MQSUN+ REPORT

Final Report for Real-Time Learning Review on Nutrition Response in the Democratic Republic of the Congo

25 February 2020

About MQSUN+

MQSUN+ aims to provide the Department for International Development (DFID) with technical services to improve the quality of nutrition-specific and nutrition-sensitive programmes. The project is resourced by a consortium of five leading non-state organisations working on nutrition. PATH leads the consortium.

The group is committed to:

- Expanding the evidence base on the causes of undernutrition.
- Enhancing skills and capacity to support scaling up of nutrition-specific and nutrition-sensitive programmes.
- Providing the best guidance available to support programme design, implementation, monitoring and evaluation.
- Increasing innovation in nutrition programmes.
- Knowledge-sharing to ensure lessons are learnt across DFID and beyond.

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About this publication

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Abbreviations

ACF	Action contre la Faim
ALIMA	Alliance for International Medical Action
AM	acute malnutrition
ANJE	*alimentation du nourrisson et du jeune enfant*
ANJE-U	*alimentation du nourrisson et du jeune enfant en situation d'urgence*
BCZS	*Bureau central de la zone de santé*
CAC	*cellule d'Animation Communautaire*
CHW	community health worker (r*elais communautaire* / ReCo)
CoDeSa	*Comité de développement de l'aire de santé*
COOPI	Cooperazione Internazionale
CPS	*consultation préscolaire* (preschool consultation)
CQI	continuous quality improvement
CS	*Centre de santé*
CU5	children under 5 years old
DFID	UK Department for International Development
DHIS2	District Health Information System II
DPS	*Division provinciale de la santé*
DRC	Democratic Republic of the Congo / *République démocratique du Congo*, or RDC
EVD	Ebola virus disease
GAM	global acute malnutrition
GMP	growth monitoring and promotion
HDN	humanitarian-development nexus
HGR	*Hôpital general de reference*
HH	household
HRP	Humanitarian Response Plan
HSS	health systems strengthening
IASC	Inter-Agency Standing Committee
IMA	Interchurch Medical Assistance
IPC	Integrated Phase Classification
IT	information technology
IYCF	infant and young child feeding
IMAM	integrated management of acute malnutrition
M&E	monitoring and evaluation
MAM	moderate acute malnutrition
MICS	Multiple Indicator Cluster Survey
MIRA	Multisectoral Initial Rapid Assessment
MOPH	Ministry of Public Health
MQSUN+	Maximising the Quality of Scaling Up Nutrition Plus
MUAC	mid-upper arm circumference (*périmètre brachiale,* or PB)
NAC	*Nutrition à assise communautaire*
NGO	nongovernmental organisation
NNC	National Nutrition Cluster
OCHA	UN Office for the Coordination of Humanitarian Affairs
PB	*périmètre brachiale* (mid-upper arm circumference, or MUAC)
PCIMA	Protocole national de prise en charge intégrée de la malnutrition aiguë
PDSS	Programme de développement du système de santé
PEC MAM	*Prise en charge de la malnutrition aiguë modérée*

PEC MAS	*Prise en charge de la malnutrition aiguë sévère*
PLW	pregnant and lactating women
PRONANUT	*Programme national de nutrition* (National Nutrition Programme)
QI	quality improvement
RDC	*République démocratique du Congo* / Democratic Republic of the Congo, or DRC
ReCo	r*elais communautaire* (community health worker/CHW)
RLR	real-time learning review
RUSF	ready-to-use supplementary food
RUTF	ready-to-use therapeutic food
SAM	severe acute malnutrition
SANRU	Santé Rurale/Rural Health
SMART	Standardized Monitoring and Assessment of Relief and Transitions
SNSAP	*Surveillance nutritionnelle, sécurité alimentaire et alerte précoce*
SUN	Scaling Up Nutrition movement
TOC	Theory of Change
UN	United Nations
UNICEF	United Nations Children's Fund
UNTI	*Unité nutritionnelle thérapeutique intensive*
USAID	US Agency for International Development
WASH	water, sanitation and hygiene
WFP	World Food Programme
WHO	World Health Organization
ZS	*Zone de santé*

Executive Summary

The United Kingdom's Department for International Development (DFID) supports nutrition-related development and humanitarian projects in the Democratic Republic of the Congo (DRC), where both acute and chronic malnutrition rates are very high. To strengthen the nutrition response in areas of greatest morbidity and mortality risk, DFID DRC requested Maximising the Quality of Scaling Up Nutrition Plus (MQSUN+) to conduct a real-time learning review to identify and help stakeholders learn from what is working well and what needs to be strengthened in acute malnutrition (AM) prevention and treatment. This included learning from current practice, research and innovation in the DRC and other relevant contexts. In September and October 2019, the team reviewed project and evidence documents and carried out remote and in-person stakeholder consultation. Key learning—by DFID-requested area of inquiry (**Table 1**)—is as follows:

- ***Actors need to better understand—in order to act upon—the main drivers of AM.*** Drivers are universal, but in a specific context, the dynamic interactions between determinants and behaviours may reinforce or balance effects, acting simultaneously on multiple levels and making the pathways to nutrition difficult to unravel and understand. For clarity, it is important to take a comprehensive view of the continuum of care, putting the mother-child pair at the centre and considering the pair's various—sometimes competing—needs. This would allow tailored approaches to address AM and improve child health and survival that consider both health (e.g. infections, mental health) and non-health (e.g. socioeconomic, cultural, geographic) issues.

- ***Timelier information for assessing, monitoring and evaluating nutrition crises is needed.*** Two alert systems draw from national multisectoral surveillance systems and small-area surveys. However, neither is agile enough to provide real-time appraisals or rapidly trigger a response sufficient to cover the highest priority zones. In a context of low access to and use of health services, relying on a surveillance system that depends on other weak systems from which to extract data is a serious impediment to appropriate decision-making (alerting, prioritising or monitoring vulnerability). Nevertheless, real-time data from an expanded surveillance system would be better than late data from small-area surveys that themselves depend on late alerts and scarce resources.

- ***AM response strategies need to better integrate prevention/treatment and development/ emergency activities.*** Development programmes supporting AM prevention are few or weak, with treatment largely absent. Therefore, emergency intervention packages, most of which are short-term stand-alone activities, attempt to fill gaps. Development interventions that include an emergency nutrition component with temporary emergency funding may be better able to build upon and strengthen existing structures; however, their geographical coverage is limited and cannot cover all needs.

- ***Intervention monitoring and evaluation need to be adaptable and focused not only on planned activities but also on evolving needs.*** The linear pathway of programme monitoring compares progress and results against what is planned, but perhaps not against what is needed. This may create stockouts or give confusing results if contexts have changed due to population movements or insecurity. Moreover, this approach is not flexible enough to adapt to the fast-changing context.

- ***Maximising interventions' efficiency and effectiveness will require a learning and adaptation approach.*** Emergency response strategies rely on global guidance and evidence but lack a structured and collaborative approach that can adapt to the DRC reality and reflect on whether the right thing is done and done right. They miss an in-built quality improvement approach that encourages curiosity for adapting standards and modalities to induce improvements.
- ***Technical guidelines may need to further evolve to support actors in leveraging their potential, standards and guidelines.*** Some actors' capacities are underestimated, untapped or misunderstood. The National Nutrition Cluster guidelines are an excellent tool for ensuring respect for minimum standards, coordinating actors and actions and adapting strategies to the emergency context and needs. They have not yet exploited their potential or reached all those who would benefit from them, but further revision could address these issues.
- ***Resilience capacity[1] may need to be built for a sustainable approach focused on preventing AM whilst strengthening the ability to manage treatment as needed***. Several development initiatives have shown their absorptive capacity to include emergency-type activities that build resilience capacity, strengthen existing services and address newly identified needs. The DRC's fragile context calls for all development programmes to strengthen resilience capacities of health and community systems and plan for contingencies to bridge the emergency divide, as well as for all emergency programmes to include a systems approach to sustainably strengthen weak services or establish new services as needed.
- Relatedly, ***the humanitarian-development nexus (HDN) needs to be strengthened.*** Rethinking emergency response strategies suggests a hybrid model, conceived as a development start-up, with a window of opportunity to include a country-adapted surge approach to address key health and nutrition vulnerabilities in primary health care and build resilience capacities to absorb and adapt to shocks.
- ***Advocacy should be prioritised.*** Advocacy is an underutilised method to tackle hurdles and gain attention from multiple levels. The new government and nutrition development impetus provide key opportunities. Country-specific tools can be developed to assist nutrition advocacy efforts supporting the HDN.
- ***Knowledge and evidence gaps should be prioritised, the key gaps should be filled, and learnings should be shared.*** Ongoing or planned pilots and research are continuous learning opportunities, but not all those who should be involved are or are abreast of these. Moreover, there is no system for prioritising key research questions and no platform for sharing existing evidence and context-specific learning.

Key recommendations for collaborative actions of key partners are summarised below:

1) **Strengthen technical and operational leadership of the *Programme national de nutrition* (PRONANUT), or National Nutrition Programme, and its partners**:

    - Strengthen governance and management skills of the PRONANUT by creating an environment conducive to learning in fast-changing and fragile contexts.

[1] Resilience has been defined in many ways but in general can be seen as the ability of a system, community or individual to resist, absorb, adapt to and recover from stresses and change (DFID 2011).

- Equip the PRONANUT for accessing evidence and new learning and translating it into context-adapted practices to improve its guidance, systems and structures and to adequately steer and support its partners (including community-based organisations).

2) **Strengthen nutrition evidence generation and learning:**

- Establish a (multisectoral) health and nutrition knowledge management and discussion platform that combines learning from evidence and best practices in both development and emergency settings and ensures knowledge sharing amongst all stakeholders.
- Strengthen research capacities of key actors (e.g. PRONANUT and academia).
- Support a dynamic collaboration between prominent academic and research institutions (South-South and North-South connections between schools of public health and universities) for mutual learning and knowledge management.
- Support the revision of nutrition training curricula, including adaptation to evidence and best practices; cover knowledge and skills development in assessing needs and designing, implementing and monitoring and evaluating nutrition programmes in higher education.

