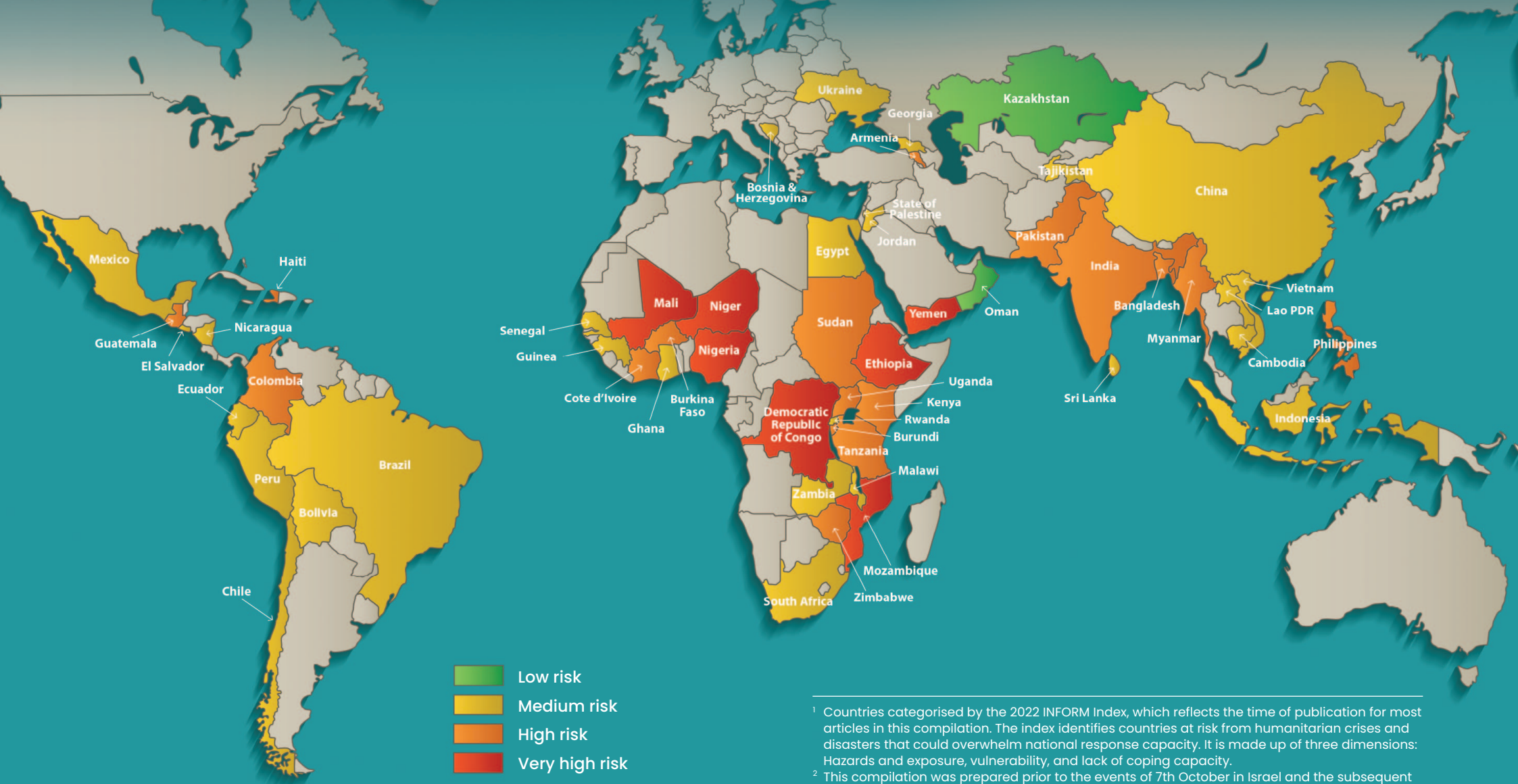
<sup>2</sup> <https://www.unicef.org/documents/improving-young-childrens-diets-during-complementary-feeding-period-unicef-programming>

<sup>3</sup> <https://www.unicef.org/documents/nutrition/MNPS-Guidance-Note>

<sup>4</sup> WHO Guideline for complementary feeding of infants and young children 6-23 months of age

# Countries featured in this compilation...

We feature original articles and analysis of important research from 53 countries<sup>1</sup>, providing you with a comprehensive picture of complementary feeding around the world<sup>2</sup>.



<sup>1</sup> Countries categorised by the 2022 INFORM Index, which reflects the time of publication for most articles in this compilation. The index identifies countries at risk from humanitarian crises and disasters that could overwhelm national response capacity. It is made up of three dimensions: Hazards and exposure, vulnerability, and lack of coping capacity.

<sup>2</sup> This compilation was prepared prior to the events of 7th October in Israel and the subsequent military operation in Gaza. The situation remains ongoing as of the time of publication.



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Mary Mai Sundi, a disabled Anganwadi Sewika, initiates Annaprashna - a ceremony to initiate eating food - to Nandi Sundi's daughter, Laxmi Sundi (7 months), at the Anganwadi in Jharkhand, India, 2022



## A global perspective on improving the diets of infants and young children



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### Many children under the age of two are not getting the food or nutrients they need to thrive and grow well, which leads to irreversible developmental harm

At least one in every three children suffers from some form of malnutrition at the global level. Globally, only 53 countries are on track to meet childhood stunting targets, and only 57 countries are set to meet childhood wasting targets (2021 Global Nutrition Report). Regional disparities reveal inequities in progress (UNICEF, 2021). At the same time, an estimated 5.9% of the world's children under the age of five – around 40 million – are overweight (UNICEF, WHO and World Bank, 2021), highlighting a persistent burden of malnutrition.

### Change is possible: It is already happening at scale, but acceleration is needed

According to the UNICEF “Fed to Fail” report (UNICEF, 2021), over the last two decades the world has made significant progress in addressing malnutrition in children under five: for example, the prevalence of child stunting has been reduced by one-third and the number of children with stunted growth has been re-

duced by 55 million. These formidable achievements indicate that positive change for child nutrition is possible and is happening at scale in many countries and regions. Despite such progress, we have collectively failed to protect the right of all children to good nutrition. This has contributed to a situation where an estimated 149.2 million children have stunted growth (with around 45% of these children living in fragile or conflict-affected countries) and 340 million children under the age of five are suffering from deficiencies in vitamins and other essential micronutrients (UNICEF, 2019).

### Children carry the scars of poor diets and feeding practices for life

The period between 6–23 months of age is critical in a child's life, as the six-month mark represents the moment when a child's energy and nutrient needs begin to exceed what is provided by breast milk alone. Exceptional changes happen, including rapid physical growth, which lead to high nutrient needs. Poor diet (inadequate quality and/or quantity of first foods; poor feeding practices) in this age group therefore contributes to poor nutritional status. The risk of stunting increases rapidly between 6–23 months and, globally, more than half of all children with wasting are

under the age of two. Improving children's diets is critical for child growth and development, as well as to address and prevent different forms of malnutrition (micronutrient deficiencies, wasting, stunting, overweight and obesity), which all contributes to achieving the Sustainable Development Goals by 2030. Critical to this is continued breastfeeding between 6–23 months, which safeguards children's survival, growth and development and provides essential fats, proteins and other nutrients that are important to lifelong health in all settings.

### Progress in improving dietary practices has been slow and there is a need to accelerate action

**Currently, diets are failing in terms of timeliness, frequency and diversity**  
Globally, about half of all children aged 6–23 months (48%) are not fed the minimum recommended number of meals; over two-thirds (71%) are not fed the minimally diverse diets they need to grow and develop; and over one-quarter (27%) lack the benefits of the most nutrient-rich foods such as fruits, vegetables, eggs, fish or meat. In addition, around one-third (35%) of children aged 12–23 months are no longer continuing to be breastfed (UNICEF, 2021). According to the most recent

## Box 1 UNICEF programming guidance: An Action Framework for improving the diets of infants and young children

In February 2020, UNICEF published programming guidance on improving young children’s diets during the complementary feeding period (UNICEF, 2020a). The guidance describes recent evidence on improving complementary feeding, explores the determinants and drivers of young children’s diets, and presents Action Frameworks for delivering nutrition results for children through the food, health, WASH, and social protection systems. It also provides guidance on monitoring and evaluating complementary feeding programmes and outcomes.

The guidance highlights the determinants and drivers of poor diets in young children, emphasising the role of adequate food, services and practices (Figure 1). Poor diets are determined by the adequacy of foods, which is in turn driven by the availability, affordability, and desirability of such foods. Equally, the availability, affordability, quality and use of health, nutrition, WASH, and social protection services influence the quality of children’s diets. The feeding, care and hygiene practices of caregivers are key determinants of the quality of young children’s diets. These practices are driven by caregivers’ knowledge and time, household dynamics and social norms.

**Figure 1** The determinants of young children’s diets



The guidance describes the most recent evidence for improving complementary foods and feeding, highlighting implementation across different systems, including health, food, social protection and WASH, at multiple levels (policy, institutional and community/household). The interventions include:

1. Nutrition counselling and social and behaviour change communication
2. Counselling and education on responsive feeding and stimulation
3. Use of vitamin and mineral supplements in settings where nutrient-poor diets prevail
4. Access to diverse and nutritious complementary foods at household level
5. Access to fortified foods as needed, aligned with global and national standards
6. Promoting improved accessibility and use of safe complementary food, water and a clean household environment
7. Access to affordable and nutritious foods through social protection programmes and counselling services

The guidance provides a framework of action as a tool to apply the systems approach (Figure 2).

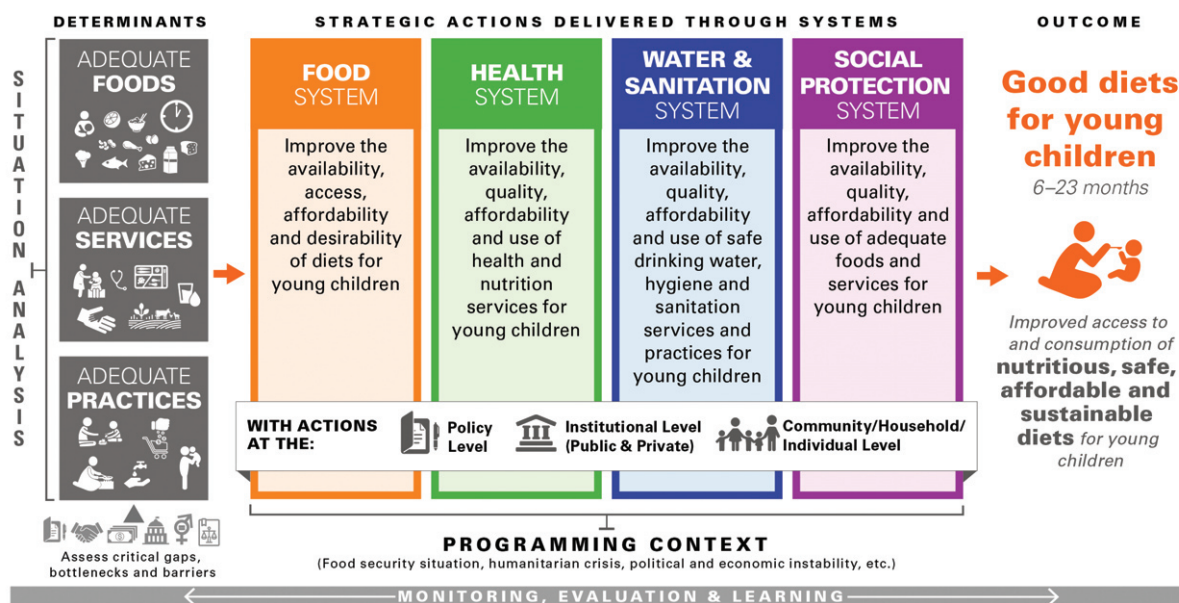
The Action Framework has four elements that interplay to facilitate the design and implementation of evidence-based programmes: a situation analysis to understand the status, drivers, and determinants of young children’s diets; strategic actions to be implemented through systems; the adaptation to the programming context; and the need for monitoring, evaluation and learning.

### What is next for the programming guidance?

UNICEF has implemented a plan for the uptake of its programming guidance at regional and country level. Regional workshops on improving the diets of infants and young children were conducted over the last two years to sensitise regional and country offices on the guidance and will continue. Regional landscape analyses, which provide a starting point for the planning of actions at both regional and country level, were also conducted.

For this issue of Field Exchange we will share examples of applying and adapting the Action Framework, and the programming guidance to improve the diets of infants and young children particularly in fragile, food insecure and humanitarian settings

**Figure 2** The UNICEF Action Framework to improve the diets of young children during the complementary feeding period



## Box 2 Using the programming guidance in humanitarian and fragile settings?

In 2019, the Infant Feeding in Emergencies (IFE) Core Group conducted a review on complementary feeding in emergencies, which identified gaps including in coordination, assessment, preparedness and programming capacity, among others. The review found that, despite existing guidance on infant and young child feeding in emergencies (OG-IFE), there is still a gap in clear guidance on actions related to complementary feeding in emergencies. Although the UNICEF programming guidance was not specifically designed for humanitarian contexts, a review conducted by ENN and the IFE Core Group with an “emergency lens” found that its content remains relevant to emergency settings, as it considers the requirements for emergencies in most actions and identifies what elements apply to both emergency and non-emergency contexts.

### Programming context

The guidance emphasises the importance of understanding the programming context and therefore of:

- Adapting and expanding actions to **respond to the specific setting**, e.g. challenges affecting access and affordability of food and health services, or security issues
- Ensuring **appropriate coordination** to ensure within- and across-sector coordination is taking place, including strengthening multi-sector planning and clearly defining the roles of different actors
- Understanding the **policy environment and legal frameworks** driving complementary feeding outcomes in a particularly dynamic environment

### Situation analysis

Any assessment of an emergency situation should consider the challenges and drivers related to the feeding of infants and young children, even if no specific complementary feeding in emergencies assessment is planned. Building on existing data and evidence can also provide insights into the drivers and determinants of feeding practices prior to an emergency. The situation analysis should review existing barriers, bottlenecks, gaps and risks that may negatively affect programming to plan actions to strengthen response and preparedness.

### Multiple intervention channels

The guidance identifies actions for different humanitarian settings, including sudden onset displacement, and slow-onset emergencies. It highlights that humanitarian emergencies can aggravate existing drivers of poor nutrition, such as reducing access to nutritious foods and services, and emphasises the importance of prioritising vulnerable families with services that mitigate these risks.

The needs of specific population groups, such as young children and caregivers with disabilities, are also emphasised, highlighting the unique challenges faced in humanitarian settings and the importance of addressing these needs through tailored interventions.

### Systems strengthening

The guidance emphasises the importance of building the emergency response on existing systems – food, health, social protection and WASH – to deliver nutrition results for young children. Examples of strategic actions to undertake at the policy, institutional and community/household levels are illustrated to address the drivers of children’s diets through these systems.

The guidance recommends an approach that involves building institutional capacity and supporting the government to mitigate the effect of a humanitarian crisis and facilitate sustainable recovery. It highlights that, when systems strengthening efforts continue during emergencies, they can promote community resilience and help institutionalise actions to improve children’s diets over the long term.

### Monitoring and evaluation

In humanitarian and fragile settings, the generation, documentation, sharing and application of knowledge may become challenging due to the volatile nature of the context. The guidance nevertheless emphasises the importance of maintaining a framework to ensure the monitoring of infant and young child feeding indicators. A context-specific results matrix serves as a useful tool to facilitate monitoring, evaluation and learning as part of the complementary feeding response.

Child Food Poverty Report, one in three children lives in severe food poverty (defined as eating fewer than two food groups a day) and, in the Sahel and Horn of Africa, 50% of children living in severe food poverty are fed only one – or none – of the eight recommended food groups (UNICEF, 2022). The state of children’s diets therefore remains a persistent bottleneck to greater progress on nutrition.

In many contexts – including fragile, food insecure and humanitarian contexts – families struggle to find and afford nutritious complementary foods for their children. The feeding of infants and young children may also be jeopardised by limited access to clean and potable drinking water, a lack of access to quality health services, and altered practices due to social disruptions (such as family and community breakdown, stress, time, space, lack of preparation/cooking facilities/equipment, etc.). Shortages in national food supplies, seasonal scarcities, displacement and poor road infrastructure constrain access to nutritious foods especially for the poorest and most marginalised populations. Physical access is also problematic in poor urban communities where there are fewer shops selling affordable nutritious foods. When income is limited, families tend to prioritise the frequency of feeding and fuller stomachs over the quality of foods for young children. This shift was clearly documented during the COVID-19 pandemic, where, for example, in Indonesia a survey conducted among urban households in Jakarta, reported the percentage of young children consuming the minimum recommended number of food groups fell by one third in 2020 compared to 2018 (UNICEF, 2021).

### Improving diets of young children is possible and important even in fragile settings

Experiences in countries that have recorded a significant improvement in diet quality over the past decade, provide evidence that change is possible at scale with the right focus, identification of barriers and investment. In line with its Global Nutrition Strategy 2020–2030 (UNICEF, 2020b), UNICEF is committed to improving the diets of infants and young children as a contribution to preventing all forms of malnutrition.

### Multiple actions are needed for improving diets of infants and young children

For far too long, efforts to improve the diets of young children have been inadequate in scale, fragmented and fail to reach most vulnerable children. These efforts have also not addressed the challenges that caregivers face in feeding children what they need to grow well in a comprehensive manner. In recognition of this, we at UNICEF have developed programming guidance for improving the diets of infants and young children during the complementary feeding period (UNICEF, 2020a) (Box 1) to support more effective action through a multi-systems approach. This guidance, together with the 2021 Child Nu-

trition Report (UNICEF, 2021), calls for governments to take the lead in upholding every child's right to food and nutrition, as well as for the mobilisation of policies, resources and actors across multiple systems (specifically food, health and social protection, and water, sanitation and hygiene [WASH]).

So why a multi systems approach? – at UNICEF we believe that different systems have key roles to play to improve diets in early childhood?

The **health system** provides multiple contact points at the facility and community levels to inform, counsel and support caregivers on infant and young child feeding and care practices, as well as to distribute dietary supplements and home fortificants (as appropriate) where poor diets and micronutrient deficiencies are common.

The **food system** comprises the policies, services and actors involved in the production, processing, distribution and marketing of food. It influences whether foods are available, accessible, affordable, nutritious, safe and sustainable, and can make it easier – or more difficult – for caregivers to make nutritious food choices for their young children

The **social protection system** forms a crucial safety net to protect vulnerable children against poverty and social exclusion, including in emergencies. It can increase families' physical or financial access to nutritious diets by providing social transfers (food, cash and/or vouchers) and offers a platform for the delivery of essential nutrition services and the promotion of positive nutrition practices.

The **water and sanitation** system aims to ensure a population's access to, and use of, safe drinking water and sanitation. These are critical to protecting young children's diets, as poor WASH can expose children to pathogens that cause diarrhoea and other infections and can result in environmental enteropathy, leading

to impaired structure and function of the small intestine. Improved access to basic WASH services can reduce the risk of diarrhoea and other infectious diseases.

Achieving the outcome of good diets for children in the first two years of life, means that countries need to leverage all four systems, prioritising strategic actions that are evidence-based, equitable and sustainable based on a country-specific analysis of barriers and bottlenecks on the determinants and drivers. This will serve to inform the programming context and the systems' capacity to deliver.

### Food insecure and fragile contexts heighten the vulnerability of children and narrow the window of opportunity to intervene

In fragile contexts, it is important to ensure timely and appropriate response to protect, promote and fulfil children's right to nutrition. In contexts characterised by limited availability of, or access to, nutritious food, the inclusion of child-centred food assistance may be warranted. This may include providing rations of specialised nutritious food to prevent wasting, or cash-based transfers where markets function. The appropriate use of these interventions should be closely monitored, and the use of specialised products should be discontinued as soon as the situation allows the shift to more appropriate and sustainable home food diets. Box 2 provides an elaboration on how the UNICEF programming guidance applies in emergency contexts.

### What's next?

As promoted and advocated for in the Fed to Fail report, governments must take the lead in upholding every child's right to food and nutrition. Together with national civil society, development and humanitarian partners, and the private sector, governments must mobilise the

food, health and social protection systems to deliver nutritious, safe and affordable diets, essential nutrition services and positive nutrition practices for every child.

The need to transform how we tackle poor-quality diets in early childhood is urgent. If activated in the right way and held accountable, the food, health and social protection systems – and their public and private sector actors – can ensure that children benefit from the nutritious, safe and affordable diets and the essential nutrition services and practices they need to grow and develop to their full potential, especially in fragile and emergency settings.

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Nurislam (aged 30 months) eats porridge with the help of his mother at their home in Kurshab village, Kyrgyzstan

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# UNICEF regional perspectives on complementary feeding

## INTRODUCTION

Effective and appropriate complementary feeding strategies are integral to meeting global nutrition targets. Such strategies must consider persistent inequalities by location, age, sex, education and wealth at regional, national and sub-national levels and which may be exacerbated by urban–rural divides, conflict and/or climate fragility. To support the dissemination, adoption and adaptation of UNICEF’s complementary feeding programming guidance at the regional and country level, this article presents experiences from each UNICEF global region, framed alongside a series of landscape analyses compiled by each regional office.



# East Asia and Pacific (EAP)



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Despite substantial economic growth in Southeast Asia, the triple burden of malnutrition – undernutrition, hidden hunger (due to vitamin and mineral deficiencies) and overweight – continues to threaten the survival, growth and development of young children. At least one in four children under the age of five in Southeast Asia suffers from one or more of the most visible forms of malnutrition, with 27.4% being stunted, 8.2% wasted and 7.5% overweight (UNICEF et al., 2021).

A major driver of child malnutrition in Southeast Asia is inadequate child complementary feeding practices. UNICEF EAPRO conducted a landscape analysis on complementary feeding in Cambodia, Indonesia, Lao PDR, Myanmar, the Philippines and Vietnam 2018–2019 (UNICEF EAPRO, 2021). This showed that, while complementary feeding is included in national nutrition policies, practices are inadequate across the region. Specifically, children's diets lack diversity and they are not fed frequently enough to meet their growth and development requirements (Table 1).

The barriers to meeting the nutrient needs of young children are uniquely challenging in Southeast Asia as the context is changing dynamically. More families are moving to cities and their diets are constrained due to

poverty, inequities and the increasing cost of nutritious foods. More women are participating in the workforce, often while continuing to carry the greatest burden of caregiving and household duties, restricting the time they have to prepare healthy homemade foods for their children (and for themselves). Families are shifting from traditional diets towards more convenient processed foods, which are usually higher in salt, sugar and fat and low in essential nutrients (UNICEF, 2019).

From 2018 to 2019, UNICEF EAPRO hosted a series of regional and country-level technical consultations to identify priority actions. Regional frameworks (Figure 1) were developed to outline a comprehensive set of overarching and multi-sector strategic actions across the health, food, education, social protection, and water, sanitation and hygiene (WASH) systems to improve complementary feeding.

UNICEF EAPRO supported countries to adapt the regional Action Frameworks through the development of the Association of Southeast Asian Nations (ASEAN) Food and Nutrition Security Report in 2021 (ASEAN et al., 2022). This provided an overview of the food and nutrition security profiles of countries in ASEAN member states, detailed the progress made over the previous five years and made recommendations on the way forward. UNICEF EAPRO

also supported the development of a series of six ASEAN guidelines and documents on minimum standards – including one on the protection, promotion and support of breastfeeding and complementary feeding (ASEAN et al., 2022) – and the ASEAN Nutrition Surveillance System (ANSS) to annually monitor and report against 104 nutrition-specific and nutrition-sensitive indicators.

Three research and knowledge gaps were also identified from the priority actions, as follows.

**The role of nutrition-sensitive social protection:** UNICEF EAPRO has developed a policy working paper documenting opportunities to expand social protection pathways to nutrition (UNICEF, 2020). A series of surveys have also been conducted on the status and determinants of food insecurity and undernutrition in the urban poor in Indonesia (UNICEF, FAO, WFP, & WHO, 2021a), the Philippines (UNICEF, FAO, WFP, & WHO, 2021b) and Myanmar (UNICEF, FAO, WFP, & WHO, 2021c), with the Food and Agricultural Organization (FAO) and World Food Programme (WFP), particularly focused on the impact of the COVID-19 pandemic.

**Strengthening capacity for the development and implementation of social behaviour change (SBC) strategies:** Despite being a priority overarching action in the re-

**Table 1** Complementary feeding practices in children aged 6–23 months in Southeast Asia (ANSS, 2022)

	Introduction to solid, semi-solid or soft foods	Minimum meal frequency	Minimum dietary diversity (MDD)	Minimum acceptable diet (MAD)	Any fruit or vegetable consumption	Consumption of eggs or flesh foods	Continued breastfeeding 12–23 months
<b>Cambodia</b>	81.6	72.2	40.4	30.4	64.7	81.7	58
<b>Indonesia</b>	85.5	71.7	53.9	40.3	82.2	71.3	67.3
<b>Lao PDR</b>	86.7	69.9	35.7	26.5	63.8	79	43
<b>Malaysia</b>	41.5	92.8	53.1	54.4	87.5	90.3	44.1
<b>Myanmar</b>	75	57.6	12.3	15.9	44.2	58.5	78.5
<b>Philippines</b>	84.4	N/A	N/A	N/A	N/A	N/A	59.6
<b>Thailand</b>	91.7	87.1	74.5	66.3	86.1	90	24.5
<b>Vietnam</b>	85.9	75	52.2	42.2	100	50.2	26

N/A: data not available. Many of the values presented were reanalysed by UNICEF to reflect the recently updated definitions for complementary feeding indicators published in 2021. As a result, they may differ slightly from previous indicator estimates printed in older reports.



IYCF counselling training for village doctors from Qingshizui town and Suji town in Men Yuan county, China, 2021

© Men Yuan MCH/China/2021/Ye Fuzhong

Pilot training in Qinghai led to the provision of over 13,000 IYCF counselling sessions by township and village doctors to benefit more than 10,000 children under the age of two and their caregivers in project counties during the two-year period.

To assess results, baseline, midline and end-line e-surveys were conducted with stratified sampling with nearly 1,000 caregivers of children aged 6-23 months from five project counties in October 2019, February 2021 and December 2021 respectively. Results showed a positive change in IYCF practices and YYB services as measured by two indicators: compliance rate for the YYB,<sup>5</sup> and minimum dietary diversity of children.<sup>6</sup> From baseline to endline, YYB compliance rate increased from 80% to 92%, and the percentage of children aged 6-23 months achieving minimum dietary diversity increased from 66% to 82%, demonstrating the relevance of the community IYCF counselling package.

### Issuance of a Breastfeeding Promotion National Action Plan and IYCF scale-up programme

At the same time, in 2021, NHC, together with 14 related ministries, issued a new *Breastfeeding Promotion Action Plan (2021-2025)*, which emphasised the role of primary health workers in supporting IYCF and the need for investing in their capacity. As a part of this effort, the MCH Department of NHC, in partnership with UNICEF, released a plan for the national scale-up of the community IYCF counselling package in May 2022, building on the success of the pilot. This national scale-up programme aimed to build the capacity of more than 290,000 primary health workers at township and village level in 1,212 counties (including all 832 YYB counties) across 31 provinces by mid-2023, facilitating the provision of skilled IYCF counselling and benefiting more than five million children under the age of two. The linking of the national YYB programme and the community IYCF counselling programme is now a real-

ity across the entire country, with a focus on vulnerable counties.

Key features of the national IYCF scale-up programme

#### a) **Update of national technical documents**

Key IYCF messages were updated in the *Chinese Dietary Guideline (2020)* and the *National IYCF Education Messages for Health Workers (2020)* issued by NHC, following the adaptation and use of the community IYCF package. This demonstrates the opportunity to align national and global best practices and to ensure consistency across policy documents.

#### b) **Adaptation and digitisation of the training package**

To support the need for significant scale-up and to mitigate the impact of COVID-19-related restrictions, three types of IYCF training modalities were developed to ensure tailoring towards the time availability and knowledge level of participants, as follows:

- Three-day face-to-face training sessions were provided for facilitators at national and provincial level
- Two-day group training sessions guided by online courses and a one-day practical session for facilitators were provided at county level
- Two-day online self-study course accompanied by a one-day practical session were provided for township MCH workers and village doctors

The combination of online and in-person training was adopted as China has a highly literate health workforce with good digital access but a heavy workload, especially at township and village level.

All materials, including the online course, were made available through the online training platform of the National Center for Women and Children's Health (NCWCH).

#### c) **Integration of IYCF counselling and practice indicators into existing platforms**

Indicators to assess the quality of IYCF counselling services and practices have

### IYCF counselling cards



been updated and integrated into the national YYB monitoring system. A standardised IYCF assessment form to monitor individual feeding practices was rolled out for future inclusion in the National Essential Public Health Service Package, which helps identify children at risk and establish strong referral links between basic public health services and community IYCF counselling.

#### d) **Digitisation of IYCF counselling services and education for caregivers**

To enable access to a larger number of caregivers and obtain real-time user feedback for programme monitoring, UNICEF worked with NCWCH to design and integrate an IYCF module into a mobile application called the Healthy Family App managed by NHC. This app can reach millions of caregivers and health workers in China. The integrated IYCF module includes IYCF education materials for caregivers and tools for health care workers to guide IYCF counselling services and conduct assessment of complementary feeding practices.

<sup>5</sup> The compliance rate of the YYB was defined as children aged 6-23 months who ate one sachet of YYB per day, at least four days per week.

<sup>6</sup> Minimum dietary diversity was defined as children given at least four out of seven food groups every day.

<sup>7</sup> Details of the Healthy Family App can be checked at <https://www.unicef.cn/en/press-releases/transforming-millions-childrens-and-mothers-lives-china-through-improved-health>.

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There has been substantial progress in reducing childhood malnutrition in Central Asia. Between 2010 and 2020, the prevalence of stunting in children under the age of five reduced from 17.1% to 10.0% and overweight reduced from 9.5% to 5.6% (UNICEF, WHO, & World Bank, 2021). Rates of exclusive breastfeeding also increased to 44.5% (UNICEF, 2021). However, there are disparities across the broader ECA region. For example, in the Eastern Europe sub-region, although the estimated prevalence of overweight and obesity has reduced from 11.9% to 9.9%, it still ranks as the region with the fourth highest global rates (UNICEF, WHO, & World Bank, 2021).

The ECARO landscape analysis was conducted in six countries, across three sub-regions: Bosnia and Herzegovina and Serbia (Balkan), Armenia and Georgia (Caucasus) and Kazakhstan and Tajikistan (Central Asia). Methods included a comprehensive review of literature and policies, an analysis of national level survey data and in-depth qualitative interviews with key informants.

Contrary to other global regions, key informants did not perceive that the availability, access and affordability of foods affected the quality of young children's diets in the Balkans and the Caucasus. However, in Central Asia, complementary feeding was hampered by seasonal fluctuations in agriculture and incomes. In the same area, access to adequate foods was reported as an issue for the poorest families.

The ready availability of processed foods in the Balkans, the Caucasus and Central Asia has progressed, threatening the capability of families to feed nutrient-rich foods to their young children. In the Balkans, processed foods were considered a convenient option for parents.

However, they remain prohibitively expensive for many families in Caucasus countries, who may instead opt for local homemade foods. In Central Asia, the cost of nutrient dense foods was prohibitive, resulting in two-thirds of respondents being unable to routinely afford foods such as meat, fruits and vegetables.

Both complementary feeding counselling quality and roll-out through primary care are weak across the ECA region, but adequate WASH was not considered a barrier to complementary feeding. No country in the region had designated social protection policies targeting the improvement of children's diets in food-insecure or poverty-affected households.

The introduction of foods before the age of six months, the use of infant formula and the perceived inadequacy of breastmilk were common beliefs in Balkan countries, affecting exclusive breastfeeding and effective complementary feeding practices. There was a lack of data regarding this aspect for Central Asia and Caucasus countries. Despite some regulations on advertising infant formula or follow-on formula in the Balkans and the Caucasus, the marketing of formula milk on television is still a reality and the availability of infant formulas in health facilities is widespread. Food taboos and myths – related to allergies, foodborne illnesses or, in Central Asia, language learning – influence diets across the region, although there was a lack of data from Caucasus countries. In Balkan countries, the return of mothers to work was identified as a limiting factor to the time available for preparing food for young children, whereas household chores and responsibility for agricultural production were factors limiting preparation time in Central Asia. There were no data from Caucasus countries on caregiver time.

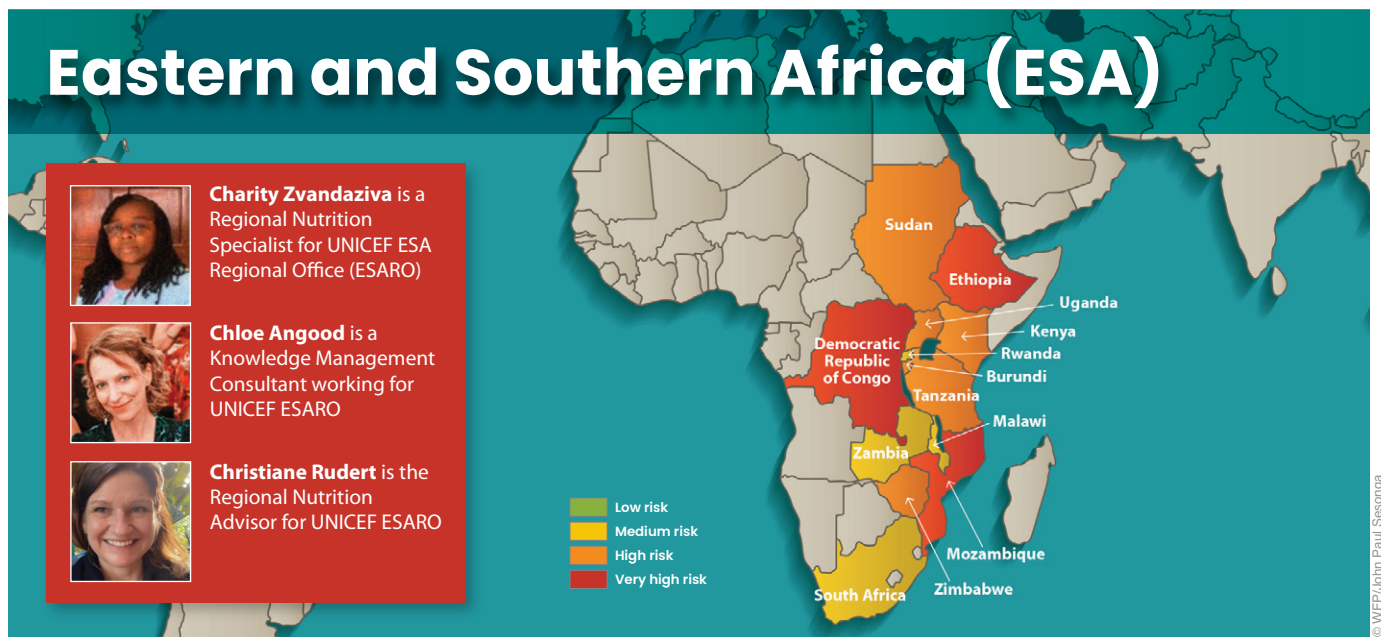
## Recommendations and next steps

Although individual recommendations have been developed for each sub-region, the landscape analysis made five overall recommendations for improving young children's diets in the region: 1) the development of national food-based dietary guidelines, including guidance on feeding young children according to global standards; 2) the need to strengthen the quality and delivery of counselling services for breastfeeding and complementary feeding; 3) the need to update laws prohibiting the promotion of breastmilk substitutes and regulating the marketing of foods for infants and young children (still a consistent problem across global regions); 4) the integration of complementary feeding indicators into health monitoring systems; and 5) the development of social protection policies targeting vulnerable families.

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Poor diets are a key driver of stunting in young children in the ESA region. Only 24% of children aged 6–23 months achieve MDD, only 14% achieve MAD and 43% consume no fruits and vegetables (UNICEF, 2022). While the prevalence of continued breastfeeding at the age of two is high in ESA (70%), there is inter-regional variation, with a much higher prevalence in Southern African countries compared to Intergovernmental Agency for Development (IGAD) countries (84% versus 64%). Similarly, while 77% of children are introduced to solid foods at the appropriate time across ESA, this drops to 64% in IGAD countries. Children living in countries that experience chronic food insecurity, poverty and frequent emergencies (such as Comoros, Ethiopia, Malawi, Tanzania and Zimbabwe) are least likely to achieve MAD (UNICEF, 2019). There are also within-country disparities: children in rural areas are more likely to be breastfed at the age of two, but less likely to receive MAD, compared to children in urban areas.

Improving the diets of young children is central to UNICEF's nutrition strategy in the ESA region. UNICEF supports country actions to improve the diets of young children, including building the capacity of community workforces to counsel caregivers on adequate complementary feeding using the UNICEF community infant and young child feeding (IYCF) counselling cards, delivery of cooking demonstrations, promoting and supporting kitchen gardens and improving the health environment. UNICEF also supports the implementation of social protection interventions that target vulnerable households within the first 1,000 days of life, as well as food systems transformation efforts, to support the availability and accessibility of nutritious foods for young children. This article describes recent actions taken by

UNICEF ESARO to support these efforts across the 21 countries in the region.

