



© UNICEF/UN0221659/Adriko- Encouraging a diverse diet for children is key to prevent malnutrition

NUTRITION THEMATIC REPORT

January – December 2018

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UNICEF Eastern and Southern Africa Regional Office (ESARO)
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Table of contents

Acronyms.....	3
Glossary of terms	4
Executive summary	5
Section 1: Strategic context in 2018	8
Section 2: Results.....	12
Section 3: Financial report.....	24
Section 4: Future work plan	25
Expression of thanks	26
Donor feedback form	26
Annex 1: Enhancing IYCF in emergency preparedness and response in East Africa: capacity mapping in Kenya, Somalia and South Sudan	
Annex 2: Feasibility of a milk matters initiative to enhance milk intake in children over 6 months of age in Somalia	
Annex 3a: Implementation of national and small-scale surveys following the SMART methodology in sub-Saharan Africa	
Annex 3b: National nutrition surveys using SMART methodology in Tanzania and Burkina Faso - from advocacy to implementation	
Annex 4: Stories on nutrition impact in the region	

List of figures and tables

Figures

- Figure 1:** Stunting trends in Eastern and Southern Africa
Figure 2: Prevalence of stunting in Eastern and Southern Africa countries
Figure 3: Prevalence of wasting in Eastern and Southern Africa countries
Figure 4: Exclusive Breastfeeding (EBF) and Minimum Acceptable Diet (MAD) in ESAR

Tables

- Table 1:** Key achievements
Table 2: Results assessment
Table 3: Planned budget by Thematic Sector - Nutrition (in US\$)
Table 4: Thematic contributions received for thematic pool 3 by ESARO in 2018 (in US\$)
Table 5: 2018 Expenditures by Key Results Areas (in US\$)
Table 6: 2018 Thematic expenses by Results Area (in US\$)
Table 8: Planned budget and available resources for 2019

Acronyms

AARR	Average Annual Rate of Reduction
AU	African Union
BNA	Bottleneck Analysis
C4D	Communication for Development
DHIS	District Health Information System
ECSA-HC	Eastern Central and Southern Africa Health Community
EPI	Expanded Programme on Immunization
EPR	Emergency Preparedness and Response
ESA	Eastern and Southern Africa
ESAR	East and Southern Africa region
ESARO	UNICEF Eastern and Southern Africa Regional Office
EVD	Ebola Virus Disease
FAO	Food and Agriculture Organization
FFI	Food Fortification Initiative
FFP	Food for Peace
FNSS	Food and nutrition security strategy
FSNWG	Food Security and Nutrition Working Group
GAIN	Global Alliance for Improved Nutrition
GAM	Global acute malnutrition
HKI	Helen Keller International
IGAD	Intergovernmental authority on development
IYCF	Infant and young child feeding
IYCF-E	Infant and young child feeding in emergencies
IPC	Integrated phase classification
IMAM	Integrated management of acute malnutrition
MIYCN	Maternal, infant and young child nutrition
MNP	Micronutrient powders
MoH	Ministry of Health
MUAC	Mid-upper arm circumference
NGO	Non-governmental organization
NI	Nutrition International
NiE	Nutrition in emergencies
NWL	No Wasted Lives
NYHQ	New York Headquarters
PPME	Programme Planning, Monitoring and Evaluation
RECs	Regional Economic Communities
SADC	Southern African Development Community
SAM	Severe acute malnutrition
SDGs	Sustainable Development Goals
SUN	Scaling-Up Nutrition
UNHCR	Office of the United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VAS	Vitamin A supplementation
WFP	World Food Programme
WHO	World Health Organization

Glossary of terms

Chronic malnutrition: Also known as 'stunting', chronic malnutrition is a form of growth failure that develops over a long period of time. Stunting may be caused by inadequate nutrition over an extended period as a result of poor maternal nutrition, poor infant and young child feeding practices and/or repeated infections. In children, it can be measured using the height-for-age nutritional index.

Global acute malnutrition (GAM): A measurement of the nutritional status of a population, GAM reflects the total number of children aged between 6 and 59 months in a given population who have **moderate or severe acute malnutrition**. (The word 'global' has no geographic meaning.) When GAM is equal to or greater than 15 per cent of the population, the nutrition situation is defined as 'critical' by the World Health Organization (WHO). In emergency situations, the nutritional status of children between 6 and 59 months is also used as a proxy to assess the health of the overall population.

Malnutrition: This is a broad term commonly used as an alternative to 'under-nutrition', but which technically also refers to over-nutrition. People are malnourished if their diet does not provide adequate nutrients for growth and maintenance, or if they are unable to fully utilize the food they eat due to illness (**under-nutrition**). People who consume too many calories are also considered to be malnourished (**over-nutrition**).

Moderate acute malnutrition: Defined as weight-for-height between -2 and -3 standard deviations from the median weight-for-height for the standard reference population.

Nutritional status: Refers to an individual's growth or micronutrient status, reflecting the level of nutrients in the body and their ability to maintain normal metabolic integrity.

Nutrition surveillance: The regular collection of nutrition information used to track progress or change or make decisions about actions or policies that will affect nutrition. In emergency situations, nutritional surveillance is part of early warning systems to measure changes in nutritional status of populations over time and mobilize appropriate response.

Severe acute malnutrition (SAM): A result of recent (short-term) deficiency of protein, energy, minerals and vitamins leading to loss of body fat and muscle tissue. SAM presents with **wasting** (low weight-for-height) and/or the presence of oedema (retention of water in body tissues). For children aged 6–60 months, SAM is defined as a weight-for-height below -3 standard deviations from the median weight-for-height for the standard reference population, a mid-upper arm circumference (MUAC) of less than 115 mm or the presence of nutritional oedema.

Stunting (chronic malnutrition): Technically defined as below -2 standard deviations from median height-for-age of a reference population. (See chronic malnutrition.)

Underweight: Wasting or stunting or a combination of both, measured through the weight-for-age nutritional index.

Wasting: Too thin for height. Technically defined as below -2 standard deviations from the median weight-for-height of a reference population.

Weight-for-age: Nutritional index, a measure of underweight (or wasting and stunting combined).

Weight-for-height: Nutritional index, a measure of acute malnutrition or wasting.

Z-score: Score expressed as a deviation from the mean value in terms of standard deviation units; the term is used to analyse continuous variables, such as heights and weights, of a sample.

Executive summary

UNICEF's Eastern and Southern Africa (ESA) Regional Priority 2 is focused on key actions and pillars to accelerate the reduction of stunting. Childhood stunting, a deficit of linear growth in relation to age that has life-long negative health and well-being impacts, remains a major developmental challenge in the Eastern and Southern Africa region (ESAR), accounting for 23 per cent of deaths among children under 5 years of age.¹ The number of stunted children has fallen worldwide, from 255 million in 1990 to 151 million in 2017, but ESAR accounts for an increasing share of the global total; the number of stunted children in the region rose from 23.6 million to 29 million over that period, due to slow rates of stunting reduction coupled with a rapidly expanding child population², and 10 countries – Angola, Burundi, Ethiopia, Kenya, Madagascar, Malawi, Mozambique, South Africa, Tanzania and Uganda – account for over 80 per cent of stunting in the region³. For these reasons, stunting reduction is a priority for UNICEF in the region.

The main programmatic interventions to address stunting and other forms of malnutrition include: increasing coverage of Vitamin A supplementation and other micronutrient interventions including home fortification with multiple micronutrient powders, improving the diet of infants and young children, scaling up treatment for children with SAM and addressing the nutritional needs of children in emergency contexts, including nutrition in the context of Ebola, cholera and measles. Compared to 2017, the region reported an improved food security and nutrition situation⁴, yet major disparities were noted with some areas reporting global acute malnutrition rates above 15 per cent, especially in Ethiopia, parts of northern Kenya, Madagascar, Somalia and South Sudan. The levels of severe acute malnutrition remain high in ESAR, with an annual burden of 2.1 million children, ESA countries account for 70 per cent of the burden. The SAM burden is highest in Ethiopia, South Sudan, Somalia, Mozambique and Angola. While many countries in the region are implementing programmes on care for children with SAM, the quality and scale of the interventions varies with the current coverage ranging from 10 per cent to a high of 70 per cent.

The period 2017-2018 was marked with a focus on reviewing progress against the regional priorities. This included carrying out a Nutrition Programme Review to assess the design and quality of programmes across the region towards achieving stunting reduction, carrying out a quality of care regional review for children with severe acute malnutrition, and ensuring enhanced preparedness and capacity for Nutrition in Emergencies.

Working closely with development partners is key to enabling the region to scale up stunting reduction actions and the number of active partnerships have increased over 2018, as work with the Regional Economic Communities (RECs) and other development partners to improve maternal and young child nutrition has expanded. In addition, partnerships to increase the number of children receiving life-saving care for severe acute malnutrition have been strengthened, as well as establishment of partnerships with research institutions. With the aim of supporting scale-up to reach more children with nutrition interventions, technical assistance to the 21 country offices in the region continued in 2018 with on-site missions of the regional team to 18 of the regions' 21 countries. Remote support has been provided to all 21 country offices.

¹ Osgood et al, "Mapping child growth failure in Africa between 2000 and 2015", *Nature*, Vol 555, March 2018. <https://www.nature.com/articles/nature25760>

² UNICEF, WHO and World Bank Group, "Joint Child Malnutrition Estimates – Levels and trends", 2018 edition. For further information, see <https://data.unicef.org/resources/joint-child-malnutrition-estimates-2017-edition/>.

³ State of the World's Children data (2017 data tables)

⁴ Data from country level nutrition programme data: small scale nutrition surveys, Integrated Food Security and Nutrition analysis (IPC analysis), MUAC screening data and Situation Reports.

Table 1: **Key achievements**

Focus area	Key achievements
Infant and young child feeding (IYCF)	<ul style="list-style-type: none"> • A total of 41.5 million children aged 6-59 months received Vitamin A in 2018. • Ongoing work toward integrating Vitamin A with Expanded Programme on Immunization (EPI) services in five countries, as part of health systems strengthening. • Implementation research on integration of Vitamin A supplementation into routine health services under way in Madagascar, Malawi and Mozambique. • Maternal nutrition landscape analysis conducted in 13 countries resulting in development of maternal nutrition country profiles. • Regional guidance for improving quality of complementary feeding with micronutrient powders (MNP) under development. • New partnerships established with the Global Alliance for Improved Nutrition (GAIN), the Southern African Development Community (SADC), Helen Keller International (HKI), Nutrition International (NI) and the Intergovernmental Authority on Development (IGAD) to work more closely with RECs to strengthen nutrition strategies and frameworks in countries across the region.
Care of children with SAM	<ul style="list-style-type: none"> • A total of 983,144 children were treated for SAM in the region (January – November 2018), representing a reach of 47 per cent of expected SAM burden across the region and 74 per cent of the target for 2018 as per the regional acceleration plan which includes an incidence calculation. Complete data for 2018 reach will be available at the beginning of Q2 2019. • A care for children with SAM deep dive consultation was held, with global SAM treatment experts and participants from 14 countries including Ministry of Health (MoH), UNICEF and WHO staff. • Country level SAM deep dive priorities developed from the 2017 consultation held by the regional office for all 21 countries, were updated in 14 country offices and technical assistance requirements from Supply Division – NYHQ and the regional office for 2018-2020 actions were elaborated. • In-country technical support on quality care for SAM was provided in five countries on: capacity building for the management of SAM, technical support in reviewing and updating of the current national SAM management protocols, and development of the training package for integrated management of acute malnutrition (IMAM). • Supported nutrition commodities supply chain management integration for nine countries. • Supported bottleneck analysis for SAM service uptake for two country offices. • Regional quality of care for children with SAM national protocol review implemented from April 2018, with findings disseminated at the SAM deep dive. • Tools and guidelines for end user monitoring for nutrition commodities developed jointly with supply and nutrition sections of the regional office and disseminated across the region.
Nutrition in emergencies (NiE)	<ul style="list-style-type: none"> • Ongoing technical assistance provided on SAM, maternal, infant and young child nutrition (MIYCN), and micronutrients in emergencies across the region. Specific technical support on humanitarian performance monitoring provided from the regional level for the nine Humanitarian Action for Children (HAC) countries i.e. Angola, Burundi, Kenya, Eritrea, Ethiopia, Madagascar, Somalia, South Sudan and Uganda as well as the six countries at risk of El Niño (Eswatini, Lesotho, Madagascar, Malawi, Mozambique and Zimbabwe).

	<ul style="list-style-type: none"> • On-site NiE training in Mozambique, South Sudan, Zimbabwe to increase response capacity and quality. • Final draft of the ESAR NiE toolkit developed and refined following field testing in Mozambique, South Sudan and Zimbabwe with translation into Portuguese in Mozambique. • Four five-day joint UNICEF/Save the Children/World Food Programme (WFP) infant and young child feeding in emergencies (IYCF-E) trainings conducted for Ministry and Nutrition sector partners in Somalia (2), South Sudan and Uganda. • In the context of Ebola Virus Disease (EVD) preparedness, UNICEF partnered with WHO, WFP and the Office of the United Nations High Commissioner for Refugees (UNHCR) and issued a joint statement on infant feeding in the context of EVD and drafted key information, education and communication materials based on the latest evidence. • Nutrition technical leadership provided to the Food Security and Nutrition Working Group (FSNWG) - nutrition sub-group and monthly inputs provided to the food security working group in ESA. • Joint publication with Save the Children on enhancing IYCF in emergency preparedness and response in East Africa: capacity mapping in Kenya, Somalia and South Sudan (See Annex 1). • Joint publication with Save the Children on the feasibility of a milk matters initiative to enhance milk intake in children over 6 months of age in Somalia (See Annex 2).
Nutrition surveillance	<ul style="list-style-type: none"> • Nutrition Programme Review completed with a deep dive into the progress on stunting reduction across the region. Country specific advocacy papers under development with findings from the deep dive. • Regional nutrition data report established with three rounds of data collection (Quarters 1, 2 and 3 of 2018) as well as reporting for 2017. • Joint sensitization with the Food and Agriculture Organization (FAO) through the Integrated Phase Classification (IPC) Global Support Unit and Programme Division – NYHQ on the new IPC for acute malnutrition (IPC manual 3) conducted for 10 countries. • Support provided to plan and implement micronutrient surveys in Angola, Burundi, Somalia and Zambia, and national nutrition surveys in Burundi, Tanzania and Zimbabwe. • Joint publications with the Centers for Disease Control and Prevention (CDC) and Action Against Hunger (ACF) on the role of nutrition Standardized Monitoring and Assessment of Relief and Transitions (SMART) surveys in decision making (See Annex 3).
Support to SADC to monitor implementation of the FNSS 2015–2025.	<ul style="list-style-type: none"> • The secondment of a nutrition specialist to the SADC has greatly raised the profile of nutrition among SADC member States, and this support has continued throughout 2018. • SADC provided with support from Food Fortification Initiative (FFI) and GAIN to develop Regional Minimum Standards for food fortification and monitoring framework. The seconded nutrition specialist contributed to the development of an implementation framework for the SADC Food and Nutrition Security Strategy (FNSS), which member States have agreed to support.
Interagency support to Comoros: nutrition strategy coordination and reporting	<ul style="list-style-type: none"> • Ongoing support of a United Nations nutrition coordinator to lead and coordinate multi-sectoral nutrition activities for stunting reduction, resulting in the creation of a civil society nutrition platform made up of 20 associations.

Section 1: Strategic context in 2018

The region

Eastern and Southern Africa is a large, geographically diverse region that stretches from the Red Sea in the North to the Cape of Good Hope in the South. UNICEF's ESA region encompasses 21 countries: Angola, Botswana, Burundi, Comoros, Eritrea, Eswatini (formerly Swaziland), Ethiopia, Kenya, Lesotho, Madagascar, Malawi, Mozambique, Namibia, Rwanda, Somalia, South Africa, South Sudan, Tanzania, Uganda, Zambia and Zimbabwe. The region is home to approximately 250 million children under 18 – a population that is expected to double by the end of the century⁵.

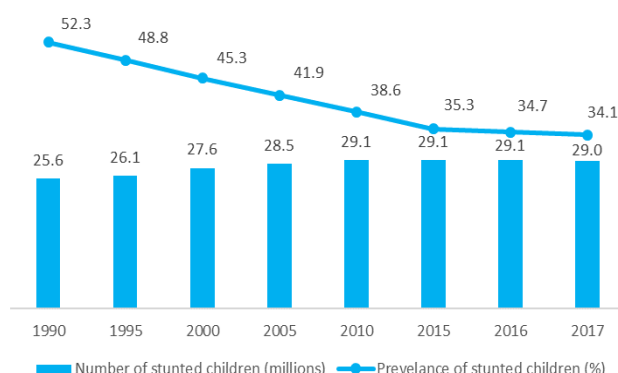
Global nutrition landscape

The 2018 Global Nutrition Report highlights that the burden of malnutrition across the world remains unacceptably high, and progress unacceptably slow. Malnutrition is responsible for more ill health than any other cause. Children under 5 face multiple burdens: globally, 150.8 million are stunted, 50.5 million are wasted and 38.3 million are overweight. Meanwhile, 20 million babies are born of low birth weight each year⁶. Although progress continues to be made in improving child nutrition, the latest joint malnutrition estimates released by UNICEF, WHO and the World Bank in May 2018 illustrate that progress is not at a pace that will enable achievement of the Sustainable Development Goals (SDGs).⁷

In many low and middle-income countries, children are particularly vulnerable. UNICEF's State of the World's Children database for 2017 showed that fewer than one in two infants under 6 months of age is exclusively breastfed as recommended, and only one in five toddlers is fed a minimum acceptable diet (a composite measurement of dietary diversity and meal frequency).

Nutrition landscape in ESA: reducing stunting as a UNICEF regional priority

Figure 1. Stunting trends in Eastern and Southern Africa



Stunting reduction continues to be one of UNICEF's regional priorities in ESAR and will remain so for the period 2018-2021. While the number of stunted children has fallen globally, ESAR accounts for an increasing share of the global total. The number of stunted children rose from 25.6 million to 29 million between 1990 and 2017⁸, due to slowing rates of stunting reduction over time and the rapidly expanding child population (See Figure 1).

⁵ Data covers population aged 0–19 years for 21 countries of ESA. United Nations Department of Economic and Social Affairs, *World Population Prospects: The 2015 Revision*, <http://esa.un.org/unpd/wpp/DataQuery/>.

⁶ Development Initiatives, 2018. *2018 Global Nutrition Report: Shining a light to spur action on nutrition*. Bristol, UK: Development Initiatives. file:///C:/Users/mnyawo/Downloads/2018_Global_Nutrition_Report.pdf

⁷ United Nations Children's Fund, World Health Organization and World Bank Group, "Joint Child Malnutrition Estimates – Levels and trends", 2018 edition. For further information, see <https://data.unicef.org/resources/levels-and-trends-in-child-malnutrition-2018/>

⁸ Ibid

Ten countries (Angola, Burundi, Ethiopia, Kenya, Madagascar, Malawi, Mozambique, South Africa, Tanzania and Uganda) account for over 80 per cent of stunting in the region⁹. In most countries, boys are more likely to be stunted than girls, and children from the poorest families are nearly twice as likely to be stunted (45 per cent) as those from the richest households (26 per cent). Children of adolescent mothers are also more likely to be malnourished and stunted.

Figure 2. Prevalence of stunting in Eastern and Southern Africa countries

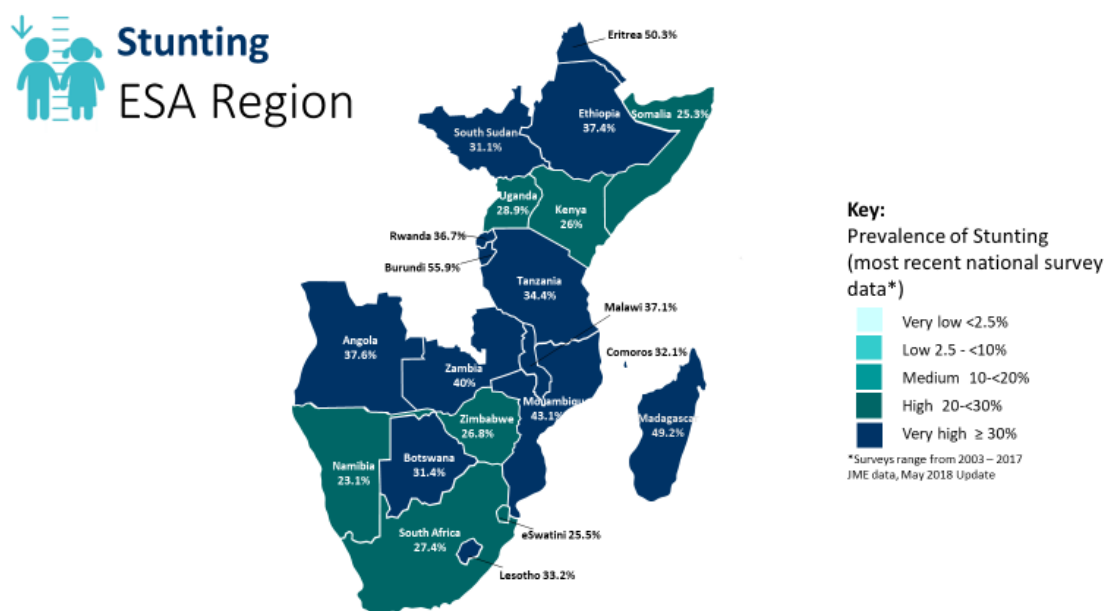


Figure 2 provides an overview of stunting prevalence in the region. According to the newly-released thresholds¹⁰, the prevalence in 14 of the 21 countries remains ‘very high’ in terms of public health significance. While many ESA countries have made progress in reducing stunting, the average annual rate of reduction is slower than population growth and not sufficient to achieve a 40 per cent reduction by 2025 as per the World Health Assembly target in most countries in the region.