3) **Expand partnerships for nutrition:**

- Ensure involvement of key actors (particularly those working in nutrition-specific and nutrition-sensitive interventions, the HDN and knowledge generation) in health and nutrition knowledge and discussion platforms, collaborate with other knowledge management platforms as appropriate and be sure to cover both emergency and development needs in these efforts.

4) **Increase nutrition advocacy capacity:**

- Strengthen partners' capacity for nutrition advocacy and develop plans, tools and processes to garner the necessary political will of the newly elected government and parliament to pass bills stipulating the commitment to fund nutrition programmes.
- Advocate to expand the pool of highly trained nutritionists and to position a critical mass of public health nutritionists with adequate managerial and technical skills at key government ministries and agencies to effectively operate under the Scaling Up Nutrition Movement banner, covering both emergency and development needs.

Drawing lessons from this review, stakeholders in the DRC's fragile context are encouraged to better catalyse opportunities and adjust strategies and resources to improve emergency nutrition interventions based on a sound and robust alert system that can better target vulnerabilities. The recommendations need vetting for feasibility and adaptation by actors with the necessary contextual and technical expertise. The immense unaddressed nutrition needs in development and emergency settings in the DRC call for strengthened collaboration and out-of-the-box thinking so that emergency interventions can leapfrog ahead and spark transformative change.

Introduction

Overview

The scale of malnutrition in the DRC is immense, driven by recurrent crises of insecurity, population displacement and disease outbreaks and further exacerbated by factors such as repeated and untreated infections, inappropriate infant and young child feeding (IYCF) practices, food insecurity, low incomes, poor birth outcomes, underdeveloped health infrastructure, low educational and social status of women and early childbearing. A comparison of data from 2018 and 2013 suggests a slight improvement in the trend amongst children under 5 years old (CU5): global acute malnutrition (GAM) decreased from 8 to 7 percent, and severe acute malnutrition (SAM), from 2.6 to 2.0 percent, while overall stunting steadied at around 42 percent (Ministère du Plan et Suivi de la Mise en œuvre de la Révolution de la Modernité (MPSMRM) et al. 2014). In 2013, 35 percent of children suffered from moderate and severe anaemia (Ministère du Plan et Suivi de la Mise en œuvre de la Révolution de la Modernité (MPSMRM) et al. 2014). Recently, 5 of 26 provinces surpassed the 10 percent GAM, and 21 surpassed the 40 percent stunting, public health thresholds, indicating a serious situation (Institut National de la Statistique (INS) and UNICEF 2019). At the time, the Humanitarian Response Plan (HRP) estimated that, in 2019, over 5.2 million CU5 would be at risk of acute malnutrition (AM) and 1.4 million would need treatment for SAM (OCHA 2018). Moreover, nutrition crises have increased in recent years, and emergency responses must scale up to cover the needs.

Whilst there has been significant investment in the management of AM, it has not yet been integrated into routine child health services and is covered only to a limited extent in longer-term development health programming. In the first trimester of 2019, 366,000 children with SAM and 349,00 children with moderate acute malnutrition (MAM) were treated, with an estimated coverage of 22 percent for SAM and 17 percent for MAM (PRONANUT 2019a). The coverage and intensity of effective multisectoral interventions to prevent wasting and to increase nutrition resilience are limited. Hence, emergency responses temporarily and sparsely fill the huge gap between SAM/MAM children and treatment coverage and are not expected to improve the nutrition resilience of the population or the health system. This situation requires a rethink of the effectiveness of approaches to prevent and manage malnutrition, in both emergency and development contexts, and to prioritise vulnerable populations.

Through nutrition-sensitive and nutrition-specific investments, DFID supports the DRC government and its partners in working to improve the nutritional status of CU5 and pregnant and lactating women (PLW) exposed to recurrent shocks and protracted crises. It is in this context that DFID DRC requested support from MQSUN+ to conduct this real-time learning review (RLR), which aimed to support key stakeholders to strengthen the nutrition response by identifying and learning from what is and is not working well and what could be improved in the prevention and management of AM. By reflecting and learning together from current practice, research and innovation in the DRC and similar contexts, stakeholders were invited to critically ‘think outside of the box’ to explore

complexities and opportunities. **Table 1** lists the key questions posed by DFID and covered by the RLR, as well as where in this report they are addressed.[2]

Table 1. Specific questions the real-time learning exercise aimed to answer.

Review questions	Sections
1. What is our current understanding of the main drivers of acute malnutrition in the DRC?	**1.** Understanding the main drivers of acute malnutrition
2. Based on existing evidence, what programmatic strategies should humanitarian partners adopt for the implementation of preventative activities, and how much does that differ from current practice?	**3**. Acute malnutrition response strategies
3. How should such interventions be monitored to evaluate their outcome and impact on preventing acute malnutrition?	**4**. Monitoring and evaluating interventions
4. To what degree can these interventions induce sustainable improvements? What can be done to improve resilience (individual / household / system) in this context, and what age groups should be prioritised?	**7.** Resilience capacity and sustainability of interventions
5. What can be learnt from research, evaluations, innovation and emerging practice from the DRC and from other geographical regions which is of relevance to maximising the efficiency and effectiveness of the treatment of acute malnutrition in this context?	**5.** Maximising the efficiency and effectiveness of interventions
6. Are Nutrition Cluster partners doing the right things to treat acute malnutrition and at the right time, prioritising the right groups? Should technical guidelines evolve considering the nutrition situation, the response capacity and resources available and the latest innovation and evidence?	**6.** Actors, standards and guidelines
7. Are current nutrition information and monitoring mechanisms providing suitable data to analyse the nutrition crisis, inform the prioritisation and timing of interventions and measure their impact?	**2.** Information for assessing, monitoring and evaluating nutrition crises
8. What opportunities exist to collaborate with / link to more development-supported health and nutrition interventions (preventative and treatment)?	**8**. Humanitarian-development nexus
9. What are advocacy priorities for the government, donors, humanitarian actors and development partners?	**9.** Advocacy priorities
10. What analytical or research gaps exist, and which are priorities for effective and efficient emergency nutrition in the DRC?	**10.** Knowledge and evidence gaps
11. What form of ongoing technical support or learning processes may be useful from DFID to operational nutrition partners and donors in the DRC?	This will be covered in the terms of reference for such support.

Methods

Approach to the Rapid Learning Review

An RLR is a short, time-bound exercise intended to bring a timely and fresh external perspective on ongoing operations. The method has a qualitative focus and by its nature provides neither an in-depth analysis nor a comprehensive evaluation. The consultant team facilitating the RLR was gender-balanced, comprising two international nutrition experts.

[2] The consultants support but did not use the evolving terminology, replacing 'treatment' with 'management' (detection, diagnosis and treatment path decision, treatment, recovery and follow-up, prevention of relapse and rehabilitation) and 'acute malnutrition' with 'wasting' and 'nutritional oedema'.

Participants in the review were purposively selected based on their involvement and interest in addressing AM in the DRC, with the intention that their involvement will stimulate ownership and uptake of the review outcomes. The team briefed participants on their roles in the RLR (based on their availability and interest) and included them in the learning activities. The team consulted with 77 people (29 women) from 41 partner agencies. **Annex 1** lists these agencies.

The review had three phases:

- **Inception**: Conversations with key stakeholders and a brief desk review of the current context and programmes provided a basic understanding of the main drivers of AM (see **Annex 4**) and approaches to address it in the DRC.
- **Collaborative learning:** Key informant interviews with policymakers, managers, front-line workers and beneficiaries, as well as field visits to observe implementation, provided more information on the effectiveness of interventions, challenges and lessons from the response. Also during this phase, a participatory workshop built on the initial analysis and evidence gathered, deepening a common understanding and formulating recommendations.
- **Consolidation:** The last phase consolidated the collaborative learning and recommendations to guide the way forward.

In the Kasaï and Kasaï Central Provinces, the team visited three general hospitals, nine health facilities and three households (HHs). They met with key staff of the two provincial health divisions (*Divisions provinciale de la santé*), three zonal health offices (*Bureaux centrals des zones de santé*), nine health areas (*Aires de santé*), members of community groups (*Comité de développement de l'aire de santé*, or CoDeSa, and *Cellules d'animation communautaire*, or CAC) and community health workers / *Relais communautaires* (CHWs/ReCo) and HHs with SAM children. **Annex 2** includes the visit itinerary, along with the preceding and subsequent stakeholder consultation activities.

On 22 to 23 October 2019, the team facilitated a workshop with relevant stakeholders to build upon ongoing work to strengthen the nutrition response (see **Annex 3** for the agenda). The workshop explored the quality of the emergency nutrition response strategy through stepwise, iterative, participatory and collaborative learning from current practices and innovation in order to consider the effectiveness of strategies to prevent and treat AM in the DRC and to identify lessons to inform changes. Participants included 47 representatives (including 12 women) from 36 partner agencies with a vested interest in strengthening the response for preventing and treating AM, including the *Programme national de nutrition* (PRONANUT), or National Nutrition Programme; National Nutrition Cluster (NNC); Nutrition Cluster partners; United Nations Children's Fund (UNICEF); World Food Programme (WFP); US Agency for International Development; European Civil Protection and Humanitarian Aid Operations; the World Bank; and the University of Kinshasa.

Equity and data privacy considerations

In all steps of the review, the team invited both men and women for interviews and workshop participation and ensured discussion of any perceived sex or gender discrepancies in the management of and response to AM. The consultants ensured respondents and participants understood how personal information was collected and how it would be used, and why, as well as how their privacy would be maintained.