### Regional landscape analysis and consultation

Between 2018 and 2020, UNICEF ESARO partnered with the Johns Hopkins Bloomberg School of Public Health and the Global Alliance for Nutrition (GAIN) to conduct a regional complementary feeding landscape analysis. The objectives were to generate evidence on children's diets in the ESA region and to provide member states with an understanding of trends, risk factors and policies and programmes implemented at scale. The landscape analysis was undertaken in 10 countries (Ethiopia, Kenya, Malawi, Mozambique, Rwanda, South Africa, Tanzania, Uganda, Zambia and Zimbabwe).

Results revealed that the positioning of nutrition in national development plans, policies and strategies is key to improving the diets of young children, particularly within the first 1,000 days. This process has been greatly supported in the region by the Scaling Up Nutrition (SUN) Movement. However, the availability and accessibility of nutritious diets for children remains a challenge across ESA, as access to some nutrients is particularly constrained. In most countries where the landscape analysis was done, foods rich in vitamin A and vitamin B12 were the most affordable, while foods rich in zinc and iron tended to be least affordable. Across five countries, 20–80% of households could not afford the lowest-cost sources of zinc, including pulses, ruminant liver (beef, goat or sheep), beef and small dried fish. Iron-rich foods were found to be unaffordable to 20–75% of households, with dark green leafy vegetables and pulses being the most affordable iron sources in most countries (Ryckman et al., 2021).

Findings from the landscape analysis were shared with participants from seven countries, the South African Development Community, IGAD, United Nations agencies and other partners during a consultative meeting on improving young children's diets in June 2019. UNICEF's global framework for improving young children's diets was also presented. Following a discussion on best practices for the health, food, WASH, education and social protection systems in the ESA region, critical actions to accelerate progress across these systems were identified.

### Regional framework for improving young children's diets

Based on the critical actions identified, as well as the priority actions identified by UNICEF country teams, a draft Regional Framework for Improving Young Children's Diets in the ESA region was developed. This framework serves as a planning tool for countries to identify and prioritise actions for improving the diets of young children at the policy, institutional and community levels across the four key systems (Figure 2).

### Progress in supporting national action on young children's diets

Between February and July 2021, ESARO conducted five regional webinars with governments, non-governmental organisations (NGOs) and UNICEF country offices and agencies to support the roll-out of the regional framework. These webinars included a 'deep dive' into how social protection interventions and food system transformation efforts can contribute to improving children's diets. The webinars facilitated the identification of country-specific actions to improve children's

diets across all relevant systems. Since this time, 11 countries (Malawi, Zimbabwe, Zambia, Kenya, Uganda, Namibia, South Africa, Rwanda, Mozambique, Madagascar and Angola) have developed action plans for improving complementary feeding, and three countries (Ethiopia, Tanzania and Zimbabwe) have adapted the regional Action Framework into country-specific frameworks. Country-specific frameworks help galvanise multi-sector action and track progress on the implementation of key actions for improving the diets of young children. Discussions are underway in Kenya, Madagascar, Botswana, Uganda, Angola and Eswatini towards the development of similar country-specific frameworks.

### Next steps

UNICEF ESARO will continue providing technical support to countries on the development,

implementation and monitoring of country complementary feeding Action Frameworks. In complement to this, and in the context of the United Nations Food Systems Summit and the Nutrition for Growth Summit, UNICEF ESARO has intensified engagement with governments and UNICEF country offices on the transformation of food systems for young children. UNICEF ESARO is working with academic and research institutions in the region to profile the content of commercially produced foods and to understand the knowledge, attitudes and perceptions of caregivers on the use of these products. This information will contribute to transforming food systems for young children in the region and to building nutrition resilience. A few countries have expressed interest in partnering with local industries to produce healthy and nutrient-rich complementary foods, including fortified local

porridge and egg and fish powders. Technical support and advocacy will continue to support these efforts.

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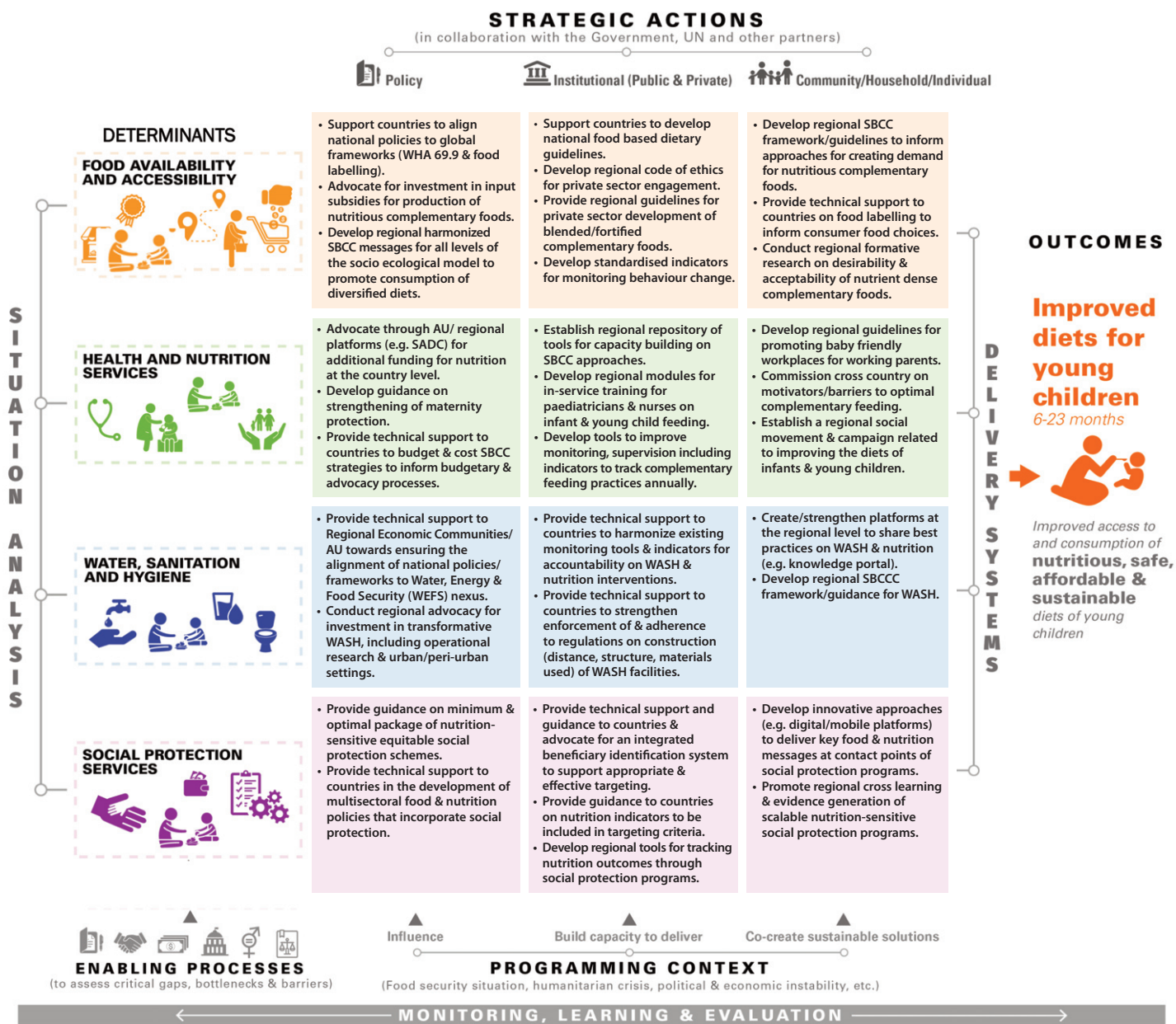
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**Figure 2** ESA Regional Complementary Feeding Action Framework



# Latin America and the Caribbean (LAC)



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UNICEF LACRO would like to acknowledge the co-authors of the peer-reviewed article<sup>1</sup> which, along with other resources, informed this Field Exchange article: Franziska Gassmann, Richard de Groot, Stephan Dietrich, Eszter Timar, Florencia Jaccoud, Lorena Giuberti and Giulio Bordon (UNU-MERIT, Maastricht University, Maastricht, Netherlands). The team contributed to the conceptualisation, data curation and formal analysis, as well as the writing, reviewing and editing of the original draft. Aashima Garg (UNICEF Headquarters, Programme Group – Nutrition) contributed to the conceptualisation, supervision, writing, reviewing and editing of the manuscript. UNICEF LACRO would also like to thank UNICEF country offices in Guatemala, Peru, Paraguay and Uruguay for their contributions.

In the LAC region, the prevalence of wasting in children under the age of five is low (1.3%), and that of stunting reduced from 18% to 11.3% between 2000 to 2020. Despite this, 5.8 million children in the region are still affected by stunting (UNICEF, WHO, & World Bank, 2021). Regional prevalences hide national and sub-national discrepancies. The prevalence of childhood stunting is 47% in Guatemala – one of the highest levels globally – and is above 20% in Ecuador, Haiti and Honduras (UNICEF LACRO, 2020). At the same time, the prevalence of overweight in children under the age of five increased from 6.8% to 7.5% 2000–2020, resulting in 3.9 million children affected, ranging from 3.7% in Haiti to 12.9% in Argentina. Of all countries analysed in the LAC region, only Guyana, Haiti and Uruguay still have a higher prevalence of childhood wasting than overweight. One of the key determinants of this simultaneous burden of undernutrition and overnutrition are the gaps in early IYCF practices throughout the region.

To explore child feeding practices in the region, UNICEF LACRO conducted a landscape analysis according to the following three thematic areas of UNICEF's Action Framework for improving diets of young children: (1) the 'what', 'when' and 'how' of feeding; (2) drivers of children's diets, especially nutrition services and practices; and (3) strategic actions in place across WASH, health and social protection systems. A total of 59 documents and two datasets from countries across the region were included in the analysis, although there was substantial variation in the availability and timeliness of data between different countries.

## Findings from the landscape analysis

On average, 84% of infants in the LAC region were introduced to complementary foods at an appropriate time. This is favourable when compared to other regions, but there were substantial variations within the region. Only 38% of infants under six months were exclusively breastfed, ranging from alarmingly low rates in some countries (3% in Suriname, 4% in Saint Lucia and 5% in Dominica) to rates that were at or above the global average in others (66% in Peru, 58% in Bolivia and 53% in Guatemala). Peru, El Salvador and Cuba had the highest percentage of boys and girls aged 6–23 months who consumed a minimum of five of the eight food groups (83%, 73% and 70% respectively), while the Dominican Republic, Guyana and Haiti had the lowest percentage (51%, 40% and 19% respectively). These findings reinforce the unequal progress towards healthy diets for children between sub-regions and countries.

Most infants and young children in the region were fed at an appropriate frequency, but their diets lacked diversity, with children aged 6–11 months receiving less diverse diets than those aged 12–23 months. Poor dietary diversity has been attributed to the availability of ultra-processed foods and the comparatively prohibitive cost of nutrient-dense foods.<sup>2</sup> Indigenous communities were particularly vulnerable, typically having poorer dietary quality and more limited household food access.

Awareness surrounding effective IYCF practices and caregiver knowledge was generally poor in the region, except for Paraguay and

Panama, which have developed and implemented food-based dietary guidelines for children under the age of two.

Data gaps also remained a significant challenge. For example, most countries do not have the capacity to measure the prevalence of MDD, making it difficult to monitor progress.

Large-scale policies and programmes on food fortification are popular in the region and contribute to tackling micronutrient deficiencies. However, access to safe water and sanitation is not universal and there are substantial rural-urban divides, similar to other regions.

## Priority actions for improving the diets of infants and young children

Based on the findings from the landscape analysis, UNICEF LACRO identified the following key priority actions.

**Availability of data:** Improvements in data capture and administration, as well as multi-sector coordination, are recommended across the region. To address gaps in information and data relating to the diets of young children and to allow for monitoring of progress, UNICEF LACRO will prioritise supporting the integration of regular data collection and monitoring of complementary feeding indicators in national surveys and health information systems.

<sup>1</sup> <https://journals.plos.org/globalpublichealth/article?id=10.1371/journal.pgph.0000260>

<sup>2</sup> UNICEF LACRO was not able to monitor the unhealthy foods in the diets since the tools for this were launched after the completion of this study.

**Ultra-processed foods and their marketing:**

A stronger policy response to unhealthy eating habits should be promoted and supported, focusing on supporting countries to adopt regulatory strategies to reduce the accessibility, availability and desirability of sugar-sweetened beverages and unhealthy or ultra-processed foods. These include 'sugar taxes', advertising restrictions and requirements for transparency in food labelling to facilitate healthy purchasing choices by caregivers (front-of-pack labelling).<sup>3</sup>

Research should be strengthened and experiences should be documented regarding tackling the availability and marketing of ultra-processed foods and commercial milk-based formulas, as well as strategies and programmes to improve diet diversity among children aged 6–23 months across the region. This can serve as a model for developing effective interventions and strategies that simultaneously target child overweight and undernutrition.

**Counselling and support:** To promote caregiver knowledge and awareness of healthy infant feeding practices, UNICEF LACRO will

prioritise expanding the coverage and intensity of counselling and support to caregivers on feeding practices while considering local preferences, beliefs and socio-cultural contexts. Support of programmes will also promote positive interactions between service providers and caregivers during service delivery. Expanding the coverage of social protection services and using such services as an entry point for counselling and support have also been identified as a priority area.

**Next steps**

UNICEF LACRO will provide technical assistance to country offices in adapting the complementary feeding Action Framework to their context. In addition, UNICEF LACRO is committed to supporting the improvement of young children's diets in emergency situations, thus building resilience in a region regularly affected by economic shocks, migration and disasters caused by natural phenomena. UNICEF LACRO has already conducted a regional webinar with the Global Nutrition Cluster Technical Alliance on supporting complementary feeding in emergencies, and will provide support to coun-

tries that are interested in, and require support to, expand their emergency preparedness and response efforts.

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<sup>3</sup> Across Latin American countries, 39 such regulatory strategies aimed at reducing the consumption of unhealthy foods and beverages were previously identified, with the efforts of Chile, Ecuador and Mexico being most comprehensive: see <https://www.unicef.org/lac/media/30436/file/The-role-of-schools-in-preventing-overweight.pdf>

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A mother picks up fresh and nutritious foods designated for her children at school in the municipality of Patzún, Guatemala

© WFP/Giulio d'Adamo

# Middle East and North Africa (MENA)



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High burdens of malnutrition in all its forms remain a challenge in the MENA region, with inequities between and within countries regarding the number of children under the age of five who are affected. According to the latest estimates, in 2020, 15.6% of the region's children under the age of five were stunted, 6.3% were wasted and 12% were overweight (UNICEF, 2021). Regional estimates mask the alarming prevalence of malnutrition; over the last decade, some countries have experienced persistently high levels of stunting (Djibouti, Libya, Sudan, Syria and Yemen) and wasting (Djibouti, Sudan and Yemen). At the same time, trends of childhood overweight are comparatively high, and worsening, in Egypt, Libya, Syria and Tunisia. While data on childhood anaemia in the region are scarce, national surveys conducted in selected countries show a very high (>40%) prevalence of childhood anaemia.

Poor diets for young children are a critical determinant of malnutrition in the region, with only one in four children (23%) aged 6–23 months receiving MAD. About half of young children are fed egg and/or flesh foods (53%), and a fourth are not fed fruits and vegetables. This lack of dietary diversity is driven by constrained access to nutritious and diverse foods as a result of food insecurity, limited access to markets due to conflict and instability, low purchasing power and high food prices due to ongoing global food and nutrition crises. Inadequate complementary feeding practices, coupled with limited access to essential nutrition-sensitive services, also contribute to the poor diets of young children in the region.

In 2019, UNICEF MENARO assessed complementary feeding practices and their determinants in six MENA countries (Shaker-Berbari et al, 2021). This analysis recommended that interventions to improve complementary feeding practices should include actions tailored to the

population's needs at the caregiver, household, community, service use and policy level.

The MENA region presents a diverse programming context, including countries across different income categories (from lower-income to high-income), stability levels (from unstable/conflict-affected countries to countries with long-standing development/humanitarian challenges, as well as stable countries) and levels of food security. Climatic shocks and the global food and nutrition crisis further impact access to nutritious, safe and affordable diets in the region. This is compounded by country-level programmatic challenges/bottlenecks related to nutrition data gaps, low prioritisation of (and funding for) maternal and child nutrition agendas and weak technical capacities to design, implement and monitor nutrition programmes. Improving the quality of young children's diets is often missing or minimal in the programming agendas of these countries, with a heavy focus placed on the treatment of wasting as part of humanitarian responses over the last decade.

**The way forward:** Improving the quality of young children's diets is a key priority for UNICEF MENARO under the current strategic plan (2022–2025). Prior investment from the Government of the Netherlands has supported initial work to improve children's diets in eight of the region's countries: Djibouti, Egypt, Lebanon, Libya, Oman, the State of Palestine, Sudan and Syria.

Building on this, UNICEF MENARO is working to strengthen the design and delivery of programmes across the following five strategic pillars:

- **Reinforcing the importance of situation analysis to understand the determinants and drivers of young children's diets:** This will involve a regional and country-level analysis to fill data gaps using quantitative and qualitative methods
- Setting the narrative and advocating for actions to improve young children's diets at

the country level: UNICEF MENARO has led the adaptation of UNICEF's global Action Framework for improving young children's diets to the MENA context. The MENA regional Action Framework serves as a tool to guide a systematic analysis and prioritisation of strategic actions to improve children's diets through a multi-systems response

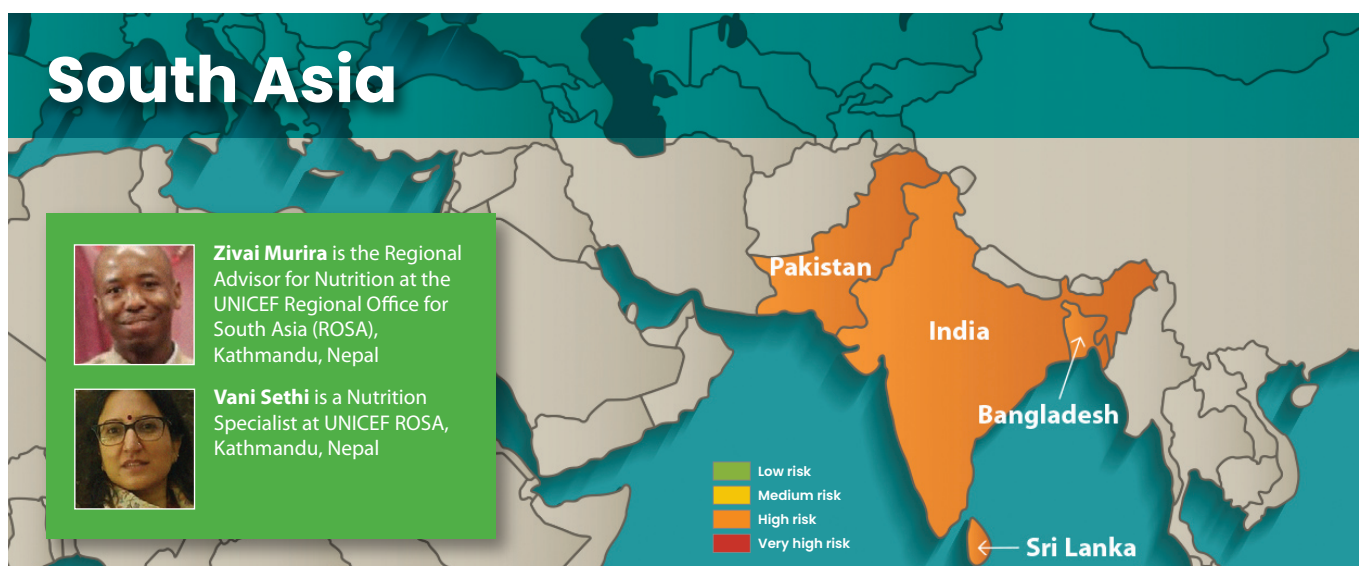
- Strengthening partnerships and coordination with other United Nations agencies, academia, international NGOs, NGOs, etc. to deliver coordinated and synergistic interventions to improve young children's diets at the regional and country level
- **Leveraging the wasting agenda to address all forms of malnutrition:** The focus of donor investment in the region is on addressing high levels of wasting in priority countries. UNICEF MENARO is leveraging this focus and past achievements in wasting treatment, to position a more holistic programming narrative that delivers a continuum of across prevention, early detection and treatment of all forms of malnutrition
- **Knowledge generation, dissemination and exchange** will form a critical pillar of UNICEF's regional nutrition programming approach to document and share lessons learnt, bridge evidence gaps and build the capacity of the UNICEF workforce and partners to improve young children's diets in MENA

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All forms of malnutrition – stunting, wasting and overweight – affect children in South Asia (UNICEF, WHO, & IBRD/World Bank, 2021). Poor complementary feeding practices have been linked with an increased risk of stunting, wasting and concurrent stunting and wasting in young children in the region (Harding et al., 2018; Kim et al., 2017). South Asia also faces increasing consumption of unhealthy food and beverages, even among children aged 6–23 months, increasing their risk of developing overweight/obesity (Pries et al., 2017). Only 58% of South Asian infants are likely to consume their first solid foods at the age of 6–8 months; among infants aged 6–23 months, only 45% receive an adequate number of meals each day, only 19% meet MDD and only 11% achieve MAD (UNICEF, 2021). Poor access to nutritious foods during the complementary feeding period contributes to 130 million children aged 6–23 months experiencing food poverty in the region, of whom 64 million suffer from severe food poverty (UNICEF, 2022). The micronutrient gaps of greatest concern in young children's diets are iron, zinc, vitamin A, folate, vitamin B12 and, to some extent, calcium and vitamin C, but more data and evidence are required (Beal et al., 2021). An array of interrelated drivers and determinants influence young children's diets and feeding practices in the region (UNICEF, 2021; Ryckman et al., 2021).

### Opportunities

Concerted efforts are underway across South Asia to roll out multi-sector plans to address the multiple causes of poor nutrition in the region. In 2021, 58% of South Asian infants were likely to consume their first solid foods between the age of 6–8 months, an increase from 37% in 2000 (UNICEF, 2021). The evidence base on the status, drivers and determinants of complementary feeding in the region has been strengthened through a landscape analysis of

complementary feeding in children aged 6–23 months in South Asia undertaken by UNICEF ROSA and regional partners. UNICEF ROSA has strengthened its collaboration with the South Asia Association for Regional Cooperation (SAARC) to support the implementation of the South Asia Regional Action Framework for Nutrition. Furthermore, regional Action Frameworks on complementary feeding provide a structure for countries in the region to operationalise multi-system approaches to improve the diets of young children. However, there remain untapped opportunities in South Asia to harness the power of business solutions to support improvements in accessing nutritious foods for children aged 6–23 months, while ensuring actions are aligned with the International Code of Marketing of Breastmilk Substitutes and subsequent Resolutions by the World Health Assembly, along with the 2016 WHO Guidance. Such public–private sector engagement opportunities and entrepreneurial solutions should be explored alongside other complementary strategies.

### Actions

The stakes are high for improving the complementary feeding of young children in South Asia to accelerate progress towards Sustainable Development Goal 2 nutrition targets by 2030. To galvanise regional action, in 2019, UNICEF ROSA partnered with GAIN and the Alive & Thrive Project of FHI Solutions to undertake a regional analysis of complementary feeding in children aged 6–23 months in South Asia.

Through a series of working papers, the landscape review brought attention to the status, including the policy and programme context, of young children's diets in the region. This provided SAARC member states and development partners in the region with consolidated evidence and knowledge for action. In September 2019, UNICEF ROSA and SAARC convened a Regional Conference on “Stop

Stunting: Improving Young Children's Diets in South Asia” to drive commitment and action to improve young children's diets in the region. The Regional Conference highlighted the need for countries across South Asia to strengthen the policy environment and deliver programmes at scale to improve the diets of young children. Regional and country-level commitments were mobilised in the form of a Call to Action and country action plans. Regional frameworks for multi-system approaches to improve young children's diets received technical endorsement during the Regional Conference and are supporting countries in the region to identify priority actions across systems to improve diets.

In 2020, UNICEF ROSA partnered with ENN to curate and disseminate a South Asia special edition of ENN's Nutrition Exchange on Improving Young Children's Diets.<sup>1</sup> This documented country experiences and lessons learnt in leveraging various systems to improve young children's diets. UNICEF and its partners continue to influence policy and programme action on multi-system approaches to improve young children's diets in the region, with particular emphasis on leveraging food systems, health systems and social protection systems. Recognising the important role that business and private sector play in enabling access to nutritious foods for young children, UNICEF ROSA and its partners are undertaking a scoping review of social business enterprises and market-based nutrition entrepreneurship solutions and private sector engagement business models for improving the diets of young children at the bottom of pyramid population groups. The review findings will inform the development of a regional framework to harness the power of business to improve access to nutritious foods for young children. Lastly, UNICEF ROSA and partners will continue to document cross-country knowledge and evidence on models

<sup>1</sup> <https://www.ennonline.net/nex/southasia>

for scaling up access to nutritious diets in South Asia, including links with the social protection systems.

### Next steps

ROSA will build on the momentum generated by the Call to Action from the UNICEF and SAARC Regional Conference on “Stop Stunting: Improving Young Children’s Diets in South Asia” to create a greater sense of urgency to improve young children’s diets in the region and to support the implementation of regional Action Frameworks. Urgent action is needed to harness the food, health, WASH and social protection systems to meet young children’s needs for nutritious, safe, affordable and sustainable diets. UNICEF will continue to support SAARC member states in developing, strengthening and implementing policies and programmes to improve the diets and feeding practices of young children aged 6–23 months. Greater emphasis will be placed on food system actions to improve young children’s diets and promote linkages with other systems to increase the availability and affordability of nutritious foods.

As drivers and determinants of young children’s diets vary from one context to another, UNICEF ROSA will continue to encourage countries in the region to undertake reviews at the country and sub-national level, where relevant, to deepen understanding and help identify strategic actions to improve the diets and feeding practices of young children. The un-

tapped power of business solutions needs to be harnessed to support improvements in access to nutritious foods in the region. To this end, UNICEF will promote regional dialogue to explore social entrepreneurial and public-private sector partnership engagement opportunities for improving young children’s diets. A landscape analysis of potential business exemplar engagement approaches to improve access to nutritious foods and practices for children aged 6–23 months will be undertaken in India, Bangladesh, Nepal and Sri Lanka. A regional children’s diets innovation challenge will be launched to identify innovative solutions to improve the diets of populations at the bottom of the social and economic pyramid. The region is prone to flooding, droughts and cyclones, and the effects of climate change can be felt in the increased severity and magnitude of these natural disasters. Mitigating the impacts of emergencies on young children’s access to nutritious foods needs to be prioritised in country emergency preparedness and response strategies. As countries in the region grapple with mitigating the impacts of the global food and nutrition crisis and macroeconomic risks, governments and their partners – including donors, United Nations agencies, civil society and the private sector – should use this opportunity to build stronger and more resilient systems to improve the diets and feeding practices of young children in South Asia. A whole-of-government approach to ensuring these key systems work coherently to deliver nutritious diets for

young children at scale will set children on course for a healthy and productive future. For more information, please contact Zivai Murira at [zmurira@unicef.org](mailto:zmurira@unicef.org)

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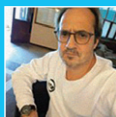
Budhe and her daughter, Priyanka (aged 20 months). She still breast feeds, and feeds her child solid food with a spoon to keep infection through dirty hands at a minimum

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# West and Central Africa (WCA)



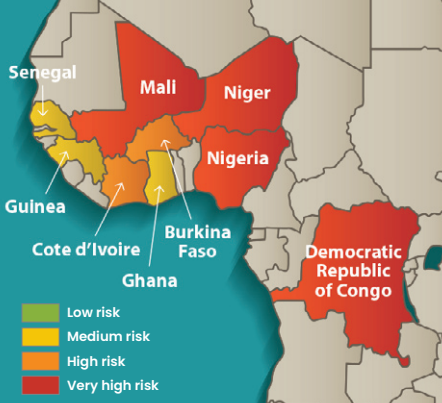
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edge on how to effectively engage with local producers to increase the availability of nutritious, stable, healthy and low-cost food for children aged 6–23 months can contribute to developing child-centred food systems.

As is the case around the world, in the WCA region, many commercially available complementary foods have nutrition profiles that do not follow international and regional recommendations or specifications – they are too sweet, too salty and/or have unhealthy fatty acid profiles (Pries et al, 2017). The development and/or innovation of commercially available complementary foods for young children, including all foods and drinks for infants and young children that are not breastmilk substitutes, should adhere to World Health Organization (WHO) guidance on ending the inappropriate promotion of foods for infants and young children (WHO, 2016), and should be promoted only if they meet relevant standards for composition, safety, quality and nutrient levels and are in line with national and regional dietary guidelines.

Over the coming years, regional partners will be working on a more specific set of regional guidelines for younger children and on the systems to enforce them at the national and regional level. This development should be done in close collaboration and under the leadership of ECOSHAM, the ECOWAS Standards Harmonisation Mechanism, with next steps to support national implementation.

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West and Central Africa (WCA) is home to only 13.8% of the world's children, yet contributes to 19.6% of the global stunting burden. Despite a nearly 10% reduction in stunting prevalence over the past 20 years, the absolute number of stunted children in the region has increased from 23 million to 29 million due to high population growth (UNICEF, 2022). To achieve the 2030 Sustainable Development Goal, the region would at least need to triple the current annual rate of stunting prevalence reduction from 1.4% since 2015 to 3.7%.

The consequences of malnutrition are well documented and include increased risk of mortality, poor cognitive development, poor school performance, limited productivity and non-communicable diseases. These individual-level consequences have macro-level implications for economic development. For example, in a recent analysis, the UNICEF West and Central Africa Regional Office (WCARO) showed that the economic loss due to malnutrition (Horton & Steckel, 2013) in West African countries amounts to at least USD36 billion per year.

While 18 of the 24 countries in the WCA region have national policies of complementary feeding (Na et al., 2020), a meta-analysis of the latest demographic health surveys conducted by UNICEF and the University of Göttingen in 22 countries showed that only 18% of children aged 6–23 months consume five food groups or more (Volmer et al., 2022). In addition, 39% of children receive two or fewer food groups daily. The proportion of children receiving the recommended five food groups or more could be doubled by ensuring that an additional food group or two is added to the daily diet of the 43% of children who currently consume three or four food groups per day, with a focus on animal source foods, legumes, and other fruits and vegetables that are consumed less often.

Unfortunately, limited finances and physical access (i.e., distance and expensive transport to markets) were two of the challenges to increasing childhood dietary diversity identified in a landscape analysis conducted in 2021 by UNICEF WCARO. Before the 2022 inflation, food prices

were already a key determinant of household food access in Africa, being 30–40% higher than in other areas of the world at comparable levels of GDP *per capita* (Allen, 2017). The landscape analysis highlighted the relevance of this for ensuring access to nutritious foods for children, with the most nutritious foods (e.g., animal sources) often being the most expensive.

Historically, efforts to improve young children's diets have focused on enhancing caregiver knowledge and practices, usually through nutrition education and counselling. These services are an important part of the solution to this problem but will not lead to dietary changes unless nutritious foods are locally available, accessible, affordable and desirable to families (UNICEF, 2021). Efforts to improve young children's diets must further ensure food systems respond to their specific needs. A rights-based approach to improving children's access to nutritious food through social protection schemes may help to ensure that marginalised and vulnerable populations – who are disproportionately affected by malnutrition – have equitable access to local products.

The WCA region is composed of a wide variety of ecosystems and an equally high number of food production systems. Unfortunately, nutrient-dense foods essential for young children aged 6–23 months – including animal source foods, fruits and legumes – are not widely available in rural areas, and only at a significant cost in urban areas. These foods are also subject to significant postharvest losses in sub-Saharan Africa (33.4% for fruits and vegetables, and 21.2% for animal source foods), which could be reduced through minimal processing for the benefit of children's diets (Kuiper & Hao, 2021).

Working through game-changing initiatives from other regions aimed at strengthening the food system and supporting the local, sustainable supply of safe nutritious and affordable complementary food for young children will contribute to improving diets and reducing stunting. For example, in Ethiopia, dehydrated egg powder has been assessed to improve the affordability of a nutritious diet for young children (Baye et al, 2021), supplying 42% of daily needs for animal protein (Abreha et al, 2021). Documenting knowl-

## Views

# An innovative feeding tool to improve young children's diets

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Using the bowl to serve a portion of food. State of Palestine, 2022



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For young children, the 6-23 months period represents a critical window for setting growth and developmental trajectories for the rest of their lives. Children require a variety of nutrients from a wide range of food sources, at the right time, and in the right way.

### The caregiver: A central figure to improving young children's diets

The role of the caregiver is integral to determining the timing of feeding, the modality, and the choice of foods offered to the child (Schmied et al, 2020). A caregiver's knowledge and behaviour can therefore be seen as the gatekeeper to adequate infant and child nutrition. Knowing what and how to prepare foods – including appropriate food hygiene and storage requirements – and how to stimulate and interact with the child before, during, and after mealtime will all influence a child's nutritional outcomes.

This plethora of responsibilities highlights the importance of a supportive environment to the primary caregiver – typically the mother. Adequate services are required at the community and primary healthcare levels to foster such a supportive environment. As health workers continue to be the trusted recipient of mothers' and families' questions on first foods for their children (Schmied et al, 2020), quality counselling services provided by health workers on what, when, and how to feed infants and young children should be more readily available. Through counselling, they can receive support and take away key nutrition messages to apply optimal practices at home. Caregivers are also then in a better position to discuss good practices with their neighbours, increasing knowledge transfer throughout the community.

Depending on where they reside, caregivers may face additional constraints to obtaining adequate and appropriate foods. This is a concern for marginalised rural communities where absolute food accessibility remains a key factor; or for those residing in food poverty areas or increasingly obesogenic environments where access to a diverse diet that is nutrient-dense and stems from a wide range of food sources may be difficult to come by and not financially accessible. This is particularly true in humanitarian emergencies where access to nutritious food becomes challenging and assistance may not always provide access to adequate or appropriate foods for young children.

One can easily understand how a caregiver may feel overwhelmed, isolated, and potentially lonely when making the best decisions for their child. The Feeding My Child report (Schmied, 2020) highlights what mothers clearly voiced:

A need for better and more accessible support from all levels, at home, at the community, and at the health centres.

Enabling caregivers – whose prominence in shaping infant and young child feeding (IYCF) is clear – is not only warranted, but essential. This is especially true in more challenging circumstances such as in emergency settings where healthcare systems are often overburdened, human resource capacity is reduced, and normal services and support mechanisms may be disrupted.

### A 'bowl and spoon' to support caregivers

The complementary feeding 'bowl and spoon', developed by UNICEF (Figure 1), contributes to addressing the two main pillars of infant and young children's diets: what children eat (complementary foods) and when and how they are fed (complementary feeding practices).

This innovative project was born out of a need to strengthen IYCF counselling programmes with a tool that could serve as an easy reminder for caregivers on nutrition messages. The bowl and spoon draws on initial prototype research from Emory University, which explored and documented the impact of using a feeding bowl to support key messaging around young children's diets and a slotted spoon to emphasise the right food consistency. Prototypes of bowls and spoons were tested for acceptability in India (Collison et al, 2015) and Kenya (Kram et al, 2015). Increases in meal frequency, the quantity of food consumed, and the improved thickness (and therefore nutrient density) of food were observed in India. In Kenya, mother to mother knowledge sharing

was also observed. In addition, a cluster randomised trial conducted in Malawi (Kedera et al, 2016) found that meal volumes increased significantly, and food consistency improved within food insecure households when using a comparable child feeding toolkit.

Building on these initial findings, UNICEF conducted a series of comprehensive consultations and engaged in an innovation process to further develop the product. As a result, the design was modified to incorporate new features that address dietary diversity and hygiene while implementing a more child-friendly and inclusive design, in line with UNICEF's **Programming Guidance for improving young children's diets** (page 34).

On the bowl, the caregiver is reminded of the four key nutrition messages: quantity, frequency, dietary diversity, and hand-hygiene. Detailed features of the bowl and spoon are described in Box 1.

## Bowl and spoon programming

Although innovative, the complementary feeding bowl and spoon set remains a simple tool that is not intended to be a stand-alone product. Instead, this tool should be anchored within existing programmes that focus on improving young children's diets. As well as a direct aid to counselling, the bowl and spoon can also provide a practical tool to support advocacy campaigns that target behaviour change, reinforcing their long-term effect.

Following the programming guidance (UNICEF 2020) recommendations, embedding the bowl and spoon within a systems approach can maximise both reach and positive outcomes:

### Health system

Included during nutrition counselling sessions, the bowl and spoon provide support to the counsellor to convey key messages by illustrating the main recommendations. The set can also be used as a complement to existing community IYCF counselling packages. The provision of quality counselling using the bowl and spoon will support the caregiver towards adapting to changes in feeding care and practices.