Poor IYCF practices (Figure 3), recurrent drought, its associated disruption to livelihoods and role in increasing food insecurity among households living in poverty or headed by adolescent girls and boys – especially in emergency-prone countries – contributes to a high prevalence of SAM and higher risk of death and stunting in children. An estimated 2 million children aged 6–59 months need care for SAM in the region every year. Ethiopia and Mozambique are among the countries with particularly high burdens of both stunting and severe acute malnutrition. Recent research has shown that children who are both stunted and wasted have the highest level of mortality related to under-nutrition, at 12 times increased risk compared to a well-nourished child.

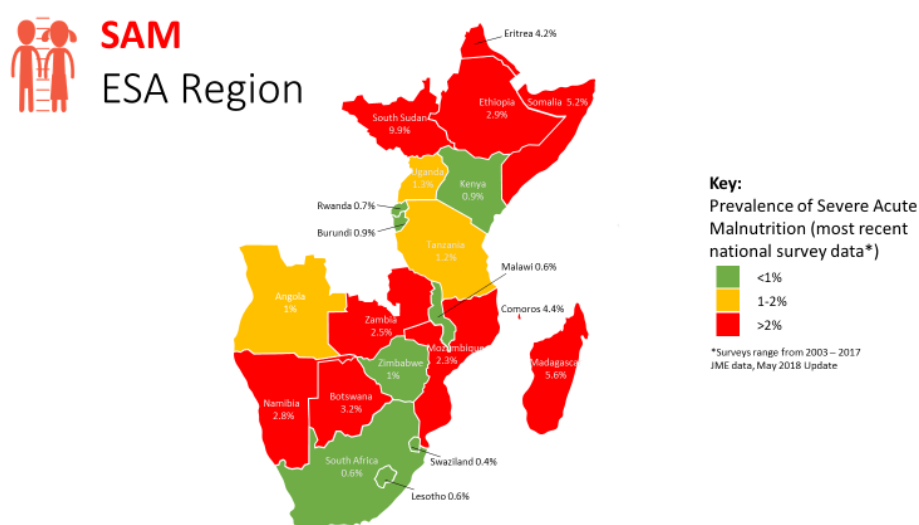
Acute malnutrition affects 52 million children globally on an annual basis, 16 million of whom suffer from SAM¹¹. Children with SAM are nine times more likely to die from common infection than their better-nourished peers, affecting children’s prospects of surviving and thriving in all areas of their lives. Treatment for this condition is highly effective, curing over 90 per cent of children who complete treatment. However, globally less than 20 per cent of children affected are able to access the treatment they need.

⁹ State of the World’s Children data (2017 data tables)

¹⁰ Prevalence thresholds for wasting, overweight and stunting in children under 5 years, M de Onis et al, 2018, Public Health Nutrition, 22 (1) 175-179.

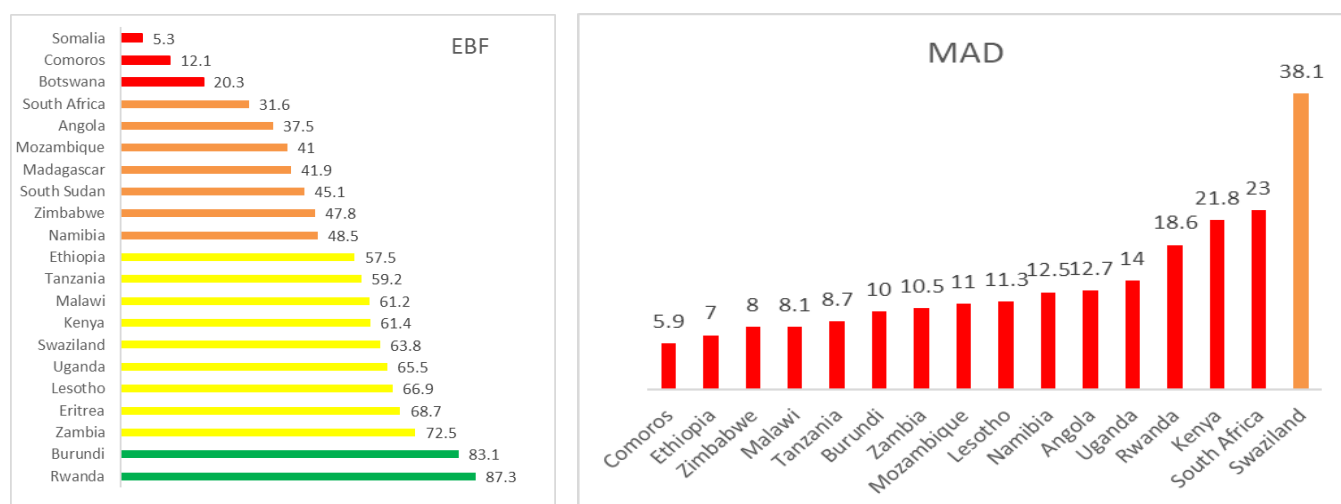
¹¹ N Dent and S Bruneau, ‘COUNTRY SCOPING_SAM Deep Dive_May 2017’, 2017.

Figure 3. Prevalence of wasting in Eastern and Southern Africa countries



In ESAR, the prevalence of SAM was 1.7 per cent,¹² in 2017, accounting for 8 per cent of the global burden of SAM. This translates into 1.3 million children suffering from SAM on an annual basis. However, when applying an incidence rate¹³, this number increases to 2.1 million. Across the region, three countries report GAM rates above the emergency threshold of 15 per cent; Ethiopia, Madagascar and South Sudan. Over half of the countries in the region report SAM prevalence as over 2 per cent, highlighting the need and urgency for SAM treatment service availability. Accounting for incidence, the total annual burden increases to over 2 million children.

Figure 4: Exclusive Breastfeeding (EBF) and Minimum Acceptable Diet (MAD) in ESAR (SOWC 2017)



In this context, UNICEF's country programmes across the region aim to reduce stunting by improving the diet and micronutrient status of children and mothers through: strengthening public health systems and infrastructure (including improved access to safe water); preparing for and responding to emergency situations that disrupt livelihoods and impact nutrition status; and finding and treating children with severe acute malnutrition.

¹² UNICEF, WHO and World Bank Group, 'Levels and Trends in Child Malnutrition', *Joint Child Malnutrition Estimates Edition*, 2017 https://www.who.int/nutgrowthdb/jme_brochure2017.pdf.

¹³ Incidence is defined as; "The occurrence of new cases of children 6-59 months with SAM in a population over a specific time period (usually a year).

UNICEF has worked with select governments to address wasting in terms of prevention and scale-up of care, by positioning SAM in government health systems, delivering quality services for in and outpatient cases of SAM in all contexts through improved planning and coordination. Furthermore, the technical support provided has helped to improve the design of SAM care programmes to facilitate greater access and utilization of services at community level, increase resources for managing SAM and availability from multiple streams (domestic, development, private, public donors), evidence and knowledge generation to improve service delivery and data utilization.

In Southern Africa, UNICEF has been working closely with SADC, especially since 2016, to develop the regional appeal for the drought response to El Niño. As a result, SADC requested that the UNICEF Eastern and Southern Africa Regional Office (ESARO) broaden its nutrition programming support. ESARO recognizes this as a milestone in its partnership with SADC that can play a key role in ensuring that member States accelerate progress and commitment to reach 2025 World Health Assembly targets, which include stunting reduction. In 2018, ESARO has expanded engagement with SADC through the RISING initiative, facilitated by the out-posted nutrition specialist. RISING aims to accelerate gains in maternal and child nutrition through strengthening regional partnerships to improve the capacity of RECs and their member States in implementing evidenced-based policies, strategies and plans for stunting reduction.

SADC is currently comprised of 16 member States (Angola, Botswana, Comoros, Democratic Republic of Congo, Eswatini, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Tanzania, Zambia and Zimbabwe), with headquarters located in Gaborone, Botswana. The SADC objective most relevant to ensuring that nutrition-related interventions are prioritized is to: *“Achieve development and economic growth, alleviate poverty, enhance the standard and quality of life of the people of Southern Africa and support the socially disadvantaged through Regional Integration.”*

The Comoros archipelago is located at the northern entrance of the Mozambique Channel, midway between the east coast of Africa and northwest Madagascar. It consists of four islands: Grande Comore (Ngazidja), Moheli (Mwali), Anjouan (Ndzuwani) and Mayotte (Maore). Since independence on 6 July 1975, Mayotte has remained under French administration. The Government joined SADC with the aim of fostering regional cooperation and trade. This is expected to allow intra-regional trade and investment flows, increase market size and increase transfer of technology and experience. Since achieving independence, the Union of Comoros has experienced frequent political upheavals, with renewed unrest in 2018 as the current President changed the Constitution and expected to continue into 2019 ahead of national elections scheduled for March 2019. These crises have worsened the already fragile situation, especially in relation to weak institutional capacity, leading to a marked deterioration in public service delivery and distrust of public institutions. Key development challenges include persistent poverty (45 per cent), high youth unemployment, inequality (Gini of 64.3), vulnerability to climatic shocks and weak national cohesion. National capacity in nutrition programming is limited; very few UN agencies are based fulltime in Comoros. For these reasons, in 2016 the Government of Comoros appealed to United Nations agencies to support the position of a Scaling-Up Nutrition (SUN) coordinator to work closely with government sectors to accelerate progress on nutrition.

In the context of supporting Comoros, where poverty remains high and development assistance is highly limited, the innovative element of this initiative was the opportunity to strengthen inter-agency coordination of, and response to, malnutrition. Thus, UNICEF joined other United Nations agencies to support capacity-strengthening efforts by placing a nutrition specialist in the office of the Resident Coordinator. This position was in place throughout 2018.

Section 2: Results

Progress toward results

ESARO's Regional Priorities were reviewed by the regional management team, leading to consensus that reducing stunting will remain a regional priority for 2018–2021, considering the unfinished nutrition agenda. The review against progress on stunting reduction (2014–2017, the second regional priority) showed that despite steady progress in most countries, progress is nonetheless slow and uneven across countries, and tracking progress on stunting reduction remains a challenge in the region. For these reasons, ESARO carried out a review of nutrition programmes across the region. The review aimed to assess if country programmes are implementing appropriate strategies to reduce stunting, if these strategies are being implemented correctly, and at sufficient scale to make a difference. The review also assessed the rate of stunting reduction per country in ESAR, with a projected trajectory to 2025. Overall, the review found that appropriate interventions are being implemented in all countries, although better synergy is needed with health interventions and a wider range of interventions is required, especially nutrition-sensitive ones. In order to assess the programming logic behind interventions supported, programming strategy notes were reviewed, with a finding that 11 of the region's 21 countries have a documented theory of change for stunting reduction that they are following. The review further showed that although some countries are achieving scale for some interventions, it is not consistent across the region, and very few countries are achieving scale across multiple interventions. Overall, interventions are making a difference and the prevalence of stunting is reducing, however the rate of stunting reduction is slow and is not keeping pace with population growth. This means that all but two countries in the ESAR are off-track to meet the World Health Assembly target of a 40 per cent reduction in the number of stunted children by 2025 (Box 1).

As a follow up to the review, the Nutrition section, together with the Programme Planning, Monitoring and Evaluation (PPME) section, supported 10 countries with a high burden of stunting and that had served as in-depth case studies for the nutrition programme review, to undertake a deep dive of their stunting reduction plans. This increased the understanding of the rate of progress towards stunting reduction and identified actions needed to support accelerated and at-scale interventions for stunting reduction and included the development of a country specific theory of change for stunting reduction to improve programming planning and logic. Following the deep dive meeting, country-level policy briefs are under development using the information from the programme review, as well as additional advocacy material and cost benefit analysis information.

Box 1: The Nutrition Programme Review

Objectives:

PPME and Nutrition section commissioned a Nutrition Programme Review to answer four key questions:

1. Are context-specific appropriate interventions being implemented?
2. Are the interventions being implemented correctly?
3. Are the interventions being implemented at scale?
4. Are the interventions making a difference?

Methods:

- All 21 country offices were included for document review; 10 countries were selected for a light review, of which a further five were selected for the in-depth review.
- A deep dive meeting was held in May 2018, drawing on review findings to build consensus on the way forward.

Major findings:

Are context-specific appropriate interventions being implemented?

Generally, Yes:

- Nutrition specific interventions implemented in all countries (Vitamin A; IYCF; SAM management)

However:

- Better synergy needed with Health
- There is need for a wider range of interventions, especially nutrition-sensitive ones

Are the interventions being implemented correctly?

Needs to be better assessed, however:

- Eleven of 21 countries reported that they currently have a Theory of Change for stunting reduction in place.
- Of those countries, seven reported the Theory of Change included an analysis of gender disparities.
- Key challenges that affect quality include:
 - Lack of coordination, oversight and governance of multi-sectoral processes, including overly ambitious goals
 - Lack of funding and (human) resources
 - Lack of data and data management

Are the interventions being implemented at scale?

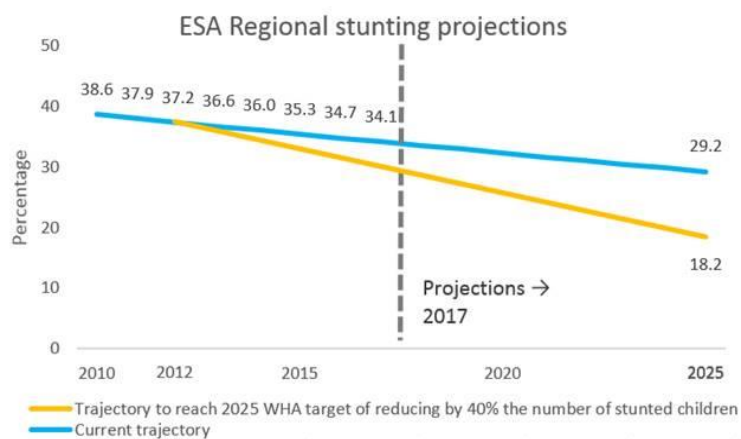
Generally, No:

- There are no interventions that are consistently implemented at scale across the region
- Very few countries are achieving scale across multiple interventions
- Nutrition-sensitive interventions are generally not yet achieving scale

Are the interventions making a difference?

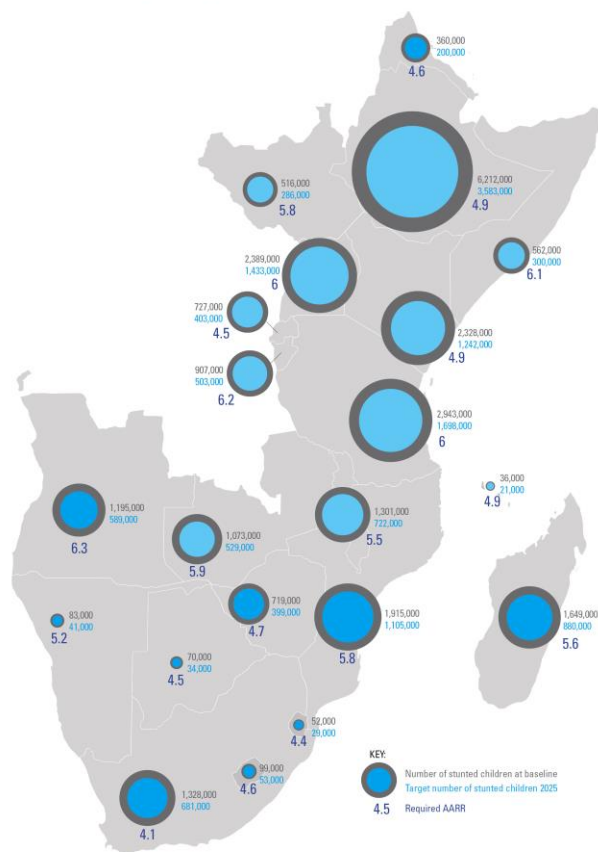
Yes, but not enough:

- There is an urgent need to increase the rate of stunting reduction.
- Average Annual Rate of Reduction (AARR) of stunting per country:
 - Kenya and Swaziland are the only countries in ESAR on-track to reach 2025 global target.
 - Rwanda and Zimbabwe are close.
 - Burundi, Eritrea, Mozambique, South Africa are projected to have more stunted children by 2025 (negative progress).



The map below shows the required AARR of stunting to reduce the number of stunted children sufficiently to reach the SDG target of a 40 per cent reduction by 2025.

ANNEX 2: AARR by country



Key recommendations:

- The importance of stunting as a development problem is not sufficiently recognized by political leaders and decision-makers in some ESA countries. It is necessary to address this in order to ensure stunting reduction becomes a government priority.
- Programmes should be designed with the feasibility of scale-up in mind from the beginning. New initiatives should routinely include a scaling up strategy to be employed when effectiveness has been proven.
- Priority-setting for certain context-specific interventions should take into account the limitations of national systems and budgets. The selection of interventions and pathways to achieve country-wide stunting reduction should be based on an analysis that takes all contextual factors into consideration.
- Preventing and reducing stunting demands a multi-sectoral approach. There are countries within the region with successful examples showing how collaboration with other United Nations organizations led to at-scale multi-sectoral programming with a demonstrated impact on stunting reduction. These successful examples should be learned from, adapted and replicated in other contexts.

Maternal and early child nutrition

The RISING project supports regional initiatives for nutrition; to this end a consultative meeting was convened in Nairobi in the first quarter of 2018 towards establishing partnerships with IGAD, GAIN and HKI, and expanding on the existing partnership with SADC.

The partnerships planned with GAIN, SADC, HKI, NI and IGAD were successfully established and joint work plans finalized. Coordination was strengthened throughout 2018 through quarterly calls, and resuscitation of the SADC Food and Nutrition Steering Committee and sub-working groups on maternal and early child nutrition. Technical support extended to IGAD has resulted in the regional coordination forum being re-activated. The forum is composed of directors of nutrition of IGAD member States who, on quarterly basis, share multi-sectoral nutrition progress, achievements, activities against the IGAD strategy through an IGAD quarterly platform - the 'Quarterly Nutrition Update'. This has triggered bilateral discussions and 'cross-fertilization' of approaches among the member States. On a monthly basis, IGAD collates nutrition, agriculture and health news, as well as relevant research findings for access by the nutrition directors, further sustaining discussions and information sharing.

ESARO strengthened regional advocacy efforts and jointly presented with WFP and WHO in a session on Nutrition as a Driver of Sustainable Development at an African Union (AU)-led International Conference on Newborn and Child Health. In collaboration with the World Bank, UNICEF supported convening of a Nutrition Summit in Lesotho resulting in a regional call to action for nutrition spearheaded by the King of Lesotho, an AU Champion for nutrition. Additionally, the SADC Council of Health Ministers meeting was supported with key resolutions to adopt the regional call to action for nutrition and development of Regional Standards for Food fortification, the Code and Maternity Protection.

A maternal nutrition landscape analysis was finalized to better understand the trends in key maternal and early child nutrition indicators, barriers and predictors of poor complementary feeding practices, as well as a review of the enabling environment for maternal and early child nutrition across 13 priority countries in ESAR. In addition, 13 country specific maternal nutrition profiles have been generated that provide a trend analysis and status of coverage of maternal nutrition interventions and key bottlenecks. A systematic review of programme approaches to enhance uptake of maternal health and nutrition interventions in ESAR has also been finalized, providing recommendations to countries in the region on how to improve uptake of maternal health and nutrition interventions. Key highlights from the evidence generated from these knowledge products include: in all 21 ESA countries, maternal nutrition needs of women during the first 1,000 days are not being met; the coverage of maternal nutrition interventions across all countries in the region is low; and programme service delivery is not at the scale needed to transform the care of women during pregnancy. Key bottlenecks include inadequate financing and human resource capacity at facility and community levels to provide quality service delivery. Further, full integration and demand of a comprehensive maternal health and nutrition package of interventions is low among pregnant women.