Limitations

In addition to the above acknowledgement that the RLR was not an in-depth analysis nor a comprehensive evaluation, other limitations include the following:

- The analysis of findings relied mostly on perceptions and tacit knowledge of participants triangulated with broader learning and evidence but not on systematic reviews of evidence.
- Site visits did not include all models of emergency nutrition response in place (e.g. the rapid nutrition response programme *Pool d'urgence nutritionnelle du Congo*, the PRONANUT-led intervention in Ituri Province set up as a routine child service). The models were included in the discussions, but the review may have missed interesting learning.
- Due to travel constraints, the team was unable to conduct a more thorough preparation for the workshop, and the two-day agenda did not allow as much time as desired for in-depth learning and discussions. Nonetheless, national and international key partners were briefed ahead time to garner their effective support to the workshop facilitation and found the meetings useful.
- Some stakeholders were not reached for scoping (e.g. the European Union, child health departments of the Ministry of Public Health [MOPH] and training and research institutions).

Objectives

This report complements the inception and workshop reports and consolidates the overall learning of the RLR exercise, answering the key questions posed by DFID and providing recommendations to inform DFID's strategic support for the DRC. **Annexes 5 and 6** include an updated list of innovative approaches that were identified and an appraisal of the reviewed NNC guidelines. A subsequent deliverable is a term of reference for future technical assistance (TA) to support a strengthened approach to preventing and treating AM in the DRC.

Key Learning about Preventing and Treating Malnutrition in Emergencies in the DRC

As mentioned, this review is structured around key questions about the nutrition response in the DRC (**Table 1**), summarised in the following sections: (1) understanding the main drivers of AM, (2) information for assessing, monitoring and evaluating nutrition crises, (3) AM response strategies, (4) monitoring and evaluating interventions, (5) maximising the efficiency and effectiveness of interventions, (6) actors, standards and guidelines, (7) resilience capacity and sustainability of interventions, (8) humanitarian-development nexus (HDN), (9) Advocacy priorities and (10) knowledge and evidence gaps.

1. Understanding the main drivers of acute malnutrition

An RLR is not a tool for conducting a causal analysis of determinants of AM, nor for systematically reviewing health and nutrition determinants such as those identified in the multiple studies and surveys conducted in the DRC. However, an overview of the main drivers, as prepared by the consulting team at inception, is available for reference in **Annex 4**.

Reflections based on rapid causal analyses and perceptions from stakeholders gathered during discussions and field visits were illuminating. Stakeholder discussions and field visits frequently cited the following causes of malnutrition: poverty, large family size, recurring infections and inadequate access to health care and food insecurity (including lack of access to and/or production of nutritious food, as well as knowledge about how to prepare it). Interestingly, food insecurity dominates the response, often crowding out interventions to address other key causes.

Various studies at different moments have considered these issues. Recently, a nutritional resilience study in Kwango Province described determinants from a dynamic systems perspective, in which multiple contextual and intervention factors interact at and between the individual, HH, community, sectoral and state levels. The authors developed an intervention framework that encourages strengthening leadership for collective bottom-up actions for improvement from within (PRONANUT, ACF, and Tufts 2019). That study also underlined the robustness of the UNICEF undernutrition framework (UNICEF 1990), finding similar immediate, underlying and basic causes of nutrition outcomes in comparable vulnerable, low-income settings. In addition, it underlined 'suboptimal social functioning linked to a lack of governance, people's low confidence in their own potential and gender relations that overburden women' as interacting factors requiring concrete actions. The study's framework puts the HH at the centre, linked to the collective management of the commons, and offered adaptable solutions aligned to needs and expectations. Though within Kwango and across and within other provinces there will be cultural and governance specificities, this type of approach could be useful in other areas to consider the myriad drivers and forms of malnutrition. The framework could be a useful tool to create an enabling environment for emergency response interventions to sustainably strengthen health and community systems by building individual, HH and system resilience and encouraging transformative change. Translating the lessons and tools from this study and the other ongoing analyses (**Annex 5**) may help improve intervention approaches.

The complexity of the context and interdependent determinants that act upon multiple levels simultaneously underline the importance of a systems perspective on malnutrition, and a more 'comprehensive' approach of the malnutrition problem is needed, combining continuum of care and person-centred care. Both concepts put the well-being of the mother-child pair, rather than malnutrition, at the centre, providing a different perspective on causes and needs and allowing a more integrated approach to providing services. Such a 'comprehensive' view of the continuum of mother-child pair–centred health care will stimulate identifying and addressing the needs of a perceived health priority, including (mal)nutrition, the pair encounters in space and time and across the life cycle—in other words, across:

- Biomedical, psychological, socioeconomic, ecological and cultural needs (connecting systems).
- Specialities of care and levels of the health pyramid to protect, promote, prevent, detect early, prioritise and treat according to severity or complications (horizontality of the health system).

- Levels of the health care system from community care to policy and decision-making (verticality of the health system).
- The life cycle, addressing age-specific needs and connecting services and care over time (continuity [time factor] of care).

Currently, many nutrition actors define the continuum-of-care concept as linking preventive and curative approaches to ensure optimal nutrition. The expanded concept proposed above, which puts the well-being of the mother-child pair at the centre, can help to prioritise needs, identify key causes of undernutrition, respect the choice and preference of the mother, address health needs comprehensively over time and creatively look for available solutions and untapped resources. For example, a mother with a malnourished child may have another child with competing priorities; preparing nutritious food or seeking health care may take time away from other responsibilities; a mother may have difficulty bonding with a child conceived through rape; or, posttraumatic stress or bereavement may inhibit adequate care giving.

Drivers of malnutrition, as per the conceptual framework, are robust for any context. However, what matters in a specific (and continuously changing) context is the dynamic interaction of determinants, which may have reinforcing or balancing effects and generate fluctuating outcomes in the nutritional status of an individual and a population. The cause of an emergency peak, or of an individual child's vulnerability, is the result of complex interacting factors that are difficult to understand and are much more than the sum (or list) of drivers. The DRC context calls for a 'fragile contexts' approach that blurs the humanitarian-development divide, strengthens the triple nexus (including peace) and brings actors and resources together to support the same goals, promoting a goal-based rather than a results-based approach (see **Section 8**).

Individuals (e.g. care receivers, care givers, influencers) or groups are social actors who make choices and influence behaviours (see **Section 6**). Contextual variation and vulnerability therefore need to be understood as a result of interacting factors of behaviour, biomedical and environmental shocks and system failure, as per examples (**Box 1**) encountered in the field visits. This complexity needs to be understood and addressed, not simplified.

Box 1. Real-life complexities of child health care and nutrition management

A mother has four children, one with SAM and the others healthy. The SAM child was born during a crisis, in which the father was killed and the family livelihood lost, putting the mother in a dire situation.

A mother in the hospital has three children, one daughter with severe SAM and the others healthy. During the previous 8 months, the child with SAM had multiple episodes of infections, for which the mother sought care from various health care providers. However, the care may not have been optimal, and the child finally arrived at the hospital with severe oedema. The SAM service programme had closed temporarily (contract break), but a small amount of therapeutic milk was available, and the girl eagerly took it and began her recovery. Interestingly, therapeutic foods were available in a warehouse 100 m from the hospital but had not been released because the renewed contract had not yet been signed.

In both examples, the system was a major determinant in the causal pathway, the service received and the health outcome. The causal burden of the failure was not generated by the child's biomedical system but rather by a combination of inadequate functioning of the health and socioeconomic systems.

Recommendation 1: Increase understanding of the drivers of AM

Translate the Kwango nutrition intervention framework into a programmatic systems tool and conduct an implementation study to test whether it improves the resilience capacity of a vulnerable population. First, the theory-driven implementation research study would develop, test and refine the tool and explore how, for whom, in what circumstances and why it worked (or not). Subsequently, the refined tool and generated data would allow the development of a system dynamics simulation model (e.g. agent-based modelling and stock-and-flow analysis) to complement statistical analysis models, which could be further developed to support continuous learning (e.g. serious game). The learning objective would be to improve the understanding of drivers of wasting and stunting and their relation to mortality and to offer a tool to support continuous learning on nutrition resilience, contributing to strengthened local governance capacity.

Integrate into health systems strengthening (HSS) activities methods that explore the complex dynamics of malnutrition determinants in priority areas and use a comprehensive people-centred continuum-of-care approach (which also promotes integrated health care) to learn and understand how to tailor and (continuously) adapt interventions to specific fragile/changing contexts. This could be started via an implementation research study integrated into planned/ongoing HSS activities and may cover different aspects in different ways, promoting collaborative learning and adaptive management—for example:

- Applying the comprehensive mother-child pair–centred continuum-of-care approach: Partners assisted by a systems expert could first map what to do, how and at which level with existing resources and then next plan how to integrate simple key steps into ongoing (learning and discussion) meetings using, for example, a simplified quality improvement (QI) tool based on the plan-do-verify-adapt cycle (Deming cycle), mind mapping or rich pictures. They could then monitor improvements and consolidate learning (see the continuous quality improvement [CQI] approach in **Sections 3 and 4**).
- Developing and testing a system dynamics simulation model with data generated by HSS monitoring that provide 'partial' learning in complex changing contexts (see the Kwango recommendation above).