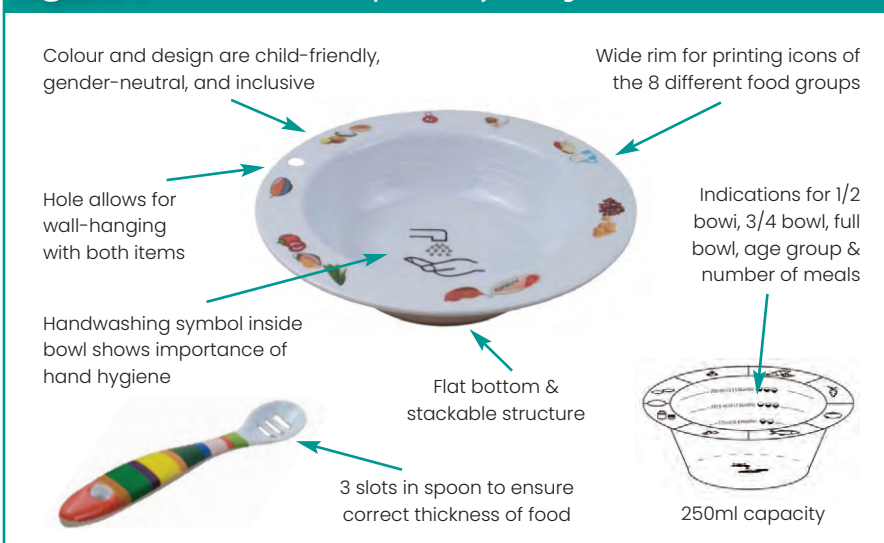
### Social protection system

Since availability and affordability are important factors for both the coverage and ultimate success of any intervention, social protection schemes such as cash, vouchers, or food to families can also serve as platforms where the bowl and spoon can be used as part of an integrated package of interventions, maximising the positive outcomes for young children.

### Food system

Agriculture initiatives that facilitate access and availability to a diverse range of foods serve as useful platforms to reinforce nutrition messages alongside the tool – as is planned in Liberia, where farmer-based organisations pro-

**Figure 1** Features of the complementary feeding bowl



vide one of the delivery platforms. In food insecure contexts, the bowl and spoon can form part of a point-of-use fortification programme with the addition of micronutrient powders or small quantity lipid-based nutrient supplements forming part of an integrated package of interventions to improve young children's nutritional status.

## Water, sanitation, and hygiene (WASH) system

The bowl includes hygiene features such as the handwashing icon and holes to facilitate the drying of the tool off the floor. In addition, it is also possible for the bowl and spoon to be integrated within existing community WASH interventions as is being tested in Liberia.

## Box 1 Form follows function

Demarcation lines are included inside the 250 ml bowl. These are age specific and adapted to the needs of 6-8, 9-11, and 12-23 months respectively, written in French, English, and Arabic.

During the complementary feeding period, the number of meals fed to children throughout the day will increase as they get older. Above each of the quantity lines, the caregiver will be able to see small bowl icons, each referring to the number of meals necessary per day for the age group.

Young children need to be fed a variety of foods that will meet their nutrient needs. The rim of the bowl features context-specific food icons representing food groups that need to be consumed on a daily basis including breastfeeding. Based on government policies on complementary feeding and existing food habits, the bowls were customised with culturally appropriate food groups represented on the rim of the bowl. Some countries opted for a regional design reflecting several food groups while some countries chose a national design.

In addition to specific nutrition messages, at the bottom of the bowl there is a handwashing symbol to remind caregivers about the importance of having clean hands for food preparation. As the child gets older, this is also a cue to wash their

hands before and after they eat. In addition, the small holes on the rim of the bowl and the tip of the spoon allow caregivers to hang the set out to dry after washing and to store it hygienically off the floor.

Along with the bowl, the chunky slotted spoon serves as a consistency test, making sure that the initial porridge is not watered down, ensuring appropriate energy and nutrient density.

In addition to displaying easy-to-read cues, the bowl and spoon have also been designed to cater for people with disabilities. The tool features contrasting colours on the bowl rim and interior, tactile demarcations on the inside of the bowl, and a chunky handle for an easy to grip spoon.

The UNICEF version of the bowl and spoon are made of food-grade virgin plastic and ink with a smooth finish to allow for easy cleaning and to prevent the build-up of bacteria. The bowl can withstand regular use and exposure to frequent washing with dishwashing detergent and can maintain all features for a minimum of 24 months. The bowl and spoon are intended to be used by several children in the same family and/or subsequently passed on to neighbours and family members. When the product no longer serves its purpose, it can be recycled thereby giving the material a second life.



Complementary Feeding Bowl and Spoon with adapted counselling card at a Workshop launch in Burundi

### Current implementation

This project is currently being implemented in five countries with UNICEF nutrition programmes: Liberia, Niger, Nigeria, Burundi, and Malawi. It is jointly implemented with the World Food Programme in the State of Palestine, Sudan, and Syria.

Following a country-level situation analysis, in line with government priorities, countries have each selected their preferred implementation strategies. As a result, the bowl and spoon have been included within a range of IYCF programmes, food fortification actions, and wider dietary diversity initiatives. Each country is offering a unique learning opportunity where the tool is integrated into existing platforms and networks ranging from primary healthcare facilities, community health and nutrition workers, mother-to-mother support groups, farmers groups, or IYCF counsellors.

In total, 400,000 bowl and spoon sets have been procured and are now in various stages of implementation.

### Emergency settings

The application of the bowl and spoon to emergency contexts is also being tested in several areas. In the State of Palestine<sup>1</sup>, where no more than 35% of children aged 6 to 23 months have a minimum adequate diet (Palestinian Central Bureau of Statistics, 2021), the tool is currently being distributed throughout the Gaza strip as part of a programme to improve young children's diets. It is expected to reach 10,000 of the most vulnerable families who, alongside the bowl and spoon, will benefit from IYCF counselling. In addition, the project includes the distribution of food parcels in certain areas and cooking demonstrations to reinforce key messages on the importance of first foods.

In Kano, Northern Nigeria, the bowl and spoon have been integrated within a wider programme of stunting reduction where the bowls and spoons will become part of a package of interventions to ensure access and affordability to the recommended diverse diet a young child needs.

### The way ahead

The bowl and spoon have an untapped potential for broader coverage and expanded use to contribute to improving the diets of young children. Discussions with country teams integrating the bowl and spoon into their programming reveal strong interest in using the tool and new opportunities are arising to extend its use into other countries and contexts.

Results to date suggest this tool can support efforts to improve feeding practices and foods for young children and maximise the impact of nutrition programmes for IYCF for a relatively small additional cost. Further, discussions are underway on wider emergency application and the possibilities for the tool to strengthen an adapted IYCF in emergency response to ensure that the diets of children aged 6-23 months are considered as part of any response package.

The first few years of this project, with implementation initially on a small scale, allow for robust data collection and the development of a greater understanding of the different delivery platforms employed and the ways to maximise impact. This learning will inform and support the subsequent scale-up of the project such as product iterations, applicability in emergency settings, and optimised efficacy, equity, and sustainability.

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<sup>1</sup> <https://www.enonline.net/fex/68/cfepalastine>

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Demonstration of the bowl and spoon set. State of Palestine, 2022

# Sudan, Nigeria, Myanmar, and Yemen: Lessons from complementary feeding programming in emergencies

## KEY MESSAGES

- This article showcases the key actions and interventions made in four countries – Sudan, Nigeria, Myanmar, and Yemen – to improve young children’s diets and how learnings were collected in a systematic fashion using UNICEF’s Action Framework to improve the diets of young children during the complementary feeding period.
- These case studies highlight the importance of a strong contextual analysis to guide the appropriate design, implementation and monitoring of actions and interventions, cross sector collaboration and integration, and proof of concept of localised initiatives that have the potential to be scaled up at national level.
- Similar documentation of experiences from other contexts, including those where complementary feeding is not prioritised and therefore not yet established, is recommended.



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## Background

The complementary feeding period (6-23 months) is a critical window in a child’s life when ensuring an appropriate diet is important

to prevent malnutrition. It is therefore vital to prioritise supporting families with children aged 6-23 months to ensure access to appropriate complementary foods, promote positive feeding practices including continued breastfeeding, and to facilitate optimal growth and development. This is particularly so in emergencies when optimum infant and young child feeding may be jeopardised.

The Infant Feeding in Emergencies Core Group (IFE-CG) provides recommendations for complementary feeding in emergencies (CFE) interventions. In a review of CFE conducted in 2019, the IFE-CG identified that there was a gap in the ‘how-to’ of supporting the diets of young

children in emergencies (IFE-CG, 2020). In early 2020, UNICEF launched ‘[Programming Guidance for Improving Young Children’s Diets During the Complementary Feeding Period](#)’ (UNICEF, 2020) (page 4) which provides an Action Framework to improve the diets of children aged 6-23 months. This series of case studies examines the interventions and actions implemented in four fragile contexts<sup>1</sup> – Sudan, Nigeria, Myanmar, and Yemen – using the Action Framework as a tool.

## Methods

The case studies were undertaken in contexts where some progress towards improving CFE programming had been reported and where a diverse set of key actions and interventions to improve young children’s diets had been documented. We hoped that the learnings from these four countries would provide greater insights for both country-level practitioners and global-level decision-makers on the ‘how to’ of CFE programming and contribute to improving this.

We used a case study methodology to collect information from multiple sources including a country-level document review, an online survey questionnaire, and key informant interviews. We classified data by themes following the logic of the Action Framework. We then reported on the various components of CFE programming that emerged from this analysis.

The findings from each country were presented according to the structure and themes of the UNICEF Programming Guidance (Box 1).

## Outcomes

The Action Framework was a useful tool for this exercise as it provided structure to the different components and stages of CFE programming and identified potential opportunities at different levels, through various channels. It may therefore be useful for other countries to use this framework to plan, design and implement CFE interventions. The examination of different settings including contexts where complementary feeding is not prioritised and therefore not yet established is recommended.

For more information, please contact Jodine Chase at [ife@ennonline.net](mailto:ife@ennonline.net)

<sup>1</sup> ENN and the IFE-CG conducted the case studies in Sudan and Nigeria. USAID/Advancing Nutrition conducted the case studies in Myanmar and Yemen

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## Box 1 Summary of the UNICEF Programming Guidance themes and components

### Programming context

Programming context is defined as the setting in which the country programming is being implemented, considering contextual features such as emergencies and food security. The Action Framework (and actions to improve the diets of young children) should be adapted and expanded according to the country context.

### Nutrition situation analysis: Drivers and determinants of young children’s diets

Conducting a situation analysis is important to design effective complementary feeding programmes. The situation analysis should include an examination of existing barriers and bottlenecks that may negatively affect complementary feeding programming. Coordination should occur within and across sectors including strengthening multi-sector planning and clearly defining the roles of different actors. Understanding the policy environment and legal frameworks driving complementary feeding outcomes is a key action.

### Interventions and actions for improving young children’s diets

Key interventions for improving young children’s diets are recommended based on available evidence. These are suggested to be implemented via different channels/systems including health, food, social protection and water, sanitation, and hygiene and at multiple levels (policy, institutional and community/household).

### Monitoring, evaluation, learning, and reported outcomes

Monitoring, evaluation, and learning is critical to effective programme implementation and the achievement of programme objectives.

# Case Study 1

## Complementary feeding in emergencies programming

### Sudan case study



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A happy mother-child dyad

© WFP/Sudan/Gabriela Vivacqua

### Introduction

This case study reviewed the complementary feeding programming implemented in Sudan, as the country was known for having made some progress despite a recurring fragile context (ENN and IFE CG, 2022).

### Programming context

Sudan presents a complex emergency context where conflict, political and economic instability, infectious disease outbreaks, and drought all negatively impact poverty and food security and challenge optimum complementary feeding practices and programming.

Within Sudan, complementary feeding in emergency (CFE) interventions have been adapted to various contexts (localities with a relatively stable protracted situation, localities with possible access, and localities with limited access) and priority was given to lifesaving interventions during acute emergencies. The tailoring of complementary feeding interventions has been elaborated on in the newly developed Sudan infant and young child feeding in emergencies (IYCF-E) operational guidance.

Strong coordination mechanisms for nutrition were in place, with the government leading on CFE interventions via the national nutrition programme and the Nutrition Sector, as well as multiple infant and young child feeding (IYCF) specific platforms (IYCF technical working group, IYCF-E taskforce and a technical committee on complementary feeding) that supported the planning and development of guidance on complementary feeding. CFE programming did not happen as a standalone intervention but was included within the wider maternal and IYCF agendas. Across other sectors, the Nutrition Sector closely coordinated with water, sanitation, and hygiene (WASH), social protection and food security and health. Key informants also reported that joint planning for nutrition (including complementary feeding activities) was happening.

The policy environment to support CFE in Sudan appeared to be strong with various policies, strategies, plans, and guidance in place to govern IYCF and IYCF-E actions. The main policy documents included a national IYCF strategy and the recently developed national nutrition policy and IYCF-E operational guidance. A key gap, however, was lack of legislation on the International Code of Marketing of Breastmilk Substitutes (the Code).

### Nutrition situation analysis: Drivers and determinants of young children's diets

A situation analysis for complementary feeding programmes was conducted in Sudan to guide programming using existing household surveys that reported on anthropometry and feeding practices, as well as qualitative data. The analysis showed that wasting and sub-optimal complementary feeding (predominantly low dietary diversity) practices among children aged 6-23 months were a major concern. Complementary feeding practices were driven by several factors, including parental education and wealth. Findings from the analysis had helped to guide IYCF actions, including the prioritisation of improved dietary diversity among young children. However, there was still a need for updated data and analyses reflecting the current situation to better guide and inform complementary feeding interventions.

The barriers and challenges to CFE programming included context-specific factors such as food insecurity, poverty and social norms and programme-related factors including funding, poor implementation of the Code, and access to remote communities.

### Interventions and actions for improving young children's diets

Most of the recommended interventions from the UNICEF Programming Guidance were re-

ported to have been implemented either nationally or in some localities, except for 'responsive feeding' – where a mother responds to her baby's cues as well as her own desire to feed.

Interventions included nutrition counselling and social and behaviour change communication (SBCC) provided alone or in combination with other interventions depending on the area of intervention. For example, in areas where food insecurity was high, counselling and SBCC were coupled with interventions to improve access to diverse and nutritious foods at the household level, such as home gardening, the provision of fortified seeds, and/or cooking demonstrations. In food insecure areas, supplementary feeding was also provided to children aged 6-23 months with a mid-upper arm circumference above 13 cm as well as micronutrient powders. Cash assistance targeted families in vulnerable areas, specifically for pregnant mothers until their child reaches 23 months of age.

The main channels of delivery of services were the health system (primary health centres) and the food system. Social protection systems were also used to target families who were most in need. WASH was integrated with IYCF interventions including hygiene awareness, access to potable water, and sanitation. System strengthening actions were implemented to influence policy and strengthen capacity at the institutional and community/household levels.

Actions to strengthen the **health system** included influencing policy related to health and nutrition services, building the capacity of service providers on complementary feeding, and implementing behaviour change interventions through mother and father support groups which contributed to strengthening delivery at the community level.

The **food system** was strengthened through close planning and the implementation of nutrition and food security activities, supporting



policies related to food fortification, implementing supplementary feeding, and supporting the food supply chain and behaviour of caregivers through home gardening interventions and cooking demonstrations.

Actions to strengthen the **social protection system** included integrating nutrition vulnerability criteria into social protection interventions and supporting cash assistance for caregivers of young children.

**WASH system** strengthening actions included developing a joint standard operating procedure to integrate IYCF, WASH and community-based management of acute malnutrition and to ensure access to water, hygiene, and food safety awareness and sanitation to vulnerable groups.

### Monitoring, evaluation, learning, and reported outcomes

IYCF (including complementary feeding) indicators were monitored by the Federal Ministry of Health with support from UNICEF and other partners. Indicators on counselling and support groups were integrated within the National Nutrition Programme and were regularly collected.

Although no evaluations had yet been conducted on the outcomes of existing interven-

tions (e.g., mother support groups and behaviour change techniques), these have since shown a positive outcome on caregiver feeding behaviour.

Key enablers and opportunities were identified by interviewees to address challenges, including addressing food insecurity through direct food assistance, ensuring emergency preparedness through existing plans and provisions, scaling up existing interventions (i.e., prioritise peer support by providing training on complementary feeding to community volunteers, sensitise communities on complementary feeding key messages, build capacity for delivery of programming on complementary feeding and implement SBCC campaigns), increasing investments in complementary feeding interventions and building on existing opportunities, strengthening reporting systems to provide evidence on the outcomes of interventions and to increase funding, and delivering complementary feeding interventions as part of an integrated programme using the multi-sector approach.

### Conclusion

Several learnings emerged from this case study: having a package of interventions contextualised to the specific challenges of

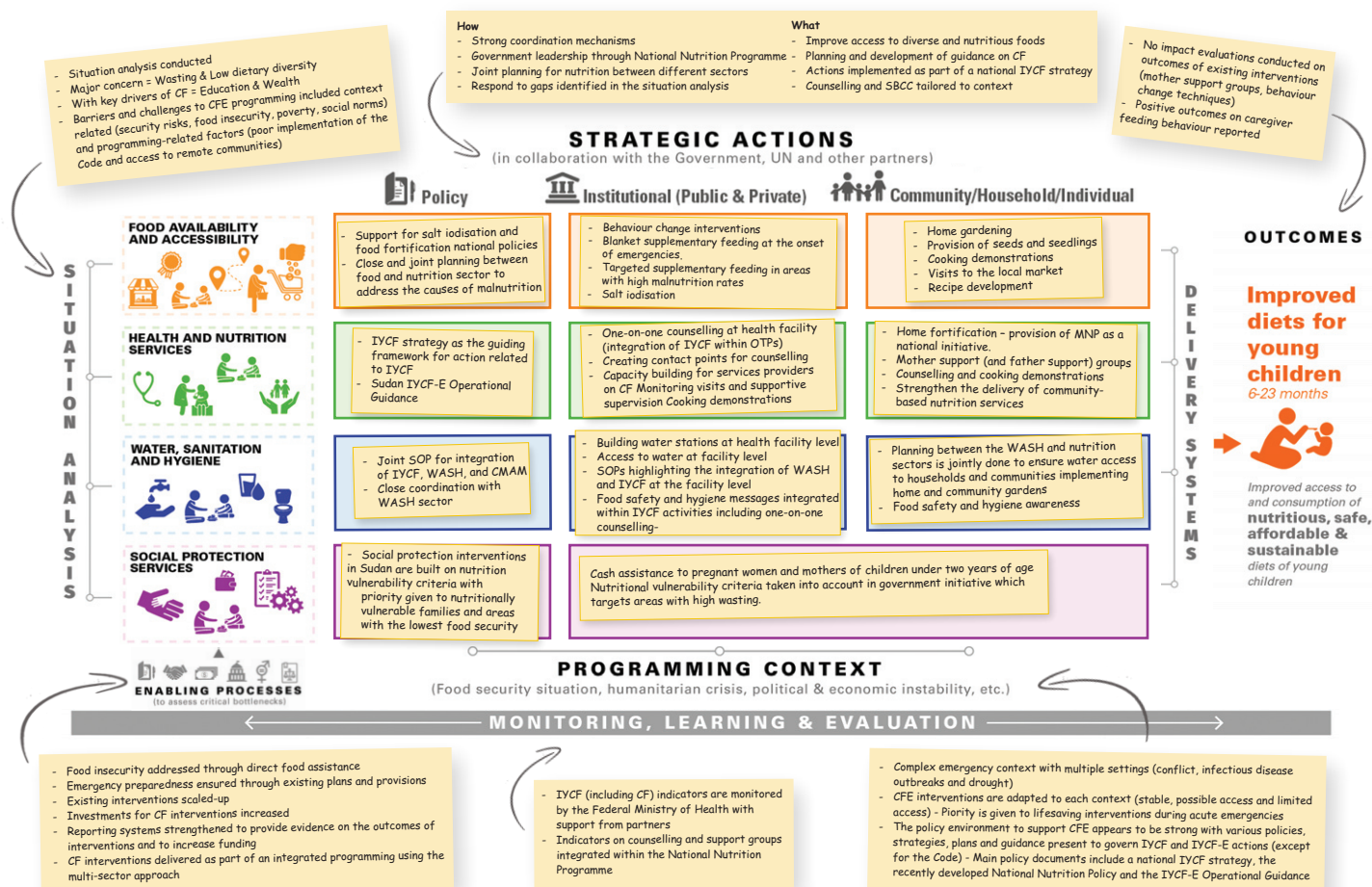
Sudan's complex emergency, including insecurity, lack of access to food and safe water and hygiene, enabled a more effective response to context-specific needs. In addition to the importance of a detailed situation analysis to guide the design and implementation of interventions, the continuous and active appraisal of the evolving situation was crucial as well as having emergency preparedness plans with clear guidance on rapid assessment in place. Close collaboration and coordination between sectors, including the representation of different sectors in IYCF, IYCF-E and complementary feeding working groups facilitated engagement and joint planning. Finally, localised initiatives, such as the Kassala dietary diversity project, provided concrete examples with documented outcomes and built the momentum for scale-up and buy-in at the national level, thereby maximising impact.

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**Figure 1** CFE Programming using the Action Framework in Sudan



# Case Study 2

## Complementary feeding in emergencies programming

### Nigeria case study

A mother interacting with her child during feeding, as recommended by the World Health Organization



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#### Introduction

This case study reviewed the experiences undertaken in Nigeria, where some progress was known to have happened in recent years in terms of complementary feeding in emergencies (CFE) programming (ENN and IFE CG, 2022).

#### Programming context

With a history of conflicts and emergencies since 2009, and a particularly complex security situation in the north-eastern states, Nigeria presented a challenging humanitarian context for CFE programming.

Strong coordination mechanisms for nutrition were in place in the northeast, where the Nutrition Sector and the infant and young child feeding in emergencies (IYCF-E) Technical Working Group worked to develop an IYCF-E guidance. This was later adapted into a unified package of interventions, as per maternal, infant, and young child nutrition in emergencies (MIYCN-E) guidance. The adoption of the guidance by all implementing partners and government bodies ensured that the nutrition response increasingly considered complementary feeding (through the infant and young child feeding (IYCF) interventions).

Although the government was not necessarily leading on CFE interventions at the start, it did provide support and endorsement to the process of developing the new guidance and tools, and their subsequent application, particularly in the northeast. The policy and legislative frameworks to support CFE were later strengthened to align federal policies with what was being done in the northeast, building on the IYCF-E and MIYCN-E documents.

Depending on the situation – areas with a relatively stable protracted situation, areas with

possible access, and areas with limited access – CFE interventions in the northeast were adapted and priority was given to lifesaving interventions during acute emergencies.

#### Nutrition situation analysis: Drivers and determinants of young children's diets

A situation analysis to guide complementary feeding programming had been carried out in Nigeria and reported in the Nutrition Sector strategy and response plan. The analysis was mainly informed by the Demographic and Health Surveys (DHS, 2018) along with other localised nutrition, food security and knowledge, attitudes, and practices surveys.

The situation analysis showed that malnutrition and sub-optimal complementary feeding practices among children 6-23 months were major concerns in Nigeria, low dietary diversity was the main factor in sub-optimal complementary feeding, but inadequate meal frequency was also prevalent, and the main drivers of sub-optimal IYCF practices were food insecurity, lack of caregiver knowledge and time, household dynamics, certain social norms, and inadequate water, sanitation, and hygiene (WASH) services.

The findings from the analysis helped to guide IYCF actions and the development of the IYCF-E guidance including prioritising dietary diversity among young children. The barriers to implementing CFE programming at scale included both contextual factors (security risks, poorly functioning markets, high inflation) and those that related to the programming of the response (insufficient funding, lack of buy-in from other sectors, capacity building constraints).

#### Interventions and actions for improving young children's diets

Actions to improve the diets of young children in northeast Nigeria went beyond the health sector and included access to food, social protection, and WASH. Interventions to improve the diets of young children in the complementary feeding period were part of a unified package of interventions (MIYCN-E guidance) and included nutrition counselling and social and behaviour change communication, provided alone or in combination with other interventions.

The main channels of service delivery were the health system (through primary health centres) and the food system. Social protection systems were also used to target the most vulnerable families. WASH was integrated with IYCF interventions, including hygiene awareness, access to potable water, and sanitation.

System strengthening actions were implemented to influence policy, strengthen capacity at the institutional and community/household levels, and were part of a coordinated effort to improve the diets of young children:

**Health system** strengthening actions included influencing policy related to health and nutrition services, and strategic programmatic shifts towards prioritising prevention and focusing on children 6-23 months which gained traction in influencing federal and state governments.

**Food system** strengthening included supporting policies regarding food fortification, implementing supplementary feeding, supporting the food supply chain and caregiver behaviour via cooking demonstrations and home gardening interventions.

**Social protection** system strengthening included the integration of nutrition vulnerability criteria into social protection interventions, as well as cash assistance.

**WASH system** strengthening actions included the integration of IYCF, WASH, and community-based management of acute malnutrition and ensuring access to WASH services for vulnerable groups.

### Monitoring, evaluation, learning, and reported outcomes

CFE activities were monitored using a proposed set of indicators as part of the newly developed MIYCN-E guidance to measure and track progress at different levels. These indicators were collected by the Nutrition Sector with potential for the federal government to adopt and integrate within the national information system to ensure sustainability.

Although no formal evaluations were conducted, a gradual change in feeding practices was perceived (based on documented improvements in exclusive breastfeeding indicators) and attributed to behaviour change techniques.

Opportunities and recommendations that could enhance programming were identified

by stakeholders including the need to scale up programme coverage (given existing traction and enhanced programme delivery to address complementary feeding drivers and security risk), the need to advocate for increased funding, and the need to better address food insecurity.

### Conclusion

Using the UNICEF CF Programming Guidance and its Action Framework to document CFE interventions in Nigeria, we learned that having a package of interventions that is contextualised to specific needs, e.g., food insecurity and changing characteristics, e.g., access, allows for a better, more tailored response. A detailed situation analysis that examined the drivers of complementary feeding practices provided the necessary knowledge to guide the design and implementation of appropriate interventions. Joint planning and a shared vision across actors, e.g., in the development of national guidance, strengthened the focus of CFE programming on prevention as well as treatment. Also, undertaking specific and concrete activities, such as the collective review and update of programming guidance and building evidence on impact, encouraged uptake and scale up.

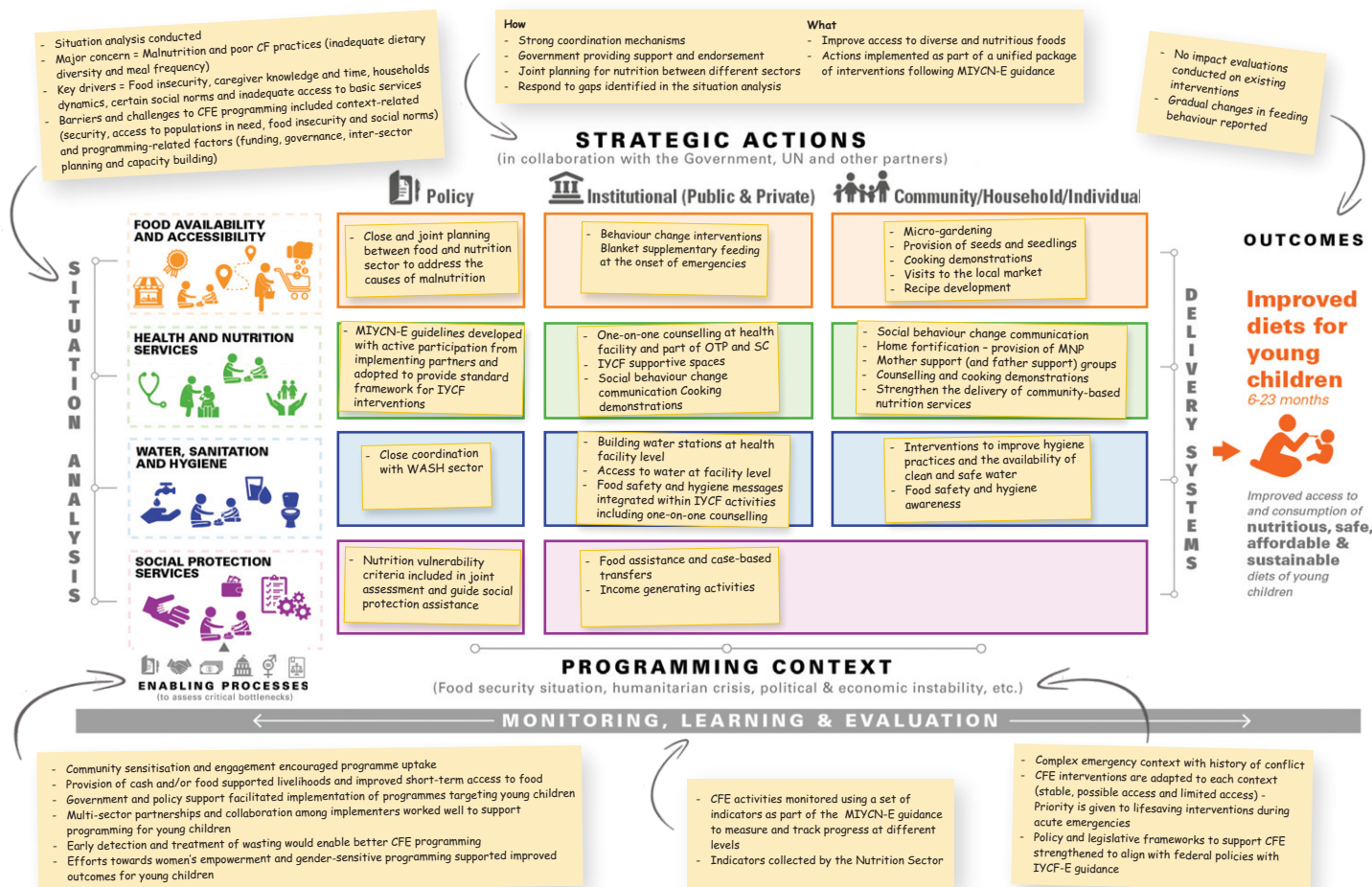
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**Figure 1** CFE Programming using the Action Framework in Nigeria



Children eat lunch at home in Yangon, Myanmar

## Case Study 3

Complementary feeding in emergencies programming

Myanmar case study



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### Introduction

This report highlights complementary feeding approaches that were implemented in Myanmar between 2017 and 2022. Myanmar was chosen as a case study due to the challenges that families face in accessing adequate complementary foods, as well as a wide range of complementary feeding approaches that were available to explore within the country.

### Programming context

Despite development gains over the last decade, Myanmar is now affected by a nationwide socioeconomic, political, human rights, and humanitarian crisis due in part to the 2021 coup d'état. This has resulted in widespread violence, mass migration, severe food insecurity, income loss, and food price inflation. Government services have collapsed including financial, health, social protection services, and agriculture. Underpinning the current crisis is a history of

persecution against many ethnic minorities, including the Rohingya people in Rakhine state. Currently, half the population lives below the poverty line.

Before 2021, several multi-sector coordination platforms and funding mechanisms integrated nutrition. These initiatives, many of which were in line with the UNICEF Action Framework (page 4), facilitated multi-sector planning and the implementation of complementary feeding support.

Due to the current crisis, international donors and non-governmental organisations (NGOs) have shifted away from strengthening government systems towards building the capacity of local partners and communities. The national multi-sector nutrition plan has been adapted for the current context as an 'Interim Multi Sectoral Nutrition Plan' resulting in multi-donor investments continuing to support multi-sector programming for complementary feeding. However, scaling up the treatment of wasting remains the Nutrition Sector priority. Multi-sector actions to support complementary feeding are not included in the plans of other sectors.

### Nutrition situation analysis: Drivers and determinants of young children's diets

Earlier statistics indicate that significant progress had been made in reducing stunting and wasting over the past two decades. At the height of these improve-

ments, only 16% of children aged 6-23 months were receiving a minimum acceptable diet, 57% appropriate meal frequency, and 67% appropriate diet diversity (MoHS and ICF, 2017). More recent analyses indicate that many gains may have been reversed since 2019.

The key barriers to optimal complementary feeding practices include the perception that healthy diets are based on high intakes of rice and cultural taboos where children are only fed certain foods (Blankenship et al, 2020). There is a lack of available and affordable diverse food options, partially due to national policies that prioritise rice cultivation, restricting land licences to grow anything else (WFP, 2020a). Limited access to agricultural supplies, movement restrictions, and fuel price increases have further restricted access to diverse foods. In a single year, the cost of a minimum food basket increased by 32% (WFP, 2020b). Normally, 59% of the population lack access to safe drinking water (MoHS and ICF, 2017).

### Interventions and actions for improving young children's diets

Myanmar has strong examples of multi-sector, development-focused interventions to improve complementary feeding practices, primarily led by NGOs and United Nations agencies, with very few through the government system.

**The 'Banana Bag'** – a bag shaped like the fruit, filled with a variety of tools de-

signed to act as ‘nudges’ for complementary feeding recommendations – is one such example. Tools such as egg and bean boxes encourage diversity, crushing tool sets promote the correct preparation of food, appropriate portion sizes are ensured through portion bowls, and appropriate water, sanitation, and hygiene behaviours are encouraged with soap and a baby towel. The soft, zippered bag also unfolds to become a baby mat so mothers can feed and play with their babies in a clean environment.

Fish production in ponds coupled with dried fish powder production are other examples, as well as the distribution of multiple micronutrient powders – targeting children aged 6-23 months (in some locations this extends up to 59 months). Encouraging home gardening with the provision of improved seeds, as well as blanket supplementary feeding programmes using fortified blended flours or lipid-based nutrient supplements are other interventions. The provision of cash and food vouchers coupled with training for motorbike and urban street food vendors to improve fresh food supply and safety also feature.

Many approaches to improving complementary feeding practices in Myanmar

are multi-sector in nature and implemented through community-based platforms informed by contextual analysis. Due to the current crisis, some of these previously development focused programmes are now adapting to the humanitarian context, demonstrating that this type of programming has the potential to be delivered as part of a humanitarian response. However, a lack of government collaboration and the presence of conflict and access to communities remain key challenges.

### Monitoring, evaluation, learning, and reported outcomes

Complementary feeding indicators continue to be part of the post-coup Plan for Nutrition. However, in the Humanitarian Response Plan for 2022, nutrition indicators included only the number of children who are reached through wasting treatment programmes. No other nutrition-related indicators are tracked. Nutrition surveys are severely restricted and assessments of interventions are carried out primarily through phone surveys with project beneficiaries largely focused on change in knowledge and attitudes.

## Conclusion

Due to the current crisis, the whole of Myanmar is categorised as a humanitarian crisis. There is concern that previous gains may now be eroded. Strengthening the government system is not currently possible and the systems approach highlighted by the UNICEF Action Framework is primarily delivered by local partners and community platforms.

Myanmar offers many examples of innovative multi-sector activities to support complementary feeding practices that continue to be delivered in the current context. However, few of these are reflected in current humanitarian response plans where the scale up of the treatment of wasting remains the priority. There is a risk that, as the funding and interventions shift to a more humanitarian focus, multi-sector actions to improve complementary feeding will be deprioritised.

This documentation of complementary feeding programming in Myanmar has yielded some useful examples of what is possible at the humanitarian-development nexus, influenced by the performance of multi-sector integrated policies, coordination, funding, and programme implementation. Efforts should continue to assess the potential for these interventions to be integrated into humanitarian planning and assess how these packages can be applied to other parts of the country.

For more information, please contact Jennifer Burns at [jen\\_burns@jsi.com](mailto:jen_burns@jsi.com)

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Ko Min plucks water spinach for his family lunch in Hlaing Thar Yar Township, Yangon

A child is checked for wasting at a health clinic in Jabal Habashi district, Taiz, Yemen

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## Case Study 4

Complementary feeding in emergencies programming

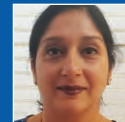
## Yemen case study



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### Introduction

This case study reviewed the complementary feeding programming implemented in Yemen between 2017 and 2022. A wide range of complementary feeding approaches were found despite the challenges many families faced when accessing adequate complementary foods.

### Programming context

Yemen continues to suffer from the worst humanitarian crisis in the world. In 2014, insurgents took control of Sana'a, Yemen's capital. In March 2015, a coalition of Gulf states launched a campaign of economic isolation and air strikes against the insurgents' groups. The country is now divided into areas controlled by the internationally recognised Government of Yemen, based in Aden, and the self-proclaimed government based in Sana'a, which is home to an estimated 70% of the population. In 2020, Yemen ranked 179th out of 181 countries in the Human Development Index, a summary measure of achievement in the key dimensions of human development. If fighting continues throughout 2022, it is expected that Yemen will also rank as the poorest country in the world (OCHA, 2021).

Food insecurity and malnutrition are most severe in areas of active conflict and

the surrounding areas where humanitarian access is limited by the security situation. Yemen's Nutrition Sector is led by the Ministry of Health and Population which co-chairs humanitarian coordination through the Nutrition Cluster with UNICEF in the governments of both Sana'a and Aden. The Nutrition Cluster is responsible for the prioritisation of humanitarian nutrition activities (including complementary feeding), as well as strategy and funding, in the Humanitarian Response Plan which covers the response under both governments.

Due to the risk of famine in recent years, nutrition activities focus on services that are perceived to be lifesaving, such as the treatment of wasting and ensuring minimum household food security. The implementation of multi-sector actions to improve complementary feeding through the Multi-Sector Nutrition Action Plan (MSNAP) is limited under both governments.