The systematic review recommends that the delivery of a comprehensive package of high-impact maternal health and nutrition interventions with quality be prioritized at household, community and facility levels. Programmatic recommendations from the review include:

- Integrating maternal nutrition interventions within other maternal health services requires careful contextual analysis to ensure successful integration.
- Overall systems strengthening is key to ensure that quality services can be delivered especially when demand is created among pregnant women.
- Community-based interventions can increase uptake of maternal nutrition services if sufficient and quality facilitators (e.g. adequate number of community health workers who are trained, supervised and motivated, adequate number of supervisors and the right commodities) are in place.
- Nutritional continuum of care from preconception to postpartum can effectively be delivered through approaches linking health facility services and community-based services and/or improving quality and continuity of care across services over time.
- The involvement of men is a priority to ensure adequate support for pregnant women and mothers.

ESARO convened 13 of the 16 SADC member States' nutrition and environmental health focal points and the private sector for a food fortification consultative meeting in collaboration with FFI, the Eastern Central and Southern Africa Health Community (ECSA-HC) and GAIN. The meeting resulted in establishment of a food fortification working group, endorsement of a roadmap for the development of SADC Regional Minimum Standards for Food Fortification, enhanced capacity of 65 member State and private sector representatives on food fortification monitoring and member State food fortification work plans being developed. Additionally, the new guidance on monitoring of salt iodization was disseminated during the SADC food fortification meeting. For the protection of breastfeeding in the region, draft SADC regional guidelines and standards for the Code have been drafted pending member State validation.

Going forward in 2019, findings of the maternal nutrition landscape analysis will be used to inform the development of the regional framework for improving maternal nutrition. Other key priorities for 2019 are to finalize the first technical briefs on maternal nutrition as part of IGAD advocacy efforts and establish a repository for nutrition evidence sharing which is under construction for quick and effective access and use by member States.

ESARO has prioritized support to countries in the region to accelerate interventions aimed at improving the diets of young children, contributing to the regional priority to reduce stunting. Through generous thematic funding, ESARO developed a regional framework, an operational guideline and tools that can support countries in ESA accelerate their actions towards stunting reduction with a focus on complementary feeding. The operational guideline and tools will be instrumental towards improving the quality of diets in 12 out of 21 countries in ESAR.

Thematic funding supported the review of the implementation process of MNP intervention in Malawi and a programme improvement plan was developed with practical recommendations for improvements in demand creation, uptake of intervention and compliance, service delivery platforms, monitoring and evaluation, as well as supply chain logistics, with a focus on integration into MoH supply chain processes. Additionally, a case study to document the roll-out process of the MNP intervention in Malawi was compiled to be used for knowledge exchange and sharing with other countries in the region.

Through ESARO technical and financial assistance, thematic funding supported implementation of a feasibility study conducted in October–November 2018 in Lesotho, as the first stage of formative research to inform the design of a home fortification programme using MNP for children aged 6-23 months. Dedicated support to the Lesotho Ministry of Health and UNICEF country office led to successful outcomes for the first phase of the formative research. Overall, there were 138 individuals interviewed (individually or in focus group discussions) for the feasibility study. Respondents included caregivers, health care providers and community leaders.

The research findings identified key barriers that need to be addressed, but also areas of opportunity. The opportunities identified included most respondents recognizing the importance of nutrition and caregivers identifying key IYCF practices and the widespread practice of preparing separate meals for children. The feasibility study identified that there is a clear willingness to learn more about IYCF and child nutrition among caregivers. Among respondents, knowledge and understanding of appropriate feeding practices for young children ranged from very poor to good. There is an apparent lack of knowledge regarding complementary feeding, particularly the appropriate age to introduce complementary foods, importance of dietary diversity, and key foods for prevention of micronutrient deficiencies. The research also found limited understanding of anaemia among all respondents, including some healthcare providers, especially regarding its causes, dietary and non-dietary ways to prevent anaemia, and how to treat it. It is thus important for sensitization messages to reach beyond mothers, to fathers and grandmothers, who play a key role in feeding children and decision making at household level. Furthermore, it was identified important for the entire community to be introduced to the concept of MNP and potential long-term benefits of MNP to a child's health to avoid rumours and resistance. Respondents emphasized that they wanted to know the benefits of MNP, side effects, usage instructions, and ingredients. It was also stressed among many caregivers that if MNP changed the colour or taste of the child's food, the caregiver would be reluctant to feed it to the child.

Overall, thematic funding was instrumental in evidence generation, and development of regional guidance and approaches that work to improve coverage and documentation of key case studies that can be used for cross regional learning. In 2019, dissemination of the regional operational guide and tools is planned, and Lesotho intends to initiate first phase implementation of their home fortification with MNP programme.

In addition to the home fortification with MNP intervention, ESARO continued to support country offices in the region to strengthen capacities for community level IYCF counselling and support. In many communities IYCF practices remain far from optimal, and caregivers often lack practical support, one-to-one counselling and correct information. Providing easily accessible, high-quality community-based IYCF counselling and support can play an important role in improving IYCF practices. Technical support provided by ESARO to UNICEF country offices resulted in the development of country specific action plans to strengthen the capacity for the delivery of community IYCF actions in Eritrea, Kenya, Malawi, Rwanda, Somalia and Uganda. Country-level adaptation of the UNICEF community IYCF package has helped to provide community health workers in Malawi and Somalia with strengthened counselling skills.

Vitamin A is essential for child survival, health, growth and development. By meeting the Vitamin A needs (through supplementation, fortification or adequate diet) of children under 5 in Vitamin A-deficient areas, mortality rates in general could be reduced by up to 23 per cent. Vitamin A supplementation (VAS) in ESAR therefore remains a key focus area; between January and September inclusive, a total of just over 41.5 million doses were distributed across the 21 countries in the region. A key focus has been on optimizing the integration of nutrition and health interventions to include Vitamin A supplementation. Countries are actively exploring opportunities and the feasibility of integrating VAS into routine systems, including Burundi and South Sudan through pilot projects. The countries in this region faced many challenges including ongoing conflict and socio-economic crises in South Sudan; outbreak of measles and political instability due to elections in Madagascar and overall data quality issues. Despite these challenges, VAS coverage rates increased or remained high during 2018.

Throughout 2018, ESARO continued to work closely with partners to better coordinate support and resources to countries to improve the implementation of VAS programmes. Specifically, ESARO along with the West and Central Africa Regional Office (WCARO), HQ, HKI and NI developed a joint work plan under the auspices of the Global Alliance for Vitamin A (GAVA). The work plan provides a framework for the organizations involved to jointly provide strategic support to countries and identifies key areas for advocacy and research needs. This partnership has resulted in the following key achievements in 2018: identification of at-risk countries in the region (countries that do not have a VAS delivery mechanism in place and/or do not have funds in place) and in some cases plans in place to support these countries; and the coordination of technical assistance to countries (Ethiopia, Kenya, Mozambique, Tanzania).

To strengthen the capacity and systems for evidence-based planning in South Sudan, ESARO in partnership with the country office conducted a training on Bottleneck Analysis (BNA) for the Vitamin A and immunization programmes. The training, completed for 10 states, resulted in 33 nutrition and health team members drawn from the country and field offices, equipped with enhanced skills and capacity to conduct BNA and evidence-based planning. Results of the BNA highlighted the need for more training at all levels, better planning, more social mobilization, strengthened monitoring and supervision, as well as inclusion of VAS and deworming activities in all partner agreements with UNICEF. As a follow up, UNICEF South Sudan is collaborating with non-governmental organization (NGO) partners to institutionalize decentralized BNA and the use of data to inform programme planning and coordination. Results indicate that the process initiated in 2018, has already contributed to improved coordination among partners and helped build capacity of government and NGO partners. In 2019, UNICEF intends to continue to use BNA and evidence-based planning and will incorporate the recommendations and findings.

Care for children with SAM

To the end of November 2018, over 980,000 children had received care for severe acute malnutrition across the region.

As part of the regional scale-up plan for the prevention of and quality care for children with SAM, a three and half-day consultative meeting was held in Nairobi, Kenya from 24 to 27 September 2018

to review progress in ESA on the scale up of services and care for severely acutely malnourished children. The progress was being assessed against the plans developed at the initial SAM deep dive meeting in May 2017, when the 21 countries in the region committed to accelerating coverage of care for SAM children to reach 2.1million children by the end of 2021. For the September 2018 meeting, 14 of the 21 countries in the region were represented with country teams from Ministries of Health, UNICEF and WHO, specialists from ESARO, Supply, Programme and Public Partnership Division at NYHQ with technical officers from WFP and WHO regional offices. Colleagues from the Humanitarian Aid department of the European Commission (ECHO) regional office, the United States Agency for International Development's (USAID) Office of U.S Foreign Disaster Assistance (OFDA) and Office of Food for Peace (FFP), regional office in Nairobi and nine of the FFP recipient countries also attended. Further, the new Executive Director from the No Wasted Lives (NWL) coalition also participated and provided an overview of the goal and aims of the coalition.

In addition to reviewing progress on SAM scale-up, the meeting also provided an opportunity to share the initial findings of a study commissioned by ESARO on the quality of care for SAM children in the region. This involved a review of all 21 protocols for the management of acute malnutrition, as well as findings from new emerging research on the use of simplified protocols, burden calculation, nutrition supply chain integration and end user monitoring.

The key outputs from the meeting were an update of the 14 country action plans based on progress and the new evidence presented. The 14 countries also identified specific technical assistance requests from the regional office, Supply, Programme and Public Partnership Division at NYHQ.

The common themes across all 14 updated country action plans were as follows:

- Continued capacity development of MoH staff in the delivery of quality SAM care
- Updating of national protocols where appropriate
- Enhanced focus on early identification and community referral of acutely malnourished children using community platforms and innovative approaches such as *Mother MUAC*¹⁴
- Nutrition commodity supply chain integration, including end user monitoring for the last mile

Following the SAM deep dive, a regional consultation on the FFP partnership was held with the nine recipient countries and country, regional and global representatives from USAID, Supply and Programme Division at NYHQ providing an overview of the progress of the partnership and identification of key steps going forward. As a member of the Executive Team of the global NWL coalition for accelerating prevention and care for children affected by SAM, ESARO actively engaged in key consultations, reviewed the draft strategy and identified Madagascar as a focal country for ESAR for enhanced focus on SAM scale-up.

Technical assistance was provided to 10 country offices (Angola, Botswana, Burundi, Ethiopia, Lesotho, Madagascar, Malawi, Mozambique, Somalia, Uganda) to integrate ready-to-use therapeutic foods into national supply chains and improved end user monitoring of nutrition commodities. Technical assistance to 14 country offices on quality of care for SAM treatment is ongoing as part of regional SAM scale-up efforts, focusing on master training, quality assurance for national SAM protocols, as well as a review of all 21 country protocols for SAM care. In-country technical support on management of SAM was provided to facilitate capacity building, provide technical support in reviewing and updating the current national SAM management protocols, and complete the national training package for IMAM for five countries including technical support for BNA for SAM service uptake for two country offices, Zambia and Comoros.

¹⁴ Mother MUAC is a strategy whereby mothers and caregivers are provided with colour-coded MUAC tapes that do not require numeracy or literacy to interpret and with skills to monitor their and other children's nutritional status, including knowing when to refer them for treatment for acute malnutrition.

Nutrition in emergencies

Thirteen countries in ESAR were considered at high to very high risk of humanitarian crisis and as a result received capacity strengthening on NiE in South Sudan and Zimbabwe as well as Emergency Preparedness and Response (EPR) training in Mozambique. NiE training tools were finalized and successfully piloted in Mozambique, South Sudan and Zimbabwe. A renewed focus, in partnership with Save the Children, WFP and UNHCR on IYCF-E was made with four five-day trainings conducted for key nutrition sector partners and MoH in Somalia (one for central and southern regions and Puntland and the other for Somaliland), South Sudan and in Uganda, which included a specific focus on IYCF-E in the context of EVD. Regional level support on IYCF-E in the context of EVD entailed support in preparedness plans, development of reference material and the release of a joint statement with WHO, WFP and UNHCR with a specific focus on supply chain of ready-to-use infant formula in humanitarian settings based on the latest evidence. Thirteen country offices (Ethiopia, Kenya, Madagascar, Malawi, Mozambique, Somalia, Rwanda, South Africa, South Sudan, Tanzania, Uganda, Zambia, Zimbabwe) were supported to review their EPR plans, their partnership contracts and their humanitarian situation reports. This included El Niño preparedness and monitoring support to six countries in southern Africa.

Ongoing technical support and regional updates continue to be provided on a monthly basis to the FSNWG of both Eastern and Southern Africa (separately). UNICEF continued to chair the nutrition working sub-group for East Africa, which compiles and reviews all regional nutrition situation updates and statements. The group meets quarterly.

Engagement with UNHCR and Save the Children on NiE was further strengthened in 2018. The partnership with UNHCR in 2018 focused on the improvement of the quality of care for children with SAM in refugee and host populations. Key outputs from the collaboration with Save the Children include the publication of a Milk Matters learning paper (Annex 2) and a joint IYCF-E capacity mapping learning paper (Annex1). Collaboration with Save the Children, UNHCR and WFP also focused on IYCF-E with joint trainings conducted in Somalia, South Sudan and Uganda.

Nutrition surveillance

During 2018 a regional nutrition database was established and circulated to all 21 country offices for data collection on a quarterly basis. The database has been formatted to provide an automatic report page that allows filtering of results by country and by timeframe (month/year). The long-term aim is to incorporate this database into the Global NutriDash database to ensure it is sustained. Seven of ESAR's 21 countries have a functioning nutrition monitoring system, self-reported via the regional database. As part of work planned to improve the functioning of national routine reporting systems, initial information was collected from countries with regard to the inclusion of nutrition indicators into their country Health Management Information System/District Health Information System (DHIS2). This work will be continued in 2019 with a DHIS2 consultant who was recruited at the end of 2018 and started work in January 2019, to review and document progress of integration of nutrition indicators into routine reporting systems (DHIS2). Ongoing technical support has been provided to nutrition surveillance initiatives at country level including two iodine surveys, two micronutrient surveys, two national nutrition surveys and a national multi-indicator Simple Spatial Survey. The use of the IPC for acute malnutrition is gradually being scaled up across the region by FAO with UNICEF support from global, regional and country office levels. There are currently six countries in the region carrying out IPC for acute malnutrition, with an additional two planned during 2019. To further build capacity, a regional training was carried out in November 2018 for those countries currently implementing IPC for acute malnutrition or with an interest to implement it in the future. The training included government and UNICEF staff from nine country offices, as well as regional level staff.

The ESAR Nutrition Information Group was established in the first quarter of 2018, and conference calls among members were held every quarter throughout the year, covering topical nutrition information-related issues and facilitating cross country learning. Joining the group was optional,

and the number of countries in the group has grown over the year from an initial 12 country offices and 18 members to 16 and 28 respectively at the end of the year. Two articles on the use of Standardized Monitoring and Assessment of Relief and Transitions (SMART) surveys in sub-Saharan Africa were finalized and disseminated as regional knowledge products. A third article on the same topic was published by the Emergency Nutrition Network (ENN). A partnership has been established with the London School of Hygiene and Tropical Medicine to research and build a statistical model to predict GAM and SAM in four countries (Kenya, Ethiopia, Somalia and South Sudan), with data collection for the research due to start in early 2019.

Supporting SADC to monitor FNSS implementation

During 2016, UNICEF ESARO explored revitalization of its partnership with SADC, with nutrition as a priority area. ESARO supported the preparation of a concept note on nutrition to highlight worrisome data on childhood stunting in the Southern Africa region and the slow pace of progress in addressing malnutrition. The paper was presented at a joint meeting of SADC Ministers of Health and Ministers responsible for HIV held in Eswatini in November 2016. One outcome of the meeting was a directive to the SADC secretariat to establish partnerships with international cooperating partners to obtain technical support in the area of nutrition. UNICEF was approached by SADC to formalize this support. To this end a Letter of Intent was signed between UNICEF and SADC on 4 April 2017, including four main targets:

- Build capacity in member States to develop and implement scaled up nutrition programmes, in line with the SADC's FNSS 2015–2025
- Develop and promote regional minimum standards and guidelines to address stunting and related nutrition scale-up plans
- Strengthen the capacity of SADC's monitoring and evaluation system to facilitate tracking of malnutrition in member States
- Strengthen the capacity of the secretariat to disseminate periodic nutrition situation analyses (including public finance analysis) and progress updates.

UNICEF deployed a nutrition specialist, as requested in the Letter of Intent. Thematic funds have been used to pay for recruitment and maintenance of the specialist, who has been stationed at SADC headquarters in Botswana since February 2017. A summarized listing of the advances achieved in 2018 with the support of the nutrition specialist is provided below.

Regional Minimum Standards for Food Fortification

A consultant was recruited to conduct a regional mapping exercise on the status of micronutrient fortification legislation in the region. Work on review of existing evidence and conducting of field visits to member States is planned for early 2019. The second phase, which is actual development of the standards will follow the evidence review.

Regional Social Behaviour Change and Communication Strategy for Improved IYCF

Work to carry out a formative assessment on complementary feeding practices in the SADC region has commenced with the recruitment of a consultant. The aim is to inform development of the Regional Social Behaviour Change and Communication Strategy for Improved IYCF.

Coordination

A regional Food and Nutrition Security Steering Committee meeting was convened in collaboration with the Food, Agriculture and Natural Resources Directorate. SADC focal points responsible for nutrition and food security from 14 SADC member States were in attendance. The meeting was also attended by UNICEF, WFP, FAO, World Organisation for Animal Health (OIE) and USAID. The meeting facilitated finalization of the terms of reference of the steering committee, including nomination of representatives by the Permanent Secretaries (Agriculture and Health). The next annual steering committee meeting will be held in the first half of 2019. Additionally, partners and member States agreed on the technical working groups for Food Fortification; Maternal, Infant,

Young Child and Adolescent Nutrition; Advocacy; and Nutrition Information Systems. In consultation with the technical working group, concept notes and terms of reference have been prepared for the FNSS monitoring framework, formative assessment for complementary feeding practices in SADC and the Food Fortification Minimum standards. Following the steering committee meeting, a concept note was developed for a regional workshop, planned for early 2019, on a harmonized food and nutrition security information system that tracks progress towards implementation of the FNSS.

Food and Nutrition Security Knowledge Management Platform

In collaboration with the Food, Agriculture and Natural Resources Directorate and the New Partnership for Africa's Development (NEPAD), a regional workshop was held on the Food and Nutrition Security Knowledge Management Platform with the participation of 11 member States. Participants gained practical experience on how to generate nutrition knowledge products.

Food Fortification

A regional consultative and capacity building workshop on quality assurance/quality control for the food fortification programmes was jointly held with the Government of South Africa, Smarter Future/FFI and UNICEF in October 2018. The workshop, which responded to priorities identified by member States in 2017, was attended by 13 SADC member States and international cooperating partners (UNICEF, WFP, FAO and ECSA-HC), development partners (GAIN, FFI) and a representative from the Premix industry. The workshop led to consensus building and endorsement of the roadmap for the regional minimum standards and monitoring framework for food fortification. Roadmaps were presented to senior officials during the Ministers meeting and were subsequently approved for implementation by SADC Ministers of Health. A schedule for technical support missions from GAIN, FFI and ECSA-HC to the member States to support advocacy for food fortification regulatory monitoring and quality assurance/quality control capacity building has been agreed and will commence at the beginning of 2019.

Support to SADC Regional Vulnerability Assessments

Data for nutrition, HIV and WASH indicators have been strengthened and included in the SADC vulnerability assessment synthesis report. In addition, an Integrated Analysis Guidance document for integrated analysis of nutrition, HIV/AIDS and gender indicators has been developed, based on information gathered from vulnerability assessment committee chairs and members in Lesotho, Malawi and Zimbabwe. The guidance document is planned to be disseminated in 2019.

Interagency support to Comoros for nutrition strategy coordination and reporting

In February 2015 an inter-agency mission involving FAO, UNICEF, WFP, WHO, the International Fund for Agricultural Development and the United Nations Population Fund (UNFPA) took place in Comoros. Given the nutritional situation in the country and the lack of capacity to scale up nutritional interventions, a recommendation was made to recruit, with United Nations joint funding, a resource person to support the Government and coordinate the multi-sectoral platform for nutrition. Thanks to thematic funds, UNICEF Comoros was able to contribute US\$ 80,000 for the recruitment of a SUN/United Nations nutrition coordinator position (at P3 level). As Comoros is a 'Delivering as One' country, it was decided to host the nutritionist at the Resident Coordinator's office, since the priority support to be provided is related to coordination. The coordinator began working in October 2017 and remained in-post until end of October 2018.