2. Information for assessing, monitoring and evaluating nutrition crises

In the DRC, several systems, methods and tools assess, monitor and periodically evaluate nutrition situation vulnerability and peaks (surges). In particular, there are two nutrition-specific emergency alert systems which are a bit intertwined. The first, the PRONANUT's Nutrition Surveillance, Food Security and Early Warning (*Surveillance nutritionnelle, sécurité alimentaire et alerte précoce*, or SNSAP), existing since 2010, collects monthly data on six indicators,[3] including screening and admission to treatment, from one or two sentinel sites at young child health clinic 'preschool consultations' (*consultation préscolaire*, or CPS) in a health zone. The 'Alert System' triangulates monthly data at the national level with data from other reliable sources, such as the District Health Information System II (DHIS2). Next, it verifies the validity of the alert with a Standardized Monitoring

[3] The SNSAP 'Alert System' uses the following key indicators to score the severity of nutritional crises: (i) proportion of children with wasting (mid-upper arm circumference [MUAC] below [<] 125mm) is equal or above (≥) 20 percent, (ii) number of SAM admissions in treatment centres shows a 30 percent increase in the past 3 months, (iii) proportion of pregnant women with MUAC < 230mm is ≥ 20 percent, (iv) proportion of lactating women with MUAC < 230mm is ≥ 20 percent, (v) proportion of CU5 with nutritional oedema is above (>) 5 percent and (vi) proportion of low birth weight is ≥ 10 percent. Indicators are triangulated with data on disease outbreaks; food production, prices and consumption; and water, sanitation and hygiene (WASH). An alert is declared if four out of six indicators and half of the aggravating indicators surpass the set cut-off based on the past three-month data.

and Assessment of Relief and Transition (SMART) survey, which takes a minimum of six weeks. However, the system is not robust and cannot cover all alerts; in the previous month, only 2 out of 47 alerts were verified by a SMART survey, and in 2019, up to October, 7 of the 24 surveys conducted showed a wasting prevalence (based on MUAC < 125mm) under 10 percent and 3 showed a wasting prevalence above 15 percent. Moreover, health zones with an important surge in CU5 AM may be classified as 'to closely monitor' if fewer than four indicators pass the threshold, which is common. For example, in the second quarter of 2019, ten health zones with wasting prevalence over 30 percent were classified as 'to closely monitor', whereas by international norms, such a prevalence is generally considered 'extremely critical' (Integrated Food Security Phase Classification Global Partners 2019). Three particularly surprising examples amongst the ten health zones 'to closely monitor' were Bunkeya, with a wasting prevalence of 51 percent; Saramabila, with 46 percent; and Kongolo, with 45 percent (PRONANUT 2019b). In contrast, two health zones classified as 'alert'—potentially entitling them to further support—had 17 percent wasting prevalence (which per international norms is a 'critical' level but which is still far below the levels in the three zones mentioned above). Moreover, in the context of low access to and usage of health services, the SNSAP's reliance on the weak CPS to generate data may be a serious impediment to the representativeness and utility of the data in monitoring vulnerability or triggering an alert.

The second nutrition-specific emergency alert system, the 'Prioritisation System' of the NNC, was established in 2018, based in part on SNSAP, to address the dearth of timely information to monitor the nutritional situation and better identify vulnerabilities. It assesses information from reliable sources obtained in the months prior to the quarterly analysis (e.g. nutrition and mortality surveys such as the national and provincial Demographic and Health Surveys and Multiple Indicator Cluster Surveys, zonal or territorial SMART surveys and the Integrated Phase Classification [IPC] system of the food insecurity situation) to generate a score based on seven key indicators.[4] The score prioritises zones as high, medium and low and shares classification in a quarterly bulletin. For example, in October 2019 it classified 161 out of 519 health zones (20 provinces out of 26) as high priority. This classification informs the annual HRPs and biannual coordinated response actions of partners. Interestingly, however, according to personal communication from I. Lezama, 10 December 2019, health zones classified as 'stable' carry three-quarters of the burden of SAM, suggesting that the prioritisation system may not be sensitive enough to identify the need for a SAM response surge.

The two systems exist in parallel; they analyse information from both the same and different sources to provide a classification at a different time with different severity results that are presented in their respective quarterly bulletins. Neither is optimal for identifying nutrition crises as their prioritisations do not always coincide. Both systems trigger a nationally decided response that can take various forms, depending on the factors which the respective system identifies as key and available resources; the lengthy procedure may delay the response by many months.

An alternative community-based e-nutrition data platform could significantly enhance the quality of the SNSAP. This could be achieved by strengthening the involvement of existing community organisations and groups (e.g. ReCo, CAC, CoDeSa, women's *groupes de soutiens*) in monthly community- and health facility–based growth monitoring and promotion (GMP) activities as part of

[4] The Prioritisation System of the NNC uses the following key indicators to score the severity of nutritional crises: (i) prevalence of GAM; (ii) prevalence of SAM; (iii) SNSAP information; (iv) classification of the latest IPC[(v) population movement resulting from armed conflict, community conflicts or natural disasters; (vi) disease outbreaks of cholera, measles and Ebola virus; and (vii) prevalence of stunting. Priority 1 zones have GAM ≥ 15 percent and/or SAM ≥ 5 percent and food insecurity phase 4 of IPC. Note that GAM and SAM prevalence are based on weight-for height <-2 and <-3 Z-score, respectively, and presence of nutritional oedema.

CPS and community-based nutrition (*Nutrition à assise communautaire*, or NAC, described further below). Moreover, GMP combining both MUAC to detect wasting and weight-for-age to detect ponderal growth faltering in CU5 will detect children with both wasting and stunting (Briend, Khara, and Dolan 2015), who are most at risk of mortality (Schoenbuchner et al. 2019), and promote early corrective preventive and treatment actions (which is the critical 'promotion' portion of GMP).

Two other systems may support the nutrition surveillance system in providing reliable data to identify crises earlier. One, the DHIS2, will soon contain a functional nutrition module. The other, the weekly Notifiable Diseases Surveillance System (*Maladies à déclaration obligatoire*), which is used in other countries with a high malnutrition burden for weekly monitoring of the severity of the disease burden, could include few key malnutrition indicators in the DRC. Both systems are linked and have the potential to monitor surge peaks during a nutrition-sensitive shock when immediate action is required, such as an epidemic of cholera, measles or Ebola virus disease, or population displacement.

Surveys are useful surveillance tools to assess nutrition situations in defined areas and during a defined time, providing a snapshot of the situation. When repeated over time, they provide trend data that allow monitoring of changes in nutrition. They are sensitive to seasons and trends. Since it takes a few weeks from start (decision) to end (analysis), results are slightly delayed and thus do not provide real-time data. Also, it may be difficult to understand when the snapshot was taken in relation to the surge peak. Because surveys are costly, resource intensive and limited in scope, they should be used only when appropriate. Small-area surveys provide small-area results; large-area surveys provide large averages that mask small-area variations and can thus leave hot spots undetected. Moreover, surveys rarely capture why and how changes came about, whether they were due to interventions or changes in the socioeconomic, ecological and political systems. A good narrative based on a qualitative inquiry is essential to interpret the results. For example, a nutrition survey using the rapid or classic SMART methodology is useful to assess the vulnerability of a population at the zonal or territory level, and repeated surveys are useful to monitor trends. Surveys that study knowledge, attitudes and practices are useful to better understand which behaviours to improve and may reveal how to do so. Repeated Demographic and Health Surveys and Multiple Indicator Cluster Surveys provide valuable data at the national and provincial levels to evaluate changes over time (though they do not include MUAC and nutritional oedema indicators).

The Multisectoral Initial Rapid Assessment (MIRA) tool of the Inter-Agency Standing Committee (IASC) Cluster is another useful tool for quickly assessing the severity of a new crisis, taking into consideration multisectoral drivers of vulnerability and ranking priority needs and affected areas to inform strategic decisions (IASC Needs Assessment Task Force 2015). It includes a MUAC screening tool, which provides a quick appraisal of the severity of wasting and can also be used separately. At the start of 2019, the NNC updated the MUAC screening tool, but partners decided against using it because screening is usually done on a nonrepresentative sample of a population, so results are absolute numbers that may not be expressed in prevalence and extrapolated to the larger group; furthermore, the less rigorous results are not as appealing to decision makers, and screening data are often misused and misinterpreted. However, the food security; health; water, sanitation and hygiene (WASH); and Nutrition Clusters in the DRC are working to have in 2020 an updated joint MIRA tool.

Recommendation 2: Strengthen the nutrition surveillance system

Review the effectiveness of the nutrition surveillance and alert system to identify changes in trends and hot spots at health-area and health-zone levels, prioritise areas for emergency response (timeliness, cost, feasibility) and explore ways to strengthen the system. These can be accomplished by:

- Strengthening **community-based GMP with MUAC and weight-for-age Z-score indicators for early detection of growth faltering in CU5 at highest risk of death,** which include screening activities run by mothers and CHWs/ReCo equipped with the required skills and tools (e.g. weighing scales, MUAC tapes, registers, national child growth charts and adapted nutrition counselling materials).
- Adding a method to capture system dynamics to detect drivers of change in the socioeconomic, ecological and political context or emergency response strategies with fluctuating resource availability (e.g. a history behaviour-over-time graph to collect and map key data for easy and better interpretation). Such a method would improve understanding of drivers, prompt action to promote good nutrition, better prevent and treat malnutrition and ensure collaborative learning and adapting through stepwise piloting in high-burden areas.
- Including an internal audit system for sentinel site data validity that replaces the SMART survey as an audit tool, which may be unfit for this purpose.
- Decentralising sentinel surveillance support to the health zone and province levels to increase ownership and motivate QI.
- Exploring the use of mobile or digitised, Internet-accessible reporting and data analysis systems.
- Expanding surveillance sensitivity by increasing from two to five sentinel sites per vulnerable zone.
- Continuing to pursue the development of a country-adapted MIRA cluster tool, with or without the MUAC screening tool, and retain it for initial alerts in the surveillance system.
- Linking a comprehensive health and nutrition surge approach for key vulnerabilities (linked with the Notifiable Diseases Surveillance System), contingency planning and strengthening of resilience capacities (see **Sections 3** and **5**).
- Exploring the robustness (effectiveness) of the Prioritisation System of the NNC and deciding how to merge the two alert systems into one.
- Ensuring systems collect and analyse data on key indicators (i.e. nutritional oedema, wasting based on MUAC and weight-for-height, combined wasting and stunting, underweight, and drivers beyond food security) and decide what data are collected when; not all information systems should cover all indicators. (With new narrative on wasting and stunting, nutritional oedema may be crowded out).

3. Acute malnutrition response strategies

Government, donors, the United Nations (UN) and emergency partners—coordinated by the UN Office for the Coordination of Humanitarian Affairs and supported by the IASC Cluster Approach—collaboratively develop the annual HRP based on the Humanitarian Needs Overview, which classifies priority health zones for a coordinated response. In addition, one of the two alert systems, with mutual decision by the national and provincial PRONANUT, may also trigger a rapid response and release pre-positioned resources.