### Nutrition situation analysis: Drivers and determinants of young children's diets

While the Humanitarian Needs Overview does not include a detailed analysis of complementary feeding, it does include findings on dietary diversity, with the 2022 report recommending multi-sector actions to support improved nutrition.

According to SMART surveys conducted in 2021, 45% of children aged 6-59 months are stunted, while 10% suffer from wasting (MPHP, 2022). Wasting rates rise to 25% in the 6-12 months period, which likely indicates very poor practices in the initial phase of complementary feeding. Only one in 10 children aged 6-23 months in Yemen receives an adequate diet in the complementary feeding period, with only 12% receiving a minimum acceptable diet. High levels of poverty, spiralling food prices, poor access to services, and the constraints on the daily lives of women, such as movement restriction and challenges accessing financial services, all present challenges to following recommended complementary feeding practices. A lack of knowledge on age-appropriate behaviours and a lack of interaction with children during meals have also been highlighted as barriers to appropriate practice (Busquet, 2018).

### Interventions and actions for improving young children's diets

Actions to improve the diets of young children predominantly focus on the health sector. They include one-on-one counselling by government health workers, mother support groups and nutrition pro-

motion sessions, infant and young child feeding (IYCF) information sharing, cooking demonstrations/community kitchens, and supplementation with micronutrient powders. Examples of programmes conducted outside the health sector include home gardening and the provision of seeds, tools, and animals in addition to farmer field schools that bring together a group of farmers for hands on training to improve sustainable and nutrition-sensitive production practices, the promotion of compound flour, blanket supplementary feeding programmes, hygiene promotion integrated with IYCF education for pregnant and lactating women, conditional cash for nutrition (recommended that cash is used to purchase nutritious food with a soft requirement to attend nutrition education or training), and in-kind food assistance.

The main channels of service delivery were the health system – supported by non-government organisations (although the government recruits staff) – and the food system. Water, sanitation, and hygiene promotion activities were often integrated with IYCF and health interventions. Social protection systems were also used to target the families who were most in need, but this was not integrated with social behaviour change communication (SBCC) activities to promote appropriate complementary feeding. Cash and in-kind food support were provided to the head of the household who, in most cases, was male. Any SBCC activities for nutrition were usually directed at female caregivers.

## Monitoring, evaluation, learning, and reported outcomes

The monitoring of indicators for complementary feeding is included in the MSNAP but national information systems do not currently collect information for most of these indicators (TASC, 2021). The Nutrition Cluster database includes some process indicators and tracks the number of children receiving blanket supplementary feeding, micronutrient interventions, and IYCF counselling.

Tracking the Nutrition Sector's outcomes is challenging as short-term humanitarian programmes typically do not have baseline and endline assessments. Instead, they use wasting treatment programme outcomes and IYCF output-level indicators such as the number of caregivers receiving counselling or attending support groups.

Periodic SMART surveys collect IYCF indicators. Monitoring is based on achieving a minimum recommendation (such as feeding at least four food groups) and does not usually track incremental progress (such as a child receiving three food groups instead of four). Information about programme outcomes on complementary feeding is limited due to the short-term nature of most programmes.

Opportunities and recommendations that could enhance programming were identified by stakeholders, including advocating to address complementary feeding as a priority issue, improving coordination across relevant sectors to address comple-

mentary feeding more directly, addressing complementary feeding knowledge barriers, and analysing incremental behaviour change.

## Conclusion

As we were guided by the UNICEF Programming Guidance and its Action Framework to document complementary feeding in emergencies interventions in Yemen, we were able to learn that, given the complexity of the situation and the multiple challenges faced by families, multi-sector action is required to improve diets.

In theory, Yemen's policy environment is conducive to ensuring multi-sector actions to improve complementary feeding through improved breastfeeding and the provision of nutritious food. Although many policies were developed during the current crisis, in practice these policies are not prioritised by donors, are rarely reflected in humanitarian strategies, and are therefore not well funded.

To change the current trajectory, greater understanding among donors and decision makers is needed regarding the importance of nutritious diets for children aged 6-23 months. The prioritisation of the humanitarian response must be balanced to improve and scale up preventive measures in addition to curative nutrition services. Integration with other sectors, such as food security and livelihoods, may also enhance opportunities to engage men in SBCC activities.

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Mothers with their children at a health clinic in Jabal Habashi district, Taiz, Yemen



A complementary feeding awareness session at the primary health care facility, Egypt, 2017

## Improving complementary feeding practices through a comprehensive health systems strengthening approach: experiences from Egypt

### KEY MESSAGES

- This article describes experiences of improving complementary feeding practices using a systems approach with particular focus on health systems strengthening.
- Achievements included: the development of national guidelines for optimum complementary feeding for children 6-23 months of age, inclusion of a specific indicator for complementary feeding in the new National Food and Nutrition Strategy, updated training packages to improve health worker counselling skills and strengthened social behaviour change communication activities.
- A systems approach requires strong coordination between all partners across sectors to ensure communities benefit from the synergistic effects of complementary interventions, while system strengthening was noted to improve the resilience of the Ministry of Health and Population to withstand the shocks of the COVID-19 pandemic and the subsequent Ukraine crisis.

### Programme framework and mapping

Using national published and unpublished data, stakeholder opinions from the central and peripheral levels, and UNICEF internal reports, we mapped the bottlenecks and barriers to optimum health and nutrition during the first 1,000 days period and then identified potential interventions to improve maternal, infant and young child health and nutrition that could be implemented while considering the community preferences and the capacity of the Egyptian MoHP. We used the UNICEF Action Framework (page 4) to pinpoint the interventions that could improve complementary feeding practices through the different systems including health. This was an iterative approach, revisited yearly to respond to the changing situation on the ground.

### Key bottlenecks and barriers that we identified

#### Inadequate diets

We found that diets for children aged 6-23 months were inadequate: half of them consumed eggs and meat no more than twice a week and legumes and pulses three to four days a week and less than a third consumed the daily fruit and vegetable recommended (Ellaithy et al, 2022). The COVID-19 pandemic further reduced the ability of families to provide healthy diets for their children. Almost a fifth of households reported reducing their food consumption and one-tenth the quality of their diets (UNICEF, 2021). The drivers of poor diets for children included poverty, lower maternal educational levels (driven in part by early marriage for girls), precarious paternal employment, and poor household dietary diversity (Ellaithy et al, 2022).

#### Inadequate practices

We also identified that caregivers and communities

### Background

In the context of a national drive to improve the nutrition status of its population, directed by the President of Egypt, UNICEF worked with the Ministry of Health and Populations (MoHP) throughout several sectors – health, food, social protection, water, sanitation and hygiene (WASH), and education – to strengthen the capacity of the health system to deliver quality maternal and child health and nutrition services. The programme focused on the first 1,000 days of life – from conception up to the age of two years – and one of its objectives was to raise public awareness of optimal complementary feeding practices.

This article relates the processes that we went through to give complementary feeding a higher profile within the health systems strengthening (HSS) approach. We also share the achievements and learnings we were able to achieve within the five years of programme implementation since 2017.

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had poor awareness of optimum complementary feeding and responsive feeding practices. Traditional practices were persistent, such as the early introduction of complementary foods, while the availability and desirability of 'junk' foods further reduced the quality of children's diets.

### Inadequate services

While Egypt has a comprehensive network of primary health care (PHC) facilities that provide **health and nutrition services** to pregnant and lactating women and children under five years of age, we found that attendance was sub-optimal due to perceived low quality of care.

Overall, health care workers (HCWs) have limited capacities to provide appropriate complementary feeding counselling due to inadequate pre-service and in-service training, and the lack of information and educational materials. Many PHC facilities were understaffed, leaving HCWs overstretched.

Although there was near universal access (98%) to an improved water source in Egypt (MOHP, 2015), access to safe **water and sanitation** is constrained for the poorest households who often cannot afford to pay for access to piped water within their homes.

### Outdated policies and strategies for nutrition

The National Nutrition Strategy had lapsed and there was no cross-sector coordinating body for nutrition. Although Egyptian law incorporates some aspects of the International Code of Marketing of Breast-milk Substitutes (the Code) and complementary foods, there was limited capacity to enforce, monitor, and prosecute violations. Up to the present, there is no legislation to limit the marketing of processed foods to children.

## The national response to improve complementary feeding

Based on the identified barriers and bottlenecks, strategic actions focused on strengthening the health system as well as interventions for the food, WASH, and social protection systems.

### Food system

National guidelines for optimum complementary feeding for children 6-23 months of age, and for women in the reproductive period, were developed and finalised in 2019.

### Health System

At policy level, the MoHP coordinated with United Nations agencies to formulate a new National Food and Nutrition strategy (currently under finalisation) which includes a specific indicator of complementary feeding, i.e., to increase the proportion of children between seven months and two years who receive adequate complementary feeding alongside continued breastfeeding by 50% by 2030 (from a baseline of 23.3% in 2014).

UNICEF and the MoHP followed a HSS approach to introduce the 'first 1,000 days' package which includes complementary feeding counselling. This holistic approach focused on maternal and child health and nutrition, and early childhood development, as an integrated pack-

age of services, aiming to strengthen the capacity of PHC facilities, improve community trust, and tackle the root causes of child malnutrition. Focusing on the geographical areas with the highest burdens of malnutrition, the package was piloted in two districts of Gharbia and Qaliubia governorates from 2017 onwards and rolled out at scale to cover the approximately 400 PHC units in these two governorates in 2019. Starting in 2021, at the MoHP's request, interventions have been focused in selected districts of Gharbia, Qaliubia, Minya, Assiut, Matrouh and Alexandria governorates where the most vulnerable populations reside.

The Health Information System (HIS) of the MoHP was reviewed and strengthened to include new nutrition indicators including the coverage of iron and folate supplementation for pregnant women and children under five and the coverage of Growth Monitoring and Promotion (GMP) visits, while decision support and a data visualisation dashboard were added to enable managers to use quality data to monitor and improve services.

Training packages were produced in 2019 to improve the quality of HCW counselling skills on maternal nutrition and complementary feeding, and training was delivered to 1,100 HCWs and supervisors. Regular tests are given to HCWs, whether face-to-face during supervision visits or monthly meetings or through online platforms, to sustain knowledge after the completion of training.

To improve the early detection of malnutrition, national anthropometry training manuals and materials were produced in 2020, and anaemia screening laboratory protocols, trainings, and quality tools were implemented. Micronutrient supplementation and treatment protocols were updated and disseminated. Micronutrient procurement and supply chains were reviewed to prioritise pregnant women and children under five and to reduce stockouts.

Social and behaviour change (SBC) activities included the production and dissemination (to 675 PHC facilities) of informational awareness materials on complementary feeding (posters, flipcharts, nutrition counselling cards, videos) to be used during counselling and health awareness sessions. Social media platforms<sup>1</sup> were launched in 2020 to spread awareness of optimum complementary feeding, breastfeeding, maternal nutrition and WASH messages. WhatsApp groups at the PHC level linked mothers to the health facility to communicate with trusted HCWs at the local level.

To improve decentralised capacity for planning, monitoring, and improving health and nutrition services, training packages on results-based management, supportive supervision, and the HIS were rolled out to raise the capacity of 140 middle managers. Regular meetings were held at the district and governorate levels to review indicators, troubleshoot problems, and share success stories. Local WhatsApp groups were also used to follow up service de-

livery in the PHC facilities. UNICEF field supervisors played an important role in mentoring middle managers and frontline HCWs, troubleshooting problems and improving data quality, and innovating on-the-ground solutions (such as activating local social media channels and improved laboratory services).

### Social protection system

In 2015, the Government of Egypt (GoE) introduced the 'Takaful'<sup>2</sup> conditional cash transfer (CCT) for the poorest families, specifically targeting the first 1,000 days, on the condition that the beneficiaries attended routine antenatal care (ANC) and GMP services at PHC facilities, as a way of improving the health and nutrition of mothers and their children. By 2022, four million families were benefiting from CCTs.

Women's empowerment trainings were provided through the MoHP in intervention areas, targeting beneficiaries from the first 1,000 days services to improve women's decision-making and negotiation skills and to help women to launch their own micro-businesses to help with household finances and ultimately improve complementary feeding.

The SBC materials developed by UNICEF in the form of a 'Positive Parenting toolkit' provided advice to parents, focusing on five main thematic areas including complementary feeding for children 6-23 months of age. It is mainstreamed in collaboration with the Ministry of Social Solidarity (MoSS). MoHP and MoSS are also currently developing health and nutrition tips for families of children under five years of age using short message service messages, delivered by RapidPro.<sup>3</sup> RapidPro is also being used to establish an integrated database for families targeted through MoSS programmes, guiding community-based organisations (CBOs) to direct their cash and in-kind nutritional food assistance to support the most vulnerable families. This complements MoSS's social protection CCT programmes and widens the reach.

## Achievements

The following section uses reports generated from the MoHP HIS and UNICEF field supervisor reports.

### Training and supervision systems

Regular meetings at different levels strengthened team building and both managers and HCWs expressed satisfaction with the improved supervision system that emphasised support and problem-solving rather than fault-finding. Supervisors

<sup>1</sup> Facebook <https://www.facebook.com/First1000DaysEgyptandWhatsApp>

<sup>2</sup> Takaful ("Solidarity") is a monthly conditional cash transfer for households with children, aiming at promoting capital accumulation by providing family income support while incentivising poor households to invest in their children's health, education and nutrition by imposing conditions such as enrollment of children in schools (with a minimum of 80 percent attendance) and getting the necessary health check-ups, including child immunisation and growth monitoring for children aged below five years old, and antenatal care for pregnant mothers.

<sup>3</sup> RapidPro is a free, open source software used for building mobile-based applications.

appreciated the new tools used to monitor and improve performance. Strengthening the supervision system, on-the job training and quality control measures were credited for improvements in laboratory performance, demonstrated by reduced measurement error in haemoglobin readings from 1.3 to 0.3 gm/dL within three months of establishing these systems. Close mentoring resulted in improved HIS data quality, as evidenced by the data quality reports automatically generated by the system that enabled middle managers to make sound data-driven decisions.

### Coverage of key services

Routine HIS reports revealed an improvement in the coverage of key services between January 2021 and April 2022 as summarised in Table 1. For coherence of reporting, only the results from the start of implementation in selected districts from 2021 onwards are presented below.

Improved attendance at ANC and GMP visits reflects that public trust in PHC maternal and child health and nutrition services increased. Regular ANC attendance (4+ visits) rose sharply (25 percentage points) since the beginning of the programme, while attendance at GMP services in the second year of life rose from 2.9 visits per child to 3.9 in 2022.

A total of 1.69 million caregivers were reached with complementary feeding messages, either face-to-face during GMP visits and health awareness sessions, or through engagement with the social media platforms.

Coverage of haemoglobin screening for children under two years of age improved from 83.2% to 95.1%, reflecting better supervision systems and improved procurement of testing supplies.

Coverage with iron folic acid (IFA) tablets for pregnant women and iron and folate syrup for children under five years of age was slightly improved by advocating for increased procurement at the governorate level.

### Partnering with the private sector

Health teams reached out to community pharmacists and private laboratories to invite newly pregnant mothers to attend ANC services which helped to increase early ANC attendance. Health teams also communicated with private nurseries to improve nutrition awareness including optimal complementary feeding practices.

### Community participation

Fundraising efforts at the local level resulted in communities donating essential supplies (including laboratory supplies, drugs, ultrasonography machines)

to their local PHC facilities. They also contributed in-kind maintenance work such as plumbing and gardening services. This deepened connections between the PHC units and the public. Local CBOs, mosques and churches provided venues for health information sessions with the public.

## Lessons learned and the way forward

### Health System

Higher ANC and GMP attendance enhances the continuity of care for the infant after birth since mothers receive nutrition counselling awareness on maternal nutrition and breastfeeding during pregnancy and after delivery, with complementary feeding counselling beginning when the infant reaches six months of age.

UNICEF's support to the GoE in strengthening the capacity of the health systems to deliver quality maternal, infant and young child health and nutrition services ensured the harmonisation and integration of essential nutrition actions into national systems and services. This improved the availability and accessibility of the essential services to address malnutrition in women and children through a more holistic, multi-sector approach. Considering the high burden of anaemia in Egypt, UNICEF will continue advocating for increasing the national budget to meet the needs for IFA supplements.

The MoHP appreciated the different nutrition training packages and materials and requested expansion to cover all 27 governorates through the training of 300 trainers. Training packages are now being digitalised to be used for pre-service training and to reduce the considerable time and costs of scaling up the trainings to the HCWs of the more than 5,000 PHC facilities in Egypt.

UNICEF will continue to support MoHP capacity to leverage social media to raise awareness. However, social media platforms, while well-appreciated, are not widely available to the poorest sections of the population (internet penetration currently stands at 71%) due to the lack of smartphones and/or internet connections and gender norms hindering women's use of social media.

### Social protection system

To synergise the effect of the Takaful CCT programme to improve diets and practices, it is essential to improve the quality of health and nutrition services at the PHC level, to encourage the uptake of those services and as a pathway to improving health and nutrition outcomes for these vulnerable groups. Using the integrated package of services described in this article, HCW capacities

nationwide should be further raised to provide tailored nutrition counselling, with a special focus on complementary feeding, to ensure that the most vulnerable populations enjoy the maximum benefit from these services. Women's empowerment training programmes should be scaled up and innovative business models are needed to expand opportunities for these women.

### Food system

In view of widespread poor diets and malnutrition among children, SBC programmes to improve dietary awareness should be developed and mass media channels considered to reach all segments of society. It is also essential to effectively implement the Code as well as the global recommendations on the marketing of foods and sugar-sweetened beverages to children. Providing productive assets, such as livestock, may encourage households to produce and consume their own food, leading to improved dietary diversity for households and children (Ellaithy et al, 2022).

### WASH system

UNICEF will re-activate a 'revolving fund' in intervention areas so that families can afford the fees for a household water connection.

### Education system

It is vital to combat early marriage to enable girls to complete their education, while ensuring comprehensive nutrition education in schools to enable young families to make optimal nutrition choices.

## Conclusion

In conclusion, improving the complementary feeding of young children can be best achieved by providing a comprehensive package of health and nutrition services for mothers and children throughout the first 1,000 days, based on a systems approach to health, food, social protection and WASH, with support from widespread SBC activities. Coordinating interventions between partners is essential to ensure that families and communities all benefit from the synergistic effects of multiple approaches to support optimum nutrition. The health systems strengthening approach described here improved the resilience of the MoHP to withstand the shocks of the COVID-19 pandemic and the subsequent Ukraine crisis.

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**Table 1** Coverage of key health and nutrition services at primary health care facilities

	January 2021	April 2022
Average number of growth monitoring and promotion visits in the second year of life per child	2.9	3.9
Early antenatal care visits (within first trimester)	27.9%	38.1%
Regular antenatal care visits (4+)	29.1%	55.6%
Postnatal care visits within 48 hours	56.3%	77.1%

# Improving the quality of complementary feeding in Rohingya refugee camps in Bangladesh

A woman prepares a nutritious meal for herself and her six children in Cox's Bazar, Bangladesh



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## KEY MESSAGES

- Cooking demonstrations and traditional ceremonies marking the start of complementary feeding (*'Mukhe Bhaat'*) were implemented in Rohingya refugee camps in Cox's Bazar, Bangladesh, with the aim of addressing poor complementary feeding practices.
- Using a "learning by doing" approach, mothers quickly learned how to prepare diversified foods at home for their children using culturally acceptable recipes, in a sustainable way.
- Despite relatively limited food options available under the general food assistance, caregivers started to prepare diverse and nutritious foods, putting what they had learned into practice.

The nutrition survey conducted in October and November 2021 reported that the prevalence of stunting was 30.2% among children aged 6–59 months (UNHCR, 2021), which is stagnant at a very high level. The same survey found that the prevalence of wasting, measured through weight-for-height, was 13.7%. Although the prevalence of severe wasting increased overall to 1.3% in 2021 after the COVID-19 pandemic, the levels showed an encouraging and declining trend in the camps from 3% in 2017 to 1% in 2020. This declining trend, despite dependence on humanitarian aid, may reflect the availability of integrated nutrition services for managing children with severe and moderate wasting.

The latest infant and young child feeding (IYCF) assessment, conducted in May 2019, found that less than optimal IYCF practices were prevalent and could be contributing to the high levels of malnutrition among Rohingya children. Timely introduction of semi-solid, solid or soft foods, which is recommended when children are six months of age, was practised by half of the caregivers (51%). Dietary diversity and meal frequency among children aged 6–23 months was generally poor, with only 46% of children meeting the minimum dietary diversity, 56% reaching minimum meal frequency and 27% having a minimum acceptable diet. The nutrition causal analysis conducted between August and December 2019 found there was limited knowledge on complementary foods and dietary diversity in the refugee settlements (ACF, 2019). The meals prepared for adults were often given to children, despite this food being bulky and with poor energy and nutrient density for children's growth needs.

## Background

The Rohingya crisis has resulted in a large influx of refugees in Cox's Bazar District, Bangladesh. As of July 2022, Bangladesh was hosting almost one million Rohingya refugees from Myanmar in 33 camps in Cox's Bazar District and Bashan Char Island. About 52% of the refugee population are children under the age of 18, and 16.5% of them are children under the age of five (UNHCR, 2022).

The latest Refugee Influx Emergency Vulnerability Assessment, conducted in March 2022, showed that 95% of all Rohingya households were moderately to highly vulnerable (WFP, 2022). Commodities such as rice, wheat, flour, lentils, soybeans, fish, meat and eggs were available in the local markets, but the prices were too high for refugees to be able to purchase these goods. With limited access to regular income and livelihood opportunities, the Rohingyas were highly reliant on food assistance provided by the World Food Programme (WFP) every month.



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**Table 1** Key food items available with the WFP e-vouchers

	Food items	Remarks
1	Rice	Fixed item
2	Red lentils	Fixed item
3	Fortified soybean oil	Fixed item
4	Eggs	Fixed item
5	Sugar	Fixed item
6	Fortified salt	Fixed item
7	Wheat flour	Flexible item
8	Dried fish or anchovy	Flexible item
9	Chicken	Flexible item
10	Live fish	Flexible item
11	Fresh fruits and vegetables	Flexible item
12	Spices	Flexible item

In the Rohingya camps, nutrition services are currently delivered through 45 integrated nutrition facilities – this is explored in further detail in an article in Issue 67 of Field Exchange (Rahimov et al, 2022). Each such facility delivers a comprehensive package of nutrition services, which includes the management of children with severe and moderate wasting, promotion of and support for IYCF, and the distribution of blanket supplementary foods. To address the poor complementary feeding practices, UNICEF strengthens community mobilisation activities. These activities focus on practical demonstrations of the various ways to improve the quality of complementary foods and to make meals more energy-dense and diverse through the utilisation of locally available and culturally acceptable foods.

### Cooking demonstration sessions and “Mukhe Bhaat” ceremonies

Since January 2022, UNICEF has been implementing cooking demonstration sessions and “Mukhe Bhaat” ceremonies in the Rohingya camps in Cox’s Bazar. *Mukhe Bhaat* is a cultural tradition observed in the country where rice is put to a child’s mouth for the first time when the child reaches six months of age; it marks the initiation of complementary feeding. These activities aim to help initiate complementary foods on time using a common cultural custom, and to build the capacity of mothers and caregivers to enhance the quality of complementary foods in terms of energy density, diversity and frequency. *Mukhe Bhaat* ceremonies target children aged six to eight months, while the cooking demonstrations target mothers of children aged nine to 23 months. Due to the limited space available in the Rohingya camps and the lack of adequate and safe environmental conditions, cooking demonstrations and *Mukhe Bhaat* ceremonies are organised in the nutrition facilities.

For the cooking demonstrations, mothers are expected to attend one session per month. Sessions stress that complementary foods

should be energy- and nutrient-dense, micro-nutrient-rich and diverse; soft, palatable and safe; and not monotonous. Attendees are informed that these foods can be made using family foods as a base, but they should then be adapted because first foods are very different from meals consumed by adults and older children. Several recipes were prepared guided by the traditional practices of the Rohingyas, using diversified food groups such as egg “*suji*” (semolina), “*kheer/firni*” (rice pudding), vegetable “*khichuri*” (traditional food made with rice and lentils), egg khichuri and chicken khichuri. These recipes also align with national IYCF guidelines. The recipes are simple to cook and are mainly based on rice, cereal, lentil, egg, and vegetables; they can be sweet or salty to taste and are made from various food items provided by WFP as a part of the general food assistance<sup>1</sup> (GFA) provided through an e-voucher system in the Rohingya camps, as detailed in Table 1. The acceptability of these recipes have been tested through field trials, and the final recipes were selected based on discussions with the mothers and caregivers of children aged 6–23 months. Active feeding is promoted in these sessions. In addition, a complementary feeding bowl and spoon are given to the mothers/caregivers to help them remember nutrition messages when preparing food for their children at home and to provide them with serving size guidance.

### Methods to assess results

An assessment was undertaken in July 2022 to understand the initial results of the community mobilisation interventions for nutrition. A mixed-method approach was employed consisting of qualitative and quantitative data collection and analysis. Qualitative data were gathered through a series of focus group discussions (FGDs). A household survey was conducted to gather quantitative data. A semi-structured questionnaire was used as a quantitative tool.

Dietary intake was assessed by 24-hour dietary recall method (24HR) applying a structured interview to capture detailed information about all foods and beverages consumed by the respondent in the past 24 hours, from midnight to midnight the previous day.

A total of 260 mothers and caregivers of children aged 6–23 months were randomly selected from the cooking demonstration sessions and *Mukhe Bhaat* ceremonies (attended between January and June 2022). Data were collected by the IYCF counsellor of the UNICEF implementing partners.

### Results achieved

**Caregivers’ participation in *mukhe bhaat* and cooking demonstrations**  
A third of the mothers and caregivers interviewed (32%) attended at least half of the sessions (i.e. three sessions) between January and June 2022.

During the FGDs, caregivers highlighted the difference between cooking demonstration sessions and regular nutrition education sessions. All interviewed mothers and caregivers said they enjoyed participating in the cooking demonstration sessions, as they had become a common meeting place for women to discuss various issues relating to child health and nutrition; they also said the sessions helped them prepare nutritious food using the GFA food rations. The food prepared during these sessions was offered to the children and the mothers said the children ate better during these sessions. Altogether, mothers were motivated to regularly attend these sessions. These sensitisation sessions were culturally acceptable and almost all (94%) mothers reported not facing any challenges or barriers from family members, e.g. husbands and mothers-in-law, to attend. For the 6% who faced challenges, the primary challenge was having a smaller child in their household and no other caregiver to take care of them while they were away.

### Caregivers’ knowledge

Mothers and caregivers who attended these sessions were found to have increased their knowledge on IYCF practices. Caregivers’ knowledge on making nutritious-dense foods (using UNICEF-recommended food recipes) increased from 41% at pre-intervention to 97% at post-intervention stages. Over 95% of mothers reported actively engaging in different activities to encourage their children to eat. Participants in the FGDs acknowledged that “learning by doing” was a better approach to learn and this encouraged them to start practising the recipes at home.

### Preparation of more diversified foods

Among mothers and caregivers interviewed, 65% mentioned they had started preparing diversified foods at home for their children after receiving guidance from the cooking demonstrations. The practice of preparing diversified foods at home was significantly associated with the number of cooking demonstration sessions attended. Mothers who attended more than three sessions were twice as likely to prepare diversified foods at home than those who attended fewer than three sessions. During the FGDs, mothers and caregivers highlighted that, even though they had started preparing the diversified food recipes at home, they were not able to prepare separate meals for their children every day. From a 24-hour dietary recall, only 38% of children had consumed at least five out of eight food groups on the previous day which increased from 22% in the pre-intervention period.

### Children’s perceptions of the foods prepared

Almost all caregivers interviewed (99%) said

<sup>1</sup> The WFP has been providing GFA through an e-voucher system that allows households to purchase up to 24 food items in shops (10 fixed and 14 flexible items).

their children liked the diversified foods prepared at home. Mothers also started to observe some changes in their child's health and nutritional status: among those who regularly prepared diversified foods, 52% reported that their child's appetite had increased and 83% observed that the child was growing healthily and was more active (being playful and responding to surroundings).

## Learnings

A child's nutrition requirements are different from those of an adult's, and meeting those requirements is critical for developing the child's full physical and cognitive potential. Food prepared at home for the child should be energy and nutrient-dense, micronutrient-rich and diverse. In the Rohingya camps, mothers do not prepare separate meals for children every day. Adult meals are often given to the child, but are insufficient to meet the child's energy and nutrient requirements. Changing the mindset of the families regarding separating food preparation for children every day has been a major challenge.

The entitlement for GFA through e-vouchers was US\$ 13 per family member per month, in line with the minimum expenditure basket approved by the government. Fixed subsidy levels on income earning limits a family's ability to choose the variety and quantity of food items. With no other or very limited income earning opportunities in the camps, it has been a challenge for a Rohingya family to buy diversified food every day.

Because of overcrowding and limited space availability in the Rohingya camps, cooking demonstrations and *Mukhe Bhaat* ceremonies are organised in the nutrition facilities. Caregivers usually cross hilly terrain and walk long distances to reach the nutrition facilities, which make them reluctant to come to the facility only to attend the cooking demonstration sessions. Because of space constraints and limited capacity in the nutrition facilities, one session is organised per day, which can accommodate 10–12 participants. Reaching all targeted mothers and caregivers of children aged 9–23 months remains a challenge. The mothers and caregivers of malnourished children (stunting, underweight and wasting) and pregnant and lactating women with IYCF issues are therefore given priority for these sessions. The survey findings give an indication that increasing the number of sessions would allow mothers to attend more sessions, and this would lead to further improvement in outcomes. From the beginning of 2023, the plan is to organise more cooking sessions to enable mothers and caregivers from every catchment to attend one session per month.

As this article is being finalised, a detailed IYCF assessment is being undertaken in the camps and host communities, from which we hope to see improvements in the IYCF indicators.



A woman buys fresh vegetables, in Cox's Bazar, Bangladesh

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## Conclusion

Doing more of the same (messaging and counselling on IYCF) will not make a significant difference to complementary feeding practices. If we want to change behaviours and improve feeding and caring practices, we must look beyond counselling or make it more enriching and participatory, as shown from the learnings of this programme. It is essential to make this change, as the quality of children's diets is more important before the age of two than at any other time of life.

The cooking demonstrations and -ceremonies in the Rohingya camps focus on how various diverse and nutritious foods can be prepared using the relatively limited options available under GFA. These sessions address key elements of complementary feeding: timely introduction, diversity, nutrient density, inclusion of animal source foods and vegetables, age-appropriate amounts, meal frequency and consistency, food safety and preserving nutrients during the process of food preparation, and responsive feeding and caring. The sessions used a participatory "learning by doing" approach; mothers easily accepted the diversified food recipes and quickly learned how to prepare diversified food at home, thus practising the learnings and ensuring that children have continued access to nutritious and safe diets in a sustainable manner.

In the Rohingya camps, the various ingredients required for a more diverse and nutritious diet are already available as a part of the GFA (though in limited quantities). Using food items from the GFA and employing culturally acceptable recipes, the dietary requirements of

children aged 6–23 months can be successfully met. This learning is already being replicated in the host communities in Cox's Bazar utilising the existing government health systems. The use of a "learning by doing" approach and developing culturally acceptable recipes can be easily replicated in any emergency settings with GFA, as well as in non-emergency settings. While it is important to focus on the various activities for protecting and promoting breastfeeding, there is also an urgent need to put extra effort into improving complementary feeding and caring practices if we are to significantly reduce levels of undernutrition among young children.

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# Improving complementary feeding through home fortification in Malawi



A mother and child in Lilongwe during feeding time, Malawi, 2022

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## KEY MESSAGES

- This article provides insight on the successes and challenges involved in introducing micronutrient powders (MNPs) at household level to improve complementary feeding practices.
- The use of MNPs for home fortification was found to be acceptable in Malawian communities.
- Community-based distribution methods were preferred, but multiple delivery modes or access points for MNPs facilitated greater coverage and relieved the burden on community-level health workers.

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## Background

In Malawi, the rates of stunting and anaemia among children under the age of five are high (36% and 63% respectively), which can lead to a significant loss in intellectual potential and future productivity (Government of Malawi, 2015). Complementary feeding practices are poor, with only 17.3% of Malawian children aged 6–23 months receiving an appropriate minimum dietary diversity (MDD), 36.8% a minimum meal frequency (MMF) and 8.7% a minimum acceptable diet (MAD) (Government of Malawi, 2021).

Knowledge gaps, food insecurity and food availability challenges are key contributing factors that limit the quality of diets in the country (Jones, 2015). Access to nutritious foods is also affected by seasonal fluctuations, and in Malawi rates of undernutrition differ between lean and post-harvest seasons (Chikhungu and Madise, 2014). These factors result in poor complementary diets and limited intake of micronutrients, which then lead to poor child growth and development. Humanitarian disasters also continue to occur with increasing frequency and intensity. The country has been heavily affected by cyclones and disease outbreaks, which increase nutrition vulnerability and affect complementary feeding practices.

Fortifying complementary foods at home is an effective intervention for improving the micronutrient intake of children in the complementary feeding period. Micronutrient powders (MNPs) have been shown to significantly improve haemoglobin levels and to reduce the prevalence of iron deficiency anaemia and retinol deficiency (Tam et al, 2020). When combined with nutrition education, MNPs can improve linear growth and other child feeding practices (Lanou et al, 2019).

The provision of MNPs has the potential to contribute to improving nutrition, especially in countries with multi-layered complementary feeding challenges and countries in fragile settings. Malawi's national Multi-Sector Nutrition Strategic Plan 2018–2022 aims to promote home fortification of complementary foods with MNPs.

This article presents results from a participatory process review of Malawi's programme for improving complementary feeding through the introduction of local MNPs (*'Ndisakanizeni'*), which was piloted in two districts of the country.

This article presents results from a participatory process review of Malawi's programme for improving complementary feeding through the introduction of local MNPs (*'Ndisakanizeni'*), which was piloted in two districts of the country.

## Programme description

In 2016, the Ministry of Health, in collaboration with UNICEF, initiated a programme for improving the quality of complementary feeding through home fortification with MNPs and enhancing caregivers' understanding of optimal nutrition and standard infant and young child feeding (IYCF) practices. It was initially implemented for 18 months as a feasibility study in two districts: Nkhata Bay was chosen to represent hard-to-reach environments in Malawi, while Ntcheu was chosen as it had better access to services.

## MNP distribution and nutrition counselling

The MNPs were distributed from a centralised location to the health facilities. Three distribution channels were used for bi-monthly delivery of MNPs and related nutrition counselling from the health facilities to the caregivers. These channels included routine delivery at the health facilities; growth monitoring sessions facilitated by health surveillance assistants (HSAs); and care group platforms conducted by volunteers (cluster leaders/promoters) in the community.

During the distribution, the caregivers were counselled to provide one MNP sachet every other day, or 3–4 sachets a week to be consumed by the children. One MNP sachet consisted of 15 micronutrients and vitamins, including vitamin A (400 µg), iron (10 mg) and zinc (4.1 mg).

### Programme training

Programme implementers were trained using a cascading model, from national to community level. Training topics included nutrition and IYCF, complementary feeding and the proper use of MNPs, screening and enrolment, distribution, supervision, and reporting. Supportive monitoring was done at all levels, with more frequent supervision during the initial deployment and less frequently after six months.

### Community awareness and sensitisation

Community leaders were sensitised at the traditional authority level through meetings with area development committees. Subsequently, community sensitisation meetings were conducted at group village level. Information, education and communication (IEC) materials were also produced and distributed (without pre-testing) to support training and counselling activities.

### Methods of programme review

In August 2019, using a mixed methods participatory process review, we collected data from 600 caregivers of children aged 6–23 months from the two implementing districts. The observations from the two districts were ecologically compared<sup>1</sup> to gain insights on the effects of product delivery and the acceptability of the products. The sample size used was calculated to predict an MNP coverage of 37.5%, with a precision of ±7% and with a 95% confidence level. Using ENA software, we randomly selected 10 clusters at the health facility level in each district. In each health facility cluster, we then selected, also randomly, 30 grouped villages using a probability proportional sampling technique. One village was then randomly selected from each of the 30 grouped villages, and 10 caregivers with children aged 6–23 months were chosen from the selected villages.

The quantitative caregiver questionnaire comprised seven modules designed to assess utilisation, acceptability and adherence of the MNP product and programme, as well as IYCF knowledge and practices. Quantitative data were analysed using descriptive statistics. Chi-square and t-tests were used to compare MNP coverage, IYCF practices, utilisation and adherence according to district for ecological differentiation and generation of lessons to guide further implementation.

Qualitative data were collected through key informant interviews (n = 64), focus group discussions (n = 10) and direct observation at community, health facility, district, implementing partners and national levels. The qualitative questionnaire comprised semi-structured guides with open-ended questions, focus group discussions and checklists for direct observation.