Various initiatives undertaken involving different national stakeholders and partners helped to ensure the operation of the multisectoral food and nutrition platform:

- UNICEF, as a key partner of this process, contributed to the development of the 2019-2020 biennial action plan of the national policy of nutrition and food. This action plan sets out the activities to be implemented, including those relating to reduction of chronic malnutrition (stunting). It is a lever to accelerate the scaling-up of nutrition-specific and nutrition-sensitive interventions. It offers an opportunity to implement integrated activities, consistent with

national and regional priorities, in the field of maternal, infant, and young child feeding, treatment of severe acute malnutrition and nutrition in emergencies.

- In the same context, the ongoing process for developing a food guide has benefited from the involvement of the different stakeholders of the multisectoral nutrition platform.
- Two studies were conducted with joint technical support From FAO (Food and Agriculture Organization) and UNICEF. The first study compiled an inventory of local products and the second examined local feeding habits and behaviors.
- Partners advocated for the creation of a civil society nutrition platform called RIZIKI. This was operationalized during 2018, comprising twenty local associations that are expected to play a core role in promoting good nutritional practices at community level and foster social change.

Key lessons learned, challenges and opportunities

The major lessons learned over the year have been firstly the need to further enhance the understanding of Communication for Development (C4D) and its inclusion in nutrition programming to strengthen community level platforms. This is key in improving quality of community-based interventions to promote IYCF practices and uptake of child survival services which rely on changing behaviours, practices and beliefs. A second key lesson learned from the El Niño and Horn of Africa emergency responses over the years is that programming on resilience and nutrition requires an integrated approach with tangible actions. This requires collaborative work across sectors.

Achieving and sustaining scale-up for interventions towards stunting reduction was found by the Nutrition Programme Review to be a challenge. Work is ongoing at regional level to support national level scale-up of key nutrition interventions, including care for children with SAM, improving coverage of VAS through strengthening routine delivery and scaling up the use of multiple micronutrient powders in key countries across the region. There are weak routine reporting mechanisms to monitor progress in many countries in the region. In 2019, work is planned to support improvement of reporting of nutrition indicators through the national routine reporting systems, which will mean better availability of routine information at scale.

Another challenge identified is insufficient documentation and knowledge management for new evidence, lessons learned and best practices in the region. This is being addressed in 2019 with the support of thematic funds through recruiting a Knowledge Management Officer who will be responsible for improved documentation and working with countries to document innovations, operational research and best practices, in particular through the thematic-funded proof of concept projects across the region.

There are opportunities that the regional nutrition team will take advantage of during 2019, and these include improved internal partnerships and engagement across sectors, positive donor partnership and engagement, an increasing number of external partnerships, including for research, quality improvement and scale-up of treatment for severe acute malnutrition, for closer work with regional bodies and for standardization of regional guidelines.

Table 2: Results assessment

Indicator	Baseline 2017	Target 2018	June 2018	December 2018	Target 2019
Number of countries in which at least 80 per cent of girls and boys 6-59 months received two annual doses of Vitamin A supplementation	4	4	4	4	5
Number of countries meeting the three SPHERE discharge criteria for the management of SAM (cured >75%, defaulted <15%, died <10%)	8	12	8	11	15
Number of technical guidance documents / publications on nutrition programming in the region developed and circulated.	2	7	2	7	7
Number of regional partnerships established and/or maintained (disaggregated by MIYCN, Micronutrients and SAM).	1	4	9	11	11
Number of country offices implementing at-scale policy actions or programmes for improved quality and diversity of diet, in children 6-23 years old.	5	8	6	10	10
Number of countries that are implementing policy actions for the prevention of overweight and obesity in children.	0	0	0	0	3
Number of countries with annually updated emergency preparedness plans for nutrition.	7	9	10	14	10
Number of country offices with a functioning nutrition monitoring system that reports regularly on the country nutrition programme.	6	8	6	7	10

Section 3: Financial report

To implement the ESARO Nutrition Rolling Work Plan, predictable flexible funding is critical to enable provision of a wide range of technical support and expertise in a responsive and timely manner. Thematic funding allows ESARO to support the strategic needs of the 21 country offices in the region, including strengthening partnerships and inter-sectoral programming aligned to accelerate progress for stunting reduction. The predictable nature of this funding means that ESARO can plan support efficiently to maximize the funds available, including over the lifecycle of vital joint programmes and initiatives in the region.

Thematic funds in 2018 enabled ESARO to play a strong oversight and coordination role to support country offices in the region to achieve results within the Nutrition sector and Regional Priority 2 (stunting reduction) for nutrition.

Table 3: Planned budget by Thematic Sector - Nutrition (in US\$)

Programme area	Funding type ¹⁵	Planned budget ¹⁶
Global – Nutrition	ORR	1,100,031
	ORE	608,039
	Total	1,609,070

Table 4: Thematic contributions received for thematic pool 3 by ESARO in 2018 (in US\$)

Donors	Grant Reference	Contribution amount	Programmable amount
Global Thematic Funds		840,000	800,000
Polish National Committee for UNICEF	SC1499040066	572,223	544,974
Polish National Committee for UNICEF	SC1899030007	259,615	247,252
Total		1,671,838	1,592,226

Table 5: 2018 Expenditures by Key Results Areas (in US\$)

Organizational Targets	Expenditure Amount			
	ORE	ORR	Regular Resources	All Programme Accounts
21-04 Prevention of stunting and other forms of malnutrition	674,665	1,282,053		1,956,718
21-05 Treatment of severe acute malnutrition	22,639	4,815		27,455
Total	697,304	1,286,868		1,984,173

¹⁵ ORR – Other Resources Regular; ORE – Other Resources Emergency

¹⁶ Planned budget excludes estimated recovery cost.

Table 6: 2018 Thematic expenses by Results Area (in US\$)

Organizational Targets	Expenditure Amount		
	ORE	ORR	All Programme Accounts
21-04 Prevention of stunting and other forms of malnutrition	186,418	458,546	644,965
Total	186,418	458,546	644,965

Table 7: 2018 Expenses by Specific Intervention Codes (in US\$)

Specific Intervention Code	Expenditure amount
21-04-01 Breastfeeding protection, promotion and support (including work on Code)	20,465
21-04-02 Diet diversity in early childhood (children under 5), includes complementary feeding and MNPs	12,437
21-04-06 Salt iodization and other large-scale food fortification	158,444
21-04-08 Data, research, evaluation, evidence generation, synthesis, and use for prevention of stunting and other forms of malnutrition	166,418
21-04-99 Technical assistance - Prevention of stunting and other forms of malnutrition	1,598,953
21-05-02 Capacity building for nutrition preparedness and response	27,454
Total	1,984,173

Table 8: Planned budget and available resources for 2019

Programme area	Planned Budget	Funded Budget	Gap
Global – Nutrition	2,667,261	896,000	1,771,261
Total Budget	2,667,261		1,771,261

Section 4: Future work plan

Through the RISING initiative, ESARO will disseminate findings of the maternal and complementary feeding landscape analysis. Findings will be used to develop regional MIYCN frameworks for action. Advocacy for the adoption of the framework by countries in the region, coupled with a cost benefit analysis as part of an investment case for nutrition will be done in both SADC and IGAD platforms. Additionally, ESARO will collaborate with key partners towards finalization of regional standards and guidelines for the Code and for maternity protection.

For care of children with SAM, work towards developing regional standards for SAM care as part of the national IMAM protocol review and integration of SAM treatment into routine health services will continue in 2019. Further priorities for 2019 include:

- Support to all country offices in ESAR to monitor progress and implement country specific SAM scale-up plans and quality of care improvements.
- Support for nutrition supply chain integration and end user monitoring of nutrition commodities into national supply systems.
- Support to country offices for increased demand for SAM care services in collaboration with C4D and Health teams and to advocate for integration of SAM into community-based programmes (WASH, EPI, outreach services, integrated community case management).
- Conduct SAM BNA at service delivery level to understand root causes and solutions.
- Support documentation using field notes of roll-out of community-based Mother MUAC and care of infants <6months with SAM in line with the new emerging global guidance.

In 2019, ESARO is also working to improve nutrition reporting through national routine systems. A consultant has been hired to carry out a landscape analysis of the status of nutrition reporting through DHIS2 in all 21 countries in the region. Subsequently, a recommended package of indicators suitable to routine reporting will be developed and lessons learned from the process will be documented. In parallel, the system for collecting information at regional level from all countries will be improved, and work started to link it to the global NutriDash data collection system.

In Southern Africa, work was started in 2018 to develop an advocacy package for the Southern Africa region to accelerate investments in nutrition aimed at reducing stunting and other forms of undernutrition. SADC is working together with ESARO to conduct a cost benefit analysis to include in advocacy briefs that will form a Call to Action.

Expression of thanks

ESARO's nutrition section takes this opportunity to express sincere appreciation to donors for their contributions to the global nutrition thematic fund. These contributions are particularly valued because they are flexible and enable ESARO to play a critical role in strengthening the nutrition response in the region by responding to specific national- and regional-level requirements. This was particularly relevant for ESARO's support for out-posting nutrition expertise to the SADC, which has facilitated regional-level coordination of nutrition issues and raised awareness and visibility of nutrition among health ministers across SADC member states. As a result, nutrition is now a standing agenda item at member-state meetings, a huge step forward in ensuring sustained commitment to the reduction of stunting.

We would also like to acknowledge the close collaboration with the Government of Germany, USAID for support through Food for Peace and Universal Salt Iodization, the Bill and Melinda Gates Foundation, the Government of the Kingdom of the Netherlands and the Government of Canada. This support has allowed UNICEF to accelerate results to help the most disadvantaged children in eastern and southern Africa through continuing to improve nutrition specific and nutrition-sensitive activities aiming to reduce childhood stunting.

Donor feedback form

UNICEF is working to improve the quality of reporting and would highly appreciate your feedback. Thank you for completing the report feedback form available at the below link:

<https://forms.office.com/Pages/ResponsePage.aspx?id=IQFBd-EUuE-QS6sYkgI2Z1EJsLcYAJBHh2bCnwnIhtZUOEY3NTBQVUIFMU9TTzVCQ1A4MDNNTERHSy4u>

A counsellor advises mothers on IYCF at a health centre in the Protection of Civilians (PoC) site, Western Bahr el Ghazal, South Sudan, 2017

Enhancing infant and young child feeding in emergency preparedness and response in East Africa: capacity mapping in Kenya, Somalia and South Sudan

Phil Hatcher-Moore/ UNICEF

By Patrick Codjia, Marjorie Volege, Minh Tram Le, Alison Donnelly, Fatmata Fatima Sesay, Joseph Victor Senesie and Laura Kiige



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Location: Kenya, Somalia and South Sudan

What we know: There is increasing demand to address infant and young child feeding (IYCF) needs during emergencies in Eastern and Southern Africa regions.

What this article adds: UNICEF and Save the Children Regional Offices for Eastern and Southern Africa undertook a regional capacity mapping on infant and young child feeding (IYCF) in Kenya, Somalia and South Sudan to provide a regional overview, identify capacity gaps and inform country (government and partners) action. It involved a desk review (literature, key informant interviews) and country-level workshops to validate results. An assessment tool was developed comprised of six pillars (policy, human resources, coordination, information/knowledge management, programme delivery and financing) and markers to analyse IYCF and infant and young child feeding in emergencies (IYCF-E) country capacity. Common gaps included weak policy provision and legislative frameworks for IYCF-E, significant capacity gaps (coordination, staff skillset), limited assessment/information systems that include IYCF-E, limited integration of IYCF beyond health and nutrition, and lack of funding. Country-specific findings will inform country-level IYCF-E improvement strategies and actions and the national government, national Nutrition Cluster and other partners will track progress of the implementation of action points with technical guidance from UNICEF/ Save the Children regional offices. In 2018, the capacity mapping will be extended to other countries in the region, based on previous lessons learned.

Background

The Horn of Africa continues to face challenges resulting in nutrition emergencies that greatly affect young children and their families. Key triggers are food insecurity, conflicts, disease outbreaks and climate change, among others. In these contexts, the risks of illnesses, acute malnutrition and mortality among young children are augmented; protection and support of recommended feeding practices is a critical safeguard but often falls short in practice. A review by Save the Children in 2012 found that infant and young child (IYCF) interventions were not delivered

at scale during acute or protracted emergencies globally. Key bottlenecks to the scale-up of IYCF in emergencies (IYCF-E) included limited technical capacities on IYCF-E, insufficient preparedness for emergencies, lack of national coordinating bodies, funding constraints and low prioritisation. These also reflect the regional experiences of UNICEF and Save the Children in Eastern and Southern Africa, where more emphasis is placed on the treatment of severe and moderate acute malnutrition despite increasing demand for IYCF-E expertise in countries facing chronic and acute emergencies.

Table 1 Pillars and markers to analyse IYCF and IYCF-E country capacity

Pillar	Key markers
Policy and plans on IYCF/IYCF-E	Extent to which IYCF/IYCF-E is reflected in policies, strategies and plans for the country
Human resources capacity on nutrition	Extent to which the country has IYCF/IYCF-E-skilled personnel to manage its needs
Co-ordination mechanisms	Extent to which IYCF/IYCF-E actions are coordinated at country level
Information system and knowledge management	Extent to which progress for IYCF/IYCF-E actions can be tracked
Programme delivery	Extent to which IYCF/IYCF-E actions can effectively be delivered in the country
Budgeting and financing	Extent to which IYCF/IYCF-E actions are budgeted and financed in the country

To address these barriers, Save the Children and UNICEF Regional Offices, under a regional framework of collaboration, agreed to focus on IYCF-E as a core priority and specifically to undertake an IYCF-E regional capacity mapping exercise. The objectives were to provide a regional overview on IYCF-E, identify key capacities, bottlenecks and gaps, and inform governments about their current IYCF-E capacity needs.

Methodology

The capacity mapping assessment took place in two phases: *phase 1 – assessment and validation* and *phase 2 – validation*.

The assessment phase (phase 1) comprised of a desk review and interviews with key informants on IYCF-E preparedness and response, including the identification of key gaps, bottlenecks and good practices in Kenya, Somalia and South Sudan. The situations in the three countries varied and included large-scale nutrition development programmes combined with localised emergencies (Kenya) and longer-term humanitarian crises (South Sudan and Somalia). The desk review served to define relevant programmatic areas for effective IYCF-E. It appraised non-governmental organisation (NGO) programme internal and external evaluation reports and national policies, strategies and action plans relating to IYCF and IYCF-E. Key informant interviews (KIIs) targeted personnel from humanitarian organisations, government, United Nations (UN) agencies and donors. Based on the analysis, six pillars were identified to analyse

the IYCF/IYCF-E capacities of a country (see Table 1). Indicators and programme markers inspired by the desk review on IYCF were selected for each pillar and a scoring system was developed to rank each country pillar and overall IYCF-E capacity. The adopted scoring system was 0 to 5 (5 being the highest) and responses were presented in a graphical manner. Each country's score represents its performance in a particular IYCF action area. The total possible score was 145 (*policy and plans=50, human resource=20; coordination=15; information system=15; programme delivery 25; budgeting and financing=20*). The percentage score for each action area was calculated and scores from each action area were combined to create an overall country score.

The first phase was conducted mainly in the first quarter of 2016. Assessment results of this phase were presented to the IYCF/IYCF-E counterparts from government, the UN and civil society in each country. Initial scores were reviewed and, when needed, stakeholders explained the rationale scoring. This phase was made possible thanks to the generous support of DFID to UNICEF ESARO.

The second phase involved the validation of results through stakeholder consultation in country-level workshops, supported by the Global Technical Rapid Response Team financially supported by the Office of US Foreign Disaster Assistance (OFDA). Final scores were validated by a wider range of stakeholders during

validation workshops held within each country in 2017 (Kenya; Hargeisa and Mogadishu in Somalia; and South Sudan). Some of these final scores were revisited again by the participants. Stakeholders were based on a purposive sample, with efforts made to cover as wide a range of partners as possible. This included the IYCF Focal Points from the Ministries of Health for Kenya, South Sudan and Somalia, as well as the nutrition and health professionals overseeing IYCF programmes integrated into nutrition and health. Boxes 1 to 3 provide an overview of country findings and validated scores.

Results of the regional analysis

The results of the capacity mapping assessment validated by each country, displayed in Figure 1, show that all the countries had some mechanisms in place for IYCF, such as:

- Availability of national IYCF guidelines and programmes (and in some cases IYCF-E guidelines);
- A joint statement or legislation on the Code of Marketing of Breast-Milk Substitutes (BMS Code)¹;
- Availability of IYCF training packages, or a mechanism to conduct trainings initiated by governments or partners;
- Use of multiple communication channels for IYCF messages;
- Participation in global events like the World Breastfeeding Week;
- Availability of some form of monitoring and evaluation framework (although reporting did not always include IYCF);
- An active Nutrition Cluster or coordination mechanism.

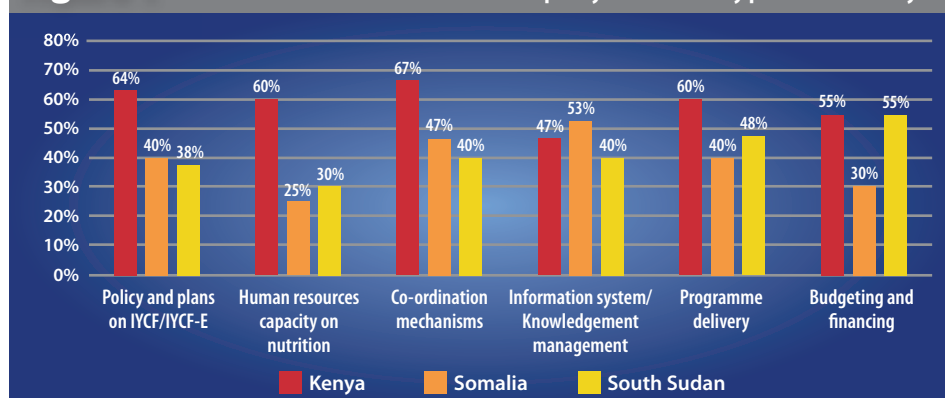
Key findings by pillar are summarised in figure 1.

IYCF/IYCF-E policy level

IYCF policy provides the general framework for implementation of IYCF activities in 'normal' times, while an IYCF/IYCF-E policy incorporates implementation of IYCF in emergency contexts. Key areas assessed were:

- Availability of IYCF/IYCF-E policy/strategy /guideline developed;
- Availability of legislation on IYCF with specific consideration of emergencies;
- Recent (within last five years) guidelines to plan, implement and evaluate IYCF/IYCF-E activities;
- A contingency plan developed to promote, protect and support exclusive breastfeeding and appropriate complementary feeding and to minimise the risk of artificial feeding (with specific reference to the BMS Code); and
- Institutional roles for implementing IYCF/ IYCF-E programmes are clearly defined and operationalised.

In all three countries, IYCF/IYCF-E programmes were developed as 'national programmes' managed by the Ministry of Health (MoH) in collaboration with UNICEF, often driven by global and regional priorities. Kenya and Somalia had

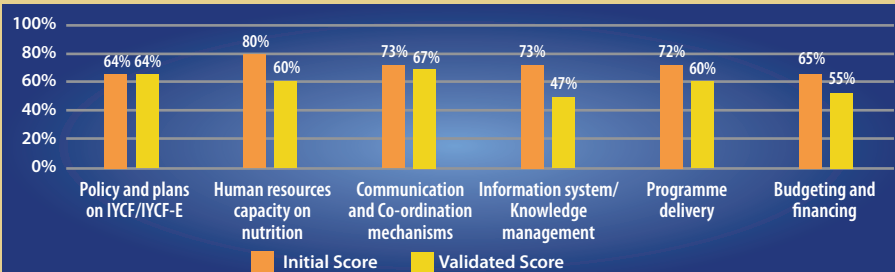
Figure 1 Validated results from overall IYCF-E capacity assessment by pillar and country

¹ www.who.int/nutrition/publications/infantfeeding/9241541601/en/

Box 1 IYCF-E capacity mapping assessment results Kenya

Kenya has put in place mechanisms to support IYCF-E that include having a supportive and legal framework for nutrition, enhanced coordination mechanisms, information systems and a funding mechanism for IYCF-related activities (directly or indirectly). After validation, the total score for Kenya was 60 per cent, with gaps in information and knowledge management,

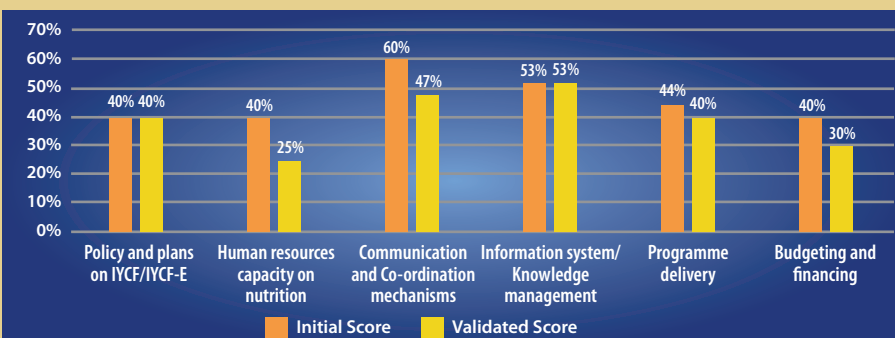
human resources, budgeting and financing. Overall, the participants in the validation felt the IYCF-E capacity mapping assessment results accurately reflected the situation in the country. Participant feedback indicated that some of the indicators were overrated (human resources and information systems); validated scores below reflect these changes.