Emergency nutrition interventions may differ in strategy, content and duration, depending on the identified causes, sources and availability of resources, including competencies. The NNC procedures encourage a coordinated response and set standards to ensure the quality of interventions described in the 2016 NNC guidelines (DRC MOPH 2016c). The guidelines propose minimum packages of interventions to promote healthy behaviours, prevent and treat malnutrition and improve WASH, as well as conduct nutrition surveillance. Where appropriate, actions are either aligned with or adapted to guidelines such as the national guidelines for AM management (DRC MOPH 2016d) or describe different procedures for a specific emergency response. Interventions are expected to build upon and expand or strengthen ongoing services or start up essential services

based on need and to strengthen resilience capacity. Suggestions for the NNC guidelines which are currently under revision are summarised in **Annex 6**.

In the DRC, emergency interventions often must begin from step 0 (as no similar services were provided before) or from a very weak basis (e.g. picking up from where a previous intervention had ended). For example, strategies for promoting good nutrition and preventing malnutrition exist, but their implementation is limited. Major efforts since 2015 to reenergise CPS and NAC[5] are under resourced and are a weak basis on which to build any emergency response. However, community nutrition actions hold the key to successful promotive, preventive and curative nutrition in both development and emergency contexts. Iodised salt provision and biannual vitamin A supplementation, as well as deworming during child health days, are long-standing national programmes with acceptable coverage and could be considered for elements to emulate. However, the management of AM had not been integrated into routine child health services, and development intervention support has been piloted but is not yet strong. Mostly, UNICEF, WFP and nongovernmental organisation (NGO) partners have provided financial and technical support and support for supply, training and supervision. However, this situation is expected to improve gradually through increased and scaled up support for health and nutrition interventions (e.g. from DFID and a sizable new investment through the World Bank in six provinces in 2020, including SAM management in the development context). It will be useful to understand how their combined coverage compares to the total need.

Response strategies depend on who leads or can access resources. Therefore, the resource source and amount, rather than need, define the design, duration, intensity and comprehensiveness of the response. Based on learnings in this RLR, an appraisal was carried out of emergency response models for preventing and treating AM, including their appropriateness to the DRC context (see **Table 2**). Some models may have been missed or were not visited. For example, in Tanganyika, WFP has helped merge the management of MAM with a comprehensive approach to prevent malnutrition, but it is unclear whether SAM cases are also covered. The integrated management of acute malnutrition (IMAM) in the DRC is not a routine child health service but is instead an emergency intervention in select hot spots where resources and competencies from partner agencies are available. The PRONANUT is integrating IMAM into routine health services in one health zone of Ituri Province, but funding is unclear, and previous attempts in the DRC have faced challenges.

The appraisal roughly indicates that most emergency interventions focus on the management of AM and include weak preventive community activities. Moreover, many of the emergency interventions for preventing and treating AM come too late, are too short, do not cover all the needs and do not strengthen existing structures or build health and community system resilience. Moreover, given their short duration, interventions may create false expectations, first motivating and later demotivating local stakeholders or limiting local creativity, or have other negative consequences. The leadership role of PRONANUT did not surface clearly at the different levels of the system to steer the emergency response with a vision.

[5] NAC (which differs from the nutrition assessment, counselling and support model) is a PRONANUT model consisting of (1) ReCo, community volunteers who provide a basic health services package (behaviour promotion, including IYCF through HH visits and group sessions; basic commodities, including zinc, oral rehydration solutions and paracetamol; and referral to health services and social safety nets); (2) community organisations, including the animation cell (CAC) and the health development committee (CoDeSa), which selects and holds ReCo accountable; (3) the Health System, which trains, manages and supervises ReCo and reports their data into the health information system; and (4) NGOs for initial support (Mugabi 2017).

Table 2. Quick appraisal of emergency response models for nutrition in the DRC.

Potential advantage	Potential disadvantage	Appropriateness
Rapid nutrition response (pre-positioned supplies & team) as a stand-alone temporary intervention (e.g. ACF in various locations, such as Kwango)		
Partners can respond to a 'new' emergency alert identified by the 'Alert System'. Prearranged contracts are in place and a response can be triggered quickly by a confirmed alert without needing donor approval; pre-deployed team and resources are quickly mobilised. Mobility of movement to a new zone is independent from the geographically defined or assigned impact area of a partner agency.	Pre-deployment of team and resources is very costly. Isolated stand-alone intervention limits change. Short-term contracts with limited scope come too late and end too early; continuity is not assured. Contract period may not well match the peak of the need because of the alert-response lead time, despite pre-positioning of resources.[6] Partners are new to the zone, may come with limited knowledge of the context and must build (temporary) partnerships from scratch. Handover at the end of the contract is unrealistic, and exit is extremely difficult. Results, cost effectiveness and impact are difficult to evaluate.	Available resources cannot cover the demand for responding to alerts. The ad hoc response can save lives but can neither improve a situation nor build capacities, nor can it bring lasting change. Response activities may lead to unintended harmful consequences. For example, increased support for a limited time may disrupt health facilities and communities and create unrealistic expectations; even though the need is still urgent, support may end abruptly. The intervention is believed to have good results (swift response is positive), but its cost effectiveness / opportunity cost are not explored.
Emergency nutrition response (identifying a team and providing supplies) as a stand-alone temporary intervention (e.g. COOPI in Kasaï and Kasaï Central, Première Urgence Internationale in Kasaï Central)		
Prearranged financial resources may quickly deploy response teams. Partners can respond to an emergency need identified by the humanitarian response plan or 'Prioritisation System'. Interventions are planned and part of a larger coordinated response strategy. Partners can be selected based on competencies and asked to cover large areas. The geographic presence or prior presence of the partner in the area	The intervention package is predefined, impeding context adaptations. Contracts are strict in nature and allow little flexibility, as they are defined by rigid logical frameworks and budget lines. Though it is possible that this can be overcome, the contract period may not match the peak of need because of the long alert-response lead time (important because acute malnutrition should have been addressed early to build individual resilience), and continuity is not assured. Teams and interventions are set up and broken down in a short time frame, and the insecurity of renewal of contract discourages finding durable solutions. The geographic absence of the partner in the area may delay setup and adaptation to the context.	Available resources cannot cover the demand for responding to alerts. The limited and isolated response can save lives but cannot improve a situation, build capacities or bring lasting change. Unintended consequences may do more harm than the good the response brings (same as above). The intervention is believed to be efficient and effective, but this assumption lacks evidence.

[6] This point (as well as the next three) may be most useful as an example of a challenge with such a model generally, rather than specifically, as the DFID and ACF have a contract for a set number of emergency interventions, which can be triggered by a confirmed alert without awaiting DFID approval.

Potential advantage	Potential disadvantage	Appropriateness
helps the intervention setup and adaptation to the context. The period of intervention may be longer than 6 months, contracts may be renewable, and the exit strategy may be planned and build upon existing strengths. Complementary partners may collaborate better and learn from each other.	Different life cycles of programmes of other partners may hamper collaboration, encourage duplication and increase risk of doing harm.	
Emergency nutrition response added to a temporary 'other' emergency intervention (e.g. World Vision in Kasaï Central)		
Partners can respond to an emergency need identified by the 'Prioritisation System' or 'Alert System'. The contract period may better match the peak, if lead times are respected. Because of the geographic presence of the actor, the intervention may start quickly and can easily piggyback on ongoing interventions.	The intervention package is predefined and allows little context adaptation or flexibility. Responses to alerts in zones with partners' presence may be favoured. Partners may be asked to take on the intervention without having the competency. Contracts are strict in nature and allow little flexibility, as they are defined by rigid logical frameworks and budget lines. The contract period may not match the peak of need because of the alert-response lead time (as above), and continuity is not assured. Teams and interventions are set up and broken down in a short time frame, and the insecurity of contract renewal discourages finding or investing in durable solutions. Different life cycles of programmes may hamper collaboration, encourage duplication and increase risk of doing harm.	Available resources cannot cover the demand for responding to alerts. The more comprehensive response can save lives but cannot improve a situation or bring lasting change. Unintended consequences are not considered (same as above). The intervention is believed to be efficient and effective, but this assumption lacks evidence.
Emergency nutrition response added to an ongoing development intervention (e.g. IMA / Santé Rurale in Kasaï and Kasaï Central)		
Partners can respond to an emergency need identified by the 'Prioritisation System' or 'Alert System'. Because of the geographic presence of the actor, the intervention may start quickly and can easily piggyback on ongoing interventions.	Intervention in a zone depends on the geographically defined or assigned impact area of a partner agency. Responses to alerts in zones with actors' presence may be favoured. Actors may be asked to take on the intervention without having the competency.	This is a desirable situation, linking emergencies (surge needs) with a development intervention and improving resilience. The long-time presence of a partner working with and through local institutions can build upon and unlock local capacities. PRONANUT could support this response with an assessment/mapping of geographical coverage

Potential advantage	Potential disadvantage	Appropriateness
Interventions can be planned and build upon a larger coordinated intervention strategy with long-term vision, if integrated into the system and budgets. Partners know the context and can coordinate their activities with a public health approach (easier to avoid duplication and harm; emergencies do not crowd out essential services).	The contract period may better match the peak time frame, if lead times are respected; but with this example, the lead time may be very long (as with the second and third models above).	of development interventions that include nutrition response or would be conducive to having that complement added. Further, advocacy may be needed for convincing development actors that do not currently sufficiently incorporate treatment for wasting into their programmes.
Emergency nutrition response setup as a routine child service (e.g. PRONANUT in Ituri, or the approach planned for DFID's new programme, which will include nutrition, including SAM treatment from the start)		
The response is built upon available resources and competencies, which may make them sustainable, if integrated into the system and budgets. The contract period may match the peak, but much depends on the strength of individuals rather than the institution.	The intervention period may match the peak, but resources may limit the quality and the duration. Speed and quality depend on the strength of individuals rather than the institution. There have been instances in which this model has only reached a few easily accessible health centres and in which accountable entities became aware of diversion and supply chain issues, so these must be monitored carefully.	This appears to be the most desirable situation, as linking an emergency (surge) and development intervention improves resilience; however, there are caveats (see left). Working with and through local institutions can build upon and unlock local capacities.