**Table 1** Comparison of MNP coverage indicators by district

	Ntcheu (n = 253)	Nkhata Bay (n = 282)	p-value
Report ever receiving a packet of MNP, N (%)	162 (64.0)	200 (70.9)	0.09
Report child ever consuming MNP with complementary foods, N (%)	152 (60.1)	199 (70.6)	0.01
Report child is still consuming MNP with complementary foods (among those who ever consumed MNP with complementary foods), N (%)	74 (48.7)	139 (69.9)	<0.0001

**Table 2** Comparison of complementary feeding indicators according to MNP consumption

	Ever consumed MNP with complementary foods (n = 351)	Never consumed MNP with complementary foods (n = 184)	
Minimum Dietary Diversity (MDD <sup>a</sup> ), N (%)	258 (73.5)	131 (71.2)	0.57
Number of food groups consumed (out of 7), Mean ± SD	4.41 ± 1.46	4.04 ± 1.59	<0.01
Minimum Meal Frequency (MMF <sup>b</sup> ), N (%)	188 (54.8)	108 (60.0)	0.26
Minimum Acceptable Diet (MAD <sup>c</sup> ), N (%)	143 (40.7)	79 (42.9)	0.62

<sup>a</sup> Proportion of children aged 6–23 months who received foods from at least four food groups during the previous day

<sup>b</sup> Proportion of breastfed and non-breastfed children aged 6–23 months who receive solid, semi-solid or soft foods (but also including milk foods for non-breastfed children) the minimum number of times or more

<sup>c</sup> Proportion of children aged 6–23 months who had at least the MDD and the MMF during the previous day

Qualitative data were analysed using NVivo software. Data were organised into themes, for which a coding framework was developed.

All data collection tools were translated into the local language before validation by the MNP taskforce and data collection team and pre-tested in two health facilities that were not part of the intervention.

## Results and outcomes

### Demographic characteristics

Of the 600 caregivers surveyed, 70% had obtained a primary school education and over 50% spoke Chichewa. Over half the children (51%) whose caregivers were interviewed were female and aged between 12 and 23 months.

### Programme coverage, equity and delivery of MNPs to beneficiaries

Overall, more than 60% of the study participants in both districts reported ever receiving an MNP packet or their child ever consuming MNPs with complementary foods. Table 1 summarises the differences in coverage between the two districts. Coverage was significantly higher in Nkhata Bay compared to Ntcheu for children ever consuming MNP and children still consuming MNP. On the other hand, there were no observed significant differences in coverage based on demographic factors: child's sex, caregiver education and caregiver walking distance to health facility.

Programme implementers nevertheless revealed, through qualitative assessments, inequitable distribution of MNPs and of support to hard-to-reach areas because of access challenges resulting from fuel, terrain and human resource constraints.

More than 80% of the caregivers received MNPs from HSAs at growth monitoring sessions, while 20% received them through the health

facilities or care group promoters. All three channels of delivery were well accepted by the caregivers and programme implementers.

### Complementary feeding practices and use of MNPs

Three complementary feeding indicators were assessed, and results showed that over 70% of the children in both districts achieved MDD. There was no significant difference in MDD, MAD or MMF between children who had ever consumed MNPs compared to children who had never consumed MNPs (Table 2). However, MNP consumption was positively associated with the consumption of a higher number of food groups. More children who were consuming MNPs were still being breastfed (95%) compared to children who had stopped consuming MNPs (85%).

### Utilisation of micronutrient powders and adherence by caregivers

Caregivers found that MNPs were acceptable and compliance with the administration guidelines of MNPs was good; they reported that their child consumed an average of one sachet per day. Based on caregiver self-reporting, the *Ndisakanizeni* powder was rarely shared with non-eligible children (3%) or thrown away. However, about 40% of caregivers did not adhere to the mixing instructions, adding MNPs to food that was too hot or not mixing it homogeneously.

### Effectiveness of community sensitisation on the utilisation of MNPs

Although poor retention of information by caregivers was mentioned, IEC materials were mostly perceived as useful and contributed to the high

<sup>1</sup> The ecological approach is understood as a method by which comparisons are measured at population/group level in different geographic regions or countries.



A demonstration of how to add MNPs to a child's food in Lilongwe, Malawi, 2022

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acceptability of MNPs and the dispelling of rumours. Of caregivers, 40% were aware of negative rumours surrounding MNPs, although only 11% decided not to use the *Ndisakanizeni* powder based on these rumours. HSAs were identified as the preferred communication channel for MNP messages by 80% of caregivers.

### Programme training and implementation supervision

Programme implementers reported the two days of training received were too short and not comprehensive enough. Attendance was low. Only 47% and 43% of programme implementers reported attending and/or leading a cooking demonstration in Nkhata Bay and Ntcheu respectively. Overall, only 69% of caregivers received training on *Ndisakanizeni* powder, which was higher in Nkhata Bay (73.3%) than in Ntcheu (63%). In Nkhata Bay, supportive supervision was facilitated by partners (World Relief and Save the Children) through the provision of vehicles and other materials. The same support was not available in Ntcheu.

*“Of course, the main problem why the health surveillance assistants are not being supervised is because we do not have enough resources. Although it is included in the work plan, how can we implement it without resources? There is no money set apart for supervision.”*

- The Hunger Project, Implementing Partner, Ntcheu

### Lessons learned

This programme review highlighted several lessons that could be adapted to similar programmes, or emergency contexts in the future.

#### Successes

The programme reached equitable coverage in terms of child sex, caregiver education levels and caregiver walking distance to the health facility. The latter reflects the widespread use (80%) of community outreach sessions to distribute MNPs.

The combination of different channels of distribution (growth monitoring sessions, care group promoters or health facilities) was positively perceived by the caregivers and implementers and found to be an effective approach given the strengths and weaknesses of each channel – these findings are in line with micronutrient distribution in Cambodia, as featured in Field Exchange issue 59<sup>2</sup>, where a combination of channels increased coverage and cost effectiveness. The diversity of distribution channels was also considered a means to lower the risk of distribution channel collapse in case of an emergency.

The programme was effective in empowering the programme extension workers and the caregivers. The extension workers showed high knowledge retention on the use of MNPs and IYCF, and caregivers mostly administered the MNPs according to instructions. Overall, there were positive attitudes and perceptions about the programme among caregivers. Although rumours made their way to the communities, they had little effect on the decisions made by the caregivers to feed *Ndisakanizeni* powder to their children.

### Challenges

Programme implementers reported more district-level supportive supervision, community-level cooking demonstrations and attendance at caregiver trainings in Nkhata Bay compared to Ntcheu, which could be contributing factors to the observed differences in coverage between the two districts. This is despite Ntcheu being chosen as a district with better access to services.

Across both districts, several challenges and gaps were identified in both programme conception/design and implementation/programme delivery. These gaps represented missed opportunities to promote community engagement, sustainability, and ownership. Challenges included poor supply chain management, gaps in capacity building and supervision and weakness in the integration of the MNP programme into other IYCF programmes. Addressing these challenges is important, not only to ensure the quality of

the programme but also to strengthen the resilience of the programme to possible shocks.

### Conclusion

This programme for improving the quality of complementary feeding through home fortification with MNPs showed encouraging initial results. This participatory review has provided useful lessons on strengthening the programme to potentially contribute to improving complementary feeding practices while ensuring the system in place can remain functioning in case of an emergency.

Overall, the programme was well received by the target population. However, this study illustrated the implementation challenges that need to be overcome to ensure optimum uptake of MNPs and improve complementary feeding practices. A weak delivery system might easily reduce MNP distribution, coverage, uptake and level of complementary feeding and diversification. The uptake could have been better in both districts had there been adequate and regular capacity building and supervision of implementers to ensure high-quality messaging; a pre-tested, integrated social behavioural change communication approach; sufficient, uniform logistical support; and strengthened supply chain management.

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<sup>2</sup> <https://www.ennonline.net/fex/59/micronutrientcambodia>

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The bond between the caregiver and children was enhanced during the food introduction and sensory workshops. Brazil, 2022

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# Supporting positive young child feeding practices among Venezuelan migrants and refugees living in Brazil

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## KEY MESSAGES

- This article describes the “participatory kitchens” that were established in three shelters in Brazil to support positive infant and young child feeding practices among Venezuelan migrants and refugees.
- The organisation of a network of potential local food producers and suppliers has allowed for the provision of higher-quality and lower-cost food to shelters for refugees and migrants and promotes the local economy within the context of a humanitarian crisis.
- In emergency contexts and humanitarian crises, the promotion of healthy eating behaviours in spaces such as shelters for refugees and migrants must consider the cultural specificities of each group and their need for appropriate spaces and structures for the preparation and consumption of healthy food.

## Background

The state of Roraima in Brazil has experienced a high influx of refugees and migrants from Venezuela. Roraima has been the primary target of activities developed by UNICEF and its partners. These initiatives have mainly focused on the implementation of primary health care services, including nutrition, in official shelters; informal settlements; and Local Health Facilities in the most affected municipalities (Boa Vista and Pacaraima). Currently, Roraima has nine shelters for migrants and refugees from Venezuela, which are managed by the Ministry of Citizenship, the United Nations High Commission for Refugees and its partner organisations. Shelters are vital services for the health and well-being of refugees and migrants. When managed well, they can contribute to restoring self-reliance, dignity, and nutritional recovery. Most people stay for an average period of four months, although often much longer. After leaving the shelters, some families are relocated to other states in Brazil, following a national programme of integration; others decide to stay in Roraima, living outside shelters.

There is a high level of malnutrition among Venezuelan refugees and migrants, with a recent survey finding that 11% and 3% of children under the age of five were moderately and severely wasted respectively. The same survey found that 18% of children under the age of five were stunted (UNICEF, 2022). Roraima has no formal food security strategy for refugees and migrants. In the shelters, families are provided with three meals per day. However, the family food ration has low dietary diversity due to the lack of local food suppliers, and does not consider the specific needs of young children.

In response to this gap in the family food ration, and building on our commit-

ment to children, we have developed an intervention to support the feeding of infants and young children aged 0-24 months by establishing “participatory kitchens”, engaging with the existing community.

## Participatory kitchens

The participatory kitchens pilot project was implemented between January and May 2021 in three shelters in Boa Vista Municipality in Roraima. The project was implemented in partnership with UNICEF Brazil, the Volunteer Association for International Service (in Portuguese: Associação Voluntarios para o serviço internacional – Brasil), and the Center for Nutritional Recovery and Education (in Portuguese: Centro para Recuperação e Educação Nutricional), and financed by the United States Department of State's Office for Population, Refugees and Migration. It aimed to empower caregivers to prepare adequate complementary food using existing and accessible food, thus contributing to improved access to adequate food within the context of a refugee crisis.

## Formative research

We identified and interviewed a network of local suppliers that could potentially contribute to the participatory kitchens with the support of local humanitarian agencies (Table 1). We interviewed nutrition professionals working at the shelters, local humanitarian organisations, and caregivers to inform the design of the participatory kitchens model and provide insights into the nutritional needs and dietary habits of Venezuelan children. In total, 156 interviews and focus groups were held with 82 caregivers living in the shelters.

Of the caregivers interviewed, 89% indicated that they would use the kitchen to prepare food for their children and 90% stated they would accept additional

**Table 1** Potential collaborations for the participatory kitchens

Type of organisation	Potential for contribution
Farmers' Associations, local markets and supermarkets	Donating food or providing food at a reduced cost
Federal University of Roraima	Free training on food production in a community garden and facilitating possible partnerships with local cooperatives
Private organisations from the food industry sector	Training in the areas of food production, food safety, and the establishment and maintenance of vegetable gardens; possibility of including community kitchens as beneficiaries entitled to receive donations
Boa Vista Municipality – managers	Funding the technical nutrition team that provides project supervision, helping ensure the sustainability of the project; an opportunity for the project to be a beneficiary of the Food Acquisition Program
Secretary of Agriculture and Social Management	Allocation of land for the development of a community garden, and allocation of inputs for planting and maintenance
Operation Welcome (“Operação Acoholda”), conducted by the Brazilian government/Army	The project could be integrated into formal national programmes of integration, such as Operação Acoholda. The training of caregivers of children could become a livelihood strategy and contribute to caregivers' integration into Brazilian society

responsibilities such as cleaning and distributing meals. The challenges identified were that 53% of caregivers had more than three children, 41% were single mothers, and 46% had no one to look after their children while they were outside the home. Through the interviews and focus group discussions, it was identified that one caregiver should be available daily for the role of meal preparation for every 20 children, and at least one caregiver should be available to clean the space. These would be rotating activities in which different caregivers would participate each day. We found that supervision of the kitchen by a single nutrition professional and the provision of a logistical technician was achievable at all shelters.

### Implementation

Participatory kitchens were fully equipped and established inside three shelters to facilitate the participation of caregivers and

ownership of the project. In this pilot phase, the three kitchens covered a catchment of five shelters. Caregivers from all five shelters participated in kitchen activities, with participation dependent on the kitchen's capacity and the shelter's COVID-19 protocols. A management model for the kitchens and food distribution was defined in partnership with the project staff (a nutrition coordinator, two nutritionists, and two qualified nutrition technicians), managers, and caregivers of each shelter. A local committee system composed of caregivers that focused on infant and young child feeding was established in each of five shelters to periodically discuss parental care, food preparation and hygiene, and logistics for the distribution of meals. It was established that the average monthly logistical cost of the project was USD 1,000 for the three participatory kitchens. However, this amount did vary depending on the size

of the target population, the geographical conditions, and local political and social issues. The final cost for including one balanced complementary meal for children aged 6–24 months in each shelter was USD 1.5 per child per day – 40% lower than the cost incurred by the shelter management services pre-intervention.

### Workshops and training

Three main forms of training took place within the project.

#### Caregiver training

Groups of up to 10 caregivers of children aged 0–24 months were established, with each group attending a total of five workshops. Each workshop covered a different theme relating to infant and young child feeding, with several sessions promoting the tasting of new and local foods to stimulate the senses of smell and taste. To promote greater engagement in the workshops, following practical demonstrations, caregivers created a symbolic craft work (“concrete gesture”) and facilitated periods of relaxation to the sound of soft music. Table 2 describes the main themes of the five workshops, as well as the “concrete gestures” created in each workshop. Supporting material for participants were prepared in Spanish and Portuguese; they contained simplified information on infant and young child feeding and a menu of culturally adapted recipes using accessible local healthy foods and ingredients.

#### Caregiver training with certification

A partnership was made with private organisations to provide an additional professional course on safe food handling practices (comprising a workload of 20 hours). On completion of the course, caregivers were provided with a certificate that is valid throughout Brazil.

#### Training for health professionals

Additionally, workshops on nutrition during the first 1,000 days were conducted, targeting nutritionists and community health workers from different agencies working on the humanitarian response. The approach focused on increasing basic technical knowledge and showcasing alternative methods for conducting infant and young child feeding counselling during routine services. The training composed of four modules of two hours, applied weekly. The course covered four main topics: counselling on feeding practices that are responsive to identified needs; pregnancy and breastfeeding; the introduction of food items during complementary feeding; and nutritional surveillance in emergencies.

### Successes, challenges, and lessons learned

#### Successes

The realisation of this pilot project represented an important achievement for the partnership

**Table 2** Topics covered in participatory workshops, targeted at caregivers of children aged 0–24 months

Main theme	Concrete gesture
The first 1,000 days	<b>Planting a seed:</b> Each participant was given a plastic cup with a piece of cotton and bean seed to plant. The group discussed the need to care for the seed so that it would germinate and grow, and how this could represent the care children must receive to thrive
Breastfeeding	<b>Building a mandala (a geometric symbol):</b> Each participant produced a mandala called “The God's Eye”. This symbol originates in Latin American indigenous traditions and symbolises a child's care, protection, and good fortune
Introduction of complementary foods	<b>“Secret Santa” activity:</b> Healthy complementary foods were presented to the children so they could become accustomed to the texture, shape, and appearance of these foods. At the end of the sessions, each participant chose a fruit or vegetable to gift to someone else in the group, and was asked to reflect on why they had chosen their specific fruit or vegetable as a gift
Brazil's nutrition guidelines and tools for children under the age of two	<b>Creating a meal:</b> Each participant designed a plate of food using their recently acquired knowledge on complementary feeding. The plate had to include one food from each food group. This activity was adapted from the activity commonly used in nutrition education called “My Plate” <sup>1</sup>
Great Meal	<b>The Great Meal:</b> To put into practice content from the previous sessions, a big meal was prepared and served to all children in the shelter

<sup>1</sup> <https://www.myplate.gov/>

between UNICEF Brazil, the Volunteer Association for International Service, and the Center for Nutritional Recovery and Education.

For the first type of training, 159 caregivers (98.7% female) participated in five workshop sessions (shown in Table 1). Ninety-nine (62.2%) caregivers participated in the professional training on safe food handling practices and were certified. For the third type of training, 52 health and humanitarian professionals were trained.

Pre- and post-evaluations were conducted with caregivers who attended the workshops to assess the extent to which they understood key themes and information and to measure the impact of the workshops. Pre-intervention, misconceptions about complementary feeding were common. Caregivers were uncertain about the right time to introduce complementary food, and about what foods should be given to a child given the restricted food available in the shelters. Post-intervention, it was observed that caregivers had a better understanding of positive infant and young child feeding practices.

Identification and engagement of different local food providers was a simple way to source healthy low-cost food rations in a context where no food security strategy was previously in place. The project identified a network of food suppliers that would allow for potential offers of free food from local food suppliers in future phases of the project. Engagement with small local producers might promote a more localised supply chain and a positive economic legacy of the migration crisis in the host community.

The co-management model for the participatory kitchens was more efficient when implemented through an integrated structure including representatives of the community, humanitarian agencies, and the formal managers of the shelters. It verified the importance of investing in the engagement of stakeholders throughout the entire system, a good illustration of which was through the rotation of caregivers for food preparation.

There was a high level of engagement in workshops. Participants were interested in the activities and followed each meeting with care and motivation. Sensory aspects of the workshops, in which children were able to have contact with *in natura* food (natural forms of food), proved to be an important initiative in the shelters where the environment did not allow for responsive feeding.

Professional training on safe food handling practices was important for broadening the knowledge of the caregivers and enhancing their possibilities of being formally employed in Brazil. This project has the potential to be integrated into formal integration programmes such as Operação Acolhida, encouraging the training of caregivers of children as a livelihood strategy and thus contributing to their adaptation to Brazilian society.

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Sensory workshops allow the presentation of foods in natural forms to children living in shelters. Brazil, 2022

Adherence to the shelter's water, sanitation, and hygiene measures in the kitchens was essential to maintaining hygienic and safe food preparation.

Existing activities for children run by the education sector in the shelter made it possible for caregivers to participate in co-management activities, showcasing the potential for inter-agency and intersectoral collaboration within the shelters.

### Challenges

The evaluation showed that the workshops contributed to a better understanding and promotion of positive complementary feeding practices, which can consequently improve the growth and development of children in the first two years of life (a fundamental phase in the formation of eating habits). However, a significant proportion of participants still had doubts about some themes, highlighting the need for culturally sensitive approaches and of more time for discussions.

The co-management of participatory kitchens involves a risk of conflict between beneficiaries if the model's design does not promote the engagement of the community and its leaders from the beginning. To mitigate this risk, the local committee system was established and worked as a mechanism to involve the community in all decision-making processes. This model has the potential to increase community ownership of the project and empower committee members to become agents of change.

The lack of financial resources to support humanitarian aid (and specifically nutrition) in emergencies in the context of the migration

humanitarian crisis in Brazil has been a constant challenge that has impeded the continuation of this project. Integration of this project into public policies depends on the resolution of political issues and interest at the local, federal, and international level.

### Conclusion

The pilot project's development and the kitchens' rehabilitation empowered caregivers to prepare healthier meals for their children. The workshops contributed to increasing the knowledge of the caregivers on positive infant and young child feeding practices and promoted healthy eating among refugee and migrant children. Despite the difficulties in funding, UNICEF Brazil continues to seek funds and promote healthy eating in the context of the Venezuelan migration crisis. We continue to promote initiatives such as this to raise awareness among local shelter managers about the importance of putting communities at the centre of their feeding habits and to promote the food security and social-economic benefits of integrating nutrition programmes into emergency responses. The co-managed participatory kitchens provide a model that could be adapted and replicated in other humanitarian contexts.

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# Cash transfers and health education to address young child diets in Kenya

A community Health Worker counselling a NICHE beneficiary on nutrition in her home in Turkana county, Kenya, 2022



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## KEY MESSAGES

- Providing cash alongside nutrition counselling can enable vulnerable populations to adopt positive nutrition practices, avoid negative coping mechanisms in case of shocks and improve the diets of young children.
- The joint targeting of social protection and nutrition services depends on strong system linkages at programme level. This is greatly facilitated by the complementarity between social protection and nutrition policies and strategies, comprehensive training of different staff cadres, operational guidance that details specific roles and responsibilities, and common registration and information management systems.
- The scale of the current nutrition crisis in Kenya suggests that further system strengthening is urgently needed to enable rapid response to future climate-related shocks and food insecurity.

## Background

### Improving the diet of young children through linked cash and nutrition programmes

Social protection is a key delivery system for improving nutrition because social protection interventions such as cash transfer programmes, by improving income and increasing assets, have the potential to empower female caregivers, increase access to and availability of diverse foods, increase uptake of positive nutrition practices and improve access to nutrition and other services (Table 1). These are critical factors along the impact pathway to improved child diets, childcare and, ultimately, improved nutrition. For this reason, increasing the “nutrition sensitivity” of social protection interventions is a key priority for improving the diet of young children, as laid out in UNICEF’s complementary feeding guidance (UNICEF, 2020). Recent evidence suggests that cash transfer programmes can reduce child stunting, wasting and diarrhoea incidence, although the effects are heterogenous

and small overall. The effects of increasing the consumption of animal source foods, improving diet diversity, and reducing diarrhoea incidence have been more pronounced (Manley et al, 2022). Cash transfers are more likely to improve the diet of young children if they are accompanied by complementary interventions, or “cash plus” elements, such as behaviour change communication (BCC), and if they link participants to other services such as health and livelihoods (Manley et al, 2022; Little et al, 2021).

### Nutrition situation of young children in Kenya

As of February 2022, following five consecutive poor seasonal rainfall performances, 3.5 million people residing in Kenya’s Arid and Semi-Arid Lands (ASAL) were severely food insecure. Although the levels of stunting and wasting have fallen in recent years, both remain high at 26% and 7% respectively. While 99% of children are breastfed in Kenya, only 22% of children aged 6–23 months are estimated to receive a mini-

mum acceptable diet (MAD) (KNBS, 2015). This proportion falls to 3% in the highly food insecure North-Eastern region (KNBS, 2015). Poor diet quality is driven by poverty and food insecurity, as well as poor young child feeding and caring practices. To provide a comprehensive solution to this multifaceted problem, integrated social protection and nutrition strategies are required to ensure the optimal growth, development and well-being of young children.

### Social protection policy and programmes in Kenya

Much progress has been made in recent years to develop a comprehensive social protection system in Kenya to mitigate poverty among the most vulnerable sections of society. Guided by the 2011 National Social Protection Policy, the current system is arranged around the four pillars of income security (including social assistance), social health protection, shock responsiveness and complementary programmes. The main platform for government social assistance is the National Safety Net Programme (NSNP), managed by the Social Assistance Unit, which targets cash transfers at different stages of the lifecycle (Table 2). The Hunger Safety Net Programme (HSNP), under the National Drought Management Authority (NDMA), targets additional cash transfers at poor households vulnerable to drought in ASAL counties. The HSNP provides a regular bimonthly cash transfer of KES 5,400 (USD 48) to 100,000 households, which is scaled up to over 270,000 households in response to shocks (with planned expansion to more). Under the fourth “complementary programmes” pillar of the social protection system, the government aims to provide a range of complementary programmes in addition to cash transfers to support the development and productive capacity of vulnerable sections of society. The main nutrition intervention under this pillar is the Nutrition Improvements through Cash and Health Education (NICHE) programme.

### NICHE pilot programme (2016–18) – Phase 1

In 2016, UNICEF partnered with county governments, with funding from the European Union Supporting Horn of Africa Resilience in Kenya programme, to implement the NICHE pilot. NICHE aimed to bring together relevant government departments and stakeholders to address multiple vulnerabilities in extremely poor households in Kitui County and parts of Machakos County (two counties with very high levels of stunting). The NICHE pilot targeted all households receiving CT-OVC (Table 2) with either a pregnant woman and/or a child under the age of two (3,800 households). In addition to the regular CT-OVC cash transfer, recipients received a bimonthly cash top-up of KES 500 (USD 5) per child and/or pregnant woman for up to two household members (a maximum of KES 1,000, or USD 10, per household) and nutrition counselling. The counselling emphasised iron/folic acid supplementation during pregnancy, exclusive breastfeeding for the first six months, appropriate complementary feeding, vitamin A sup-

**Table 1** Pathways of enhancing nutrition through social protection

Pathway	Importance	How social protection helps tackle malnutrition
<b>Household food security</b> <ul style="list-style-type: none"> <li>Diet quality</li> <li>Quantity of food available and accessible</li> <li>Economic vulnerability</li> </ul>	Assured access to and consumption of enough nutritious food to live an active healthy life	Improving income, food access and increasing assets
<b>Caring practices for women and children</b> <ul style="list-style-type: none"> <li>Women's education</li> <li>Empowerment</li> <li>Infant and young child feeding</li> <li>Health-seeking behaviour</li> </ul>	Pregnancy and lactation are critical junctures for good-quality care and support	Targeting nutritionally vulnerable populations through the 1,000-days approach <sup>0</sup>
<b>Health services and environment</b> <ul style="list-style-type: none"> <li>Access to shelter</li> <li>Access to and use of good-quality health services</li> <li>Access to and use of safe water</li> <li>Access to and use of sanitation facilities for disposing of human waste</li> </ul>	Conditions that expose children to pathogens and the use of preventive and curative healthcare	Promoting improvement, access and delivery of health and sanitation services

plementation, growth monitoring, the use of oral rehydration solution (ORS) when children were sick and kitchen gardening and small livestock production. Community Health Volunteers (CHVs) trained by the Ministry of Health (MoH) delivered the nutrition counselling through weekly household visits. In select areas, child protection group sessions were also delivered by Child Protection Volunteers. By simultaneously providing cash transfers and nutrition and parenting counselling, the project aimed to address the lack of access to nutritious food and poor young child feeding practices to improve the diet of young children.

An evaluation set up as a randomised control trial measured the impact of the programme compared to control households receiving standard CT-OVC cash transfers only. The results showed minimal positive changes in stunting reduction, likely due to the short duration of the project and the multiple drivers of stunting. However, the programme had a strong, significant impact on child diets, demonstrated by a 44% increase in children achieving a MAD. Other indicators along the nutrition impact pathway were also improved, including the treatment of drinking water (+40%), the use of household handwashing facilities (+29%), early initiation of breastfeeding (+8%) and exclusive breastfeeding (+7%) (Guyatt et al, 2018).

Qualitative data revealed that counselling sessions were relevant to participants and that

learning translated into changes in infant and young child feeding and livelihoods behaviours, especially planting kitchen gardens and purchasing small livestock. Reported problems included difficulties accessing cash through banks, cash transfer values being too low to make desired changes and communication difficulties with programme implementers and CHVs when problems arose (Guyatt et al, 2018).

### Expanded NICHE (2019–2022) – Phase 2

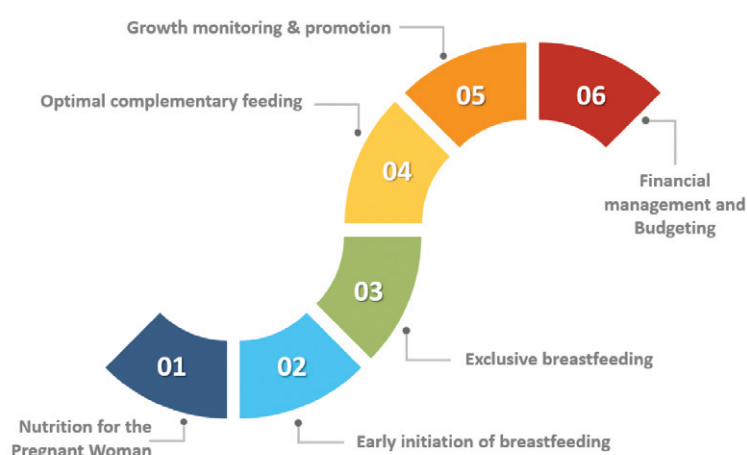
Based on findings from the initial pilot, the Government of Kenya (GoK) has now scaled up NICHE in five stunting “hotspot” counties (Kitui, Marsabit, West Pokot, Turkana and Kilifi). This phase is being implemented and funded by GoK, with support from the World Bank and the UK Foreign, Commonwealth and Development Office (FCDO) for the first five years. UNICEF and partners are providing technical support for the first three years, with a view to full government ownership and implementation from the fourth year onwards.

In this phase, households with a child under the age of two and/or a pregnant woman that are registered to receive any NSNP cash transfer (Table 2) and/or the HSNP are targeted with nutrition counselling and a bimonthly cash top-up of up to KES 500 per beneficiary for up to two household members (a maximum of KES 1,000, or USD 10, per household). Cash top-ups are provided alongside routine payments. Eligible households are identified using NSNP and HSNP recipient

**Table 2** NSNP cash transfers

Name of cash transfer	Recipient criteria	Benefit level	Coverage
<b>Older Persons Cash Transfer (OP-CT)</b>	Any Kenyan citizen above 70 years of age	KES 2,000 (USD 18) per month	203,011 individuals
<b>Cash Transfers for Orphans and Vulnerable Children (CT-OVC)</b>	Poor households caring for orphans or other vulnerable children	KES 2,000 (USD 18) per month	246,000 households
<b>Persons With Severe Disability Cash Transfer (PWD-CT)</b>	Poor households caring for a child or adult living with a severe disability	KES 2,000 (USD 18) per month	45,505 individuals

<sup>1</sup> <http://www.socialprotection.or.ke/> (accessed 19 January 2022)

**Figure 1** Nutrition counselling topics in NICHE

lists and validated through a process of community identification with continuous/on-demand registration. A digital management information system was developed within the existing information system for the NSNP and HSNP to support registration and results tracking and to report on performance indicators. The NICHE digital management information system is also interoperable with the Kenya Health Information System.

Nutrition counselling is delivered through the Baby Friendly Community Initiative approach, an MoH initiative that aims to strengthen routine community nutrition services. CHVs deliver counselling on a range of topics (Figure 2) during fortnightly home visits, whilst supported by Community Health Extension Workers (CHEWs), and mothers also participate in community mother support groups. A social BCC strategy and materials have been developed to support these activities. In Kilifi, NICHE households also receive counselling in positive parenting practices to support child protection outcomes to pilot this approach, with a view to expand this feature to all other participating counties.

*Top-up cash payments began in July 2021 to cover the period between March and April of the same year. By the end of 2021, over 12,000 households in 15 sub-counties were enrolled in the NICHE programme?* Training has since been rolled out to CHEWs and CHVs, who are now implementing the counselling component. In response to the current food insecurity crisis in programme areas, CHVs have also been trained to provide mid-upper arm circumference screening for the early detection and referral of wasted children.

### Implementation, workforce and delivery mechanisms to support nutrition-sensitive social protection

Several implementation challenges were identified during the evaluation of the NICHE pilot (2016–18). These included difficulties managing programme entry and exit for recipients given the short nature of the target period (from pregnancy up to the child's second birthday); false reporting of behaviours; CHVs not initially visit-

ing all households (this was improved through closer management); falsification of household reports by CHVs; and out-of-date government information leading to difficulties in identifying eligible households.

Design changes were made to the second phase to overcome these challenges. An improved system for identifying and enrolling recipients is now being used, supported by the new digital information management system, to enable swift programme entry and exit. An operations manual has been developed for programme staff to support standardised as well as enhanced implementation. This also builds the capacity of government field personnel to sustain implementation in the absence of UNICEF technical assistance. The capacity of GoK's health workforce has also been built by training CHEWs as trainers, who then cascade training to all CHVs in the area.

A formative evaluation of Phase 2 showed high programme performance on the cash transfer side, with funds being transferred regularly and on time. However, there is evidence that the cash transfer value is too small to impact household behaviours. Evidence also suggests the need for further integration between social protection, health and nutrition staff at sub-national levels to fully link cash transfers with nutrition counselling and other sectoral services. This is now being actioned.

### Key lessons learned

- Providing cash alongside sustained nutrition counselling has enabled vulnerable populations to adopt positive nutritional practices by raising awareness of, and improving access to, nutritious foods.
- Multi-sectoral coordination bodies at national and devolved levels can help facilitate coordination and integration between health and social protection systems.
- Aligning integrated social protection and nutrition programmes with the strategies of each sector and ensuring complementarity between sector policies and strategies are key enablers of joint programming.
- Joint targeting of social protection and

nutrition services depends on strong system linkages at the programme level. This is greatly facilitated by common digital registration and management information systems.

- Programme-level integration between health and social protection can be supported through the comprehensive training of different staff cadres and by providing operational guidance that details specific roles and responsibilities.
- Nutrition-sensitive social assistance programmes are more likely to achieve desired nutrition impact when cash transfers are of sufficient value and paid on time. The social protection system may need strengthening to achieve this, including the preparation of strategies to secure sustainable financing.
- While the social protection system in Kenya has provisions to scale up in response to shocks, the scale of the current food insecurity crisis in the ASAL regions suggests that further system strengthening is urgently needed to avert future nutrition emergencies.

### Conclusion and next steps

The NICHE pilot proved to be an effective way to address multiple vulnerabilities in extremely poor and nutritionally vulnerable households in Kenya, with clear evidence that this resulted in improved diets for young children. The scale-up of NICHE is underway. A strong evaluation and learning component, including a cost-effectiveness study, will generate evidence to inform further scale-up and the full integration of the programme into routine systems following this phase. The scale of the current food insecurity crisis in the ASAL regions of the country threatens to reverse these gains and reveals the urgent need to strengthen the capacity of the social protection system to surge in response to shocks. As further climatic shocks become inevitable, further integration of social protection and nutrition, as well as strengthened capacity to scale up support to households both vertically and horizontally, will become central to protecting the diets and growth of young children in Kenya.

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Field Article

# Conducting a situation analysis as a first step to improve young children's diets:

## Examples from Ethiopia, Tanzania and Zimbabwe

### KEY MESSAGES

- Context analysis is a crucial step in understanding the particular gaps faced by caregivers in providing young children with an optimum diet.
- In Ethiopia and Tanzania, such an analysis was used in conjunction with the UNICEF Action Framework at the national level to support the identification of strategic actions across systems and to strengthen national commitment and policy change towards the improvement of young children's diets.
- In Zimbabwe, a context analysis and the application of the systems thinking approach supported the appropriate tailoring of interventions within an integrated nutrition and resilience programme. Strong government leadership at the sub-national level was key to successful implementation.

### Introduction

In 2018 and 2019, as part of a broader programme to improve the quality of diets during the complementary feeding period in East and South Africa, 10 countries in the region undertook extensive country-level situation analyses that fed into a broader **landscape analysis** to provide key learnings and understandings about the barriers and enablers to improving the diets of young children.

Across the region, the country-level analyses allowed the identification of gaps faced by caregivers in providing their children with an optimum diet to support growth and development to their full potential. This provided

the basis for refining, adapting and contextualising the complementary feeding Action Framework for improving the diets of young children aged 6–23 months according to individual country context.

This article illustrates the process and its outcomes using examples from three countries – Ethiopia, Tanzania and Zimbabwe – and provides a strong illustration of actions that can be implemented in a concrete way as a result of conducting such an analysis.

### The process

In each country, the process of conducting the situation analysis started with a consult-

ative workshop. Under the leadership of the respective government ministerial departments – health, nutrition, agriculture and water – representatives from a wide range of agencies, civil society organisations, international non-government organisations and academia gathered to reflect on the Action Framework depicted in the programming guidance (UNICEF, 2020).

Over several days, the participants in each country took part in a series of thematic and sectoral discussions on the current state of young children's diets in their respective context, based on existing situation analyses highlighting the drivers and barriers to young children's optimum diets. Following this exercise, they identified strategic actions to be delivered through the four systems (health; water, sanitation and hygiene (WASH); food; and social protection) and at different levels, thus adapting the Action Framework to their respective contexts.

As a result of the process, each country implemented agreed actions that followed a systems approach and ensured the building of community resilience to accommodate the changing and volatile context, i.e. the onset of the COVID-19 pandemic amid pre-existing high poverty. The key results from this process in Ethiopia, Tanzania and Zimbabwe are described in the sections below.

# Summary of each country



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## Ethiopia



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*We would like to thank the Ministry of Health (Ethiopia) and all participants, including government sector offices, partners and academia, for their commitment and contribution to the development of a child diets Action Framework for Ethiopia. We extend our thanks to GAIN for collaborating with UNICEF in the adaptation process. We would also like to acknowledge the Foreign, Commonwealth and Development Office (FCDO) for their funding support.*

### Findings from the child diets landscape analysis

The complementary feeding landscape analysis reviewed the national strategy and policies across four sectors (health, agriculture, social protection and WASH) to identify how they supported different aspects of complementary feeding and what good practices and opportunities there were for improvement. For each of the four sectors, the review found little or no reference to young children's diets.

One of the main barriers identified for mothers to adopt age-appropriate complementary feeding practices was inadequate access to nutritious and safe foods as a result of absolute poverty, lack of purchasing power at the household level, and lack of market-level availability of diverse foods in pastoralist, remote and drought-prone areas.