Box 2 IYCF-E capacity mapping assessment results Somalia

A strong (nutrition cluster) coordination mechanism is in place to support service delivery. While policies and systems have been strengthened, gaps remain in implementation, follow-up and engagement of all stakeholders. The total score for Somalia was 39 per cent after validation. The major constraints identified were on service delivery, relating to budget allocation and the high dependency of the country

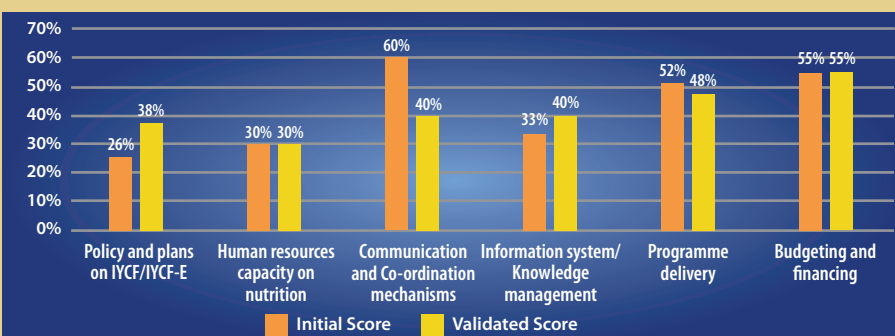
on external funding; weak IYCF-E coordination between the Nutrition Cluster and other stakeholders; inadequate implementation of policies and strategies due to government structures not being fully functional at district and community level; and limited operational capacity by government for policy implementation and enforcement.



Box 3 IYCF-E capacity mapping assessment results South Sudan

Capacity for implementation of IYCF-E activities is limited in South Sudan. With support from partners, the government has put in place some mechanisms to support implementation of activities. Key to note is the development to the IYCF strategic plan which has incorporated IYCF-E. Some of the key successes in South Sudan are availability of a coordination mechanism, integration of IYCF-E in the Rapid Response Mechanism and available funding for IYCF. The total score for South Sudan was 41 per cent after validation. Health and nutrition human resources were the main barriers identified and

were characterised by: lack of clear job descriptions and targets; insufficient and irregular paid compensation; lack of supportive supervision and quality control mechanisms at all levels; lack of basic information about numbers, composition and geographical distribution of health providers in the private sector; insufficient coordination of human resource development across different parts of the health system; limited continuing educational opportunities and professional development; and poor recruitment and weak retention capacity of states and counties.



IYCF strategies and policies in place (standalone or integrated); while South Sudan was using the UNICEF community IYCF package to roll out IYCF trainings nationwide (South Sudan has since developed and disseminated the country IYCF strategy). In Kenya, the full BMS Code is legislated; for Somalia and South Sudan there are no legal measures as yet². The assessment revealed that more attention was needed to improve knowledge and dissemination of the BMS Code and reporting of Code violations by the implementing agencies in all countries.

Based on the analysis, the rating on the availability of a legal framework supporting IYCF-E was 40 per cent (20 per cent for South Sudan, 40 per cent for Somalia and 60 per cent for Kenya). In Kenya, IYCF-E is included under the 2013 operational guidelines, in addition to specific guidance for the promotion and support of infant and young child nutrition in emergencies. In Somalia and South Sudan, a specific IYCF-E section was not developed within the national IYCF national strategy and policy at the time of the first phase assessment.

Human resources capacity for IYCF-E

Adequate and supportive supervision by a staff knowledgeable on IYCF-E was missing in all countries. Essential materials for IYCF-E assessments such as standard questionnaires and orientation packages were also lacking, and staff were not adequately resourced to implement IYCF-E programmes such as counselling, community support groups and community education and care for pregnant and lactating women (PLW), especially during emergencies. Specific expertise on IYCF-E, such as on social marketing, community empowerment, advocacy and communication for development in humanitarian settings, were assessed as limited in the three countries.

Coordination and communication mechanisms on IYCF/IYCF-E

Capacities varied within the three countries, but all needed to improve national multi-sectorial coordination and collaboration across sectors and coordination between agencies at the early onset of an emergency and during needs assessment. South Sudan was the furthest along in having a multi-sectorial IYCF action plan and an IYCF-E steering committee. Somalia had several coordination mechanisms mainly through the Somalia Nutrition Cluster. In Kenya, effective IYCF and emergency nutrition coordination mechanisms were established within the MoH structure and under their leadership and support; excellent collaboration among all the partners was reported. IYCF strategies for Kenya and Somalia were developed by the government in partnerships with UN agencies and the non-governmental sector. At the time of the assessment, the South Sudan Government was developing its IYCF strategy with the support of UNICEF and the Nutrition Cluster partners.

² Marketing of BMS: National implementation of the international code. Status Report 2016.



Women and young children attend a health education session at a UNICEF-supported outpatient therapeutic feeding clinic, Baidoa, Bay Region, Somalia, 2018

IYCF-E information system and knowledge management

This area was rated average in all three countries. While integration of IYCF into health systems in Kenya began in 2007, there is limited reporting of maternal and infant and young child nutrition (MIYCN) national indicators in district nutrition surveillance and surveys. In Somalia, to support humanitarian nutrition information systems, the Nutrition Cluster has created an Assessment Information Management Working Group (AIMWG) to provide guidance on assessment planning, design and implementation, and validation of assessments and surveys including IYCF. In South Sudan, routine Health Monitoring Information System (HMIS) that includes IYCF indicators is largely non-operational. To address this gap, a new overall information system has been developed by the Nutrition Cluster Nutrition Information Working Group (NIWG) for emergency nutrition site-level programme data and information; this includes IYCF-E.

IYCF promotion, counselling and support programmes

This appeared to be active in all three countries assessed. Activities include revitalisation and adoption of mother and child-friendly related policies and guidelines; individual and community-level IYCF counselling, establishment of mother and baby-friendly spaces; bottle exchange programmes (where feeding bottles are exchanged for cups); and distribution of ready-to-use foods (RUFs) for children and women. Complementary feeding support involves promotion, counselling and linkage to other sectors; no robust programmes for complementary feeding were identified in any of the countries. Although all three countries had some form of existing IYCF programming in stable times, scale-up of these programmes during crisis was rare and ad hoc, mainly due to limited funding, competing priorities and limited expertise to manage this.

IYCF budgeting and financing

While there is government leadership on IYCF in Kenya and South Sudan, none of the countries had independent government financing specific for IYCF programming. The main sources of funding for IYCF and IYCF-E activities are from the UN agencies, donors and agencies' own funding. Funding is a major constraint for all

implementing IYCF-E programmes and is rarely provided for standalone IYCF-E activities. IYCF-E is not considered 'life-saving', so it is not prioritised or sustained for long-term activities (including preparedness). IYCF-E funding is also often cut first in case of budget constraints. While nutrition funding has increased in all three countries, funding for IYCF/IYCF-E programming has not.

Common gaps across countries

Common gaps for the three countries were:

- Lack of inclusion of IYCF-E in national policies and training curriculums: IYCF policies or strategies are in place in many of these countries, but do not encompass an emergency section, which would delay the inclusion of IYCF in any emergency response;
- Limited dissemination of national policies, legislation on the BMS Code, etc. In countries where these strategies exist, the dissemination of such documents to the humanitarian community is limited and therefore not in use or endorsed;
- Limited integration of IYCF-E with other sectors; very limited knowledge about IYCF by sectors other than Health and Nutrition;
- Inability of NGO and health workers to differentiate IYCF and IYCF-E, leading to confusion on the IYCF priorities in emergencies;
- No or limited monitoring of BMS Code violations;
- Limited budget allocation to IYCF-E programming;
- Lack of awareness of IYCF-E indicators to be included in assessments;
- No system for data collection and monitoring specifically for IYCF-E;
- IYCF-E is often not prioritised in cluster or coordination meetings.

The main reasons identified for not undertaking IYCF-E activities were:

- IYCF is not considered a life-saving intervention during emergencies and is not prioritised by non-technical staff;
- Competing priorities, poor sensitisation across agencies and lack of clear IYCF-E policy;
- Limited funding for IYCF-E programming;
- Context constraints including insecurity,

poor access and lack of government leadership or guidance on IYCF-E;

- Insufficient human resources or expertise in local and international staff members and the absence of technical staff on the ground;
- Capacity gaps among partners, government facilities and field teams.

Conclusions and next steps

The results of the IYCF-E capacity mapping assessment reflect a need to pinpoint IYCF actions and strategies in the East Africa region to specifically address fundamental gaps in policy, capacity, coordination, information management, programming and financing. Understanding and cohesion across development and humanitarian actors and sectors needs considerable improvement. In East and Southern Africa, UNICEF and Save the Children are important partners for IYCF-E and work closely with governments and NGOs; they are positioned as important and influential stakeholders in this area. Governments, donors, NGOs, breastfeeding associations and other stakeholders have critical roles to play in advocating for and mainstreaming IYCF-E across sectors and in emergency response and mobilising resources.

UNICEF and Save the Children Regional Offices jointly developed the IYCF-E capacity mapping assessment tool. The capacity mapping exercise demonstrated the value of gathering health and nutrition professionals to agree collaboratively on the current gaps and status of the IYCF-E implementation in a specific country and agree on a common action plan involving all key stakeholders and agencies. The next step for each country is to use the findings of the capacity mapping to develop IYCF-E improvement strategies and actions targeting the main issues and barriers identified, as well as tracking progress made. Additional technical support to countries may be required, by UNICEF, Save the Children and other nutrition agencies at national level with critical involvement from the government and national Nutrition Clusters.

The capacity-assessment process can be used in other countries in Eastern and Southern Africa region by any partner to foster the development of a specific action plan for better integration of IYCF during emergencies by governments and the humanitarian community.

UNICEF and Save the Children Regional Offices will revise the assessment tool based on learnings from the validation process and capacity mapping will be extended to other countries in the region in 2018.

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Feasibility of a milk matters initiative to enhance milk intake in children over six months of age in Somalia

By Fatmata Fatima Sesay, Dr Binyam Woldetsadik Gebru, Minh Tram Le, Dr Sayed Ezatullah Majeed, Patrick Codjia and Marjorie Volege

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The findings, interpretations and conclusions in this article are those of the authors. They do not necessarily represent the views of UNICEF, its executive directors, or the countries they represent and should not be attributed to them.

Location: *Somalia*

What we know: Pastoralist communities rely heavily on meat and milk for nutrition; seasonal availability varies, which may impact on intake.

What this article adds: A feasibility study was carried out in Hiran region of Somalia in 2016 to determine the viability of a 'milk matters' intervention in pastoral communities to enhance nutritional intake of children aged 6-23 months before and during lean seasons. Key learning areas include: the need to enhance milk production and consumption through maximising production during the lean season, prioritise empowerment of women (as key decision-makers on household consumption and use) and investment in the rearing of goats. Multi-sector engagement is essential, coupled with behaviour change communication. The expected benefits go beyond nutrition to include improved livestock production systems, improved access to income and improved community resilience.

Background

Countries in the Horn of Africa continue to face food security challenges¹. Pastoral and agro-pastoral communities relying on subsistence crop farming and livestock rearing as main sources of livelihood are the most affected. The nutrition situation in Somalia is one of the worst in the world, with a global acute malnutrition (GAM) prevalence of over 15%, which rises to 30% in some locations (classified as critical). The causes of malnutrition in Somalia are multiple, including poor infant and young child feeding (IYCF) practices, untreated sickness, food insecurity, poor water and sanitation practices and conflict. A quarter of Somalia's population is pastoral, with nomadic habits and reliance on meat and milk as major diet components. Dietary diversity is generally poor, reflecting the inadequacy of food access and availability, especially micronutrient-rich foods.

A feasibility study was carried out in Hiran region of Somalia in 2016² to determine the viability of a 'milk matters' intervention in pastoral communities aimed at enhancing the nutritional intake of children aged 6-23 months before and during lean seasons. A recent learning paper, summarised in this article, builds on these findings by analysing household patterns in livestock management, milk production, access and utilisation, milk handling, market chain and feeding practices in order to inform the milk matters initiative to maximise impact. The study also provides valuable information on the overall suitability and risks of implementing the project. It is intended to empower nutrition programme implementers in designing priority actions for nutrition-sensitive, resilience-building programmes, as well as defining key areas of investments.

Methods

Data were collected between March and August 2016² in three livelihood groups: pastoralists, agro-pastoralists and internally displaced persons (IDPs)/urban populations in Mataban and Beletwyene districts (where there are plans to implement the milk matters initiative in future, subject to the availability of funding). Twenty-eight key informant interviews were carried out with men and women in the communities, including leaders and milk traders. Sixteen focus group discussions were held with community members and 1,534 quantitative surveys were carried out with respondents from 767 households.

Results

Livelihoods and their management: Pastoralists relied on livestock production as their main source of income. One third (32.7%) of pastoralist and all (100%) agro-pastoralist households reported that they had land access; 44% of urban population respondents reported that they had some land, albeit in places far from where they were settled. Of the sampled households, 72.4% had goats, 41.2 % had cows, 44.6% had camels and 23.8% had sheep. Results showed seasonal variability, with greater herd sizes in wet compared to dry seasons

¹ East Africa food security Outlook January to June 2018, and July to September 2018 www.fews.net/east-africa-

² <https://somalia.savethechildren.net/sites/somalia.savethechildren.net/files/library/MILK%20MATTERS%20FEASIBILITY%20STUDY%20%20FINAL.pdf>



A camel herder walks behind his herd near the town of Ainabo, Somalia, March 2017

(23% difference), and greater availability of fodder in the wet season (60.3%) compared to dry (42.9%). Livestock management was found to be a male responsibility, while decisions on milk use were predominantly made by females in consultation with males, as reported in 75% of the surveyed households. In total, 64.2% of women were responsible for milk handling, storage and transportation to selling points. Pastoralists migrated with their herds (mainly cows and camels) during drought or seasonal stresses, leaving goats behind for milking purposes (75.9%).

Milk consumption: Across all three livelihood groups, consumption of milk is high during the high production season and low during the low production; hence production of milk is the main barrier to milk consumption and utilisation, as reflected in Figure 1. During the wet season (Gu), milk consumption was higher and milk provided a major source of income. Households consumed 41.8% and 27.8% of produced milk in wet and dry (Jilal) seasons respectively. More than half (52.3%) of pastoralists had milk surplus during the wet season, consumed by children

under five years in 80% of households. In 71.2% of the households, milk was added to vegetables, potatoes, water or tea before feeding children. In households with no livestock, an average of 0.56 litres was purchased daily in wet seasons, of which 0.38 litres was consumed by children aged 6-59 months (68%), compared to 0.5 litres of milk purchased daily by households with no livestock in the dry season (no significant difference between volume of milk bought between the two seasons ($P=0.547$). Figure 1 compares patterns of milk utilisation between each of the three groups (pastoralists, agro-pastoralists and urban dwellers) in both regions.

Milk availability and management: Low milk availability was perceived to contribute to the poor nutrition status of children in 27.7% of households across the livelihoods. Communities generally perceive the benefits of animal milk in the prevention of malnutrition. Knowledge on optimal breastfeeding and complementary feeding was low (37.7% and 33.1% respectively). In 47.3% of households, milk was boiled for consumption and traditional methods such as

cold-water storage (28.6%), repeated boiling (56%), fermentation and mixing with traditional herbs were used to preserve unconsumed milk. Restricted access to markets, insecurity, seasonal floods, limited marketing skills, poor storage facilities and seasonal availability were factors limiting milk markets. Most small-scale traders were women (97.6%). Only 4.9% of the milk traders were engaged in milk production. In Hiran region a lack of companies processing and preserving milk was cited as a problem. Other than fermentation (35.1%), there were no other known milk products in the region, showing a limitation in value addition.

Key learning points

Livelihoods and their management

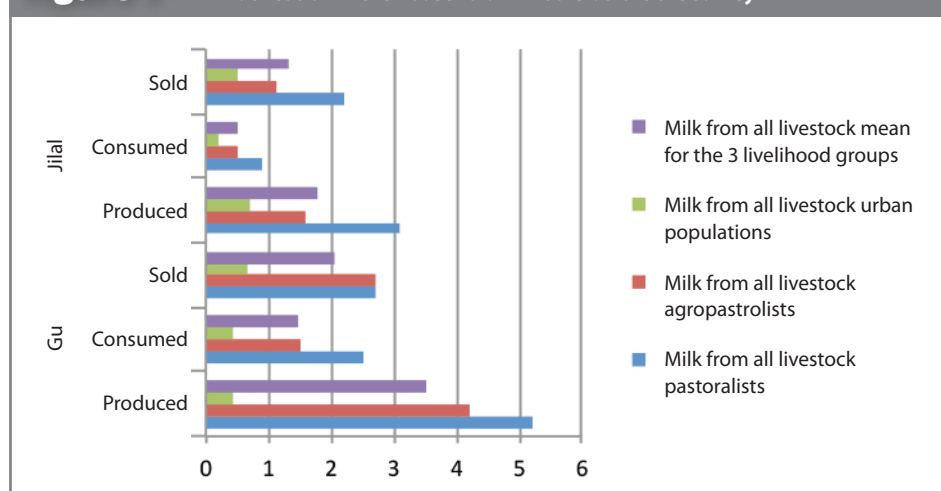
Results show good acceptability of milk among young children in pastoral and agro-pastoral communities and the use of milk to enhance household revenue; therefore investing in increased milk production and processing capabilities to ensure milk availability beyond the production season has the potential to increase milk consumption among young children and enhance household income. Advocacy is needed to reinforce multi-sector engagement – agriculture, water, sanitation and hygiene, health and nutrition – to enhance milk production and processing. Results show a clear preference for goats among pastoralists for both milk and meat, due to their relative affordability, taste of the meat and tolerance to drought and disease. Domestically, goats are also considered easier to keep at home by women due to their smaller size. Future programmes should therefore focus livestock investments on goats.

Women are the main decision-makers on milk utilisation in households; there is therefore great potential to mobilise women's groups for the improvement of milk production and enhanced nutrition status among children. While the focus is on women, engagement of the men in the programme is required to provide supportive roles for sustainability. The mobilisation of community groups, including men, for fodder management, water management, rangeland and environment management is essential.

Box 1 Proposed interventions

- Water availability
- Land use and fodder production
- Forage conservation/Crop residue management
- Fodder/Livestock health vouchers
- Supplementary feeding of livestock
- Breed improvement
- Balancing the livestock population and available feed resources
- Training of community animal health workers
- Improvements to the livestock and product marketing system through market linkages and infrastructure creation
- Trainings on milk hygiene practices
- Local supply of milk-handling equipment
- Nutrition education with a focus on optimal IYCF practices

Figure 1 Milk utilisation in the household 24 hours before the survey



Milk production

The high consumption of milk in Gu is attributed to high milk production in the households, low prices of milk and limited markets due to over-production. Milk production should be maximised during dry seasons and milk preservation should be maximised during wet seasons to support continuity of use. Possible basic interventions could include fodder and water management, support to quality veterinary services, and promotion of appropriate nutrition and IYCF practices. Pilot and scale-up should focus on pastoral and agro-pastoral communities, where incidence of livestock ownership is high and traditional practices recognise the importance of milk in enhancing nutrition among children. Further research is needed to determine the impact of the milk consumption on nutrition status.

Milk consumption by households and children

Milk is perceived to be an important food in the prevention of malnutrition in children and is used to enrich complementary foods for infants. Behaviour change communication (BCC) is needed that focuses on sustained production and milk consumption across the seasons, alongside the promotion of optimal complementary feeding. The availability of milk in the households

does not seem to influence breastfeeding patterns among mothers; rather breastfeeding is influenced by socio-cultural practices. The feasibility study did not provide information on milk consumption specifically among children aged 6-23 months and monitoring of milk intake for this category should be considered.