Abbreviations: ACF, Action contre la Faim; COOPI, Cooperazione Internazionale; DFID, UK Department for International Development; DRC, Democratic Republic of the Congo; IMA, Interchurch Medical Assistance; PRONANUT, *Programme national de nutrition*; SAM, severe acute malnutrition.

The question about what to do better and how is difficult to answer without an evaluation that explores the strengths and weaknesses in different contexts. The immense unaddressed needs in both development and emergency settings in the DRC demands leapfrogging and out-of-the-box thinking by applying local and new learning. Some specifics from the learnings are below, having considered global guidance.

Emergency interventions (try to) temporarily fill the gaps in the weak health system. They oscillate between emergency and development approaches, failing in both. Substantial evidence suggests that they may impact mortality (Stewart et al. 2019); however, other research, plus personal communication from P. Bahwere, 1 December 2019, indicates that nutrition interventions often come too late to address pathophysiological needs to prevent malnutrition during a crisis (Isanaka et al. 2009, 2010; Langendorf et al. 2014). The DRC context, where the burden of SAM is spread across many pockets in both stable and priority areas, calls for hybrid emergency nutrition interventions, adapted to comprehensively fill gaps in both emergency and development contexts and bridge both contexts by building resilience capacity and sustainable services. On the other hand, development interventions need to include and strengthen nutrition services in routine health approaches, prepare for contingencies and strengthen surge capacities. In the DRC, there are good examples of collaboration between

development and emergency health and nutrition interventions or partners, in which resources are not duplicated and support and learning works both ways. These examples need to be promoted where possible.

Standard intervention 'packages' miss opportunities to explore and use existing community resources. Communities are creative entities, and local initiatives have brought incremental changes or filled contract gaps with locally available resources. For example, in one health area, the local community system (including the CAC, CoDeSa and community leaders), together with the NGO partner, had identified local opportunities to support vulnerable HHs to access nutritious foods and continue healthy behaviours during the four- to six-month contract gap. In another, the community support system helped the caregiver gain access for the recovering SAM child to nutrient-dense foods from a home garden. When emergency programmes end, communities and HHs continue to look for solutions to their problems and may do better if continued peer support in the community could further build on the acquired learning and skills.

Partners in the DRC and globally are intensively exploring ways, and building knowledge and evidence, to improve nutrition interventions to reduce prevalence and manage wasting—for example,

Recommendation 3: Improve AM response strategies

Make the comprehensive response packages more fluid (building upon / further strengthening the existing structures and systems that align with / flow into a development approach) *and more flexible* (allowing context adaptations and QI by adapting the NNC guidelines, allowing changes in action plans described in logical frameworks—such as the use of the plan-do-verify-adapt cycle—and strengthening implementers' expertise).

Given the high burden of low birth weight and early growth faltering, *explore the feasibility of introducing the* Management of At-risk Mothers and Infants (MAMI) approach (Kerac et al. 2015), with its tools for early detection and management of AM in (often weakly covered) infants under 6 months old with growth faltering in primary (outpatient) care or secondary (inpatient) care.

Promote the use of a CQI approach of child health and nutrition services (practical application of the plan-do-verify-adapt cycle to identify bottlenecks, propose change, test and verify improvements to learn together and increase ownership and motivation) by using simple, practical tools, of which several examples and applications exist, such as the COPE® tool[7] (EngenderHealth 2003) and the Ministry of Health Uganda CQI manual (Ministry of Health of Uganda 2015).

Design emergency nutrition interventions as hybrid interventions that establish (when absent) or strengthen (when weak) essential health services. Use two entry points for the hybrid design in highly vulnerable areas: (1) In development settings, strengthen the system and plan for contingencies on a surge approach for key health and nutrition vulnerabilities, which triggers increased support when need surpasses capacity (link with emergency) (CONCERN Worldwide 2016); the original tool will need to be simplified and include key vulnerabilities beyond SAM. (2) In emergency settings, use a resilience approach that builds capacities and prepares for services' sustainability as needed (link with development).

Develop and make available a country-adapted decision tree of nutrition-related actions for preventing and treating AM with options (including information on evidence of impact, cost efficiency and complexity), depending on variations in contexts and resources (and when a comprehensive package is missing or continuity cannot be assured), stimulating creativity for local solutions and unlocking community capacity (aiding flexibility); added to the NNC guidelines. As a resource, see the Global Nutrition Cluster MAM decision tool (Global Nutrition Cluster MAM Task Force 2017).

Map the geographical coverage of development interventions of multisectoral nutrition, explore how their coverage overlaps with emergency interventions and needs and decide next steps to collaborate and improve strategies to cover highly vulnerable and at-risk populations in fragile settings.

[7] COPE (client-oriented, provider-efficient services) is a registered trademark of EngenderHealth.

by better targeting vulnerable populations, detecting growth faltering or those at high risk of death early by combining wasting and stunting, simplifying and optimising treatment protocols, reducing the cost of therapeutic products, assuring good-quality and sustainable scale-up of services and engaging CHWs/ReCo in treatment. The engagement of the DRC partners in this quest is encouraging and paving the way for positive change.

4. Monitoring and evaluating interventions

Emergency nutrition interventions have been designed as results-based programmes, with their activities and monitoring and evaluation (M&E) system described in logical frameworks as a linear pathway.[8] The framework is a great planning tool, or Theory of Action, explaining what actions will bring the expected change. Progress and achievement are monitored by comparing results with what was planned. However, this usual way of doing business has limitations for fast changing contexts, such as in the DRC, where the plans of today may not be the most appropriate or relevant for tomorrow, restricting adaptive management to achieve the desired change.

The M&E system of emergency nutrition interventions in the DRC operates at various levels: the donor agency; the NNC as a group of partners; the individual partner agency; the PRONANUT nutrition system at the national, provincial and zonal levels; and the DHIS2 and nutrition system at the zonal and health facility levels. The systems are assumed to be compatible and linked, but they do not electronically communicate with each other. In practice, this may be challenging as objectives, data collection, analysis and reporting systems differ, and paper reporting is common, leading to multiple manual data entry and, as such, considerably increasing the risk of error and level of effort.

Information for planning

The intervention package—informed by the 'Prioritising [or] Alert System'—prescribes what resources and for what activities to plan (a minimum package of multi/sectoral prevention and treatment), for whom (CU5 and PLW), for how long (commonly 6 to 12 months) and where (health zones with highest priority). The intervention package and duration are agreed in the contract, and details are defined in the logical framework.

For planning preventive interventions, the target population of PLW and mothers/caretakers of CU5 and the number of community leaders, groups and CHWs/ReCo are derived from zonal health projections. For planning treatment interventions, the target population (estimated number of children expected to have AM during the intervention period) is estimated by summing estimated prevalent cases (number of cases at the start of the period) and incident cases (number of cases expected to develop the illness during the defined period). Getting this step right is crucial to make sure resources are in place and to prepare activities.

Estimating caseload of AM in CU5 has been a difficult hurdle because of the many unknowns (e.g. unknown prevalence in the absence of a recent survey, unknown and unstable incidence, changes in population in the covered period). A nutrition survey may give a snapshot of the situation now

[8] The logical framework describes which resources (inputs) allow activities (actions) to produce outputs (results) that influence changes in the target population (outcomes) that then, together with other interventions, contribute to a desired change in the condition of the population (impact).

(prevalent cases) but tells little about the situation to come, unless a more in-depth analysis of the context can reveal risks and vulnerabilities and detect trends. At the global level, the annual incidence conversion factor (1.6) or correction factor (2.6) allows estimation of a theoretical annual caseload and is standardised across countries.[9] The basis for assuming that duration of illness is the same and prevalence and population figures are stable is weak, and hence incorrect caseload estimates may induce poor country-specific planning. In some countries this has led to recurrent stockouts, which cause treatment interruptions, mistrust of health care and carer demotivation. Recent UNICEF-led research conducted by Harvard University (report pending) suggested a conversion factor of 5 as more appropriate for the DRC. DRC partners are waiting for global operational guidance, which could be delayed by concerns about the surge in resource needs to cover the even greater caseload. Annex 6 explains and further comments on the incidence conversion from prevalence to estimate annual caseloads.

Information for monitoring progress

In 2001, at the inception of the community-based management of AM approach and for the sake of generating evidence, global actors developed an expanded monthly monitoring system. The same elaborated system is still in place in most countries, yet in the DRC it seems to have lost some of its strength. For example, spreadsheets are missing the pivot tables and automated analysis of key indicators and trends over time, which give instant feedback on performance to health actors at various levels. The stand-alone monthly reporting system is electronically shared but not digitised and hence duplicated at the various levels (i.e. parallel reporting by the MOPH and partners for donor purposes). The IMAM database is consolidated at the national level by UNICEF and the PRONANUT but not shared; results are reported in the SNSAP and NNC quarterly bulletins. Data are amalgamated and analysed only at the national level, depriving lower levels of the ability to use them to tailor training, supportive supervision or other CQI approaches. No steps have been undertaken to make it more user friendly (e.g. including analysis in the spreadsheet, converting to a mobile or electronic reporting tool by using smart phones or tablets and having Internet access).

For preventive interventions, the monitoring system is much lighter and less developed and has a simpler monthly monitoring system in place. The consulting team could not ascertain how much is partner-managed and/or partner-driven and how ownership and accountability are shared with the community. Again, if implementation challenges (such as current practices, as well as lack of access to electricity and/or mobile data coverage in some centres) can be overcome, mobile or electronic reporting could simplify procedures and increase access to information for QI. The newly designed nutrition module of the DHIS2 may address the above problems, but if not, some other way should be found to address them. Moreover, the expanded DHIS2 could help bring together the various parallel structures of supportive supervision and management that duplicate efforts for different services by different health actors covering the same health workers and volunteers in the same health facilities and communities, and rationalise resource use. Moreover, if well-conceived and digitised, the DHIS2 may monitor and compare behaviours amongst a multitude of indicators that should improve our understanding of how wasting and stunting outcomes interact.