A recent study showed that, although global food production increased in Ethiopia between 2011 and 2015, this growth was primarily within the cereal sector and at the expense of other food groups, which led to a decrease in production diversity (Baye et al, 2019). The scarcity of food transformation technologies and poor market linkages has further limited the availability of diverse food for children aged 6–23 months. A Fill the Nutrient Gap analysis<sup>1</sup> conducted by the World Food Programme revealed that a nutritious diet for this age group would be four times more expensive than an energy-only diet, reiterating the need for strategies and actions geared towards increasing household purchasing power and the availability and affordability of nutritious foods. The lack of knowledge of caregivers and communities, compounded by cultural and religious beliefs, were additional challenges to diffusing age-appropriate infant and young child feeding (IYCF) key messages (Ethiopian Public Health Institute and the World Food Programme, 2021).

### Identification of strategic actions

Following the review of the landscape analysis, participants delved into the barriers and bottlenecks to child diets in different contexts and across systems. Thereafter, the workshop participants identified strategic actions at the policy and institutional levels to be implemented through each of the four systems, according to the Action Framework (Figure 1).

Workshop participants found that this exercise fostered productive multisectoral discussion and exchange, which was considered a positive outcome of this process.

A key recommendation from the workshop was the need to engage with the private sector. Considering the increasing production and marketing of commercial complementary foods in the country, participants believed there was a need to increase knowledge and common understanding among all stakeholders (including caregivers, communities and the private sector) towards promoting the production and consumption of nutrient-dense complementary foods. The private sector delivers health, WASH and nutrition services and products alongside the government. Strengthening partnerships and working together with the private sector would help ensure the appropriate products and services are delivered to children aged 6–23 months.

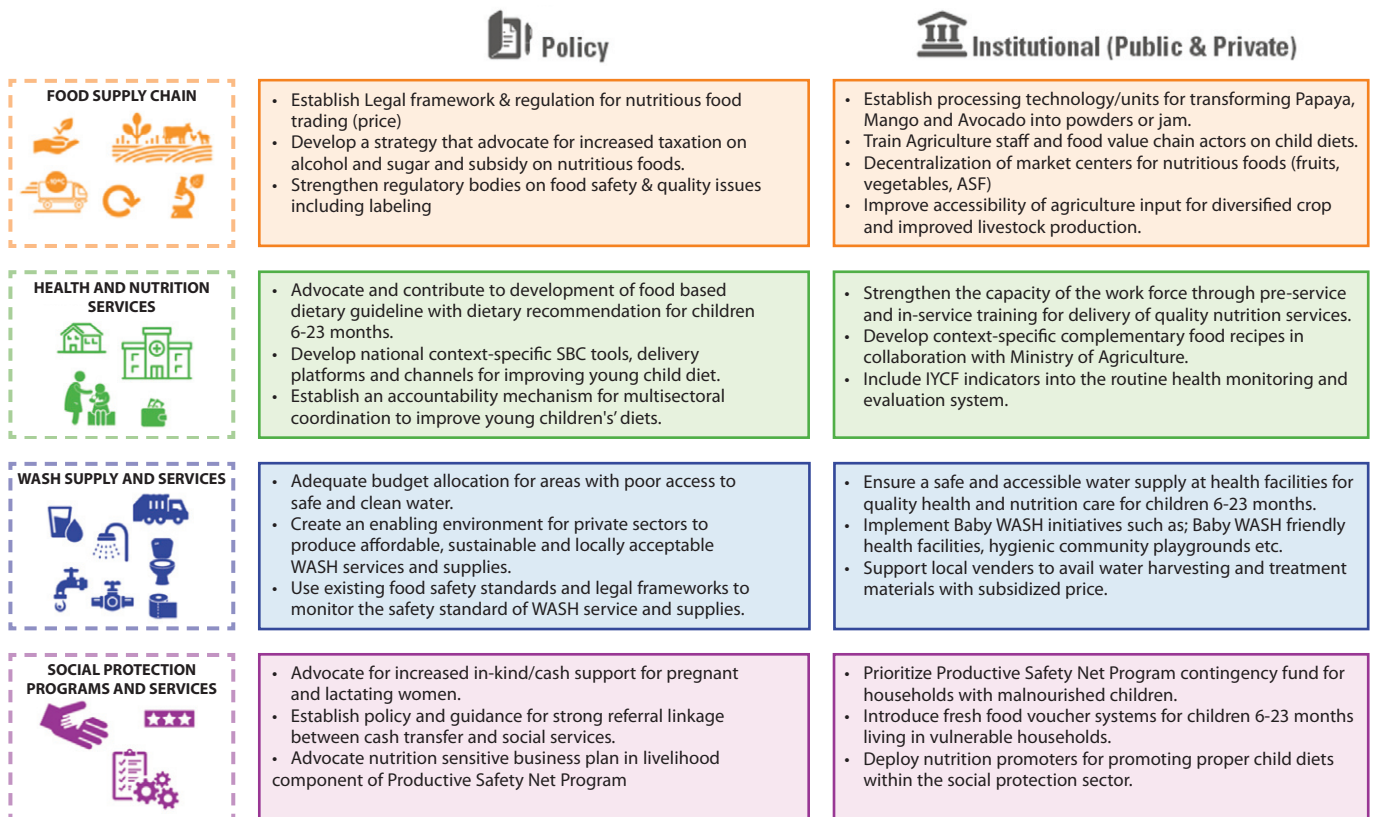
To promote diets that are of appropriate nutritional value, locally available and affordable for children aged 6–23 months, it was recommended to develop context-specific food recipes. UNICEF, in collaboration with the Ministry of Health, took the lead to address this, and the initiative began by conducting a field assessment to identify locally available foods and examine eating habits of communities. The findings will inform recipes to be produced for Oromia, Amhara, Afar, Somali, Gambela and the Southern Nations, Nationalities and Peoples (SNNP) and Sidama regions.

Cultural and religious beliefs play a significant role in driving IYCF practices. It was found that, without the involvement of religious and clan leaders and community volunteers in existing nutrition programmes, it would remain difficult to improve children's diets and the uptake of nutrition services. Improving the nutrition literacy of these key community members was therefore included as crucial intervention. As a result, UNICEF has supported the government to develop orientation manuals for religious leaders, which are currently under review for endorsement.

Building on the outcomes of adapting the Action Framework at a national level, and considering the heterogeneity of the country, UNICEF has begun replicating similar consultations at the sub-national level to understand the different contexts and develop locally appropriate actions.

<sup>1</sup> The World Food Programme's Fill the Nutrient Gap tool analyses the nutrition situation in a country and identifies barriers to accessing healthy diets, platforms for reaching nutritionally vulnerable groups in the population and opportunities for policy and programme interventions to improve access to nutritious foods through multiple sectors, including agriculture, health, social protection and education.



**Figure 1** Strategic actions identified to improve young children's diets in Ethiopia

## Tanzania



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*The authors are very grateful to the Global Thematic Fund for financing interventions to improve young children's diets in Tanzania.*

and potential micronutrient gaps included beef liver, chicken liver, small-dried fish, beef, eggs and dark green leafy vegetables.

### Strategic actions and learnings

Technical consultations with key stakeholders from the government (ministries, departments and agencies), development partners (United Nations agencies and non-governmental organisations) and research institutes within each system (health, food, social protection and WASH) enabled them to define their policy priority actions and to highlight the relative contribution of each system to improving children's diets in line with the country priority actions adopted at the regional level. Figure 2 summarises the key priority actions identified within each system.

To ensure that this adapted Action Framework to improve children's diets in Tanzania was translated into plans and action, priority actions were included within the second edition of the national multisectoral nutrition action plan (2021/22–2025/26). The goal to improve young children's diets through increasing the proportion of children who consume a minimum acceptable diet from 30% to 50% by 2026 was among the commitments made by the Government of Tanzania during the Growth for Nutrition summit in Tokyo. This commitment will be monitored under the framework of the Multisectoral Nutrition Action Plan.

Follow-up orientation sessions were also conducted for multisectoral teams at the regional and council level to enable them to customise the adapted complementary feeding Action Framework and to ensure the agreed actions

### Findings from the landscape analysis

In 2021, as a result of recognising the importance of children's diets as a key determinant of poor nutrition outcomes and their impacts on human capital in Tanzania, UNICEF Tanzania undertook two analyses. The Comprehensive Nutrient Gap Assessment analysis revealed that there were gaps in the consumption of iron and vitamin A during the

complementary feeding period, as well as possible gaps in calcium, zinc and vitamin B12 (GAIN and UNICEF, 2021). The Children's Diet Affordability Analysis (GAIN and UNICEF, 2019) indicated that a significant proportion of households struggled to afford nutritious foods to meet even half of the dietary requirements for iron for their children aged 6–23 months. The most affordable food sources recommended to fill the identified

were included in their comprehensive annual plans and budget. The actions that were prioritised for each sector will be monitored via the National Multisectoral Information System.

## Next steps

The adapted Action Framework will be rolled out at the sub-national level (regional and local government authorities), with a target that over 90% (168) of Local Government Authorities in Tanzania will develop specific Action Frameworks to improve the diets of young children in their areas by June 2024.

Advocacy to ministerial permanent secretaries, department directors and nutrition focal persons will be conducted by the Prime Minister's Office (which is responsible for providing leadership in nutrition coordination and for ensuring accountability and responsiveness across sectors), so that the agreed priority actions will be included within the plans and budgets of the four sectors. The Multisectoral Nutrition Action Plan Technical Working Groups will also ensure that agreed priority actions are part of both the strategic plans and the annual sector plans.

An accountability framework will be developed to monitor and document the implementation of priority actions at both sub-national and national levels as part of the existing Multisectoral Nutrition Information System. An Integrated Monitoring And Evaluation System will be the core system for collecting, analysing and reporting local and regional nutrition and related data, although there is a need to review and refine it to ensure the inclusion/capture of indicators from the other key sectors responsible for delivering the priority actions.

**Figure 2** Priority actions identified to improve young children's diets in Tanzania

FOOD SUPPLY CHAIN	HEALTH SYSTEM	WASH SYSTEM	SOCIAL PROTECTION
<ul style="list-style-type: none"> <li>Advocate for increased investment in food system-based research (agriculture, livestock, fisheries, market etc)</li> <li>Promote local based production of healthy food to improve accessibility and affordability of the nutritious complementary food</li> <li>Review and update the current National regulation for marketing of BMS and IYFC guideline to align with WHA 69.9 and food labelling</li> <li>Harmonize SBCC messages for all levels of the socio ecological model</li> </ul>	<ul style="list-style-type: none"> <li>Advocate through AU/ regional platforms for additional health sector funding for nutrition at the country level.</li> <li>Advocate through national platforms for additional health sector funding for nutrition at the country level to have measurable impact to the targeted population.</li> <li>Build coalition with academia to strengthen capacity in SBCC implementation research, use of evidence and for data programming (SBCC saturation, how to deliver SBCC information).</li> </ul>	<ul style="list-style-type: none"> <li>Advocate to ensure water continues to be a public good/ human right, even as access increased via the private sector.</li> <li>Advocate programs which foster coordinated planning, implementation and evaluation between WASH and Nutrition interventions.</li> <li>Advocate for operational research on transformative WASH in urban/ peri-urban/rural settling</li> <li>Advocate for SBCC programming covering both WASH &amp; nutrition.</li> </ul>	<ul style="list-style-type: none"> <li>Provide evidence-based guidance on minimum and optimal package of nutrition-sensitive equitable social protection schemes.</li> <li>Map and enhance existing policies with social protection and nutrition components to inform finalization of the social protection policy.</li> <li>Develop realistic social protection packages to meet minimum requirements for nutrition.</li> </ul>

## Zimbabwe



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## Programme description

A landscape analysis consultation was conducted in 2019 in Zimbabwe focusing on 18 districts where UNICEF was implementing the Zimbabwe Resilience Building Fund (ZRBF) programme, an integrated nutrition and resilience programme to improve complementary feeding practices among caregivers of young children aged 6–23 months. The landscape analysis consisted of formative research and a qualitative case study, which utilised a documentary analysis, an analysis of project monitoring indicators and a multi-stakeholder learning workshop and process evaluation analysis. The results of the landscape analysis were used to tailor ZRBF programme interventions to optimise positive impacts on young children's diets, in conjunction with the adaptation and application of the complementary feeding Action Framework to the local context using a "systems thinking approach". Integrated programming through the different systems – health, WASH, education, social protection and food – was coordinated through the multisectoral food and nutrition security committees (FNSCs) at district, ward and village level.

Programme implementation utilised the "care group model" – a community-level platform designed to promote optimal complementary feeding practices and related behaviours – to support recommended nutrition behaviours in target communities. Seven key behaviours were pro-

moted to improve complementary feeding of young children and related facilitating actions, including improved handwashing by caregivers, household production and the promotion of diverse and underutilised nutritious food varieties. Other key approaches of the integrated ZRBF programme were contextualised social behaviour change and strengthening of local foods systems through the integration of nutrition-sensitive resilient food systems into value chains. Capacity building of multisectoral stakeholders on strengthening local food systems and the delivery of integrated nutrition-sensitive actions through different sectors were conducted through training, mentorship and assessments of the community food systems landscape and food environment.

The programme aimed to increase the capacity of at-risk communities to protect their development gains and achieve household and community resilience in the face of shocks and stresses. Since the nutrition actions were introduced as part of an existing resilience building programme, sequencing and layering of nutrition interventions on food security, resilience building and livelihoods interventions was prioritised with the aim of improving the diets of children from vulnerable households.

## Programme outcomes

The integrated nutrition and resilience intervention was successfully implemented in all 18 districts despite differences in the way interventions were adopted between districts. Through a case-

control evaluation, improvements on children's diet quality were observed in target communities compared to similar communities not targeted by the ZRBF project. Caregivers in the targeted communities were three times more likely to offer children aged 6–23 months timely, adequate and diverse complementary feeding with continued breastfeeding for two years and beyond (OR 3.88 CI: 2.28–6.60;  $p < 0.01$ ) (Matsungu et al, 2022).

Strong partnerships between stakeholders facilitated effective integration of actions across sectors. In the 14 districts where stakeholder partnerships and sector collaboration were effective, nutrition actions were quickly delivered to communities, allowing wider coverage and adoption of recommended nutrition behaviours. In the remaining four districts, collaboration between stakeholders was a challenge, hindering the delivery of integrated actions and resulting in poor coverage of programme interventions.

## Learnings

The systems thinking approach proved effective in advancing actions to improve complementary feeding for young children within the resilience programme, as well as for the adaptation of the Action Framework for improving children's diets. Strong government leadership, especially at sub-national level, was found to be key to the successful implementation of the Action Framework.

The programme provided key insights on factors that are key to implementing the Action Framework in resource-limited settings. Social and behaviour change communication focused on knowledge alone was not effective in improving children's diets, even in the presence of

complementary activities where production of diverse foods increased. Practical approaches or "learning by doing" were found to be more useful in changing behaviours. Resilience building interventions – including income generation, savings and loans associations, the production of more diverse and resilient crops and increasing market linkages – supported improved complementary feeding. In addition, community leaders played a key role in the success of the Action Framework delivered through various sectors.

Leveraging the nutrition-sensitive resilience building project (which was adequately funded) and utilising existing government structures allowed easy adaptation of the Action Framework for improving children's diets, an approach that could be taken up by other low-income countries.

## Conclusion

The three examples featured here show that an appropriate analysis of the situation and the use of the UNICEF Action Framework as a tool to help identify strategic actions can contribute to improving the diets of young children at the national level. Ethiopia and Tanzania have demonstrated that nationally led workshops result in policy changes and in a strong commitment to improving young children's diets. In the case of Zimbabwe, the multi-system approach was complemented by the building of community resilience, and has the potential to lead to concrete changes and the creation of a positive environment to support long-term changes to improve young children's diets.

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# A peer-to-peer model to improve maternal, infant and young child feeding in Rwanda



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## KEY MESSAGES

- Following a formative study to understand the drivers of poor maternal, infant and young child feeding practices, Rwanda piloted a peer-to-peer support model that offers experiential skills, guidance, and camaraderie support around food selection, preparation, feeding, and hygiene practices for children below two years of age.
- The headline results suggest that peer-to-peer activities contributed to improved infant and young child feeding and hygiene practices for households in five districts of Rwanda.
- As an approach specifically aimed at building resilience amongst caregivers to better adapt to shocks such as pandemics and disasters, peer-to-peer activities can support optimal child nutrition under these conditions.

## Background

In Rwanda, one in three children under five years of age is stunted and only 17% of children 6-23 months are fed a minimum acceptable diet (National Institute of Statistics of Rwanda et al, 2021). This is despite the finding that the percentage of caregivers with comprehensive knowledge of optimal maternal, infant and young child nutrition (MIYCN) increased from 22% to over 90% between 2013 and 2017 (Rwanda Ministry of Health and Rwanda Biomedical Centre, n.d.). Intensive communication and education campaigns have been delivered to caregivers regarding best practices for MIYCN. Yet, these campaigns appear to have little impact on the overall goal of improving diets which is an important factor in reducing stunting rates. This indicates that shifting knowledge and attitudes is insufficient to address child undernutrition and that it requires multi-sector approaches that ensure food availability and accessibility at the household level, while improving nutrition services and care practices such as food selection, preparation, feeding, and hygiene.

UNICEF, in collaboration with the Rwandan Government, conducted a comprehensive ethnographic study between November 2019 and September 2021 to understand the household-level drivers of nutrition outcomes among pregnant and lactating women and young children. The study deployed an anthropological approach using qualitative methods to study people in their own cultural setting with the aim of understanding why nutrition outcomes among children under five were sub-optimal despite a good understanding of adequate MIYCN practices in the population. This preliminary study revealed gaps in the knowledge capability practice chain and recommended a move towards focusing on the final section of the chain where knowledge and capability are translated into better dietary choices (Birungi et al, 2022). It is against this backdrop that the peer-to-peer approach has been modelled and implemented in selected areas since June 2021.

The peer-to-peer approach aimed to build resilience amongst caregivers to better adapt

to shocks, such as pandemics and disasters, and to ensure optimal child nutrition under such conditions. The approach targeted five socio-economically diverse districts (e.g., predominantly rural or urban, subsistence agriculture, cattle keepers, or day labourers) to ensure the sample was nationally representative, reaching over 1,540 children under five years of age and their caregivers.

## Methods

### Design of the peer-to-peer approach

Formative research informed the design of the peer-to-peer approach. A desk review of MIYCN social and behaviour change interventions was conducted to identify suitable interventions that could be adjusted or replicated in Rwanda. Subsequently, a tool was developed and tested to identify the caregivers of children without malnutrition who demonstrated successful MIYCN behaviours/practices known as 'positive deviant households' or 'doers' and caregivers of malnourished or at-risk children ('non-doers') through focus group discussions and interviews. Doers who demonstrated best practices and volunteered their involvement were then selected, grouped and trained as peer supporters. The respective enablers and challenges experienced by doers (peer supporters) and non-doers of successful MIYCN behaviours/practices were explored further and used to inform the framework of the peer-to-peer approach.

### Selection of peer supporters

A total of 110 peer supporters were recruited in the pilot phase across the five districts. In each district, one cell was selected per sector, with four villages in each cell then chosen for initial piloting (Figure 1). Each cell had approximately 20 peer supporters, with one acting as

coordinator for the village peer supporters. Each village, comprising 10 households, had five peer supporters, one of whom acted as the leader.

### Capacity development of peer supporters

The goal of the peer-to-peer model was to create self-help groups of parents equipped to provide practical support to other parents through frequent, accessible, flexible, and supportive interactions. Peer supporters received a series of training on interpersonal communication and mentorship to enable them to transfer knowledge and skills effectively to their fellow parents/caregivers. Peer support focused on food selection, the use of food available in the household, and the preparation of age-appropriate food (e.g., the healthiest ways to cook vegetables, soups, porridge, and purees). Peer support was also given on the timely introduction of complementary foods from six months of age, optimal meal frequency and volume, the optimal nutrient status of pregnant and breastfeeding women, and effective hygiene practices – such as optimal hand washing, faecal disposal, and the treatment of drinking water. Appropriate food safety and storage as well as the involvement of men in childcare were also included. Peer supporters were also trained how to take mid-upper-arm circumference measurements and about the subsequent referral of identified malnourished cases.

### Intervention

During implementation, each peer supporter conducted twice-weekly hour-long home visits to five households with at least one child under five years of age. The households were identified in consultation with community health workers regarding nutritional status, and with local leaders and social workers regarding economic status to ensure homogeneity across household economies. Households were then categorised according to the nutritional status of their children.

Face-to-face communication was the preferred channel through which peer supporters interacted with their peers to select food, cook together, and explore age-appropriate ways

to feed a child, including breastfeeding, complementary feeding and the use of multiple micronutrient powders (MNPs). Nevertheless, short messages and telephone calls were effective mitigations implemented during periods of COVID-19-related restrictions. Training activities for community health workers on risk communication and community engagement activities were conducted via Zoom, WhatsApp, email, and over the telephone (Birungi et al, 2021). Key messages on MIYCN were disseminated through print and electronic media channels as well as via community radio stations. Peer supporters used their own resources such as airtime for calls, WhatsApp, and SMS bundles to ensure continuity of their tasks as well as the continual exchange of information. Simplified visual education materials on nutrition-related topics were found to be useful even in areas where parents and peers had low literacy rates. Peer supporters also supported their peers to establish home gardens to produce vegetables and fruits, thereby reducing daily food costs to meet nutritional needs.

### Monitoring and reporting

Each peer supporter provided monthly reports based on a diary of tasks that they maintained. Reports were then compiled and sent up through each level: village, cell, community health worker, and district health hospital. After the reports were approved at the district level, they were sent to the National Early Childhood Agency – the relevant government body – for analysis. The reports contained quantitative information on the support provided, changes in MIYCN practices and behaviours, and malnutrition cases and referrals, as well as an exploration of observed challenges, lessons learned, innovations, and opportunities. To ensure sustainability, the production and dissemination costs of the reporting formats were covered by the district budget.

A key sustainability mechanism was the consistent engagement of government leadership and the training of relevant staff at both central and grassroots levels throughout the design, implementation, monitoring, and evaluation stages. Key staff at district and community

level were trained on data collection, routine monitoring, and supportive supervision to enable the scale-up of the model following the piloting phase. Peer supporters worked under the supervision of trained local authority staff in collaboration with the National Child Development Agency staff, including progress monitoring of the frequency of home visits, group discussions, and the time each peer supporter spent with a peer. In addition, peer supporters met monthly at cell level to share experiences, challenges, and solutions.

### Evaluation

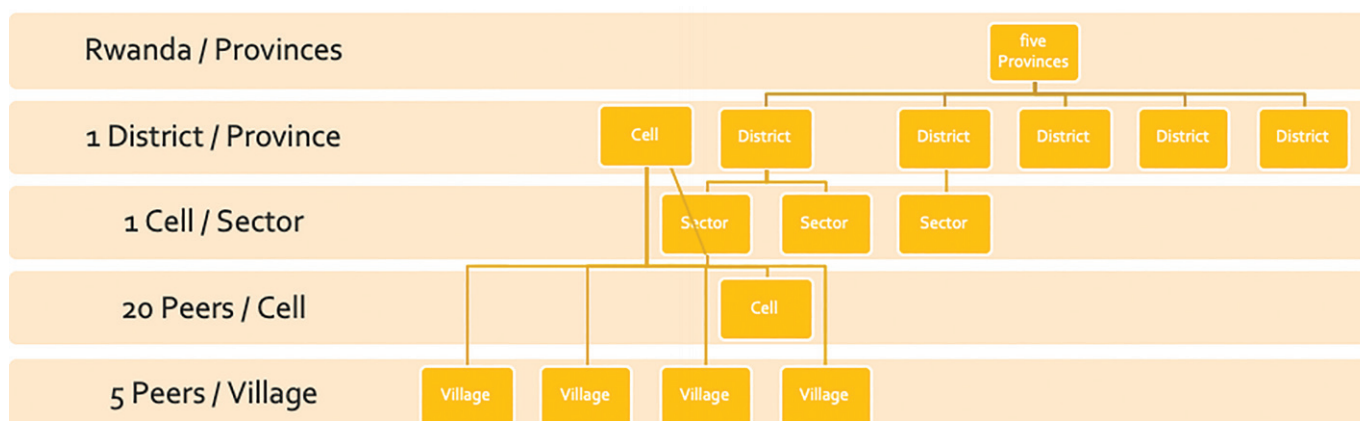
To determine the effectiveness of the peer-to-peer intervention, baseline (May 2021) and endline (July 2022) household surveys were conducted in the intervention and control areas on key MIYCN indicators (minimum acceptable diet, meal frequency, minimum diet diversity, consumption of MNPs, and hand hygiene for caregivers of children under five years). District-level anthropometric data was also collated and focus group discussions were conducted in collaboration with health centre management teams. At endline, a total of 560 households with pregnant and lactating woman and/or children 6-23 months were selected for the quantitative survey through the random sampling of 20 selected intervention villages and 20 matched control villages. A total of 25 focus group discussions were held across the intervention and control villages, among groups of six to eight mothers, fathers and community health workers.

### Results

Although the control and intervention groups were not homogenous for certain indicators at baseline, a general trend of intervention efficacy can be seen across the results (Table 1). Both minimum dietary diversity and minimum meal frequency improved significantly for children aged 6-23 months in the intervention group compared to the control group.

Misconceptions from mothers about MNP usage, mainly regarding the perceived side effects, are among the factors currently limiting their use (Dusingizimana et al, 2021). The in-

**Figure 1** Priority actions identified to improve young children’s diets in Tanzania



**Table 1** Assorted complementary feeding indicators for children aged 6-23 months

Indicator	Control			Intervention		
	Baseline (%)	Endline (%)	P-value	Baseline (%)	Endline (%)	P-value
Minimum dietary diversity 6-23 months*	22.3	25.6	0.658	24	74.6	<0.001
Minimum meal frequency (6-23 months)**	54.5	42.3	0.075	62.5	86.6	<0.001
Micronutrient powder use in the last six months?	71.4	69.3	0.827	70.2	80.6	0.087
<b>How do you prepare food with micronutrient powders?</b>						
Cook with child's food	0	0	-	5.8	0	0.034
Mix with cooked solid or semi-solid food	88.4	99	0.006	84.6	100	<0.001
Mix with water	11.6	1.1	0.006	9.6	0	0.003

\*Proportion of children 6–23 months of age who received foods and beverages from five or more food groups during the previous day and night.

\*\*Proportion of breastfed and non-breastfed children 6–23 months of age who received solid, semi-solid, or soft foods (but also including milk feeds for non-breastfed children) the minimum number of times or more.

intervention contributed to an increased uptake of MNPs whereby the use of MNPs increased by 14.8% ( $P < 0.001$ ) in the intervention group compared to a slight decrease in use among the control group. However, both the intervention and control groups optimised their preparation of food with MNPs with almost all participants mixing the powders with cooked or semi-solid foods by the end of the study period.

At endline, 96% of homes in the peer-to-peer zones had established home gardens and 21.2% of children aged 6-23 months consumed vegetables and/or fruits at endline compared to 7.5% at baseline. After receiving training on the importance of having animal source foods to promote child growth and development, many peers adopted animal rearing practices to provide households with access to protein as well as organic manure for their home gardens. Saving groups allowed members to contribute a small amount of money every week and training was given on bookkeeping and saving financial resources. For example, in Gatsibo district, peer-to-peer beneficiaries created a saving groups composed of 25 members where each member contributed RWF 200 (£0.16) each week to make a total of RWF 5000 (£4.11), enough to buy small domestic animals for two members.

The endline survey results also indicated that 100% of intervention households reported effectively boiling their water for drinking compared to only 41% of control households. Household reported use of improved toilet facilities improved from 47% at baseline to 89% at endline in the intervention areas. Ninety-five percent of respondents in the intervention groups reported washing their hands with clean water and soap at three out of five critical handwashing moments, compared to only 45% of those in the control groups, indicating that the model may have had an impact on improving reported hygiene practices in homes.

The results of the endline survey indicated that, for the majority of respondents, fathers supported child and family nutrition in their household and accompanied their spouses for antenatal check-ups four times during pregnancy. The fathers' prioritisation of their children's

nutrition was indicated by a large increase in the reporting of fathers allocating funds to buy food from 59% to 82% in the intervention villages. The 'meaningful support' of husbands towards nutrition for their lactating and pregnant wives increased to 87% (endline) from 51% (baseline), including the provision of animal source foods. Meaningful support was measured by the level of attendance of husbands to antenatal visits which included nutrition counselling.

The engagement and empowerment of community members within the design of the peer-to-peer intervention showed that he/she can be a positive agent of change in the community. For instance, Monique Muhawenimana, one of the peer supporters in Nyamagabe District noted, "I was happy to be selected as a peer. Since we have been involved throughout the process, I feel confident and empowered to help my fellow mothers to prepare nutritious food for their children like how have been doing for my children. I will continue to be an important member of the community even after the project phase out."

## Challenges

The peer-to-peer model was a new approach in Rwanda and it took some time for the partners to understand and embrace it. This was addressed through consistent engagement and trainings.

The COVID-19 pandemic challenged the implementation of the peer-to-peer approach due to the restrictions placed on gatherings and home visits. In-person interaction between peer supporters and non-doer peers was reduced depending on COVID-19 case numbers in the country. The use of phone-based messaging, including voice messages, WhatsApp messages and some peers using video recordings, bridged the gap in the absence of home visits as network connectivity is widely good throughout the country. Utilising mobile phones for optimal MIYCN advice was found to be acceptable and beneficial in the community, as was the advice given around selecting foods that were available and affordable to households according to their socio-economic status.

## Conclusion

Human centered design approaches that apply

insights and evidence from behavioural sciences provide a promising approach to influencing the behaviours and practices of parents and caregivers. The peer-to-peer approach worked well in this context and the regular support structure promoted positive behaviour change.

The endline results suggest that peer-to-peer activities contributed to improved infant and young child feeding and hygiene practices for households in five districts of Rwanda in a way that communication and education campaigns have not. The approach created ownership and empowered parents and communities to plan and address issues around malnutrition with key problem-solving and socio-economic competencies, even in the context of a pandemic. Continuous monitoring, evaluation, supervision, and refresher training were required to keep the peer supporters updated especially during the project's infancy. Looking ahead, UNICEF has handed over the peer-to-peer model to the district leadership and National Child Development Agency for a proposed scale-up plan that considers the specific challenges faced in each district.

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## State of Palestine:

# Investing in assessment positively impacted programming for complementary feeding

*This compilation was prepared prior to the events of 7th October in Israel and the subsequent military operation in Gaza. The situation remains ongoing as of the time of publication.*

### KEY MESSAGES

- A barrier analysis was conducted in 2019 in West Bank and Gaza, helping to identify and understand the key barriers and facilitating factors for improving maternal and child nutrition behaviours.
- The findings of this assessment guided the implementation of key interventions at the community, service delivery, and policy levels, encouraging all active partners in the nutrition sector to revisit their programmes and introduce improvements.
- This is a good example of where investing in assessment resulted in a positive impact on programming despite a particularly challenging environment.



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### Background

The State of Palestine, and in particular the Gaza Strip, is affected by a protracted humanitarian crisis with acute consequences including lack of access to services, displacement, high rates of poverty, and unemployment. As such, Palestinian families faced multiple constraints – economic, political, market, social, or cultural – that prevented most young children from receiving a nutritious, safe, affordable, and sustainable diet. Access to nutritious foods, clean drinking water, and good quality health services were limited and the resources and capacities of caregivers were already stretched thus limiting attention on infant and young child feeding (IYCF) practices.

### Nutrition situation analysis

In 2020 (PCBS & FSS, 2020), one in three households (31.2%) was estimated to be severely or moderately food insecure, this increased by 4.2% between 2018 and 2020 and, in 2022, 70% of households in Gaza and 21% in the West Bank reported difficulties meeting essential food needs because they could not afford them

(OCHA, 2022). Of the one in four people in Gaza Strip (23%) who had a poor food consumption score, most (80%) were also receiving some form of humanitarian aid.

Only 40.6% of children were first breastfed within one hour of birth (39.6% in West Bank, 41.9% in Gaza) and 43.3% of children less than six months were exclusively breastfed (44.8% in West Bank, 41.6% in Gaza) (PCBS, 2021). The same survey also showed gaps in the diets of infants and young children, with no more than 35% of children six to 23 months of age consuming a minimum adequate diet and only 44.7% meeting the minimum dietary diversity – which differed between Gaza (35.1%) and the West Bank (50.8%).

The nutrition status of children below five years showed that 8.7% of children were moderately or severely stunted which had increased since 2014 (7.4%). Younger children were more affected with stunting affecting 10.5% of children aged 12 to 17 months and 12.4% of children aged 18 to 23 months. Moderate and severe wasting affected 1.3% of children under five, while 8.6% were overweight and 1.9% severely overweight (PCBS, 2021).

Access to health and nutrition services was sub-optimal; for instance, almost one in four women (22.3%) aged 15 to 49 years with a live birth in the last two years did not access a post-natal care visit which was over one in three (30.0%) in the West Bank (PCBS, 2021).

This article describes UNICEF's support to partners to implement interventions to improve young children's diets during the complementary feeding period in the West Bank and Gaza Strip,

building on the results of a barrier analysis. The interventions aim to support the government and community members to prevent the double burden of malnutrition by establishing healthy dietary behaviours to improve the nutritional status and the diets of children aged six to 24 months.

## Programming context

UNICEF works in the State of Palestine to address a variety of health, nutrition, and development issues affecting pregnant and lactating women and children under five years of age, including social and behaviour change programming. The World Food Programme (WFP) implements unconditional food assistance to non-refugee Palestinians who are living below the poverty line. In addition, WFP conducts nutrition awareness projects to address the multiple burdens of malnutrition in the State of Palestine.

In 2019, as part of the collaboration between UNICEF and WFP to improve nutrition among the most vulnerable women and young children, the two United Nations agencies worked together to conduct a barrier analysis of maternal and child nutrition behaviours which aimed to better understand the facilitating factors as well as the barriers to practicing these behaviours in such a complex environment.

## Barriers and motivators to improved complementary feeding

### Methods

To gain an in-depth understanding of these behaviours in both the West Bank and Gaza Strip, a mixed-methods research approach was taken, including collecting quantitative data by using a barrier analysis questionnaire and a series of in-depth qualitative interviews.

The barrier analysis used a rapid assessment tool to identify the factors that were either preventing or motivating a target group to adopt specific behaviours so that more effective behaviour change communication messages, strategies, and supporting activities could be developed (Kittle, 2017). For the State of Palestine, the six maternal and child nutrition behaviours that were studied were: the rates of exclusive breastfeeding in children below six months of age, the rate of continued breastfeeding of children six to 24 months (in addition to giving complementary foods), the feeding frequency of children six to 24 months, the minimum dietary diversity of children aged nine to 23 months, the prevalence of pregnant and lactating women eating high iron-rich foods, and the prevalence of children two to five years old eating high iron-rich foods. Although different from the range of standard IYCF indicators (WHO and UNICEF, 2021), these six key behaviours were selected because they were promoted through the Ministry of Health, UNICEF, and WFP programmes but had not yet seen improvements according to assessments and programme data.

For each of the six behaviours of the barriers analysis, 45 'doers' and 45 'non-doers' across different communities in both the West Bank and the Gaza Strip were sampled. Purposive sampling was used based on criteria related to the identified behaviours, meaning they were selected because they possessed knowledge that was directly related to the identified behaviours. Sampling considered mother's age, age of children, location, employment status, highest level of education achieved, and nationality (UNICEF and WFP, 2020). All responses were analysed to identify which determinants had significant differences between doers and non-doers.

In addition to the barrier analysis, a mix of individual, family and interviews in pairs (with two persons at the same time related and non-related) were conducted with 37 participants from the Gaza Strip and seven from the West Bank. Those included mothers, fathers, and mothers-in-law. Six interviews with key informants who were professionals working in Gaza were also conducted and grounded theory was used to guide sampling. These interviews were all qualitative in nature to gain a greater understanding of not just the barriers, but to understand why these barriers affected eating habits and choices and to identify possible change motivators.

### Findings

The barrier analysis identified key factors that explained the differences between doer and non-doer caregivers for the six behaviours.

For behaviours related to the feeding frequency of children six to 24 months and the minimum dietary diversity of children aged nine to 23 months, the barriers identified included the difficulty of remembering the eight food groups, the lack of food/money for food, the difficulties in securing the food to feed children five solid meals a day, the fact that it was difficult to feed some children a diverse diet as they were refusing to eat specific types of foods or wanted to breastfeed instead of eating food, the lack of control on meal preparation, the complacency about current eating practices, the safety fears that prevented eating certain foods such as iron-rich plant foods, and the perceived risk and severity that were seen by parents as not enough to change behaviour, e.g., parents understood the benefits and sources of vitamins and minerals but often did not see brain development for babies and foetuses as a longer-term benefit.

The barrier analysis also revealed key behaviour differences among mothers in relation to exclusive breastfeeding, e.g., the lack of time, the child not accepting the breast, and the child not becoming 'full' from the breastmilk. For the continuation of breastfeeding of children six to 24 months, the key barriers found were the perception by mothers that there were no benefits for them, their child, or their family from continuing to breastfeed.

The barrier analysis also showed that the main barriers to feeding children two to five years-old iron-rich food groups were the family financial situation, the lack of knowledge of which foods are iron-rich, the availability and access to iron-rich foods.