Milk availability and management

The study noted poor hygiene practices in milk handling and preservation. Improving hygiene and safety practices should be prioritised, alongside other water and sanitation-related interventions, such as establishing water catchment dams and underground tanks for water harvesting and developing boreholes at strategic points to boosting milk production. Such interventions will help tackle some of the underlying causes of malnutrition. Investment is also needed in the surveillance of milk availability, including monitoring; analysis of supply, market availability and price could also contribute to enhancing decisions about milk management.

Conclusion

Focusing on milk production and processing during the wet season are effective strategies to address food access and improve child nutrition

intake in pastoral and agro-pastoral communities of Somalia. Key boosters to enhance milk production at household level are availability of pasture, land, water, animal breeds and veterinary services (see Box 1). The processing and optimisation of milk product availability beyond production time is also important and outlines the importance of food systems (supply of and demand for milk products) to enhance child nutrition intake and status in agro-pastoral areas, complemented by quality nutrition education on utilisation.

To maximise impact, milk matters interventions should aim to enhance milk production and processing during the wet season and should focus on building the capacity of communities in milk handling, increased production and preservation. Quality BCC strategies related to IYCF should also be implemented in conjunction. The expected benefits go beyond nutrition to include improved livestock production systems, improved access to income and improved community resilience.

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Putting budget data to work for nutrition

Summary of research¹

Location: *Global*

What we know: There is a major global funding shortfall to meet malnutrition targets; accurate data on national nutrition budgets and spend is needed to inform decision-making and support accountability.

What this article adds: SPRING interviewed 25 key decision-makers in 11 countries to examine how budget data are currently used for decision-making at country level. Findings showed that data are used to identify and coordinate nutrition across sectors, advocate for more nutrition funding and track and manage use of funds. Analyses should be adapted to fit the country's needs involving an iterative, evolving and ideally regular and routine process. A range of stakeholders should be included to increase buy-in and findings should be targeted to specific audiences. Progress is being made at country level to analyse and nutrition budget and spending; however, it is essential that findings are shared with decision-makers and that they clearly identify gaps in spending and include district-level data to ensure that funding matches needs and translates into implementation.

Many actors have come together under the auspices of the Scaling Up Nutrition (SUN) Movement, the Millennium and Sustainable Development Goals (MDGs and SDGs) and other frameworks to address malnutrition. Achieving results requires adequate funding; however, estimates from the World Bank's Investing in Nutrition report suggest that the global com-

munity is seven billion dollars short of the funding necessary. Until recently, few nutrition actors could specify how much funding was allocated to nutrition. The lack of data on national nutrition budgets and spend meant that governments and implementing partners did not have accurate, up-to-date information on how nutrition was being prioritised or how well countries were spending their nutrition funds. The

SUN Movement, along with several donor-funded nutrition projects, have released guidance to help countries collect budget data and make an investment case. By the end of 2017, nearly 50 countries had analysed how much money had been budgeted for and some had gone further to track actual nutrition spending (Figure 1). To support this effort, SPRING gathered information and interviewed 25 key decision-makers in 11 countries, from ministry staff to local non-governmental organisations (NGOs), to learn more about country-level experiences using budget data for decision-making. These experiences were synthesised around three main questions.

How are findings from nutrition budget and expenditure analysis used?

First, nutrition budget and expenditure analysis served to identify and coordinate nutrition



¹ SPRING. 2018. *Putting Budget Data to Work for Nutrition*. Arlington, VA: Strengthening Partnerships, Results, and Innovations in Nutrition Globally (SPRING) project.



Implementation of national and small scale nutrition surveys following the SMART methodology in Sub-Saharan Africa

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ABSTRACT

The SMART methodology is now used for both national and small scale surveys but the implications for applying these are not well understood. We sought to characterize the implications of implementing these surveys on logistics, coordination, human resources, costs and utilization to improve nutrition surveys. Seven Sub-Saharan African countries were selected based on the profile of their Nutrition Information Systems (NIS), implementation of nutrition surveys using the SMART methodology and use of the results to plan nutrition interventions. They were classified into national or small scale survey types. Data was collected from surveys conducted between 2013 and 2015 from the selected countries (Mali, Senegal, Kenya, DRC, Cameroon, Madagascar and South Sudan) to document the coordination mechanisms, partners' involvement, capacity building and implementation process of nutrition surveys using the SMART methodology, including duration, timing and costs of the surveys.

The process for conducting national SMART surveys in the countries selected for this review took an average of 3 to 5 months from planning to validation of results while small-scale surveys took less time. In the countries that conducted national surveys, UNICEF provided technical support for survey implementation by recruiting a SMART Survey Consultant while the leadership remains with the government. Small-scale surveys are often carried out by NGOs. The cost of nutrition surveys using the SMART methodology varied depending on the context and the logistics needed rather as well as whether they were national or small scale surveys. We found that the median cost of small-scale surveys was 14,460 USD while the median cost of a strata in national surveys was 30,884 USD.

Nutrition surveys using the SMART methodology have been increasingly implemented in Sub-Saharan Africa over the last few years to collect timely nutrition data in all contexts. This review shows that nutrition data collected using the SMART Methodology has helped to build consensus of the nutrition situation at country level among governments, development and humanitarian partners. The results of the nutrition surveys using SMART methods are used for advocacy purposes and to support program planning by providing data to calculate the burden of under-nutrition and defining response program needs at scale.

Key words: Child malnutrition, national, survey, wasting, stunting, Tanzania, Burkina Faso

Disclaimer: The findings and conclusions in this report are those of the author(s) and do not necessarily represent the official position of the Centers for Disease Control and Prevention or UNICEF.

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INTRODUCTION

Child malnutrition is a major public health problem, especially in many low- and middle-income countries including in Sub-Saharan Africa (1). Malnutrition affects children's prospects of surviving and thriving (2) and is the underlying cause of child mortality in about 45% of all deaths reported for children under 5 years of age (3). According to the 2017 UNICEF, World Bank and WHO joint estimates on malnutrition, Sub-Saharan Africa reports a prevalence of 33.5% for stunting, 7.4% for wasting and 2.2% for severe wasting together with 4.1% for overweight all among children under 5 years (4). More than a third of the world's stunted children, nearly a quarter of all wasted children, and nearly a sixth of all overweight children are in Sub-Saharan Africa (5).

Appropriate nutrition interventions need to be prioritized if Sub-Saharan Africa is to meet the WHO global nutrition targets of improving maternal, infant and young child nutrition by 2025. These targets create a demand for improving the availability of updated information on nutrition outcomes (6,7). Representative population data is essential to target interventions to populations most in need, harness attention for nutrition programming, and mobilize resources for the treatment and prevention of malnutrition (8).

The SMART Methodology is a standardized, simplified cross-sectional field survey methodology. Developed in 2002 for small-scale nutrition surveys to assess the magnitude and severity of a humanitarian emergency, the methodology has since been applied by countries conducting national nutrition surveys. The SMART Methodology and supporting resources (training materials, software, and automated quality checks) aim to ensure rigor in sampling methods, training of enumerators, data collection, and review of data quality (9).

While initially developed to inform smaller surveys in famine prone contexts, the SMART methodology is now widely used in new onset emergency, protracted emergency and non-emergency settings. Two main types of nutrition surveys using the SMART Methodology are routinely implemented: small-scale surveys primarily led by NGOs in emergency settings and national, multi-strata surveys primarily led by national governments. As of 2015 an estimated 27 of 45 countries in Sub-Saharan Africa have used the SMART methodology to conduct a small, emergency nutrition survey (9). An increasing numbers of countries are now also using the SMART methods for National Nutrition Surveys (NNS); as of 2012, 13 countries in the West Central Africa region had used the SMART Methodology to conduct an NNS survey (10).

Despite widespread use of the methodology, and more than a decade of experience applying the method in many countries, there remains a gap in understanding of the implications of applying this methodology in contexts other than small-scale emergency settings. This study uses several case studies to document similarities and differences in planning and implementing national versus small-scale surveys using the SMART Methodology.

METHODS

Utilization of SMART Methodology – Sub Saharan Africa

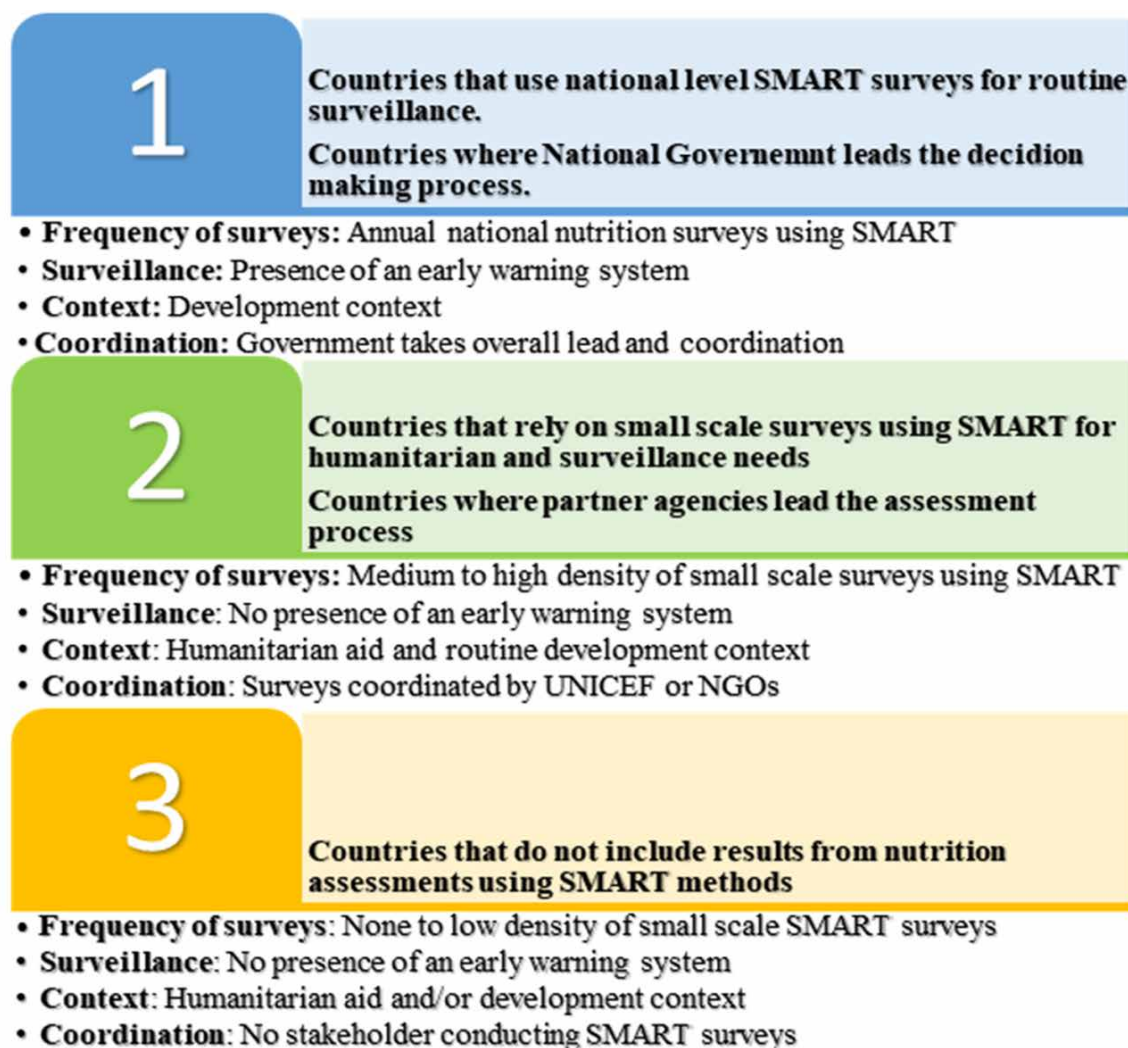
All countries in UNICEF's Eastern and Southern Africa region (ESAR) as well as the Western and Central Africa region (WCAR) were considered for review. These 45 countries were categorized as either (1) primarily collecting data on nutrition from small-scale emergency surveys using the SMART Methodology, (2) primarily collecting data on nutrition from national surveys using the SMART Methodology, or (3) not conducting or infrequently collecting nutrition data from either small-scale or national surveys. Countries were categorized by co-authors based on expert opinion.

Surveys were classified as "small-scale" if data were collected at a sub-national level (generally a second administrative level such as a single district or group of districts) and contained only a single strata. Surveys were classified as "national" if they collected data from the whole country or from a large area of a country and contained multiple strata. Multi-sectoral surveys that collected information using methodologies other than the

SMART methodology (e.g., Demographic Health Surveys) were not considered in the analysis. Categorization was based on surveys conducted between 2013 and 2015.

From the total 45 countries, a subset of countries was selected for more in depth analysis. Among surveys in Category 1, five countries were purposefully selected to include countries that varied in terms of several parameters: number of surveys conducted annually; whether the country had ongoing humanitarian programming, development programming or both; and whether the primary implementing agency was UNICEF or an NGO. Among surveys in Category 2, two surveys were purposefully selected. A greater number of countries in Category 1 than Category 2 were selected as a greater proportion of countries in ESAR and WCAR are represented by this category. Countries not conducting SMART surveys (category 3) were excluded from subsequent analysis. Parameters considered for this grouping are shown in Figure 1.

Figure 1: Parameters for country grouping



In depth analyses of selected countries

For the subset of countries selected for in depth analysis, researchers gathered survey reports, protocols, budget, and tools for all surveys conducted between 2013 and 2015. UNICEF shared all the relevant documents that were archived in the regional offices (WCARO and ESARO). Efforts were also made to reach out to the UNICEF country offices and relevant Ministries to gather documents not archived in the regional offices. In addition to reviewing documents, key informant interviews were conducted with partners involved in implementing surveys in the selected countries. Information was exchanged with key informants via email, teleconferences, in person meetings and interviews.

Information related to the following topics were extracted from collected documents and key informant interviews:

justification for conducting the survey; coordination mechanisms/structures; stakeholders involved in the survey; cost and funding of the surveys; training schedule and numbers of persons trained; analytic plan; and utilization of the data.

Cost analysis is presented by strata (as defined in the original survey analysis) for national surveys. Small-scale surveys were considered a single strata for the purpose of cost analysis. The conversion rates used from West African francs (XOF) to U.S. dollars (USD) are those on the 1st of each month, 2 months before data collection started, and the conversion rate used between the Kenyan Shilling (KES) and the U.S. Dollar (USD) was taken on April 1st, 2016

RESULTS

Five countries conducting small-scale surveys (Cameroon, DRC, Kenya, South Sudan and Madagascar) were selected for inclusion under category 1 to represent different settings in terms of frequency of data collection and nutritional status of the population. South Sudan conducted more than 40 surveys per year during the review period but other countries conducted fewer. With respect to nutritional status, Cameroon, DRC, and South Sudan represent humanitarian contexts where prevalence of acute malnutrition is at emergency levels in at least part of the country. In Cameroon, the regions of North, Adamaoua and Extreme North (where the Central African Republic refugee population primarily now reside) were a priority for surveys conducted in 2013-2015. A majority of the population in DRC were impacted by food insecurity and nutritional crisis during the review period. Regions of South Sudan have been at risk of famine since the onset of the ongoing civil war; the Nutrition Cluster was activated in 2010 in South Sudan. By contrast, Madagascar represents a development settings where chronic malnutrition rather than acute malnutrition is the primary focus of the national nutrition policy, while Kenya contains both regions with ongoing humanitarian emergencies (arid regions of the northeast) as well as regions that are more stable.

Two (Mali and Senegal) were included in the analysis under the category of primarily conducting national surveys. Senegal represents a more stable, development context. SMART surveys have been conducted in Senegal since 2008. Mali represents a humanitarian context. Changes in physical access to regions, common in humanitarian contexts, has implications on sampling. For example in Mali, national surveys excluded the northern most region of Kidal from the sampling frame in 2013 to 2015 and the region of Gao in 2013 due to insecurity. In November and December 2014, additional small scale surveys were conducted in Gao and Kidal to complement the missing data.

The number of surveys conducted per year in each of the selected countries is presented in Table 1. For national surveys, both the number of surveys and the number of strata are presented. Note that for Senegal, the national survey was representative at the level of the department in 2013 and at the level of the region in 2014-2015 (with the exception of the Saint-Louis region, where each of the three departments represented one stratum).

Table 1: Surveys per country during the years reviewed

Category	Country	Number of Surveys (Strata)			
		2013	2014	2015	Total
National	Mali	1 (10)	1 (14)	1 (8)	3 (32)
National	Senegal	1 (45)	1 (16)	1 (16)	3 (77)
Small Scale	Cameroon	5	6	4	15
Small Scale	DRC	12	24	16	52
Small Scale	Kenya	30	16	9	55
Small Scale	South Sudan	43	51	59	153
Small Scale	Madagascar			2	2

Surveys conducted using the SMART Methodology are, by definition, conducted using a similar methodology. All included surveys were cross-sectional, population-based representative surveys. Probability Proportional to Size (PPS) sampling was applied for selection of clusters and simple or systematic random sampling was applied for selection of households within each cluster.

The SMART Methodology also suggests keeping indicators other than anthropometric measurements of children under five to a minimum. Consequently, content of the surveys varied only slightly between countries, and no systematic differences comparing countries using small-scale versus national surveys were observed. Common additional indicators included those pertaining to infant and young child feeding (IYCF), child morbidity, vaccination, vitamin A and anthelmintic medications, and anthropometric measurements of women. Only minor differences in content of questionnaires, such as the routine inclusion of folic acid supplementation for women in Kenya, were observed.

The main methodologic difference observed pertained to the source of the sampling frame. National surveys generally use census enumeration areas and population estimates. Population estimates for regions with ongoing displacement were in some contexts updated. However, generally census data obtained from the national agency that conducts the census (e.g. National Bureau of Statistics) were utilized. In contrast, small scale surveys infrequently used the national census data. These surveys, generally conducted in areas with ongoing displacement, started from the assumption that the census data was outdated and therefore generally built a sampling frame from scratch relying on village lists from other government and humanitarian programs (e.g. immunization micro-plans). Small-scale surveys often included areas that were not included in the national sampling frame (e.g. refugee camps in Cameroon or protection of civilian sites in South Sudan).

In countries that conduct national surveys, generally one large survey is organized annually, at one point in the year. Whereas in countries conducting small-scale surveys many small surveys are organized and data collection may occur throughout the year. This difference in frequency has

translated in to distinction in the rational to conduct national versus small-scale surveys. Small-scale surveys were primarily conducted to inform humanitarian interventions which have shorter funding and decision making cycles (often quarters or years) than development settings where strategic plans are often renewed every five years or every decade. Both national surveys and small-scale surveys provide data used in national and regional early warning systems such as Integrated Phase Classification (IPC) in ESAR countries and Cadre Harmonisé in WCAR countries.

Another difference between countries primarily conducting national versus small-scale surveys was the partner organizations involved. In small-scale surveys, the primary implementers are humanitarian organizations (see Table 2 below) while in national surveys it is the government (often the National Bureau of Statistics as in Mali, or the nutrition division of the Ministry of Health as in Senegal) with technical support from UNICEF via SMART survey consultants and UNICEF staff. With regards to coordination and funding mechanisms, for small-scale surveys with one stratum, the logistical aspects and funding are often part of an NGO program funded by international donors as in South Sudan or in Cameroon where ECHO co-founded many surveys. Conversely, with national surveys, the situation is more complex with a multi-agency steering committee and/or technical committee coordinated by government and supported by UN agencies (primarily UNICEF). Funding for national surveys also comes from international donors via UN agencies and governments sometimes contribute also to these survey budgets. NGOs generally play a role in coordination for both types of surveys and the Cluster, or the Cluster through their NIWG, has a prominent role in humanitarian settings as seen in South Sudan.