[9] The duration of untreated AM illness in stable conditions in a historic cohort was found to be 7.5 months. The conversion factor of 1.6 (dividing 12 months by 7.5 months), when multiplied by the population figure, estimates annual incident cases from prevalence. The correction factor of 2.6 (adding 1 to 1.6), when multiplied by the population figure, estimates annual caseload by adding prevalent cases at the start of the year to the annual incident cases.

Monitoring data are meant to be used to verify whether progress is according to plans so that timely action can be undertaken to address shortcomings. This implies that what is planned at the design stage remains the same throughout the project life or that the context in which the interventions take place remains the same. This is rarely true, particularly in contexts such as those in the DRC. First, emergencies are characterised by fast changing situations in which populations move and many actors intervene, and second, the interventions themselves interact and change the context (which is the intrinsic aim of any intervention). In other words, because contexts and needs may change, monitoring may indicate progress but not give a true picture of needs. It may also generate expectations that do not match reality. Comparing the results of a current activity with the planned activity, but not the needed activities and scope, may indicate progress that is correct but out of date. For example, treating 90 out of 100 planned cases looks good but is not as impressive if there are 300 cases in the community. Further, comparing progress to a baseline with such weaknesses is not helpful for creating a CQI environment, and contact coverage (proportion of identified SAM cases accessing treatment), effective treatment (quality of treatment or proportion of admitted SAM cases being cured) or effective coverage (proportion of SAM cases in the community being cured), to name a few, are more useful indicators to understand performance and effective progress. An effective surveillance system could expand the picture of programme effectiveness compared to the need (rather than the plan), stimulate adaptive management and minimise the need for resource-intensive coverage surveys.

Adding a Theory of Change (TOC) to the Theory of Action, as described in the logical framework, opens the door for constructive collaborative learning and adaptive management that seek to understand how and why steps interact as well as to find solutions in changing contexts. Periodically refining the TOC in a 'plan-do-verify-adapt' cycle complements progress discussions (based on the logical framework) and encourages adaptations to new learning to improve quality. The CQI approach is a practical implementation of the TOC that selects incremental changes using existing resources, tests and monitors improvement and promotes monthly progress discussions. Such CQI activities bring learning together and create a motivating environment of innovation and quality. The CQI approach, however, needs oversight and learning to enable teams to have discussions—which can be part of supportive supervision—and work together to identify problems, develop TOC and indicators and test change and actions. Some partners in the DRC mentioned the weak link between information and action, a shortcoming which CQI could address. Practical CQI tools exist, which ideally should cover all services at the given service delivery platform and not address nutrition only—for example, the COPE tool (EngenderHealth 2003) and the Ministry of Health Uganda CQI manual (Ministry of Health of Uganda 2015). It is important to note that, if any of these are to be taken up, clear responsibility for doing so should be outlined in advance so that multiple partners are not trying to roll these out in parallel.

Information for evaluating impact

Impact evaluations of nutrition interventions measure the level of progress of an intervention against the change obtained in the population (e.g. reduced mortality and morbidity). They are important learning tools to understand what worked or changed. They seldom delve far enough into cause and effect to explore what worked—and how, for whom, in what circumstances and why—to better understand the change (opening the cause-effect black box). Methodological issues make it difficult for emergency interventions to evaluate impact, as the improvement may not be related to the activities undertaken or averaging masks improvements for certain populations under given

circumstances. Often a baseline is absent, and multiple factors may drive the change that lies outside of the programme or study vision, requiring expensive, lengthy, specially designed studies.

Usually, evaluations of emergency interventions draw from the Organisation for Economic Cooperation and Development (OECD) Development Assistance Committee (DAC) evaluation criteria (Beck 2006). However, these criteria are less useful for evaluating the impact of overall emergency nutrition interventions, where different criteria may be explored (e.g. to what degree intended outputs have been achieved, covered the need or adapted to the changing context). **Table 3** provides a quick assessment of emergency nutrition interventions in the DRC. Nevertheless, the key aims of evaluation are to share promising practices and learn to do no harm and for emergency response to 'build back better'.

Table 3. Quick evaluation of emergency nutrition interventions in the DRC, based on the OECD criteria.

Criteria	Appreciation	Justification
Appropriateness and relevance	Insufficient	The country's needs are prioritised, but the demands are not covered. IMAM is not a routine child health service but an emergency intervention in select hot spots where resources and competencies are available.
Efficiency	Very Insufficient	Resources are insufficient to cover the country's needs, and interventions are shaped according to available resources. The least costly strategy is not selected to achieve the outcomes needed, and alternative approaches are not well investigated.
Effectiveness	Very Insufficient	Intervention packages may show progress and save lives compared to what was planned but not necessarily compared to what was needed (e.g. where SAM targets are inaccurate to begin with or, more likely, where needs and vulnerabilities may change quickly in a fragile context).
Equity	Insufficient	Most vulnerable areas and populations (ethnic groups, displaced, refugees) or population groups (boys, girls, PLWs, disabled and the elderly) are detected, but their needs are not necessarily covered because resources are limited or interventions are implemented in fast-changing contexts where needs may shift. Moreover, alert systems are not robust and vulnerabilities may have been missed—for example, with those living with disabilities perhaps not having been considered (see **Section 2**).
Coordination	Insufficient	Nutrition Cluster partners coordinate actions, but the development and emergency health actors are often overlooked.
Timeliness	Very Insufficient	There are important delays between the alert or prioritisation and the response, and no real-time monitoring exists (surge approach).
Impact/ consequences	Insufficient	No mechanism in in place to explore whether the intervention made a difference for beneficiaries, has produced progress, or resulted in improvements (building back better).
Connectedness	Insufficient	Emergency interventions as a standard package are not sufficiently adapted to existing initiatives or to be realistically handed over with a long-term view.
Coverage	Insufficient	Some populations facing life-threatening suffering are being reached and others not at all.
Sustainability	Very Insufficient	Projects almost certainly bring no lasting change after they end or may have created hopes and expectations that were not met, despite opportunities.

Scale: 'Sufficient' (green), 'Insufficient' (orange) and 'Very Insufficient' (red).

Abbreviations: DRC, Democratic Republic of the Congo; IMAM, Integrated management of acute malnutrition; OECD, Organisation for Economic Cooperation and Development; PLW, pregnant and lactating women; SAM, severe acute malnutrition.

Recommendation 4: Improve monitoring and evaluation of interventions

Streamline emergency monitoring systems—for example, by strengthening the surveillance system through exploring the opportunities in the nutrition module of DHIS2 and/or exploring the use of mobile or electronic reporting to simplify procedures and increase access to good-quality information for timely decision-making to improve interventions (see **Section 2**).

Encourage partners to integrate implementation research into new and ongoing projects designed to better understand what works—and how, for whom, in what circumstance and why—to explain the evidence link between action and outcome (see **Sections 3** and **10**).

Explore the potential of a simplified and standardised CQI approach that comprehensively considers key vulnerabilities at the respective service platform and pilot test improvements (critical thinking from within, linking information and action). Pilot test the CQI approach for learning on feasibility and effectiveness. Ensure clear responsibilities for rollout so that multiple NGOs are not training the same health workers (see **Sections 3** and **10**).

Advocate for using the newly proposed annual incidence conversion factor, which is supported by the latest research, and use the 'conversion factor' instead of the 'correction factor' to avoid mistakes when used in periods shorter/longer than a year (see estimating caseload discussion in **Annex 6**).

5. Maximising the efficiency and effectiveness of interventions

Maximising the efficiency of interventions

Resources for an adequate response as prescribed by the minimum packages of interventions in the NNC guidelines cannot meet the overall needs in the country. The Alert and Prioritisation Systems, as available, identify hot spot health zones most in need and narrow down the geographical area for response. However, as discussed above, the targeting may not be as robust as expected, and interventions are often defined by the availability of resources and partner competencies and readiness rather than need (see **Section 3**). The method of decision-making may give a false sense of efficiency—for example, malnutrition-affected health zones may not be classified as priority areas because of the dampening effect of other indicators (see **Section 2**) and usefulness (some health zones with needs may receive support and others not). Moreover, the system encourages partners to monitor progress and evaluate results based on what is planned and not on what is needed (see **Section 4**). It also discourages initiatives to unlock local resources or explore better ways of working, or it pushes implementers into a less flexible and less critical style.

The NNC guidelines are a useful tool to provide operational guidance and standards and encourage good practices with the aim of efficiency (do the right thing) and effectiveness (do things right). They are based on global guidance and evidence and often suggest more actions than are appropriate for the DRC context or for ensuring quality (e.g. they propose mid- and end-term surveys for all interventions to assess the nutrition situation and coverage). However, operational procedures should be translatable to the context, resource sensitive and less prescriptive. Interventions are not recipes picked from a cookbook, because fast-changing contexts may hamper access to needed ingredients and stall activities. Global standards may have to be adapted to DRC contexts with maximum sensitivity to local resources to ensure results-based interventions focus on changing needs and the collaborative goal. The guidelines revision provides an opportunity to improve efficiency. Suggestions for improvements are provided in **Annex 6**.

Maximising effectiveness of interventions

A reality check of the DRC context indicates several activities that could be done better:

- Restricted resources and response systems generate interventions that may not respond timely, may not meet all the needs (too little too late) and may not be effective.
- Routine child health care services have limited capacity to provide appropriate IYCF activities and do not provide AM treatment, even where the burden is high.
- Community primary health care, including nutrition services, is based on the CHWs/ReCo who are supported by, but not part of, the formal health system and, in the absence of NGO support, have limited capacity and motivation, as well as low-quality supportive supervision, as compared with competing community health programmes that provide incentives (e.g. child health day or vaccination campaigns).
- Humanitarian funding is used to cover gaps in development interventions, with methods and models adapted neither to development nor emergencies. Likewise, humanitarian interventions come with predefined packages that do not (adequately) consider the dynamics of health and community systems.
- The response package is neither built upon nor embedded in a development package, where both the entry and exit strategies miss opportunities and may have unintended negative consequences (but they are not studied and, therefore not known).
- Emergency standards and methods are based on global evidence and therefore may miss covering DRC contexts. For example, ready-to-use supplementary food (RUSF) is used for MAM treatment, and no one suggested to use RUSF to treat SAM when ready-to-use therapeutic (RUTF) was absent, despite the fact that they are similar in composition. Nonetheless, there was agreement to use RUTF to treat MAM in the Optima pilot, in which case their similar composition and use was accepted. Reasons for missing global guidance on treating SAM with RUSF in the absence of RUTF may be that (1) it is uncommon to have RUSF available for MAM and not RUTF for SAM, and (2) it is obvious that SAM cases fall in the same overall category of AM, as the more advanced stage of MAM. Besides this unusual observation, it is encouraging that multiple pilots (ongoing or in the planning stage) seek evidence for context-adapted solutions, and it is hoped that they will be adopted or adapted in larger interventions.