Finally, the barriers identified for pregnant and lactating women to consume iron-rich foods included the accessibility and affordability of iron-rich food with non-doers feeling that they were more susceptible to anaemia while pregnant or breastfeeding.

## Key actions taken as an outcome of the barriers analysis

The findings from the barrier analysis for both West Bank and Gaza encouraged all active partners in the nutrition sector to revisit their programmes and introduce improvements to programme implementation at community level, e.g., to include behavioural change of nutrition practices among high-risk women, children, and adolescents. Improvements were also made at policy level.

### Actions taken at the policy level

Some of the improvements that were accomplished included the action taken by the Ministry of Health to review and update the maternal and child national nutrition protocol which dated from 2005. This update came as a response to the evidence and research conducted in this field including the results of the barrier analysis.

The update of the protocol aimed to cover the needs of service providers to have one comprehensive document that would guide the service provision in different settings. The protocol covers different areas of maternal and child nutrition including essentials on breastfeeding, complementary feeding, nutritional assessment and growth monitoring of infants and children, infant and young child feeding during emergencies, and the management of acute and chronic malnutrition. The protocol also encompasses the International Code of Marketing of Breastmilk Substitutes which was adopted in 2011.

The review and update of the protocol was coordinated among different stakeholders through the nutrition sub-cluster, reflecting the level of cooperation and engagement among ministries and all relevant nutrition partners including the Ministry of Health, the Ministry of Education, and the United Nations Relief and Works Agency for Palestine Refugees in the Near East.

### Actions taken at the service delivery level

The barrier analysis informed the forthcoming nutrition awareness programming and the social behavioural change communication strategy with messages tailored to address the barriers identified by the analysis (See Table 1 for details of future actions).



**Table 1** Priority strategic actions to be implemented in the State of Palestine

Policy	Institution/Service delivery	Community/Household
<b>Health and nutrition services</b>		
Endorsement and implementation of the maternal and child national nutrition protocol.	<p>Train service providers (health facility and community based) on the provision of IYCF practices and counselling.</p> <p>Develop and implement innovative approaches and tools for complementary feeding counselling, including scaling up the implementation of complementary feeding bowl intervention.</p> <p>Engage and support selected health facilities offering maternity services in practicing the Baby Friendly Hospital Initiative standards.</p>	<p>Invest in behavioural change and community engagement approaches to improve healthy diets for young children.</p> <p>Support the creation of a community-based system (mother support groups and/or care groups) aimed at strengthening the peer support system on IYCF practices.</p> <p>Facilitate and support community-based activities aiming at promoting good complementary feeding practices using local and indigenous products, including community cooking demonstration.</p> <p>Support a social behaviour change communication campaign on optimal IYCF practices with key messages appropriate for the context and using multimedia channels.</p>
<b>Water, sanitation, and hygiene</b>		
Endorsement and implementation of WASH in health standards	<p>Explore opportunities of intersectoral work with WASH for improving complementary feeding through improved access of poor households' access to clean water and sanitation services.</p> <p>Support local authorities to develop and adopt innovative WASH nutrition-sensitive and climate-resilient interventions.</p>	Support a social behaviour change communication campaign with key messages to deliver joint nutrition and WASH messages.
<b>Social protection services</b>		
Support local authorities in the integration of nutrition in the social protection policies and programmes.	Intersectoral work with the social protection sector through cash transfer programmes for improving complementary feeding through improved access of poor households to nutritious food.	Support local authorities to develop social behaviour change communication strategies as a component of the social protection programme.

## Actions taken at community and household levels

Ongoing activities such as cooking demonstrations, community mobilisation and parents' education, and counselling services have the potential to be strengthened and made more specific by using the results of the barrier analysis.

The 'complementary feeding bowl and spoon' was identified as an initiative with potential to address some of the findings of the barrier analysis, including caregivers' difficulty in remembering the eight food groups, within the overall programme to improve the complementary feeding practices for children six to 24 months. The feeding bowl depicts images to support key messaging around young children's diets and the slotted spoon aims to emphasise the right food consistency. Further details can be found [here](#). The initiative is being implemented as a pilot test in partnership with WFP and two local non-government organisations that each cover different geographical areas in Gaza and West Bank. The initiative targets 20,000 children aged between six to 24 months (10,000 in Gaza and 10,000 in the West Bank) who each receive one feeding bowl and spoon.

The pilot started in Gaza in April 2022 and is due to be completed in December 2022. Activities included the training of 32 health and nutrition staff on complementary feeding and how to present the bowl and spoon to the mothers/caregivers. The trained staff then instructed mothers/caregivers on how best to use the bowl and spoon to improve feeding

practices within an overall programme of integrated activities, including mothers/caregivers' education sessions, cooking demonstration sessions, IYCF counselling sessions (individual and group), and as part of the nutrition and early childhood development assessments.

By the end of August 2022, 2,300 children six to 24 months in Gaza had already benefited from the initiative's activities and received the bowl and spoon. Although activities to collect feedback and review the initiative are ongoing, initial feedback received indicated both positive and negative reactions. On the one hand, the initiative was perceived as a way to raise the knowledge of mothers about complementary feeding, in which the bowl and spoon have helped them to provide their children with nutritious meals. On the other hand, the design, colour and durability of the bowl and spoon were found to have room for improvements. All feedback received will be documented and shared with the relevant counterparts for the purpose of learning and informing possible future scale up.

## Next steps/priorities

Learning from the barrier analysis and from the feedback on ongoing programme implementation, UNICEF will continue supporting local authorities and other partners to strengthen and develop child nutrition service provision.

Strategic actions will be taken at policy, institutional and community/household levels and cover the areas of health and nutrition services, water, sanitation and hygiene, and social protection, as described in Table 1.

## Conclusion

The barrier analysis that was conducted in 2019 in West Bank and Gaza has helped to identify and understand the key barriers to optimum maternal and child nutrition behaviours. The results of the barrier analysis had a strong positive impact on implementing partners, encouraging them to adapt their programmes accordingly and guided the implementation of key interventions at both the community and policy levels.

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## Field Article

# National social assistance programmes to improve child nutrition:

## Lessons from Burundi, Ethiopia and Tanzania

### KEY MESSAGES

- Significant progress is being made by governments in Eastern and Southern Africa (ESA) to implement large-scale social assistance programmes that target financial assistance to the most vulnerable members of society.
- Examples from Burundi, Ethiopia and Tanzania show that combining cash transfers with 'plus' elements – such as social and behaviour change (SBC), livelihoods support and links to services – can help address the underlying determinants of child undernutrition, leading to nutrition impact.
- National social assistance programmes can go further in preventing undernutrition by including scale-up mechanisms in response to shocks, and by linking with food systems interventions to improve access to nutrient-dense foods at all times.

UNICEF is supporting national governments in ESA to design and pilot 'cash plus' programmes that target nutritionally vulnerable households with cash and additional services to help prevent maternal and child undernutrition. These programmes aim to address multiple underlying causes of undernutrition by increasing household resources, as well as access to nutritious foods, uptake of positive nutrition practices and access to nutrition and other services. This is a key contribution to UNICEF's Global Nutrition Strategy 2020–2030 (UNICEF, 2020), which positions the social protection system as one of five key systems to prevent all forms of malnutrition by 2025. The following article builds on the experiences of combining cash transfers with nutrition counselling in Kenya that were shared in Issue 68 of Field Exchange (Angood et al, 2022)<sup>1</sup>, and illustrates further examples of 'cash plus' programming in Burundi, Ethiopia and Tanzania. The examples and lessons learnt are drawn from country case studies documented by UNICEF ESARO and the UNICEF Global Technical Team on Social Protection and Nutrition, in collaboration with UNICEF country teams. The full set of case studies is available at the following [link](#).

### Examples of national 'cash plus' interventions

#### The Merankabandi programme in Burundi

The Merankabandi model provides cash transfers to chronically poor households alongside community-based nutrition SBC and livelihoods support.

### Background

National social protection systems are rapidly evolving in ESA to address poverty and vulnerability among the most fragile populations. Evidence suggests that social assistance, usually in the form of large-scale cash or food transfers and public works programmes, can reduce levels of extreme poverty and improve household food security and diet diversity (Owusu-Addo, 2018). A recent systematic review and meta-analysis has shown that cash transfer programmes have significant, but heterogeneous and modest, positive impacts on child stunting, child wasting, consumption of animal source foods, diet diversity and incidence of diarrhoea (Manley et al, 2022). Nutrition impacts may be enhanced when cash transfers are delivered alongside complementary interventions, or 'plus' elements, such as SBC, livelihoods support and links to primary healthcare and other services (Manley et al, 2022; Little et al, 2021).



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Merankabandi is the Government of Burundi's national social safety net programme. It began as a pilot scheme (2018–2022) funded by the World Bank, implemented with technical support from UNICEF and partners. The pilot targeted 56,090 extremely poor and vulnerable households in four provinces (Gitega, Karuzi, Kirundo and Ruyigi) with cash transfers and additional support to build resilience to shocks and prevent undernutrition. Eligible households were those with children aged under 12 years, to reach younger children at high risk of stunting and support older children's attendance at primary school.

The cash component involved unconditional electronic payments of USD24 to households every two months for 30 months, equating to 60% of per capita income for the average household. The 'plus' component involved delivery of community-based SBC to caregivers to support uptake of optimal care and nutrition practices. Tented group spaces called 'Hinduringendo' ('let's change our behaviour') were established in each village (215 in total) with a meeting space, handwashing device, kitchen garden, cooking area, playground for children and latrine. Community Agents used these spaces to demonstrate cooking, kitchen gardening and hygiene practices and provide group awareness-raising sessions focused on relevant, actionable skills using locally available resources and foods.

Partway through the pilot, additional funding was received to set up 'solidarity groups' in target areas as an exit strategy for Merankabandi members. Members of solidarity groups met weekly to receive financial education and contribute savings from which income generation activities and unexpected costs could be supported. Ongoing support for kitchen gardens was also given and SBC messages were reinforced. A key implementation challenge was weak integration between different programme components, with the cash, SBC and solidarity group elements often neither being delivered to the same households, nor at the same time. The Community Agent model was also expensive and time-consuming, given the need for recruitment and training.

Results of real-time monitoring have shown positive changes in intervention households along the nutrition impact pathway, including improved access to healthcare, exclusive breastfeeding rates, availability of food for children, handwashing with soap and sanitation, as well as increased joint household decision-making, household savings and birth registration. Survey data collected in March 2021 revealed that the prevalence of stunting for children under the age of five among participating households was 52.8%, compared to 69.8% in non-participating households in

the same areas. The greatest difference was seen in the under-two age group. This suggests that, despite the short duration of the project (three years), the delivery of cash plus complementary activities contributed to improved child nutrition outcomes.

Based on these findings, World Bank funding has been allocated to extend the project to 250,000 households in the poorest communes in 18 provinces over five years. In line with inflation and to support greater impact, recipient households are receiving USD54 every three months for 24 months, alongside the same SBC activities and support for job creation. Refugees and host communities are also being targeted. Rather than using Community Agents, mothers enrolled in Merankabandi who engage in positive nutrition practices are being recruited and trained to provide peer support. This aims to improve linkages between the cash and complementary components and improve project sustainability.

### The Productive Safety Net Programme (PSNP) in Ethiopia In Ethiopia, a new cadre of social workers provides individual integrated case management to cash transfer clients, linking them to multiple nutrition, health and agricultural services

Efforts to link social protection and nutrition in Ethiopia primarily focus on the Rural PSNP. This is Ethiopia's largest social assistance programme, currently targeting eight million extremely poor rural households that are vulnerable to shocks and food insecurity with cash or food assistance, either in exchange for public works or unconditionally where the household has limited labour capacity ('direct support').

Evaluation findings of the PSNP III (2010–2014) revealed that, despite improving household food security, the programme did not improve nutrition outcomes for children (IFPRI, 2013). In response, and in the context of a strengthened nutrition policy landscape in Ethiopia, the PSNP IV (2015–2020) included explicit nutrition-related indicators and embedded nutrition provisions within its design to support improved access to a diverse diet, nutrition and care practices, and health and nutrition services to all participants (Box 1).

Results of an endline review of the PSNP IV found limited or no change in a range of nutrition outcomes and underlying determinants of nutrition. Food security improved marginally in the lowlands (reducing the food gap by 12 days per year), but not in the highlands. Dietary diversity marginally improved by 0.11 food groups in the highlands but not in the lowlands. Diets for young children (aged 6–23 months) and uptake of health services were no different in PSNP compared to non-PSNP households. Low nutritional impact was largely attributed to poor programme performance on the social transfer side (late and irregular transfers and low transfer value), as well as to the sporadic implementation of nutrition provisions due to budget limitations.

To explore further ways to improve the nutritional impact of the PSNP, the Ministry of Labour and Social Affairs (MoLSA), with technical support from UNICEF, implemented the Integrated Basic Social Services with Social Cash Transfer (IN-SCT) programme between 2016 and 2018 in four woredas in the Southern Nations, Nationalities and Peoples and Oromia regions. A case management approach was used to link direct support PSNP clients with an integrated package of services, including SBC, health and nutrition services, and agricultural extension and livelihoods support. PSNP

#### Box 1 Nutrition provisions of PSNP IV in Ethiopia

1. Introduction of 'temporary direct support' to excuse pregnant women, as well as caregivers of children under 12 months/children with wasting, from public works to support optimal nutrition and care practices.
2. Introduction of 'co-responsibilities' for temporary direct support clients, including attendance at health facilities and SBC sessions delivered by Health Extension Workers.
3. Increase in the nutritional value of food transfers (by including pulses in addition to cereals and oil) and in cash transfer values to enable the purchase of pulses.
4. Women enabled to receive distributions as joint household heads to enhance their control over household resources.
5. Introduction of a mechanism to scale up transfers in response to shocks using contingency budgets, thereby increasing the shock-responsiveness of the system.
6. Selection of public works projects that have nutrition benefits for the community (e.g., building childcare centres at worksites; water, sanitation and hygiene facilities; kitchen gardens; planting fruit trees).
7. Improvement of work conditions for women (half the workload of men; lighter work; building of childcare centres next to work sites).
8. Delivery of monthly two-hour SBC sessions for public works clients (with six sessions counting as one public workday).
9. Creation of linkages with support for nutrition-sensitive livelihoods for public works clients (e.g., poultry, goat's milk, fruit or vegetable production).
10. Involvement of the health sector in PSNP processes and planning.
11. Embedding of nutrition-related indicators and reporting on nutrition-related outcomes.

<sup>1</sup> <https://www.ennonline.net/fex/68/socialprotectionkenya>



Merankebandi participant tending to her kitchen garden, Burundi, 2021

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clients continued to receive the regular PSNP transfer of 3 kg of cereals per day or a cash equivalent, depending on the context. An endline evaluation revealed successful linkages between clients and services by social workers, but little impact on child nutrition outcomes. In areas receiving additional nutrition-sensitive interventions (agricultural extension and livelihoods support) some improvements occurred in indicators along the nutrition impact pathway, including household dietary diversity, food security and breastfeeding practices.

Building on lessons learnt, a five-year Integrated Safety Net Pilot (ISNP) was launched in 2019 in four woredas in Amhara region and Addis Ababa by MoLSA with UNICEF technical support. The programme tests a similar case management approach to the IN-SCT pilot, with additional elements to strengthen linkages with health, nutrition, education and protection services. A new cadre of social work staff (Community Service Workers) has been recruited to provide more consistent individual case management, supported by a new digital information management system and improved enrolment and referral systems.

Building on lessons learnt from the PSNP IV, further nutrition-sensitive design provisions have been integrated into the wider PSNP V with World Bank support. These include the selection of nutrition-sensitive assets for public works projects; embedded case management and referrals to health and nutrition services; enhanced nutrition SBC for PSNP clients; the transference of women from public works to 'direct support' during pregnancy until their child's first birthday; the mobilisation of female 'nutrition champions'; and the provision of childcare at public works sites. The PSNP V also has an improved shock-responsive component to allow the scale-up of transfers, both horizontally (reaching more participants) and vertically (achieving higher transfer values), in response to crises. Future evaluations

of the PSNP will rigorously assess the impact of these provisions.

### The Stawisha Maisha programme in Tanzania

Stawisha Maisha targets SBC at participants of the government's cash transfer programme to support the uptake of positive infant and young child feeding (IYCF) practices among chronically poor households

The Productive Social Safety Net (PSSN) II programme (2020–2023) is the Government of Tanzania's social assistance programme, which targets 1.2 million participants in chronically poor households (identified by a common targeting system). Households with no labour capacity receive unconditional cash transfers ('direct support'), and those with labour capacity participate in public works for cash during the lean season. All participating households with children under the age of 18 also receive a variable cash transfer conditional on the uptake of health, nutrition and education services. PSSN II households receive bi-monthly cash transfers to the value of USD5.30 and USD24.10 per day, depending on the eligibility criteria.

UNICEF worked with the government between 2018 and 2019 to pilot the Stawisha Maisha Cash Plus programme in two districts. Stawisha Maisha tested the efficacy of delivering additional SBC sessions to PSSN II households to enhance IYCF practices alongside PSSN II cash transfers to increase access to nutritious foods. Peer-led SBC sessions were delivered to caregivers and other household members at PSSN payment sites on the six payment days throughout the year.

A total of 10,837 caregivers were reached with SBC sessions at 127 payment sites, and 85% of participants attended all six sessions.

Weaknesses in evaluation methodology meant that definitive conclusions could not be drawn on programme impact. However, an endline review showed acceptance of the approach by participants, integration of activities into the social protection workforce and increased participant knowledge regarding IYCF. A key limitation was the use of written materials among a largely illiterate audience. On the cash side, programme performance was poor during 2019, with several missed payments due to funding shortages. Low coverage of health and nutrition services in some target areas meant that linking PSSN with services was impossible.

UNICEF and the Tanzania Social Action Fund (TASAF) worked together to design a second iteration of the Stawisha Maisha programme, which is now being implemented in Lake Zone. Design changes made in response to Phase One learnings include increased frequency of group meetings (now weekly); meetings within communities rather than at payment sites; targeting of mothers and direct caregivers; and the use of radio as the main communication channel. Sessions will be supported through the distribution of wind-up radios, improved SBC materials and ongoing supervision by PSSN workers. A much stronger monitoring and evaluation system is being developed to provide valuable information to inform future integration and scale-up.

### Lessons Learned

Evidence from these case studies show that cash transfers delivered alongside 'plus' interventions can help address barriers to optimal nutrition by addressing financial constraints, access to nutritious foods, uptake of nutrition and other services, and improving care and feeding practices. This is best achieved when social protection and nutrition colleagues work together to design and implement joint programmes.

Cash plus programmes have the greatest potential for impact when cash transfers are of adequate value, regular, predictable and paid on time, and when plus elements are delivered to the same population in tandem. Learning from Burundi shows that the latter requires joint planning, system linkages and regular communication between social protection, nutrition and other workforces.

Delivering SBC alongside cash transfers can 'nudge' vulnerable populations towards optimal child feeding and care practices. SBC can be delivered by trained community volunteer cadres within the health system (as in Burundi), or by the social welfare system (as in Tanzania). Learnings from Tanzania and Burundi shows that SBC is more likely to be effective when the target population has access to quality nutrition services and diverse foods respectively.

A referral system for cash transfer participants to multiple services can increase access to, and uptake of, multiple services to support child nutrition and wellbeing, as demonstrated by the ISNP in Ethiopia. This will be most effective when clear referral pathways exist between sector workforces and when information systems are integrated or shared. Integrated case management services provide an effective means to manage referrals, and this can be delivered by trained community volunteers (as in Ethiopia).

Experiences in Burundi demonstrate the potential of kitchen gardens and support to-

wards increased household savings, livelihoods and job creation to improve household earning for transfer participants and to sustain access to diverse foods for children. Tailoring livelihoods interventions to support the availability of nutrient-dense foods for children, such as by providing seeds and small livestock, can help families put nutrition SBC messages into practice.

Cash plus programmes must be robustly monitored and evaluated to provide quality evidence. Monitoring frameworks should be designed to show impact across the nutrition impact pathways, including indicators to measure short-term change (such as dietary diversity, changes in practices and access to services) and longer-term nutrition outcomes. Findings can be fed into the design of each programme iteration, as in Ethiopia, to ensure that learning leads to programme improvement and increased impact over time. Robust information will also support advocacy for investments as part of future scale-up.

## Conclusions

Increasing domestic and external resources are being invested in the development of large-scale government social assistance programmes in the ESA region to target financial assistance to the most vulnerable members of society. These programmes provide a valuable opportunity to address poverty as a key underlying cause of child undernutrition. The country examples provided here show that, by intentionally including nutrition provisions

within their design and adding nutrition-responsive 'plus' elements, social assistance programmes have the potential to address multiple barriers to optimal child nutrition (beyond financial barriers) to achieve positive change along the nutrition impact pathway. Scale-up of programmes in many of the countries is of course critical for contributing to national poverty reduction and nutrition goals. Engagement of multiple sectors (including nutrition) in social policy efforts, as well as in the design and evaluation of social assistance programmes, is critical to making this a reality.

One future opportunity in the ESA region involves the integration of shock-response mechanisms within national social assistance programmes to allow scale-up of cash or food assistance in response to crises. This will help prevent malnutrition in the face of increased climate-related shocks in the region as part of wider malnutrition prevention and nutrition resilience strategies. Opportunities also exist to improve the nutrition-responsiveness of wider social protection systems to support sustained change. This might include improved employment rights for women to support optimal IYCF practices, as well as health insurance schemes to support universal health coverage, including universal access to nutrition services such as treatment of wasting, micronutrient supplementation and counselling. Food systems transformation efforts are also critical for improved and consistent availability of nutritious foods, especially protein sources, to ensure that social assistance translates into improved diets for young children.

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Participants in a development programme to increase resilience to climate change and improve food security and nutrition in Burundi



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A group counselling session in Telangana, India

# A digital messaging intervention and remote data collection to support early child development and nutrition: Telangana, India

## KEY MESSAGES

- This article explores the development of a digital messaging intervention and of methodologies to collect data remotely during the COVID-19 pandemic in Telangana, India, which targeted message recall, early child development (ECD) and infant and young child feeding (IYCF) practices.
- The digital messaging intervention leveraged an existing opportunity in Telangana, one of the states with the highest penetration of mobile phones and internet usage, including ownership of phones among women, which ensured that messages delivered through the intervention achieved significant reach among beneficiaries.
- While digital messaging is a promising model for ensuring messages reach women, it cannot replace the critical interpersonal communication offered by frontline workers. Both models are therefore complementary.

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## Background

The COVID-19 pandemic and its associated lockdowns have impacted the health, nutrition and learning of children in multiple ways (Yoshikawa et al, 2020). These include impacts of protracted lockdowns and family unit disruptions on immediate socioemotional development outcomes, including adverse effects on children due to increased caregiver stress; the trickle-down economic implications on household food availability; direct infection from the virus itself, both in the immediate and longer-term; and the implications of curtailing progress towards meeting the Sustainable Development Goals (United Nations, 2020). Restrictions imposed during the pandemic have reduced access to social services, especially for vulnerable populations, with a knock-on effect on multi-sector initiatives and

child health services such as school feeding programmes and child immunisation (Pérez - Escamilla et al, 2020).

Despite these disruptions, community workers – including Anganwadi workers (AWW) in India – have demonstrated both resilience and industry (Nanda et al, 2020), distributing food to families to support complementary feeding for young children and using technology to deliver relevant nutrition and health messages. The distribution of family-level food allowance, or ‘ration’, was among the least disrupted child health services, with periods between lockdowns seeing the moderate resumption of this service (Avula et al, 2022).

At the onset of the COVID-19 pandemic, community-level service delivery for components under POSHAN Abhiyaan (the National Nutrition Mission) were brought to a standstill in India. The Department of Women Development and Child Welfare (DWDCW), the Government of Telangana and UNICEF conducted rapid online assessments to better understand service delivery gaps within the Integrated Child Development Services (ICDS) and the National Health Mission. While improvements were reported in take-home food ration and growth monitoring, counselling services remained unavailable for over 90% of beneficiaries. In response to this unmet need and to complement POSHAN Maah (Nutrition Month), a digital messaging intervention was developed in September 2020 for dissemination in the community. Sangath, a not-for-profit organ-

isation, led the development of this counselling intervention as part of the wider Aalana Palana intervention (Box 1) that was initiated in the state before the COVID-19 Pandemic.

This article explores the development of this digital messaging intervention and the methodologies used to collect data remotely during the pandemic, targeting message recall, ECD and IYCF practices.

## Methods

### Development of the digital messaging intervention

The rationale of developing this digital intervention using multimedia formats (video, audio and text) was based on existing mobile and internet access in Telangana. National Family Health Survey 5 (2019–21) data show that over 75% of households in the state have at least one mobile phone, with over 50% of women in rural Telangana and 75% of women in urban Telangana having ownership. Internet availability is at 42% across the state.

To develop key messages on ECD and nutrition, the Aalana Palana team reviewed relevant literature, including UNICEF and WHO guidance for supporting responsive parenting strategies during the pandemic (Parenting for Lifelong Health, n.d.; UNICEF, n.d.). The team produced a messaging matrix to guide the development of key messages (Table 1).

## Box 1 The Aalana Palana intervention

The *Aalana Palana* intervention is a part of **ASPIRE (A Scalable Programme Incorporating ECD interventions)**, a collaboration between Sangath, DWDCW and UNICEF. *Aalana Palana*, which is delivered by AWWs at the community level, aims to design and pilot an integrated ECD and nutrition video intervention promoting nurturing care in the first 1,000 days of life. *Aalana Palana* in Telugu implies a caring and nurturing environment provided by caregivers to their children. Such an environment includes adequate nutrition and responsive and sensitive caregiving, including opportunities for learning and access to quality health services. *Aalana Palana* draws from the internationally promoted Nurturing Care Framework on ECD that provides healthcare providers and caregivers with guidance on giving children the best start in their lives.

Since shorter videos often receive more views (Ferreira et al, 2021), the video and audio messages were kept brief at between 60–120 seconds in duration. All messages included information to address challenges regarding access to resources, limited mobility outside the home and associated stress in both children and caregivers. The appropriateness of the messages was checked with AWWs who had considerable experience of working in the community, especially during the pandemic.

The final set of messages across the media mix was shared with AWWs, and two virtual training sessions were carried out to optimise circulation of the content across multiple platforms. Messages were made available on the DWDCW website and on a state-hosted YouTube channel.<sup>1</sup> Social media channels (Facebook and Instagram)

were also used. AWWs forwarded the messages to WhatsApp groups for pregnant and breastfeeding women and their family members. Text messages reiterating key points were sent by centralised servers managed by DWDCW to registered mothers. In addition, AWWs further discussed the messages during their limited in-person interaction with women during the distribution of the take-home food ration.

For families who did not have internet or smartphone access, and to supplement social media messaging, other media included in this intervention were direct phone calls to families through a government-operated line and communication with AWWs through a satellite television channel operated by the DWDCW, known as T-SAT.

### Remote data collection on coverage and recall of the digital messaging intervention

A message recall survey was conducted with 5,377 randomly selected pregnant women and mothers of children under two years of age in 16 districts of Telangana. These women were contacted through telephone calls and WhatsApp messages, and asked questions about whether they had received any digital counselling messages from the health system, the format and content of the messages, whether they had any further queries, who they reached out to for answers, and who they shared the messages with. Coverage of the digital messaging intervention was also assessed via tracking the number of WhatsApp groups created between frontline workers (including AWWs and families in their catchment area) on which these messages were circulated widely. Impressions on social media – including views, comments and shares – were tracked to estimate coverage on these platforms.

### Remote data collection on ECD and IYCF practices during the COVID-19 pandemic

A random sample of 242 pregnant women and mothers with children aged 6–36 months residing in the catchment area of 30 AWCs were randomly selected and approached for the telephone interviews.

Data were collected using a semi-structured questionnaire, which consisted of adapted versions of standardised questionnaires and ad-

**Table 1** Messaging matrix

Video messages	
<b>Pregnant mother (3 messages)</b> Health indicators to be checked during pregnancy. Dietary tips for pregnant and breastfeeding mothers. Family support for pregnant women and childcare.	<b>Complementary feeding (2 messages)</b> Feeding child with love and care (responsive feeding). Complementary feeding: frequency and quantity.
Text, audio messages and images	
<b>Pregnant mother care (9 messages)</b> Registering at the Anganwadi Centre (AWC) and antenatal care (3 messages). Micronutrient supplementation (1 message). Healthy diet for pregnant mothers (3 messages). Preparing for delivery (2 messages).	<b>General wellbeing messages in the context of COVID-19 (11 messages)</b> Stay informed – reassure. Missing friends? Here are some ideas. Turn off the gadgets, light up a conversation. Let's squeeze this stress ball together. Daily exercise adds value to your life. The more we learn, the more we know. Making routines – creating a rhythm. Be prepared ... be safe. Stay positive Breathe in ... breathe out Healthy mothers make healthy families
<b>Breastfeeding messages (2 messages)</b> A healthy mother nurtures a healthy baby. Breastmilk makes your baby stronger, sharper and healthier	
<b>Complementary feeding (4 messages)</b> Eat right, be bright. Eating all kinds of food makes children less fussy eaters Clean hands give us clean food. It's OK to make a mess.	<b>ECD messages (8 messages)</b> A much-loved child feels safe and secure. Let's sing together. Stretch together ... physical activity is fun. Playing together makes children smarter. Peek-a-boo: I can see you. Learning is fun ... it can happen inside or outside. Talk more, bond more. A father can be a child's best friend.

<sup>1</sup> <https://icds.tgwdcw.in/AalanaPaalana>

**Box 2** Survey components featured in the sub-study

- Household financial security, including information on loss of employment
- IYCF practices, using the WHO Complementary Feeding Questionnaire (adapted) (WHO, 2021)
- Quality and extent of stimulation available to a child in the home environment (both interaction and physical environment), adapted from the Family Care Indicators (Kariger et al, 2012)
- Healthcare service provision through AWC for pregnant women and children, including measurement of height and weight, food supplementation and deworming
- Measurement of exposure to violence or neglect at home

ditional questions based on a literature review (Box 2). Owing to the telephonic mode of administration, certain items – such as measuring the quantity of food the child ate using a standard bowl – had to be omitted. Questionnaires had to be reduced in order to minimise the administration time of the interview. Mock administrations were conducted within the team in order to test the final questionnaire.

Calls were made by a research assistant from Sangath who had had previous interactions with these families during a baseline conducted under the ASPIRE programme (the results of this baseline are not presented in this article). This existing rapport was used to increase the chances of participation and cooperation in the sub-study. The research assistant was trained on administering the questionnaires and on obtaining and recording consent over the phone. An Excel database was maintained that contained demographic details, as well as a record of call attempts.

Given the sensitive nature of certain questions, specifically those pertaining to violence

towards the child and mother, information regarding helplines was provided and a follow-up was completed to check whether the family had received any required support.

Since the questionnaire took 20–30 minutes to administer, flexibility was offered regarding time of the day and the number of sessions across which the questionnaire could be delivered.

**Ethical review and quality control**

Participant consent was recorded over the phone after obtaining permission from the respondent. Prior to obtaining consent, an information sheet was read aloud and caregivers were encouraged to ask questions.

The study was cleared by the Sangath Institutional Review Board.

**Results****Digital messaging intervention**

During POSHAN Maah and the extended digital counselling rounds conducted between September and December 2020, 27,757 WhatsApp groups were created by AWWs with their bene-

ficiaries. This represented 78% of AWCs in the state. The remaining AWWs could not reach out to participants in their catchment area due to poor internet connectivity. 227,000 (94%) pregnant and lactating women and 423,000 (65%) parents and other family members of young children (aged 7–72 months) were reached through these groups.

**Message recall survey**

WhatsApp messages reached more than 60% of all registered women beneficiaries in the state. Besides these direct beneficiaries, 100,000 (60%) Village Panchayat members, municipality post-holders and women collectives received these messages. It was estimated that 1,500,000 people were reached across social media between September and December 2020.

Across 16 districts, an average of 84% of women recalled receiving messages in the week preceding the survey via WhatsApp. Results were largely comparable across districts, ranging between 81% and 89% (13 districts), with 77% in one district (Adilabad) and 61% in another.

Among women who were able to recall messages, 97% were able to remember pregnancy care-related messages, followed by 93% for breastfeeding messages, and 77% for complementary feeding messages. A total of 97% of women reported receiving these messages on WhatsApp groups created by their AWWs, and 88% of women reported sharing messages among their peers and discussing it further with AWWs and family members.

**Sub-study on ECD and IYCF during COVID-19**

Of the 242 caregivers approached for the sub-study, 208 responded and consented to participate. Thirty-one caregivers were not contactable, and three children were deceased.

The results of the sub-study indicated that 51% mothers reported receiving support from family members when feeding their children during the pandemic. Paternal participation in child feeding was reported by 18% mothers. Additionally, 71% mothers reported receiving food from AWCs both before and during the COVID-19 lockdown. Only 43% were able to get their child vaccinated, and 39% were able to get their child's height and weight measured both before and during the COVID-19 lockdown.

For parent–child interactions, 34% to 42% of caregivers reported playing, reading, singing, etc. with their child during the pandemic, yet had not engaged in such activities before the onset of the COVID-19 pandemic.

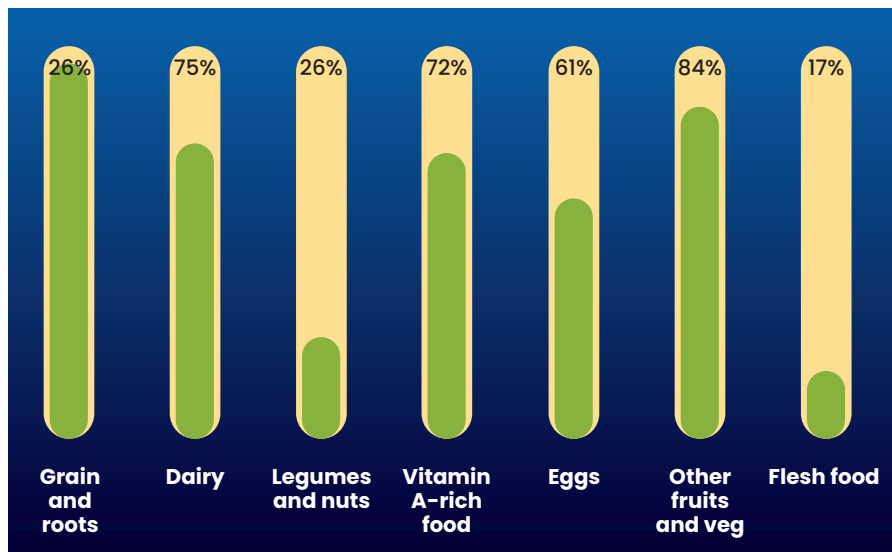
Most children (95%) received grains and roots in their diet, followed by other fruits and vegetables (84%), dairy products (75%), Vitamin A-rich foods (72%) and eggs (61%) (Figure 1). A quarter of children received legumes and nuts (26%). Flesh foods, including bird or animal meat & products made from these items, were consumed by 17% of children. Almost two-



Using a mobile phone to deliver health interventions during the COVID-19 Pandemic, India

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**Figure 1** Consumption of different food groups by children in the sub-study

thirds (63%) of children received the WHO recommended minimum acceptable diet in the 24 hours preceding the survey; 73.5% received four or more food groups; and 92% received the recommended number of meals.

### Lessons learned

This digital messaging intervention built on the opportunity provided by Telangana being one of the states with the highest penetration of mobile phones and internet, including ownership of phones among women. This ensured that key messages delivered through this intervention across multiple themes achieved significant reach among beneficiaries.

Key lessons learned from the development of the digital messaging intervention, as compared to in-person messaging, centred around making the messages sufficient in themselves so they would be effective even in the absence of a facilitator going through them with the families. This included significantly simplifying language, using colloquial terms and elaborating concepts. For audio recordings, increased importance was given to voice modulation and using a conversational tone to make the messages appealing enough for caregivers.

A key challenge, however, remained of customising messages to cater to the individual needs of families. To address this, customised tele-calling was later initiated for women to address specific concerns; however, this was possible only in a smaller geographic location. In addition, the digital messaging intervention served as a tool for AWWs to engage in discussions with community members, ensuring continuity of counselling services and uniformity in messaging and minimising information loss.

The messages developed for digital delivery have been integrated into various government schemes, including the wider Aalana Palana video intervention. The dissemination of messages on WhatsApp groups not only enabled two-way interactive communications, but also

helped create peer networks within communities to support women during pregnancy and after childbirth. It is noteworthy that many of these peer networks continued giving support to women and mothers after the lockdown.

In addition to the findings from the two cross-sectional surveys presented above, later interactions with beneficiaries after the easing of the pandemic-related restrictions showed an encouragingly high rate of recall of key messages. During these exchanges with ICDS functionaries at community-based events, as well as during home visits by AWWs, it was observed that women who were exposed to the digital messaging intervention were able to recall messages and had adopted certain promoted behaviours. These included behaviours on pregnancy care and hygiene, such as maternal nutrition supplementation, deworming, managing stress during the pandemic and hand-washing during food preparation, as well as before and after feeding children. Messages on the role of fathers and other care providers in supporting mothers in childcare and feeding were also remembered.