Table 2: Main partners and members of SMART technical and steering committees in each country

Country	Government		UN Agencies		Humanitarian Agencies	
	No.	Partners	No.	Partners	No.	Partners
National Surveys						
Mali	3	Ministry of Health, INSTAT, INRSP	4	UNICEF, WFP, FAO and WHO		
Senegal	5	Division de l'Alimentation et de la Nutrition (DAN), Agence Nationale de la Statistique et de la Démographie, other divisions of the DSRSE, IPDSR, UCAD	5	UNICEF Senegal and UNICEF WCARO, FAO, WHO and WFP	6	HKI, MI, CRF, Action Against Hunger, Plan, Save The Children
Small-scale surveys						
Cameroon	4	Sous-Direction de l'Alimentation et de la Nutrition (SDAN), Bureau Central des Recensements et des Etudes sur la Population (BUCREP), Institut National de la Statistique (INS), Ministère de l'Agriculture et du Développement Rural (MINADER)	6	UNICEF, OCHA, WFP, OWHOMS, UNHCR (2013), FAO	5	ECH, IFRC, Action Against Hunger, MSF and Organisation des Femmes pour la Santé, la Sécurité Alimentaire et le Développement (OFSAD)
Kenya	5	Ministry of Health (MoH - Nutrition M&E Unit), National Drought Management Authority (NDMA), Kenya National Bureau of Statistics (KNBS), Ministry of Agriculture, NASCOP (Nutrition Unit)	5	UNICEF, WFP, FAO, WHO, OCHA	17	Kenya Medical Research Institute (KEMRI), Action Against Hunger, Concern Worldwide, Save The Children, Mercy USA, World Vision, Islamic Relief, IMC, IRC, FEWS NET, Feed the Children, GAIN, Micronutrient Initiative, Food for the Hungry, Kenyan Red Cross, APHRC and APHIA II
South Sudan	2	Department of Nutrition of the Ministry of Health and the National bureau of Statistics	4	UNICEF, FAO, WFP, WHO	17	Care, Action Against Hunger, CW, Save the Children IMC, MEDAIR, FEWS NET
DRC	4	Institut National de la Statistique (INS), Service National des Statistiques Agricoles (SNSA) (occasionally), Institut Supérieur des Techniques Médicales (ISTM) (occasionally), The Population Science Department of the University of Kinshasa (occasionally)	4	UNICEF, FAO, WFP, WHO	17	Care, Action Against Hunger, CW, Save the Children IMC, MEDAIR, FEWS NET
Malawi	4	LUANAR University, Department of Nutrition, HIV and AIDS (DNHA), National Statistics Office (NSO), Ministry of Agriculture and Food Security	3	UNICEF, WFP	1	World Vision

Trainings for enumerators for all surveys included were based on the SMART training materials and therefore content was not substantively different by country or survey; all training agendas reviewed included a standardization test. Additionally, content of the surveys were generally similar. However, a review of survey protocols and training schedules suggested that capacity building for surveys differed with respect to: (1) the number of people trained as survey managers and (2) the number of people trained as enumerators. Surveys primarily conducting small-scale surveys required numerous survey managers as different agencies implemented the surveys, a contrast to national surveys where only one survey manager (or one team of survey managers) were retained on staff or recruited. However only two of the countries reviewed (Kenya and South Sudan) scheduled regular SMART Methodology training sessions for survey managers to continuously enhance the capacity of members responsible for the implementation of SMART surveys. Between 2014 and 2015 four national training sessions were implemented in South Sudan and in total 74 people were trained of which 70 were from local and international NGOs. In addition 12 people from South Sudan participated in regional trainings (9 from NGOs, 2 from UN agencies and 1 from the government). An important distinction to note is that it is easier to retain capacity in-country when government staff are trained.

With regards to the duration of the surveys, national surveys generally last longer, varying from 3 to 6 months in total, with 2-3 months of field work. Whereas data collection for small scale surveys is generally much shorter. The differences in time to implement are due mainly to the planning, data collection and analysis phases while the duration of the training is approximately the same. The duration of field work is always planned to not exceed one harvest or lean season. Regional surveys involving several regions and multiple strata conducted by the same organization have a duration more consistent with national surveys. For example, Cameroon surveys between 2013

and 2014 took 1 month for planning and 3 months for implementation. Small-scale surveys are shorter given the smaller sample sizes (generally less than 600 households), with data collection lasting less than 2 weeks, for instance in Kenya, county-level surveys last 4 to 5 weeks from planning to validation of results. This is an important characteristic since immediate data is often needed, particularly in humanitarian crises.

As noted above, national surveys aim to collect data annually. In the countries reviewed, there was a stated objective of collecting data at the same time (during the same season e.g. lean season) every year to allow for annual comparison. For example, data collection in Mali is scheduled from April/May to September/October in surveys from 2013 to 2015. In contrast, small-scale surveys are implemented when nutritional status is perceived to be deteriorating, when data is needed and often during multiple seasons. In South Sudan, a first round of surveys was implemented in the month of June during the pre-harvest lean season and another round during the rainy season in the post-harvest period. In Madagascar, surveys followed the onset of the droughts in several districts in 2015, and similarly in Malawi, following the floods in June 2015.

The total cost of national surveys are much higher than small-scale surveys, given larger sample sizes and consequently a longer duration of data collection (more labor costs), and larger geographic areas covered (more transportation costs). However, to understand in a more nuanced sense the implications of these two approaches on costs we evaluated costs in terms of cost per strata (for national surveys) compared to per survey (for small-scale surveys). Data on costs were not available for all surveys. We found that the median cost of small-scale surveys was 14,460 USD while the median cost of a strata in national surveys was 30,884 USD. Insecurity, more than survey type, was the major driver of cost. For example, the cost of helicopters and security personnel drove up costs in the Gao and Kidal regions of Mali.

Table 3: Cost per strata in different countries in US dollars

Country	Maximum cost	Minimum cost	Median Cost	Comments
Mali	70,200	16,700	25,000	Number of strata in surveys and security varied each year
Senegal	17,200	17,200	17,200	Only data from 2015
Cameroon	20,000	15,000	19,000	Not including the cost of recruiting a SMART consultant (\$30,000-\$40,000)
Kenya	59,000	9,900	10,500	Depending on the size and geographic issues of the counties the cost to conduct a SMART varies
South Sudan	30,000	10,000	15,000	Costs increased in 2015 due to transportation costs during data collections (i.e. boat and helicopter) as well as the crash in value of the South Sudanese pound
DRC	15,000	7,000	11,000	Data from UNICEF DRC. Cost are high for small scale surveys because central teams travels around the country
Malawi	21,500	7,000	19,750	Not including to the cost of recruiting a SMART consultant (about USD 50,000)

Finally, review of secondary information confirmed that all final reports for surveys carried out between 2013 and 2015 were completed and published. The results of SMART surveys are systematically presented during validation workshops that bring together all members of the Technical and Steering Committees as well as the country's nutrition partners or via the Nutrition Information Working Group (NIWG) and/or nutrition cluster meetings and newsletters.

DISCUSSION

Our review shows two modalities for using the SMART Methodology for two important and different data needs: small-scale surveys and national surveys. In both cases, SMART helps to provide needed anthropometric data for planning interventions and monitoring the nutrition situation of populations especially during highly vulnerable periods (lean season and emergency-related episodes). National surveys primarily help governments to develop and monitor strategic plans while small-scale surveys help humanitarian organizations and governments to understand and support immediate decision making in deteriorating contexts such as droughts, floods or conflicts and collect information in settings where a national survey is not feasible given limited access. During humanitarian crises, the situation may change quickly and therefore nutritional surveys using SMART may be needed for shorter term decision-making. Five countries in our review started implementing nutrition surveys using SMART during emergencies as did other countries in other regions of the world (15). Additionally, the results of both types of nutrition surveys are now used in early warning systems such as Famine Early Warning Systems Network (FEWSnet), Integrated Food Security Phase Classification (IPC), Nutrition Information in Crisis Situations (NICS) and the Cadre Harmonisé (CH) (16–18).

The different objectives of the two types of surveys translate into distinct partners involved in each type, different coordination structures, differing capacity building and training strategies, and differing implementation of the surveys, including their duration and cost. Countries that are determining which approach is more appropriate in their context should keep these differences in mind and donors that are funding similar surveys must understand the implications of each modality.

Governments are primarily responsible for national surveys and require highly-skilled personnel to plan and oversee them. As training continues, governments are becoming less dependent on external support and they are more involved in the planning and organization of surveys. However, there is still a wide interest for technical and financial partners to collaborate in national Surveys using SMART and governments request a collaborative effort to conduct national surveys as can be seen by the large number of partners in national surveys. Small-scale surveys on the other hand are often lead by international NGOs.

Capacity building in the SMART Methodology is another issue that requires further discussion. In many countries, despite the implementation of various projects and training

sessions, requests for more SMART capacity-building events continue to be received. More people need to be trained in countries primarily relying on small-scale surveys as there are more implementing agencies, while technical requirements of national surveys require a small number of very highly skilled personnel. Given the large turnover of human resources that these regions experience, it would be advisable to develop a mapping of existing capacities and a training plan to enable government officials and key partners to implement SMART autonomously. In addition, it would be advisable to include relevant Government staff at a decentralized level in training for and implementation of small scale surveys in order to build in-country capacity for nutrition surveys where national nutrition surveys are not implemented. In Mozambique, trainings have an additional language barrier since SMART tools have not been translated into Portuguese.

Average cost per strata generally depends more on the context and the logistics needed than the type of survey (national or small-scale). It is becoming increasingly difficult to raise and secure the funds to carry out SMART surveys, regardless of the scale of the survey, and thought needs to be given to the frequency of surveys in order to reduce their associated implementation costs, ensure value-for-money and thereby facilitate the sustainability of the nutrition information systems currently in place. An example of this is South Sudan where a large number of small-scale SMART surveys are implemented often twice or more per year, where it is often necessary to choose between implementing the surveys in livelihood zones (which can help to identify the needs of similar populations) or in administrative areas such as districts (which can increase comparability with other national surveys). More efficient and cost effective sampling and data analysis techniques should also be investigated further as a way to reduce costs while still ensuring availability of the data at the level of representation needed for programming. Costs vary widely, largely due to the different contexts. In Mali, it becomes very expensive in the northern regions where geography and security were challenges and special means of transportation were needed. However, based on the 2015 survey that had almost national coverage with eight out of the nine regions being surveyed, the average cost per stratum was approximately 26,000 USD. In comparison, the cost of the first National Nutrition Survey conducted in 2014 in Tanzania covering 30 strata was approximately 15,000 USD per stratum and the national survey in Burkina Faso covering between 28 and 30 strata, depending on the

year, cost approximately 21,000 USD per stratum. As many countries are struggling to raise funds from their primary donors for national SMART surveys, it would be advisable to maintain the cost per strata at less than 20,000 USD to guarantee the long-term sustainability of national nutrition surveys, and potentially its institutionalization. The value per strata at which SMART surveys start to be cost-effective requires further research.

A SMART survey provides malnutrition and mortality indicators but often it is used to collect a wide range of other indicators such as coverage of vaccination and micronutrient supplementation, morbidity, women's nutritional status, IYCF, food security and water and sanitation indicators. It is important to note that the sample size of any SMART survey is determined for acute malnutrition of children under five years old and mortality only and therefore, any other indicator measured might not have the same level of precision. With the growing epidemic of obesity and overweight across developing countries, SMART has been used to determine these prevalences and can serve as a useful tool to start reporting those on a routine basis (19). Further improvements and development of the SMART package might increase the use of SMART in Sub-Saharan African countries. These could include digital data collection templates for tablets or smartphones that are increasingly being used by enumerators; expanding SMART's ENA Software analysis to more than just anthropometric and mortality indicators, and automatic mapping of results. This will help to link the results with wider Nutrition Information Systems and to disaggregate the data to better inform programs at field level. Ultimately, the use of data for programming will make surveys more cost-effective.

Some limitations of this study must be noted. The method used to document the SMART survey processes at country level was based on a desk-review of relevant documents shared by UNICEF and Action Against Hunger Canada and on secondary information collected from key informants in the different countries selected, thus only documents shared could be analyzed. The study was based on surveys from 2013 to 2015 and thus does not reflect the latest surveys carried out in 2016 and beyond. Information from localized SMART surveys carried out by some NGOs was not included due to unavailability of reports. Detailed data on costs were not available for all surveys. A purposeful selection of 9 countries was drawn from a total of 45 for the Sub-Saharan region, therefore this is not an exhaustive review of all countries using SMART and may not reflect the overall situation in the region. However, special care was taken in choosing countries with different profiles of SMART methods and this sample can be considered sufficient to describe and document how the SMART method is being adopted by countries. This paper does not present a review of the SMART Methodology or its tools, nor a review of the quality of the surveys produced (sampling, indicators, data analysis) since these objectives were outside the scope of the study. In future, a systematic review of the quality of SMART surveys and comparison of their quality to the quality of other comparable cross-sectional surveys, including value-for-money and cost-efficiency could be useful. Further analysis using a more complex evaluation design including not only surveys but also surveillance mechanisms and additional countries should be conducted in future studies to better inform on the role that the SMART survey results play in national nutrition information systems, nutrition advocacy, policy development and nutrition programming.

CONCLUSION

SMART surveys are conducted on a regular basis, often in connection with seasonal malnutrition, and can be conducted at the national or regional level, as well as on a smaller scale. Using the same survey methodology, different countries have adapted the implementation of nutrition surveys to achieve different objectives so that policy and programming decisions are based on reliable, standardized data and that humanitarian aid is provided to those most in need. Different nutrition partners rely on the results of nutrition surveys using the SMART Methodology to reassess their financial needs, to advocate for the mobilization of resources and to update the various

strategies to ensure evidence-based responses. Countries that are determining which approach is more appropriate in their contexts should keep these differences in mind and donors that are funding similar surveys must understand the implications of each modality. The implementation of nutrition surveys using the SMART Methodology has contributed to the harmonization of nutrition assessment methods across Sub-Saharan Africa and the use of SMART adapted to local needs by governments has facilitated consensus on the nutritional situation to better inform planning by governments and donors alike.

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Implementation of national and small scale nutrition surveys following the SMART methodology in Sub-Saharan Africa



National nutrition surveys using SMART methodology in Tanzania and Burkina Faso - from advocacy to implementation

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ABSTRACT

Introduction.

Multi-sectoral, national surveys have historically been a primary source of nutrition information for countries. To provide policy makers with more frequent estimates of priority nutrition indicators, and ensure data collection occurs annually during the same season, several countries in East and West Africa have initiated National Nutrition Surveys (NNS). NNS are nationally representative, cross-sectional surveys that apply the Standardized Monitoring and Assessment of Relief and Transitions (SMART) methodology to collect anthropometric measurements and data on priority nutrition indicators.

Methods.

Semi-structured key informant interviews and systematic review of secondary data sources (including reports, budgets, training materials, and survey protocols) were conducted in 2016. Collected data pertained to the inception of the survey initiative, data collection, and data utilization from NNS in Burkina Faso and Tanzania. Data pertained to the period during which NNS were planned and conducted—2009-2016 in Burkina Faso and 2014-2016 in Tanzania.

Results.

National and global initiatives to scale up multi-sectoral nutrition interventions aimed at reducing stunting, wasting and obesity have created a demand for up-to-date nutrition data. In both Burkina Faso and Tanzania, consensus support for NNS required buy-in from Ministries of Health, Ministries of Statistics, United Nations agencies, and donors, and even the Prime Minister's Office in the case of Tanzania. Implementation was led by the Nutrition Section of the Ministry of Health in both countries, supported by an inter-agency technical working group as well as a steering committee in Tanzania. The duration of the NNS, from planning through dissemination of results, lasted approximately six months, including two months of data collection. In 2014, NNS cost around 22,600 USD and 15,400 USD per stratum in Burkina Faso and Tanzania, respectively.

Conclusions.

Case studies from Burkina Faso and Tanzania demonstrate the feasibility of conducting national, nutrition-specific surveys and provide insights into the financial, institutional, and technical support required to sustain such initiatives. In both countries, NNS involved greater participation from technical ministries and agencies, and a shorter implementation timeline relative to multi-sectoral national surveys. Budgets were understood to be reasonable given national investments in nutrition programs as they allowed for monitoring of progress against national and global targets.

Key words: Child malnutrition, national, survey, wasting, stunting, Tanzania, Burkina Faso

Disclaimer: The findings and conclusions in this report are those of the author(s) and do not necessarily represent the official position of the Centers for Disease Control and Prevention or UNICEF.

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1. INTRODUCTION

Over for a decade, member states monitored prevalence of underweight to meet the Millennium Development Goal of eradicating extreme poverty and hunger (1). Policy makers are now focused on measuring the progress towards the new Sustainable Development Goals which benchmark achievements in reducing acute and chronic malnutrition, based on prevalence of wasting, overweight and stunting (2,3). These global initiatives highlight a need for, and in cases have propelled countries to demand, reliable data to monitor nutrition indicators.

There is a need for up-to-date nutrition information to improve planning and targeting of interventions as well as to monitor situation and trends.

Programmatic decisions, global-level advocacy, funding appeals, and national nutrition policies similarly require frequently collected, rigorous nutrition data (4). Prevalence of wasting is used for annual caseload calculations in Community Management of Acute Malnutrition (CMAM) programs. Estimates of stunting and overweight enable countries to monitor and plan for the double burden of malnutrition. Accurate nutrition information, particularly wasting prevalence, is in even greater demand during times of nutritional volatility, such as drought and other emergencies.

Data from nationally representative, multi-sectoral surveys have traditionally been used to monitor nutrition indicators, complemented by routine reporting from health facilities. In some countries, nutrition-specific surveys have also become a primary source of anthropometric data. These surveys generally apply the Standardized Monitoring and Assessment of Relief and Transitions (SMART) methodology in order to standardize collection of nutrition data to obtain accurate and reliable information (5). The SMART methodology is a standardized, simplified cross-sectional field survey method. Initially developed in 2002 for small-scale surveys to assess the magnitude and severity of a humanitarian crisis, the SMART method provides training materials, software, and quality checks even in the most austere contexts. The method and tools have more recently been applied by countries conducting national nutrition surveys collecting anthropometric data to ensure rigor in sampling methods, training of enumerators, data collection procedures, and review of data quality (6–9).

Burkina Faso and the United Republic of Tanzania are two countries to have applied the SMART methodology as their national protocol for nutrition surveys. Both are low-income economies that have prioritized monitoring of food security. Nearly half of Burkinabé and more than two-thirds of Tanzanians live on less than 1.25 USD per day (10). Burkina Faso was among the countries with the lowest Human Development Index in 2016 (11). As a landlocked country in the Sahel, prone to droughts and floods, Burkina Faso experiences frequent periods of food insecurity. Food and nutrition crises are recurring throughout the Sahel (2005, 2008, 2010 and 2012). Prevalence of global acute malnutrition (GAM) has periodically exceeded the WHO crisis threshold of 'serious' (10%). Prevalence of stunting between 1998 and 2006 was relatively stable (range 43–46%) but has since declined (12–14). In Tanzania, prevalence of chronic malnutrition has decreased in the past decade (from 50% in 1996 to 44% in 2005), and acute malnutrition is routinely below emergency levels, however localized food insecurity is still reported (15–17).

National, multi-sectoral surveys have been used in both countries to monitor progress in improving nutritional status. In Burkina Faso, Demographic Health Surveys (DHS) and Multi-indicator Cluster Survey (MICS) are conducted in the country, collectively providing estimates of nutrition indicators every 3–5 years (12,13,18). Prompted by the 2008 nutrition crisis in Burkina Faso, a national survey focused specifically on food insecurity and malnutrition was conducted in 2008 (ENIAM: Enquête Nationale sur l'Insécurité Alimentaire et la Malnutrition). In Tanzania, DHS surveys, conducted approximately every five years were the only source of nationally representative nutrition data in the two decades prior to 2014.

The following analysis assesses the rationale and process for conducting national, multi-strata nutrition surveys applying the SMART methodology, using Burkina Faso and Tanzania as case studies.

For more information on SMART please visit
<https://smartmethodology.org/about-smart/>

2. MATERIALS AND METHODS

A mixed methodology approach was applied to document the process of adopting NNS using SMART in the two countries selected as case studies. Since their inception in 2009, Burkina Faso has conducted annual NNS using the SMART methodology. Tanzania implemented its first NNS in 2014. As such, Burkina Faso presents an example case study of a country where the NNS process has become routinized and institutionalized over nearly a decade. Having adopted the methodology more recently, Tanzania serves as a case study highlighting the rationalization and initial planning.

Burkina Faso has conducted annual NNS using SMART since 2009.

Tanzania conducted its first NNS using SMART in 2015. The process followed in the 2 countries for NNS is described below

Data collection involved a literature review of available documentation, as well as key informant interviews. Documents were considered relevant if they related to one of the following topics: (1) justification for doing the survey and the process of creating consensus; (2) implementation of the surveys (including protocols, budgets, training materials, data collection tools, and final reports); or (3) dissemination and utilization of results. All pertinent documents provided by government partners, funding agencies, technical partners, and external survey

consultants pertaining to the period of 2009 to 2016 for Burkina Faso and 2014 to 2016 for Tanzania were reviewed. In both countries, information was collected and reviewed by subject-matter experts—nutritionists with experience conducting national-level nutrition surveys.

Using a semi-structured questionnaire, twelve key informants from Burkina Faso were interviewed including members of the national technical committee involved in planning the surveys (United Nations agencies, Burkina Faso Federal Government, and international non-governmental organizations). Interviews took place in country and remotely in April 2016, and pertained to the period of 2009 to mid-2016. In Tanzania, six people from the national technical committee, national steering committee and the external survey consultant were interviewed in April 2016.

All costs were converted from West African francs (XOF) to U.S. dollars (USD) applying the conversion rate on August 1 of each year and from Tanzanian shillings (TZN) to USD using an average rate from 2014 (1 USD = 1650 TZN).

3. RESULTS

Results are presented as they relate to three stages in the survey planning process. First, we describe the initial rationale to conduct NNS and the key stakeholders involved in reaching that consensus. Second, we review the process of implementing NNS including operational decisions such as the training, hiring staff, logistics, and funding. Finally, we document evidence of data utilization, human capacity building efforts and the process of institutionalizing the surveys into national plans.

3.1 Rationale and Consensus Building

3.1.1 Rationale

A need for more frequent, representative anthropometric data was a primary driving factor for conducting NNS in both Burkina Faso and Tanzania.

There is a need for frequent anthropometric data at a level of representation to guide programme planning and targeting for equity and value for money.

In Burkina Faso, two DHS (2003 and 2010), one MICS (2006) and one ENIAM (2008) were conducted in the two decades from 1998 to 2008 (12,13,18). In Tanzania, DHS surveys conducted in 2004-5, 2010, and 2015-16 have provided the only source of nationally representative nutrition data. In both countries, availability of nutrition data every 3-5 years was determined to be insufficient to monitor priority indicators. Reliant on multi-sectoral surveys alone, availability of nutrition data annually was not guaranteed. The frequency of these surveys was dependent on funding lines and long-term planning activities, over which nutrition sector partners did not have ultimate control.

Several national and global initiatives called for annual nutrition data to monitor progress. In Tanzania for example, as an “Early Riser Country” in the international Scaling-Up Nutrition (SUN) movement, the government committed to reducing malnutrition. In a Presidential Call for Action in 2013, the federal government encouraged government authorities at the national and local level to increase efforts aimed at improving nutrition in the country, allocated additional funds to support these initiatives, and adopted new tools to track progress against the SUN targets.⁽¹⁹⁾ Second, the National Nutrition Strategy underwent an initial review in 2014. Both the budget review of the strategy (“The Public Expenditure Review of the Nutrition sector”) by the Ministry of Finance, and the first Joint Multi-Sectoral Review of Nutrition were conducted in 2014, and highlighted the challenge of analyzing progress from the first three years

of the National Nutrition Strategy without trend data. Third, two national strategy documents— the National Strategy for Growth and Reduction of Poverty (MKUKUTA II) and the Millennium Development Goals— included new nutrition activities and indicators. Both required nutrition information to plan nutrition activities and to report nutrition progress. Finally, the need to prepare a strategic plan for nutrition to reach the global 2025 World Health Assembly targets provided further, and ultimately convincing, rationale for Tanzania to invest funds in collecting nutrition data annually.

The fact that the multi-sectoral surveys did not provide regional estimates of several core nutrition indicators required by countries was an additional motivating factor to introduce NNS. While anthropometric data and other food security data are included in DHS, MICS, and ENIAM surveys, samples are not always designed to provide subnational disaggregation for these indicators. For example, the 2006 Burkina Faso MICS was not designed to have sufficient precision for subnational disaggregation. Similarly, the 2010 Tanzania DHS, the sample allowed for national, but not regional, estimates of exclusive breastfeeding. Additionally, the inability to control temporality of these surveys, which involved data collection at different times of the year and over a period of several months (often covering lean and harvest seasons), was another limitation.

Finally, in Burkina Faso specifically, recent national surveys provided inconsistent estimates resulting in confusion among policy makers: the 2008 ENIAM, initiated in response to concerns of widespread food and nutrition crisis, found a GAM prevalence of 12.4%, vastly lower than the GAM prevalence of the 2006 MICS survey (24.4%) and the 2003 DHS survey (21.2%). This finding prompted stakeholders in country to call for more frequent data collection to understand this trend as it contradicted expectations.

3.1.2 Consensus Building

The process of evaluating the costs and benefits of conducting an NNS lasted nearly a year in Tanzania – from July 2013 to June 2014. Initial months were spent establishing support from multiple government agencies (Tanzania Ministry of Health and Social Welfare's Nutrition Section, the Zanzibar Ministry of Health, the SUN focal point in the Office of the Prime Minister, Tanzania Food and Nutrition Centre) and the Development Partners Group on Nutrition, as well as donors [IrishAid and Department for International Development (DFID)] and UN partners. This initial groundwork was led by UNICEF-Tanzania. Once the need for a national nutrition survey was established, support from technical agencies for the use of the SMART methodology required additional, more educational, sessions to convey the rigor of the method. Recurrent discussions included ensuring comparability of estimates from NNS and other multi-sectoral surveys; understanding how support to NNS would reinforce the nutrition information system in Tanzania; and understanding the timeline of data collection and results dissemination. These points were

conveyed to stakeholders through a series of sensitization sessions conducted by UNICEF Tanzania in partnership with Action Against Hunger- Canada (the SMART Project Global Convener).

The decision to conduct annual NNS in Burkina Faso in 2008 followed a similar process of consensus building. However, the Sahel food security crisis had created a greater demand for nutrition information, expediting the timeline for consensus building. The NNS in Burkina Faso also involved a greater number of UN agencies and international non-governmental agencies.

The decision on frequency was determined by the government based on many factors including costs and availability of nutrition information. Ultimately it was agreed to conduct an NNS every two-three years in Tanzania, in between DHS surveys, and annually in Burkina Faso.

3.2 Implementation Process

3.2.1 Planning and Coordination

Establishing committees, with clear roles and responsibilities, for coordination and decision making was key in both Burkina Faso and Tanzania

In both countries, the process of NNS implementation started with the establishment of a standing coordination body responsible for technical and administrative decisions. In Burkina Faso one working group, called the SMART technical committee, was established to coordinate all stages of survey planning and implementation. The committee was comprised of representatives from government, UN agencies, and donors (Table). In Tanzania two different committees were created for overall management and coordination of the survey: (1) the steering committee members included representatives of leadership from 13 government, UN and donor agencies; and (2) the technical committee comprised of a smaller group of representatives from the government, UNICEF and an external consultant. The two committees in Tanzania had complementary functions. The steering committee took responsibility for final approval of the survey protocol before submission to the Ethics Committees and participated in the dissemination of the key findings of the NNS. The technical committee developed the survey protocol including sampling strategy and supported logistical preparations, including budgeting. After data collection, the technical committee presented results to nutrition stakeholders and the steering committee validated the final report.

Development of the sampling strategy was a key responsibility of partners in both countries. In Tanzania, the strategy was drafted by the technical committee and

approved by the steering committee. The 2014 survey applied a two-stage sampling design representative at the regional level for all 30 regions of Tanzania, including both Mainland and Zanzibar. The survey aimed to assess the nutritional status of children 0-59 months and women 15-49 years, infant and young child feeding practices among children 0-23 months, coverage of micronutrients interventions among children 6-59 months, and household hand washing practices (use of soap for hand washing at household level). A total sample size of 20,799 households was planned of which 19,092 (91.8%) were surveyed. In Burkina Faso, all sampling decisions were made by the SMART technical committee. Sampling was designed to be representative at the regional level with additional disaggregation to the provincial level within select regions. Sub-regional disaggregation changed annually based on programmatic need. Between 2009 and 2014, the total number of strata by year ranged from 28-30. Consequently, total sample size ranged from 9,597 to 20,615 households per year.

The Nutrition Department of each country—the Tanzania Food and Nutrition Center (TFNC) in the Ministry of Health and Social Welfare and the Direction de la Nutrition (DN) in the Ministère de la Santé in Burkina Faso—led field implementation of the surveys. An external national consultant co-led field implementation during the first survey in Burkina Faso (2009) and Tanzania (2014). Subsequent surveys in Burkina Faso were led by the DN in close collaboration with the SMART technical committee. UNICEF played a key role in recruiting the consultants and international NGOs gave technical and logistical support.

3.2.2 Implementation Timeline

It is key to plan sufficient time for a national level survey, ensuring availability of sufficient staff and planning to maintain seasonality of data collection.

Leadership of a technical agency within the government was a defining characteristic of the nutrition surveys as multi-sectoral national surveys are traditionally led by a government's statistics agency.

The implementation of NNS took about six months in both countries. Efforts were made to conduct the survey during the same season each year in Burkina Faso to minimize the impact of seasonality and improve comparability of annual estimates. In both countries, the full process from planning to disseminating results lasted approximately six months. In Burkina Faso, the planning phase generally started in June or July and lasted about 6 weeks—including

the creation of a technical committee and agreeing on the survey protocol. Survey personnel training usually lasted 2-3 weeks. Data collection generally lasted 8-10 weeks, planned to coincide with the lean season. Data analysis and dissemination of findings took approximately 6 weeks, with survey report finalized in December. Similarly, in Tanzania the implementation of the first NNS lasted from July to December 2014. Implementing the survey consisted of a planning phase (development of the survey protocol and obtaining ethical approval) that lasted 10-11 weeks, training for 2-3 weeks, data collection and analysis which lasted 14 weeks, and release of preliminary results that lasted approximately 3 weeks. In Tanzania, dissemination of the final report findings and recommendations took place more than 3 months after the preliminary results were released given delays in review and final validation.

3.2.3 Funding

The Nutrition Department in both countries took on the responsibility of mobilizing funding for the NNS, supported by efforts from UNICEF to coordinate external funding. In Burkina Faso, the World Bank and UNICEF were primary donors from 2009-2014. ECHO gave seed funding in 2009 to Action Against Hunger to support initial capacity building. USAID/OFDA gave funding during the initial survey rounds (2009-2011). WFP, WHO, and USAID have also contributed funding to these surveys. In Tanzania, UNICEF, Irish Aid and DFID provided financial support for the 2014 survey.

The cost of NNS varied between Burkina Faso and Tanzania, depending on the level of representation (and therefore sample size), the level of involvement of partners and other logistical considerations (e.g. per diems, fuel and transport). It is necessary to evaluate the cost-benefit of every NNS.

The total survey cost in Tanzania in 2014 was 462,363 USD, corresponding to an average cost per stratum of 15,412 USD. During the same year in Burkina Faso, the total survey cost was 633,741 USD or 22,634 USD per stratum. Total costs for surveys in Burkina Faso ranged from approximately

433-687,000 USD per year (Table). Variability in survey costs was primarily explained by the number of partners supporting the survey, different indicators added each year, and changes in terms of the total sample size.

The most expensive line items in the survey budgets were typically data collection (including per diem for enumerators and drivers, mobile phone credit, incentives for community leaders, printing of maps, cars, fuel and local transportation), and training. For example, data collection and training represented 21.5% and 20.6% of the total survey budget in Tanzania, respectively. An external consultant (16.2% of the total budget) was also a large expense in Tanzania 2014.

Several efforts have been considered in Tanzania and Burkina Faso to reduce survey costs, including leveraging logistical support (e.g., loaning of vehicles) from nutrition partners for the data collection phase, and reusing anthropometric equipment. Building technical capacity in Burkina Faso helped eliminate the need for an external consultant, a large cost saving. In Tanzania, the decision to conduct surveys every other year, rather than annually, was in part driven by an effort to reduce overall costs.

3.2.4 Training

Experience in Burkina Faso and Tanzania showed that a cascade training was an efficient way to ensure thorough training at all necessary levels, from the manager level. Through the TOT level to the enumerator level. Training should be appropriately tailored to each level.

In both countries, a three-step cascade process was organized to train all staff involved in NNS: (1) a high level

technical training on the full SMART survey manager curriculum, (2) training of trainers (ToT) and (3) training of field enumerators. The technical manager training was a six-day session for members of the technical committee as well as Regional Nutrition Officers and Statisticians. The training included an overview of nutrition surveys, introduction to cross-sectional survey sampling methods, guidance on field procedures, training and evaluating survey teams, the use of the ENA software, and guidance on conducting a standardization test, analysis, validation

including data quality checks, and interpretation of survey results (20). In addition, prior to the first NNS in Burkina Faso, these trainees received a four-part course that included both classroom and field experience with the SMART Methodology including technical sections on sample size calculation, sampling design, field supervision, data collection and quality review. This four-part course organized from February-April 2009 as well as a pilot survey designed to give trainers field experience was funded by ECHO. This one-time exercise served a pilot of the method to be used nationally, and helped introduce the method to national institutions and partners.

Participants that excelled during the technical training were selected as survey supervisors. This group participated

in the ToT sessions. The ToT session focused on teaching skills related to adult learning to prepare them for the field enumerator training. The field enumerators each participated in a seven-day course including five days of classroom training, as well as a full day standardization test, and a full day field test. Ad hoc trainings outside of this three-step cascade have been organized. For example, when data quality declined in Burkina Faso, a refresher training was organized for supervisors.

In Tanzania, 30 teams (with 3 people in each team) collected data, overseen by 15 supervisors. In Burkina Faso from 2009 to 2014 the number of teams ranged from 84 to 90 depending of the number of strata surveyed that year.

3.3 Use of Data, Building Capacities and Institutionalization

Data is typically used to monitor national level progress against key outcome indicators (especially stunting and wasting), to help inform programming, to contribute to national level policies and plans. In addition NNS helped to strengthen national level information systems and to contribute to inter-agency situation analysis exercises through IPC (integrated phase classification) and Cadre Harmonise. The NNS process also strengthened technical nutrition leadership and ensured availability of skilled anthropometric surveyors, contributing to improved data quality of other national level surveys.

Prevalence of GAM was estimated at 12.4% in the 2009 NNS in Burkina Faso, significantly lower than the estimate from the 2006 MICS survey (24.4%) and the 2003 DHS survey (21.2%) (12–14, 20). Subsequent NNS have provided further evidence of this trend, documenting a relatively steady decline in prevalence of GAM between 2009 and 2016, interrupted by a deterioration of the nutritional situation in 2015. The trend in prevalence of underweight and chronic malnutrition have similarly declined between 2009 and 2016, with 2015 as an anomalous year(22).

These data have helped inform nutrition and food security programming in Burkina Faso and helped leverage funding. For example, the implementation of annual NNS has enabled Burkina Faso to document achievement of MDG 1 – halving the prevalence of underweight among children under five. Annual data ensured Burkina Faso was able to identify and target regions that were faltering in efforts to reduce underweight prevalence and better target intervention and donor funding. National partners suggest that NNS results helped track progress of SUN interventions aimed at responding to the nutritional crisis. Finally, the NNS results were used in the Cadre Harmonisé, a situation analysis of food security and nutrition indicators, and are incorporated into the National Health Information System (NHIS).

Similarly in Tanzania, results were used to report on the 2015 MDGs and MKUKUTA II progress. The Government of Tanzania used the NNS results to inform the review of the National Food and Nutrition Policy (dating from 1992) and contributed to the preparation of the National Multi-sectoral Nutrition Action Plan, 2016-2021 with key targets defined

for food security and nutrition components. Results from DHS and NNS will be used to monitor goals in the National Multi-sectoral Nutrition Action Plan (e.g., reduce national prevalence of stunting by 28% by 2021). The Tanzania NNS also allowed for state level actors to monitor progress of nutrition outcomes (stunting, wasting, infant and young child feeding, micronutrient deficiencies). Previously, only output indicators (e.g., distributions of micronutrient powders or Vitamin A capsules) were collected frequently enough to be used in program monitoring. Tanzania plans to conduct biennial NNS, in gap years during which DHS surveys are not planned.

In addition to providing nutrition data to support nutrition strategies, implementing NNS has helped strengthen the nutrition information systems more generally. Burkina Faso now retains a cadre of trained enumerators skilled in anthropometry who can support nutrition surveys as well as supervise routine measurements at health facilities. Retaining such a cadre had not been feasible when conducting national surveys only every 3-5 years. In Tanzania, the Nutrition Department supported the training of enumerators for the DHS 2015-16 on anthropometric measurements, including supervision of the standardization tests. The best supervisors and team leaders of the 2014 NNS were involved as trainers on anthropometry and many of the enumerators from the NNS were enumerators in the DHS 2015-16.

The NNS process has also strengthened the technical leadership of Nutrition Section senior staff in Burkina Faso. Initial NNSs were technically supported by an external

consultant. Over several years, UNICEF Nutrition Section and Action Against Hunger-Canada invested in building capacity of the Ministry staff on both the statistical and logistical of implementing NNS. The Department of Nutrition independently led the last 7 NNSs. These sustained capacity building efforts have enabled Burkina Faso to begin institutionalizing the surveys—ensuring the

government provides independent technical leadership, ensures annual funding, retains staff to support to the NNS. Technical support has been complemented with consistent funding from the World Bank, UNICEF and other donors. Reliable funding is perceived to be essential for the institutionalization.

4. DISCUSSION

The evidence presented here suggests that NNS applying the SMART methodology provided reliable, timely, season-specific data for decision-making in Burkina Faso and Tanzania. In both countries, the results of the NNS were incorporated into the National Health Information System and provided means to monitor trends in the prevalence of nutrition outcomes. Leadership of a technical agency was also a defining characteristic of the nutrition surveys, as multi-sectoral national surveys have traditionally been led by a government's statistics agency. This involvement has helped to ensure that data collected informs program planning directly, and has enabled the technical ministries to invest in the capacity of their own staff. Further, the human resource investments made to conduct the NNS have demonstrated benefits for the nutrition information system more generally. The cadre of personnel trained for the NNS has been able to support other surveys, strengthening training of enumerators to conduct anthropometric measurements. These demonstrated benefits helped national stakeholders advocate for the continuation of NNSs on an annual basis in Burkina Faso and every two-three years in Tanzania. Many other countries have adopted the model of regular, national nutrition surveys using the SMART methodology. As of 2015, 13 out of 24 countries in West and Central Africa region have conducted NNSs (9). Mali and Niger have been implementing NNSs for more than a decade.

In addition to the utility, the presented case studies provide recent evidence with respect to the overall costs of NNS using the SMART method in Sub-Saharan Africa. Direct cost comparisons are complicated by the fact that different surveys vary considerably in terms of their scope and objectives (and therefore indicators) as well as designs (and therefore sample sizes). The presented analysis for the Tanzania and Burkina surveys, indicate the surveys cost less than the national surveys that previously served as the source of nutrition data. Analysis by Rommelmann et al, for example found that DHS surveys conducted between 1991 and 1999 cost approximately 0.9 USD million (about 120 USD/participant), more than the NNS [0.5 USD million (24 USD/participant)]. Other national surveys, such as the National Household Budget Survey, conducted in Tanzania were approximately the same cost as the DHS(22). Generally, the NNS employ fewer survey personnel for a

shorter duration than other national surveys and therefore have lower costs. However, given differences in the objectives and scope of the surveys these surveys should not be interpreted as interchangeable and relative costs are not directly comparable.

Burkina Faso and Tanzania examples, however, also highlight common challenges with implementing annual nutrition surveys and piloted solutions. For example, the human resource costs were considerable in both countries. Involvement of technical agencies meant that nutrition staff were pulled from their other duties for the duration of the survey. In Tanzania, officials had to be absent from their positions during more than two months for training and data collection. The use of student enumerators in Burkina Faso was piloted as a method to address this issue. The process of reviewing and validating survey results can also be a common challenge. Presentation of the final survey results in Tanzania was done more than three months after the end of data collection due to delays in validation. A standardized review and validation process has been developed over years in Burkina Faso, such that validation now takes within two months of data completion.

This study was subject to several limitations. First, analysis was retrospective, relying on stakeholders to have retained documents from surveys conducted up to eight years preceding data collection. Additionally, key informant interviews were conducted with partners involved with the surveys at the time of data collection (2016). Inclusion of individuals that have since left the country or transitioned into new positions may have yielded additional information.

Further analysis on drivers of cost and cost-effectiveness of these surveys is needed to better understand the long-term feasibility of NNS. Despite the lower relative cost, case studies highlighted ongoing efforts to reduce costs of these surveys as well as challenges in justifying this funding for a survey that collects considerably fewer indicators than multi-sectoral surveys. Such analysis should consider the cost/benefit of limiting the number of stratum (e.g., sampling at the regional vs. than the provincial level), as this decision has considerable cost implications as the number of stratum impacts sample size and therefore survey duration, staffing and transportation costs. Efforts to reduce cost may help governments justify the continuation of NNS.

5. CONCLUSIONS

Review of experiences in Burkina Faso and Tanzania suggest that national nutrition surveys provide a feasible model for collecting data on anthropometry in countries that require the information for public health action. In both countries, the NNS model was used to provide data in gap years during which other national surveys are not scheduled, to ensure availability of nutrition indicators, facilitate collection of rigorous data, build in-country capacity, and strengthen the overall national nutrition information system

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Author Contributions

JLA had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis. JLA, FC, VSS, OB, MN, PC and EL designed and developed the conceptual framework of the article. FC and VSS conducted the interviews, extracted data and implemented the analyses. JLA and EL verified and conducted further analyses and drafted the manuscript with input from FC. PC and VSS obtained Funding. All authors provided administrative, technical or material support and implemented a critical revision of the manuscript for important intellectual content

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National nutrition surveys using SMART methodology in Tanzania and Burkina Faso - from advocacy to implementation