A major challenge of the telephone surveys was the fatigue encountered by respondents, which at times impacted the quality of their responses. Another consequence was the inability to complete all questionnaire sections in a single session, on occasion requiring multiple attempts to contact caregivers. The duration of the phone calls was further increased when families, who were already in a state of stress due to the pandemic, discussed their personal struggles, deviating from the actual interview.

### Conclusion

Our experience demonstrates that a mix of high-dose universal digital messaging, in combination with targeting specific individual needs through one-on-one counselling, is a possible way forward for ECD and nutrition. While digital counselling is a promising model

to ensure that messages reach their target audience, it cannot replace the critical interpersonal communication with frontline workers like AWWs. Both models are complementary. A community-based mechanism for triaging pregnant women, mothers and young children into high-risk categories and providing them with additional home visits or creating referral pathways for specialised consultations is also required.

Digital platforms can also support the incorporation of data collection methods through chatbots or e-surveys alongside coverage of digital messaging, to ensure systematic collection of process indicators and data related to improvement in knowledge levels.

The lessons learnt from Aalana Palana during this unprecedented pandemic and associated lockdowns can be expanded to support young children and their caregivers in future disasters. Such disaster preparedness will be essential to ensure that services to the most vulnerable of our populations are minimally disrupted in the future.

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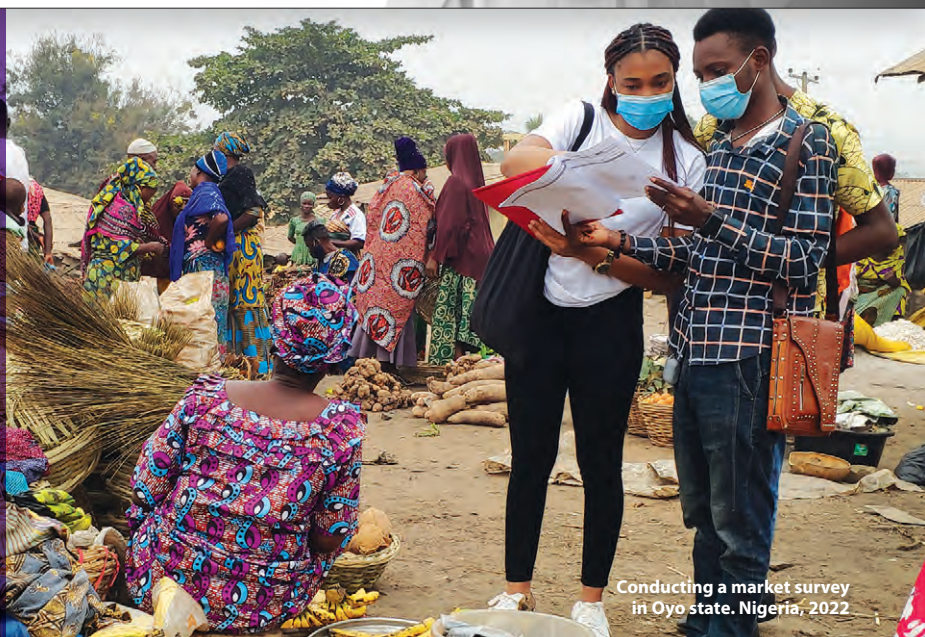
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## Affordable and nutritious child feeding in Nigeria: Applying Cost of the Diet modelling

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Conducting a market survey in Oyo state, Nigeria, 2022



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### KEY MESSAGES

- This article explores a 'Cost of the Diet (CotD)' assessment, conducted in Nigeria in 2022, which identified the cheapest approaches to meet all the nutritional requirements of children aged 6–23 months throughout the year, from locally available and culturally acceptable food items.
- Markets had a diverse range of food items that could fulfil all major macro- and micronutrient requirements, indicating that the availability of nutrient-rich foods may not be the main barrier to a nutritious diet in this setting.
- The CotD assessment showed that a lowest-cost diet meeting energy, protein, fat and micronutrient specifications is expensive compared to the standard income of the target population.

### Background

Due to the high prevalence of undernutrition, in 2019 the Government of Nigeria and the World Bank identified Oyo state in Southwestern Nigeria as one of the 12 highest-burden states in the country. Around 35% of children under five are stunted and 65% are anaemic. Six out of ten children do not receive a diverse diet, and nearly nine out of ten are not fed an appropriate number of meals for their age. Only 5.8% of children achieve a minimum acceptable diet (National Population Commission, 2019).

The Accelerating Nutrition Results in Nigeria (ANRiN) project is a GBP 202 million initiative of the Federal Government of Nigeria – financed by the International Development Association of the World Bank Group and the Global Financing Facility – to tackle malnutrition in the 12 highest-burden states in Nigeria. The project aims to improve maternal and child nutrition status by increasing access to, and

utilisation of, Nigeria's Basic Package of Nutrition Services. The package includes the promotion of infant and young child feeding practices through social and behaviour change communication activities. However, evidence suggests that economic constraints can limit the effectiveness and sustainability of such initiatives if nutritious foods are unavailable or too costly (Deptford et al, 2017). In addition, current complementary feeding recipes promoting dietary diversity tend to be generic and based on food groups rather than on actual nutritional content, cost and local food availability, as well as dietary preferences.

### Study objectives

The CotD assessment in Oyo was conducted in 2022 to identify the cheapest approaches to meet all the nutritional requirements of children aged 6–23 months throughout the year, from locally available and culturally acceptable food items. Recipes would then be

promoted through existing Mother Support Groups alongside Nigeria's Basic Package of Nutrition Services.

The analysis also aimed to assess the degree to which economic constraints might affect poor and very poor households from accessing a nutritious diet. Specifically, this assessment set out to answer the following questions:

- What is the minimum cost of a nutritionally adequate and culturally acceptable diet for a typical household in Ogo Oluwa and Afijio local government areas (LGAs) of Oyo state?
- What locally available foods are inexpensive sources of essential nutrients and can be promoted through programme interventions?

### Methods

A CotD analysis estimates the hypothetical minimum amount of money a typical household would need to purchase their recommended intakes of energy, protein, fat and micronutrients, using locally available foods. The software contains five databases: the energy and nutrient content of foods; the energy and nutrient requirements of individuals; predefined groups of individuals in typical households; the portion sizes of foods; and currency conversion factors (Deptford et al, 2017).

Primary data on food prices, seasonal food price variation, seasonal availability and local dietary habits were entered into a linear programming solver within the software. The CotD software, in combination with the internal da-

tabases, then estimated the cost, quantity and combination of local foods needed to provide target individuals and households with a diet that met average energy needs and recommended intakes of protein, fat and micronutrients. For this assessment, an average household size ( $n = 5$ ) was calculated from ANRiN's monitoring data.

Primary data collection for the CotD assessment involved surveys in selected markets and individual interviews and focus group discussions (FGDs) with neighbouring villages or communities. Primary data collection took place during January and February 2022 in Ogo Oluwa and Afijio LGAs within Oyo state, where Save the Children was already planning to implement the ANRiN Innovation project. In total, 10 markets and 10 villages (farming communities) were selected for primary data collection from a complete list of villages, with one additional market and one village selected for field practice. All 10 villages were within the catchment areas of the markets where market surveys were conducted.<sup>1</sup>

- Market survey: The primary aim of the market survey was to record the prices and weights of food items found in the assessment area across various seasons. Real-time data on food prices were collected for the current season (dry season, lasting from November to March), while retrospective data were collected for the other two seasons (rainy season, lasting from August to October; lean season, lasting from April to July). Where possible, weight and price data were collected from four traders in each market.
- Individual interviews: A food frequency questionnaire was administered to assess the consumption frequency (per week) of all food items on the market survey questionnaire, if available or in season. In each sample village, eight women (with children under two years of age, and who were also the primary food preparer in the household) were asked to participate in both individual interviews. In total, 80 individual interviews were conducted from 10 villages.
- FGDs: The FGDs were conducted with the same groups of women who had taken part in the interviews using a semi-structured questionnaire to obtain insights into typical food consumption habits, cultural practices and food taboos in the assessment area. The discussions validated the interviews' compiled responses, covering food preferences, taboos, beliefs, intra-household food distribution and access to markets, and homegrown/naturally available free food items.

### Estimating different diets and their cost

The research team estimated the cost of four hypothetical diets using the above data and

the CotD software for a typical five-person household (comprising one man, one breast-feeding mother, and three children, including one child aged 12–23 months):

- A lowest-cost diet that only met recommended average energy requirements (energy only (EO) diet)
- A lowest-cost diet that met specifications for energy, protein, fat and micronutrients but did not consider typical dietary habits (minimum-cost nutritious (NUT) diet)
- A nutritious diet calculated by applying constraints at the time of analysis to include the staple foods and exclude taboo foods (staple-adjusted nutritious (SNUT) diet)
- A lowest-cost diet that met specifications for energy, protein, fat and micronutrients and considered typical dietary habits and cultural acceptability (food habit nutritious (FHAB) diet)

### Estimating the affordability of diets

While the minimum cost of a nutritious diet can be useful on its own, more insight is gained when comparing diet costs against the purchasing power of the target population. Diet affordability was estimated using income and expenditure data from a recent economic assessment in a neighbouring LGA to Oyo state (Okeleke et al, 2020). Annual non-food expenditure was taken as it was reported. For each wealth group (poor and affluent households), income and non-food expenditure data were entered into the CotD software to determine how affordable the diet was.

### Limitations of the CotD software and method

While the CotD method and software are practical, powerful tools, it is important to consider the limitations of the analytical process and associated results.

- The software estimated diet is the hypothetical lowest-cost diet, which is applicable

only for the family size ( $n = 5$ ) and composition used in the calculation. Therefore, any results that extrapolate these findings to specific groups or individuals should be interpreted with caution.

- The method also excludes any additional energy, protein and nutrient requirements for sick or convalescing individuals due to insufficient data, highlighting the need for further caution.
- Although CotD software can identify a 'diet' that provides the recommended amounts of macro- and micronutrients from a relatively small sample of foods, it assumes that this particular diet will be consumed by each family member on a daily basis and at every meal, which is unlikely to be realistic.
- The CotD software also fails to consider the needs for several nutrients, including vitamin D, iodine, and essential amino and fatty acids. However, there is a rationale for excluding these nutrients: vitamin D is not included as requirements can be met when skin is exposed to ultra-violet light; iodine is not included as the amount present in foods is dependent on soil quality; and most food tables do not provide data on essential amino or fatty acids.
- When interpreting CotD results, it is also critical to consider intra-household food distribution. The software determines the amount of food for a family based on the sum of recommended nutrient intakes, but food is often distributed within a household based on individual needs – and not always equitably (Berti, 2012; Harris-Fry et al, 2017).

### Key findings

#### Food availability and consumption patterns

The market survey found 182 food items in the assessment area when combining all three sea-

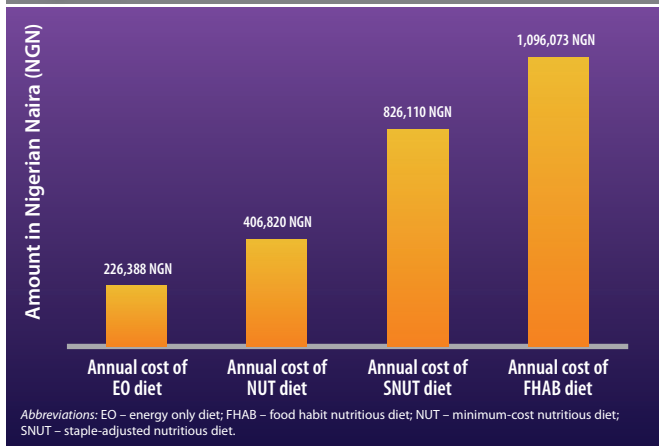


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Conducting a market survey in Oyo state, Nigeria, 2022

<sup>1</sup> A map of the study locations can be accessed here: <https://www.google.com/maps/d/u/0/edit?mid=1uPLHF CoNSJHxm9nFxmj4l6vAtLciOuuM&ll=8.107971704197201%2C4.03234752382811&z=10>

**Figure 1** The annual cost of various diet types for a standard household with five members



**Table 1** Estimated affordability of different diet types and non-food expenditure by household types (poor vs affluent)

	Formula	Poor households	Affluent households
Annual household income	-	664,222	1,651,200
Non-food expenditure	-	313,612	313,612
Income: non-food expenditure	(a)	350,61	1,337,588
Cost of EO diet	(b)	226,004	226,004
Excess or shortfall	(a) – (b)	124,606	1,111,584
Cost of NUT diet	(c)	404,381	404,381
Excess or shortfall	(a) – (c)	-53,771	933,207
Cost of SNUT diet	(d)	826,11	826,11
Excess or shortfall	(a) – (d)	-475,5	511,478
Cost of FHAB diet	(e)	1,096,073	1,096,073
Excess or shortfall	(a) – (e)	-745,463	241,515

sons: 33 cereal or grain-based products; 15 types of root and tuber; 18 types of legume, nut and seed; 9 meat and offal products; 17 types of fish or seafood; 24 vegetables; and 25 fruits/fruit products.

The interviews and FGDs conducted in the 10 villages confirmed that yam, cassava and maize were the main staple foods. Although rice and wheat (mainly used to make bread) were also commonly consumed and available in the market, they were comparatively more expensive and thus less frequently consumed than the alternatives. Most households consumed two to three meals a day on average throughout the year, with some impoverished households having only one or two meals a day. However, there were some differences between the seasons: three meals were usually consumed during dry seasons, whereas only two meals were consumed during rainy or lean periods.

The most common food for children under the age of two was ‘pap’, a soft, watery food prepared from maize mixed with sugar and milk or water. There were no specific taboos observed for this age group. Breastmilk was given to children under the age of two, but ex-

clusive breastfeeding was not often practised.<sup>2</sup> Alongside breastmilk, common foods for children were ewedu (a savoury soup made of leafy vegetables, most commonly of jute leaves), mashed beans, noodles and cassava flour. Fish, milk and eggs were rarely given to children due to the prohibitive cost.

The study found that the lowest cost of meeting just the EO requirement of a typical five-member household was NGN 226,388 (USD 500) per year (Figure 1). The annual cost of a diet that met the needs for energy and micro-nutrients but did not consider typical dietary practices (the NUT diet) was NGN 406,820 (USD 900). The annual cost of the SNUT and FHAB diets was around NGN 826,110 (USD 1,830) and NGN 1,096,073 (USD 2,430) respectively. Within the household, the cost of meeting the nutritional requirements of breastfeeding women was highest (27% of household spend), followed by the requirements of men (25%), of children aged 11–12 (24%), of children aged 9–10 (19%) and of children aged 12–23 months (5%).

The FHAB diet included 43 food items from 12 different food groups available in the markets.

Yam (tuber or flour) was identified as the primary staple that constituted 26% of overall cost, meeting 28% and 16% of energy and protein requirements respectively, along with other micronutrient needs. Overall, markets in the study area had a diverse range of food items that could fulfil all major macro- and micro-nutrient requirements. While this analysis did not identify any limiting nutrients in the assessment zone, calcium and iron were found to be the most difficult to obtain (i.e., the most significant cost driver), followed by pantothenic acid (B5) and vitamin B12.

The results from the affordability analysis (Table 1) indicate that poor rural households from farming communities may be unable to afford a FHAB diet plus non-food expenditure. This implies that poor households can only afford to purchase a portion of FHAB after meeting their non-food expenditure. As per the affordability calculation, poor households can only afford to meet energy requirements and non-food expenditure with their current income level. Therefore, poor rural households have a shortfall of NGN 53,771 (USD 120), NGN 475,500 (USD 1,055) and NGN 745,463 (USD 1,650) from being able to afford a NUT, SNUT and FHAB diet respectively. Conversely, wealthier households with an income in line with the national annual minimum wage (NGN 1,651,200 (USD 3,660)) can afford both the FHAB diet and non-food expenditure, with a predicted surplus of NGN 241,515 (USD 535).

**Nutritious diet ‘what if’ modelling**

Using CotD software, three hypothetical ‘what if’ scenarios were modelled to examine the effects on the cost, composition, quality and affordability of the diet of poor households:

1. Introducing moringa leaves (i.e., drumstick leaves) for one of three meals a day, only during the dry season, as a free food (Model 1)

<sup>2</sup> Children under the age of six months were not the primary targets for this study, although this group were often mentioned during FGDs regarding child feeding practices. For the purposes of this analysis, all children under the age of six months were assumed to be exclusively breastfed.



- Promoting the consumption of sweet potatoes once a week, during all seasons, as an alternative to the other commonly consumed roots/tubers (Model 2)
- Introducing both interventions together (Model 3)

Moringa leaves are abundant in communities, as shown by around half of the interviewed mothers reporting their consumption, yet they are only consumed sporadically. It can therefore be leveraged as a more consistent and cheaper source of nutrients. If moringa leaves were consumed more frequently (Model 1), the annual cost of the FHAB diet for the entire family would be reduced from NGN 1,096,073 (USD 2,430) to NGN 880,801 (USD 1,950) – a 20% reduction. On an individual level, the cost of a nutritious diet for breastfeeding mothers could be reduced by 17%. For children under the age of two, the reduction could be up to 36% (Figure 2).

Similarly, if poor households replaced a portion of yam flour and grated cassava (garri) in their diet with sweet potatoes (Model 2), the annual cost of the FHAB diet for the entire family would be reduced from NGN 1,096,073 (USD 2,430) to NGN 845,328 (USD 1,870) – a 23% reduction. The cost of a nutritious diet for breastfeeding mothers could be reduced by

23%, but this has little impact on children's diets (Figure 3).

If a typical poor household adopted both of the previous practices (Model 3), the annual cost of the FHAB diet for the entire family would be reduced from NGN 1,096,073 (USD 2,430) to NGN 630,612 (USD 1,395) – a 42% reduction. On an individual level, the cost of a nutritious diet for breastfeeding mothers could be reduced by 40%. For children under the age of two, the reduction could be up to 36%.

### Development of recipes

The CotD assessment also found that the cost of a nutritious diet can be significantly reduced by incorporating underutilised nutritious, but cheap or free, food into the local diet. The analysis of different diet types presented by the software revealed 12 highly nutritious, but cheap and underutilised, food sources: sweet potatoes, maize, cassava, moringa leaves and pods (free), Malabar spinach (free), citrus fruits, sorghum, African cherry, cashew nuts, wheat bran, dried coconut kernel and amaranth leaf.

To improve the child feeding practices and to promote affordable complementary food among the marginalised farming communities, the ANRiN project team developed a recipe

book comprised of 20 low-cost, nutritious recipes based on food items identified by the CotD analysis, considering the availability, price and nutrient content of all food items, as well as food preferences and dietary practices. All the recipes were developed with the active participation of community members of Ogo Oluwa and Afijio LGAs.

### Conclusion

Although the FHAB diet was 2.7 times more expensive than the NUT diet, food items selected for the FHAB diet were still some of the cheapest options in the markets. Nevertheless, the CotD assessment showed that the cost of a FHAB diet remained high compared to the standard income of the target population. Households in the study area were unable to afford both nutritious food and non-food items, with an average 'poor' family expressing an affordability gap of around 120% of their income.

Overall, markets in the study area had a diverse range of food items that could fulfil all major macro- and micronutrient requirements. Based on this finding, we conclude that the availability of nutrient-rich foods is not the main barrier to typically poor households obtaining a nutritious diet. These results appear to justify the aim of the ANRiN project to enhance children's nutritional status by reducing affordability gaps through the development and promotion of low-cost, nutrient-dense recipes. This study demonstrates the way the CotD method and software can be used, not only to understand the extent to which economic constraints may affect an individual's or household's ability to meet the nutritional requirements of the mother and children, but also to develop tools, such as the recipe booklet, which could significantly improve maternal and child nutrition during the first 1,000 days.

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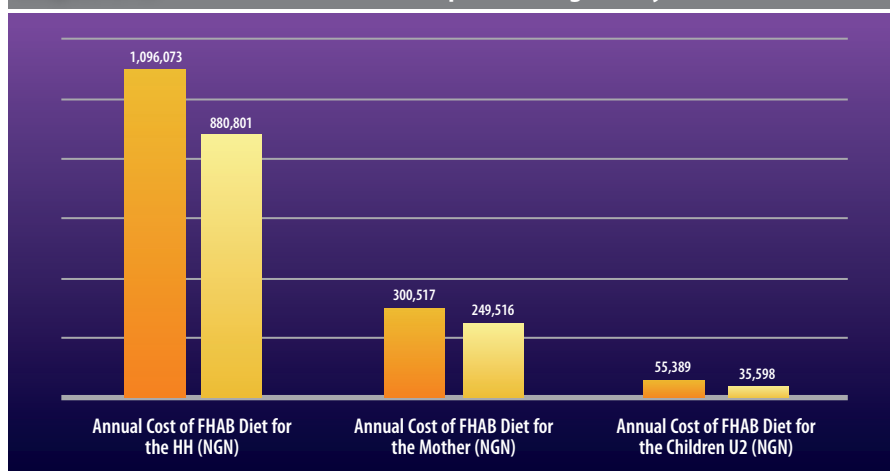
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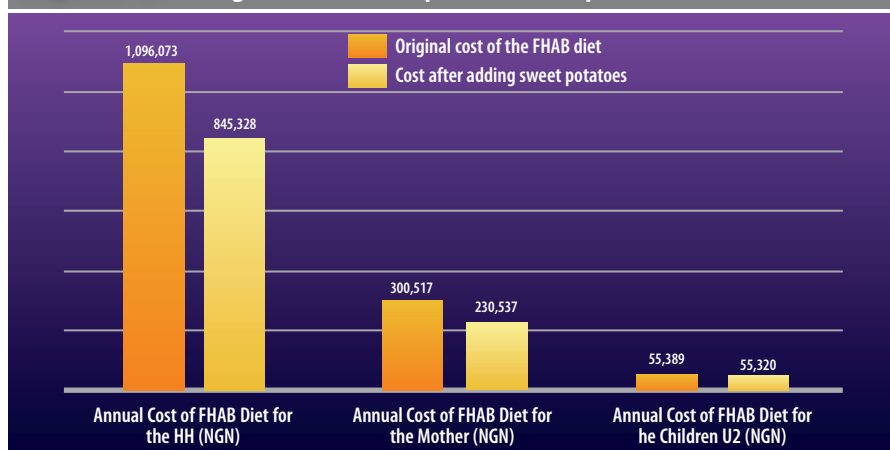
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**Figure 2** Effects on the CotD of a poor household when increasing moringa leaf (as free food) consumption during the dry season



**Figure 3** Effects on the CotD of a poor household when increasing (orange-fleshed) sweet potato consumption



## Hot weather impacts infant feeding practices in low- and middle-income countries

This is a summary of the following report: Edney JM, Kovats S, Filippi V et al (2022) A systematic review of hot weather impacts on infant feeding practices in low- and middle-income countries. *Frontiers in Pediatrics*, 10, 930348. <https://doi.org/10.3389/fped.2022.930348>

Due to concern that increased hot weather led to a rise in supplemental feeding rates due to infants requiring additional fluids or the perception that infants are dehydrated, the authors conducted a systematic review of published studies to understand how hot weather conditions may impact infant feeding practices. They first reviewed evidence to consider whether exclusively breastfed infants could maintain hydration levels under hot weather conditions, assessing indicators of infant hydration such as urine concentration measures, total fluid intake or infant weight changes. They then examined the available literature on infant feeding practices in hot weather.

The 18 studies that met the inclusion criteria after they were assessed according to predetermined quality checklists showed no evidence that exclusively breastfed infants required additional water or other liquids. The authors found that exclusively breastfed infants maintain normal hydration levels without concentrating urine to maximal levels. Supplementary water also does not appear necessary for exclusively breastfed infants that are low birthweight or born near-term.

The authors describe multiple potential pathways by which hot temperatures and weather may influence infant feeding practices, including fear of infant dehydration and the belief that infants require water and/or other liquids alongside breastmilk in hot weather or seasons. Other factors that are highly seasonal and/or weather-dependent, and which could be associated with reduced time spent breastfeeding, include demands on a woman's time (work or childcare); the infant's season of birth, which modifies the mother's experience of social support and infant feeding practices; school holidays taking place during hot, dry months and placing more childcare responsibilities on breastfeeding mothers; and periods of higher prevalence of diarrhoeal disease, when women are less inclined to supplement breastfeeding for fear of giving infants contaminated water. In some settings, healthcare providers and relatives continue to advise water supplementation in hot weather or during the warm seasons.

Increased rates of exclusive breastfeeding could significantly improve infant survival in low- and middle-income countries. The authors conclude that, overall, there is evidence to support the WHO and UNICEF guidelines recommending that healthy infants should be fed exclusively with breastmilk, regardless of weather conditions. However, they still call for further research in countries bearing the brunt of climate change. Families and healthcare providers should be advised that exclusive breastfeeding is recommended even in hot conditions.

## Small-Quantity Lipid-Based Nutrient Supplements for severe malnutrition

This is a summary of the following programming guidance: UNICEF (2023) Small Supplements for the Prevention of Malnutrition in Early Childhood: Brief Guidance Note.

<https://www.unicef.org/documents/nutrition/SQLNS-Guidance>

Recently, there has been a renewed focus on the use of Small-Quantity Lipid-Based Nutrient Supplements (SQ-LNS) (Box 1), due to the increasing body of evidence regarding their effectiveness and the inclusion of SQ-LNS in the Lancet 2021 series on Maternal and Child Undernutrition updated list of recommended interventions. In response, UNICEF have produced programming guidance to support the appropriate use of the intervention.

Evidence shows SQ-LNS can reduce the prevalence of stunting by 12% to 14%, severe stunting by 17% and the prevalence of severe wasting by around one-third in children aged 6–24 months, with greater effects observed in areas with greater burdens of wasting or stunting, or with poorer water quality or sanitation (Dewey et al, 2022). SQ-LNS can also lower the prevalence of micronutrient deficiencies (Wessells et al,

2021) and may support child development equivalent to one to five IQ points (Prado et al, 2021). Initial evidence supports the cost effectiveness of SQ-LNS (Adams et al, 2022).

UNICEF's guidance document highlights that SQ-LNS should be used as part of an integrated approach targeting younger child in contexts that are food-insecure and with high burdens of undernutrition (wasting, stunting and micronutrient deficiencies). The provision of SQ-LNS should be part of a larger effort to promote growth and improve the diets of infants and young children. A table of criteria and justifications is provided to guide decision-making around the use of SQ-LNS in any given context, and considerations for their integration within existing preventive interventions are outlined.

<sup>1</sup> <https://www.thelancet.com/series/maternal-child-undernutrition-progress>

### Box 1 What are SQ-LNS?

Yet another acronym in the humanitarian lexicon, SQ-LNS are nutrition supplements incorporated into a small amount of food paste (around 20 g per sachet). SQ-LNS provide 24 micronutrients and macronutrients and are designed to be used as a form of home fortification, comparable in scope to multiple micronutrient powders. They can be mixed with complementary foods or eaten as they are straight from the sachet, as they do not need mixing with water. SQ-LNS have been shown to be highly acceptable to children and their caregivers, and high compliance rates have been observed. They are designed to be part of a toolkit to prevent undernutrition and micronutrient deficiencies in early childhood in contexts of significant nutrient gaps and where micronutrient deficiencies are common.

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## Ukraine crisis: Organisational guidance for the feeding of children aged six months to two years

A mother with her child at a voucher distribution in Chernihiv city, Ukraine

This is a summary of the following report: *IFE Core Group, Global Nutrition Cluster, UNICEF & World Food Programme (2022) Guidance for organizations supporting the feeding of children aged 6-months to 2-years in the context of the Ukraine crisis.* <https://reliefweb.int/report/ukraine/guidance-organizations-supporting-feeding-children-aged-6-months-2-years-context-ukraine-crisis-may-2022>

In May 2022, the Infant Feeding in Emergencies Core Group, the Global Nutrition Cluster, UNICEF, and the World Food Programme issued joint guidance for organisations supporting the feeding of children aged 6-24 months. The guidance was issued to reinforce the notion that the complementary feeding period remains critical for child development as the 6-month mark represents a time when child energy and nutrient needs begin to exceed that which can be provided by breast milk alone. For adequate complementary feeding, a diverse array of foods in appropriate quantities is required. In Ukraine, access to these specific foods is likely to be disrupted due to market impacts, shop closures, and reduced means to both purchase and prepare foods.

The guidance highlights that organisations should consider contextual factors when providing food assistance, namely the safe availability of nutrient-rich foods in the market, the cultural appropriateness and acceptability for the age group, access to fuel, equipment, utensils and facilities to prepare and offer food to young children, access to clean water for both drinking and food preparation, a clean environment, for hygienic food storage and preparation, and mobility, specifically whether families are stationary or in transit due to the evolving security situation.

The guidance also details what to include in a food assistance package and how much food to provide, calculated based on the energy and nutrient requirements for young children. In addition, it highlights what support activities, services, and supplies can be provided to ensure the beneficiaries are well informed and able to access any additional practical support needed.

The document also outlines five key items that should not be provided in emergencies – foods in feeding bottles due to possible hygiene risks, foods that may cause choking hazards such as whole nuts, powder milk or infant formula as widespread use undermines the uptake of breastfeeding which is the optimal feeding strategy for this age group, foods labelled for children less than six months of age as they may be nutritionally inadequate, and foods and drinks that have a low nutrient value such as high salt soups, noodles, deep fried foods, salty snack foods, cakes, sweets, sugar-sweetened beverages, sweetened fruit puree, or sweetened breakfast cereals.

## Community peer support groups: Improving infant and young child feeding in Pakistan

This is a summary of the following report: *UNICEF (2022) Research study on the role of community-based peer support groups in the promotion of infant and young child feeding practices.* Unpublished.

With almost 40% of children being stunted, 29% underweight, and 17.7% wasted, Pakistan faces one of the highest burdens of malnutrition in Asia. Among other things, a lack of awareness amongst caregivers surrounding adequate infant and young child feeding (IYCF) practices has been identified as a key contributing factor. To remedy this, a combined approach that engages mothers and fathers, as well as providing social support, appears to be a promising strategy to encourage optimal feeding. The theory behind this approach is to engage these key influencers of a child's diet and create a positive social environment which can be more successful in changing behaviours than programmes that focus on mothers' knowledge alone.

A desk review, combined with in-depth interviews and focus group discussions, was undertaken to explore three specific objectives in the rural communities of Peshawar, KP and the drought affected communities in Tharparkar, Sindh: 1) The role of lady health workers in IYCF promotion, 2) the extent to which mother- and father- support groups have sensitised communities to the importance of the stages of breastfeeding and complementary feeding, 3) to examine other practices that have been adopted to sensitise local communities on IYCF.

Findings from focus group discussions indicated the positive role that lady health workers play in promoting IYCF which has been appreciated by communities. In particular, lady health workers helped to clear the myths and misconceptions that were passed from generation to generation such as discarding colostrum. It was noted, however, that the overall numbers of lady health workers are limited, compromising effective coverage in all areas.

Support groups were also found to be beneficial although aspects of the selection and training of group members, the frequency of meetings and the learning materials provided were highlighted as needing improvement. Other sensitisation practices adopted were found to be limited, although some cooking sessions and telephone calls were used by some.

In terms of knowledge of optimal IYCF practices, the findings indicated some confusion around when to initiate breastfeeding, with the terms 'within' and 'after' half an hour of birth creating uncertainty. The World Health Organization (WHO) guideline of exclusive breastfeeding within the first six months of life was, however, well understood by communities. Father support groups felt that breastfeeding should continue for one year whereas mother support groups correctly recalled the WHO guideline of two years of continued breastfeeding. Some fathers thought that exclusive breastfeeding was not needed if nutritious food was available, contrary to global health advice. Although awareness of complementary feeding after six months was strong, most respondents had limited knowledge around minimum dietary diversity, minimum meal frequency, and minimum acceptable diet. Biscuits with tea and roti with chilli powder and oil were mentioned as acceptable complementary foods, highlighting a critical knowledge gap.

The report identified six recommendations to improve IYCF in the region: greater provision of printed learning materials, financial incentives to support group members, using different sources of community sensitisation other than face-to-face sessions (cooking demonstrations, recipes, apps/ phones etc.), improving the performance of community workers (e.g., greater pay, reduced workloads, logistical support), the formation of father support groups in areas that do not have them, and more regular support group meetings.

## How has COVID-19 impacted nutrition services in Sri Lanka?



A mother and her baby in Colombo, Sri Lanka where an adequate and nutritious diet is out of reach for many families

## Tools for Infant and Young Child Feeding in Emergencies (IYCF-E)

Like any area of work within the field of nutrition, Infant and Young Child Feeding in Emergencies (IYCF-E) relies heavily on a comprehensive suite of reliable resources. The IYCF-E Hub aims to deliver such a suite in the form of a global portal for accessing a collection of relevant resources for use in humanitarian contexts. The Hub offers advanced search functions to appropriately seek out relevant information, while organising resources by collection – such as the Ukraine war response, the Türkiye–Syria earthquake response and the assessment of needs, orientation and training, to name a few. In each collection, both visual and text-based resources can be discovered from a wide variety of reputable international and local organisations active in the area. Where relevant, tools translated into local languages are included.

The IYCF-E Hub partners with USAID, Save the Children, IFE Core Group, PATH, SafelyFed Canada, Action Against Hunger, and ENN.

This platform was developed by Save the Children with the support of the members of the Steering Advisory Group and was made possible by the generous support of the American people through funding by the United States Agency for International Development (USAID).

For more information regarding the IYCF-E Hub, and to access the resources for yourself, please visit <https://iycfehub.org/>

This is a summary of the following report: Jayatissa R & Denuwara B (2021) Quantity, quality and gap of the nutrition services received by children living in urban underserved settlements in Sri Lanka during the COVID-19 pandemic.

\*Although this report was accurate at the time of publication, Sri Lanka's former President, Gotabaya Rajapaksa, stepped down on 15th July, after fleeing the country due to protests in response to a growing fuel, food, and medicine crisis driven by a shortage of foreign currency. It is unclear how this has affected maternal and child nutrition services since this report was published.

Before the COVID-19 pandemic, Sri Lanka faced a major public health problem of maternal and child undernutrition. Fast forward a few years and the combination of pandemic-mandated travel restrictions and lockdowns has placed a significant toll on this island nation that has recently been hit hard by spiralling food and fuel costs (Reliefweb, 2022). In the capital Colombo, a 2020 study revealed an increase in child wasting prevalence. Based on these concerns, this cross-sectional descriptive study was commissioned to assess the quantity, quality, and possible gaps in the nutrition services received by children living in the urban underserved settlements within the Colombo municipal area and the Medical Officer of Health areas of Dehiwala and Kolonnawa.

In total, 538 households with 376 children under five years were included in the study. Roughly two thirds of the households in the study were under lockdown measures in the six months leading up to the study, with 94.4% receiving government assistance in the form of food and/or cash.

The rate of exclusive breastfeeding for children under six months was 69.4% and 90.4% of children under the age of two were currently being breastfed. Both figures are significantly higher than the global averages of approximately 40% and 55% respectively (UNICEF, 2018), although Sri Lanka has traditionally experienced nearly universal breastfeeding rates thanks in part to the success of the Baby Friendly Hospitals Initiative (UNICEF, 2018). Breastfeeding rates were comparable to the pre-pandemic period for 78.9% of children, although nearly one third of children under two years were formula fed. Minimum dietary diversity (70.4%), meal frequency (86.4%), and minimum acceptable

diet (68.8%) were adequate amongst children aged 6-23 months although this was lower than pre-pandemic levels.

The report identified a need to mainstream training on optimal infant and young child feeding (IYCF) and to provide additional tailored nutrition training with supportive supervision for Public Health Midwives, who are the main source of information on IYCF for families, to improve adherence to IYCF guidelines.

Overall, nutrition services for children aged 6-59 months were maintained during the pandemic with adequate mother awareness and perception of services also observed. However, nutrition supplementation services such as targeted vitamin A (46.9%), multiple-micronutrient (15.5%), and Triposha (51.6%) – a fortified maize, soy, and milk powder blend – were highlighted as having a low coverage that required improvement. Important gaps in services for the management of wasting were identified, including low staff capacity and weak referral mechanisms. Only half of the children who were referred to nutrition clinics for treatment attended.

The report recommended the strengthening of overall facility preparedness and service delivery for the appropriate management of wasting which, together with improvements in service delivery on appropriate IYCF and micronutrient supplementation, should improve nutrition outcomes among this vulnerable group of children.

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Emergency Nutrition Network (ENN) is a UK registered charity that strives to enhance the effectiveness of nutrition policy and programming by improving knowledge, stimulating learning and building evidence. We are passionate about being field-driven and are globally recognised as thought leaders and conveners in nutrition.

ENN is based in the UK but works globally and is made up of a team of technical experts in nutrition with decades of collective experience in the field. We work alongside governments, the United Nations, non-governmental organisations or charities, and research institutions worldwide to look critically at existing practices, raise awareness of issues and drive change so that those working to tackle malnutrition can do the best possible job. We do this by:

1. Capturing what works and what is needed to reduce malnutrition – working with people implementing programmes to help them examine their experiences and document their achievements and challenges.
2. Coordinating technical bodies to increase the global understanding of malnutrition – particularly focusing on the most nutritionally vulnerable including infants and children, adolescent girls and mothers who are pregnant or are feeding their infants.
3. Supporting global efforts to reduce malnutrition – bringing our knowledge and technical expertise to strengthen the activities of organisations working to reduce malnutrition at the global level.

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