Considering the above, the DRC is at a crossroads, requiring rethinking strategic and technical approaches to prevent and treat AM in emergency and development contexts. This process has begun with government, donor and emergency and development partners but will need a strengthened structured and collaborative approach amongst actors to move forward, building on experience, innovation and evidence from local and other contexts. The momentum in building the triple Humanitarian-Development-Peace nexus may accelerate efforts for systems and resilience capacity strengthening for sustainability. However, the overwhelming task requires ambition whilst staying realistic in the context. The DFID's converging health and nutrition portfolio and the World Bank–supported health system development programme (*Programme de développement du système de* santé, or PDSS) offers windows of opportunity to change the paradigm. Current ongoing learning and innovation could be maximised if an environment is created where leadership brings together partners to think, and dare. Improved learning on applying a TOC approach could (from bottom up and from within) strengthen interventions' quality and effectiveness.

The humanitarian paradigm for preventing and treating AM should ensure that emergency interventions link with and strengthen or kick-start (when weak or absent) development interventions that then link by preparing for contingencies and building the resilience capacity of the health system. Only then can emergency interventions focus on effective, quick life-saving interventions instead of trying to fill development gaps by sprinkling in ineffective responses (*'saupoudrage'*). Emergency interventions could also benefit from a systems perspective to avoid having specific emergency interventions, such as the EVD response, crowd out essential services but instead enable them to use the momentum to establish or build essential services—hence, building back better.

Recommendation 5: Improve the efficiency and effectiveness of interventions

Design emergency nutrition interventions as hybrid interventions that establish (when absent) or strengthen (when weak) essential health and nutrition services (see **Section 3**).

Ensure that any response intervention includes activities to strengthen the health system (e.g. actions to strengthen health system functions) and existing structures so that key activities can transition to essential services and avoid 'starting and stopping' in high-vulnerability areas (see **Section 3**).

Ensure emergency interventions are tailored to the comprehensive health and nutrition need, and not just nutrition need (i.e. know what essential services are or should be in place, strengthen these by crafting an approach that builds on what exists [do no harm] and explore ways to unlock local resources, support local initiatives and use public-private partnership to expand actors and activities).

Build implementation research into interventions to explore what works—and how, for whom, in what circumstances and why—and learn from missed opportunities or unintended consequences to shift effectiveness from an intervention to a systems perspective that will provide more useful learning.

6. Actors, standards and guidelines

Actors

The questions 'Are Nutrition Cluster partners doing the right things, at the right time, prioritising the right groups? What is working well and should be scaled up? What is proving less effective?' have been addressed above. But to enrich the discussion, the involvement of nutrition actors (e.g. NNC partners and other stakeholders) in an effective response must be considered.

The stakeholder analysis exercise during the workshop—listing stakeholders by level of involvement, roles and level of interest and influence—showed that actors as institutions, organisations or individuals are not considered as a resource, and their potential is untapped. Some actors are missed (e.g. academic, research and teaching institutions, child health decision-makers), underused (e.g. community groups, traditional healers) or underestimated (e.g. the function of the NNC with partners that could collaborate and achieve change), and some actors could be more involved or make a bigger contribution.

Emergency interventions take place in a complex social environment, where health and nutrition actors, by choice or influence, consciously or unconsciously, interact with systems functions and induce or prevent change (Deconinck 2017). Strong leadership at various levels (i.e. national, provincial, zonal, health facility and community) could expand actors' involvement and capacities, appropriately link with other sectors and seek private-public partnerships to further build local capacities. Already, national NGOs have found ways to access available emergency funding and expand their capacities and involvement. This type of involvement could also be very useful for

much-needed and underfunded development initiatives. Good leadership could ensure the retention of learning from work on emergencies to build resilience capacities and evolve into sustainable, transformative change. Interventions may underestimate the social fabric of the context in which they are implemented and miss the strengths in the system's 'software' (ideas, interests, relationships, power, values and norms that are combined with the system's hardware), as well as funds, information, infrastructure, supplies, organisational structure and health workforce, all of which can improve systems performance (Sheikh et al. 2011).

Standards and guidelines

The national AM protocol is a useful tool for ensuring the quality of standardised care in facilities (DRC MOPH 2016d). Its strengths are, for example, the detailed explanation of the biomedical processes of illness and steps in care, with expert advice on the treatment of complications. The annexes offer handy look-up tables—for example, on supportive supervision. The document's shortcomings are in viewing AM management as a stand-alone medical act linking, but not fully integrating, the management of MAM and uncomplicated SAM into primary health care under the Integrated Management of Childhood Illness (WHO 2014) and not fully integrating the management of complicated SAM into secondary health care of paediatric hospital care (World Health Organization 2013). The *Unité nutritionnelle supplémentaire* for MAM*, Unité nutritionnelle thérapeutique ambulatoire* for uncomplicated SAM and *Unité nutritionnelle thérapeutique intensive* (UNTI) for complicated SAM are described as separate units managed by parallel systems, which is only partially true. Other missed opportunities include a lack of guidance on equipment and supply needs and job aids for easy decision-making and implementation even when key supplies are absent (what, how and why). Because the protocol is written as a training manual, its descriptions are lengthy and sometimes lose the essence or give inconsistent advice, which can cause confusion. The protocol ensures standardised management of AM and adequate quality but not its organisation or its implementation in emergencies.

In emergencies, per definition and depending on the need, existing services should be either strengthened and scaled up or adapted to cover the emergency needs, without crowding out other essential services. In the DRC, this approach for the management of AM is ambiguous, because in general, services are either absent or very weak. It is inappropriate, then, for emergency interventions to try to fill the gaps, because the existing systems are not strong enough to build upon at the start or to hand over to at the exit of projects. Other national guidelines have been developed to provide operational guidance for emergency response as stand-alone interventions; some of these fill the gap of development guides—for example, WASH-in-Nut (WiN) Strategy (DRC WASH Cluster 2015); NNC guidelines (DRC MOPH 2016c); IYCF in Emergencies Operational Guidelines (DRC MOPH 2018); IYCF in the Context of Ebola Virus Disease Orientation Manual (PRONANUT 2018); and Rapid Response Guidelines for Population Movements (UNICEF 2018). Useful tools for improving reach and integration of health and nutrition interventions at the community level include the national IYCF booklet (PRONANUT 2013), preschool consultation orientation manual (DRC MOPH 2015), community-based nutrition (NAC) documents (DRC MOPH 2016b) and community health approaches manual and strategic framework (World Food Programme 2016; DRC MOPH 2016a).

As they stand, the NNC guidelines discuss standards, based on a mix of generic and national evidence, and promote efficient and effective innovative approaches. Their prescriptive tone rightfully fills a gap but also limits critical thinking for adapting to contexts that are complex and may change quickly. They may give actors a false feeling of security, reassuring them that they are 'doing

the right thing' and 'providing value for money' while obliterating the fast changing context, or 'doing the right thing for the changing need'. To avoid the safe but prescriptive 'straitjacket' by which emergency response standards can be harmful, a more flexible and collaborative learning environment should be created to allow adaptive management with a systems perspective. This would face rather than avoid the complexity and consequences of interactions and address multisectoral needs without crowding out essential services. Such an approach would also encourage creativity when resources are insufficient, encourage actors to both ask for support and be ready to offer support and, as such, create a healthy bottom-up environment looking for solutions. This problem-seeking attitude and problem-solving drive will encourage actors to manage and use existing capacities, learn lessons, etc. The PRONANUT could be alerted and equipped to link, monitor and provide this support, enabling it to find a middle ground, 'keep ears open' and foster rather than stifle innovation.

Recommendation 6: Improve actors' involvement and guidance

Explore ways to expand partnerships and develop capacity for collaborative learning that will strengthen local—perhaps hidden—capacities and value the potential of 'people capacity' by, in a first step, identifying, including and engaging missing actors in all formal and informal nutrition-related gatherings.

Further revise the NNC guidelines and other NNC systems to ensure that the NNC and its partners can flexibly adapt to a changing nutrition situation, response capacity and resource availability by:

1. Combining a theory of action (logical framework) with a TOC that tests and verifies assumptions for CQI by applying the plan-do-verify-adapt cycle (see **Section 4** and **Annex 6**).
2. Sharing the guidelines with all actors involved in health and nutrition services, including health and nutrition actors from provincial and zonal government and health workers managing health facility– and community-level interventions.

Explore whether the national IMAM protocol needs to be updated to remove inconsistencies and/or develop a simplified operational booklet or job aids per unit (community-based and preventive nutrition platforms [NAC and CPS, *Unité nutritionnelle supplémentaire*, *Unité nutritionnelle thérapeutique ambulatoire* and UNTI] that could correct inconsistencies and facilitate quality implementation whilst waiting for the global guidance on the simplified protocol expected in 2021/22).

7. Resilience capacity and sustainability of interventions

Improving resilience

As mentioned, resilience is defined in various ways, with different meanings at individual, HH and systems levels, but core messages are 'the ability to cope with external stresses and disturbances as a result of social, political and environmental change' (FAO, IFAD, and WFP 2015) or 'the ability of countries, communities and HHs to manage change, by maintaining or transforming living standards in the face of shocks or stresses without compromising their long-term prospects' (DFID 2011). The latter considers countries, communities and HHs as key actors for undertaking actions to bounce back from shocks. **Table 4** summarises how the DRC nutrition strategies build the nutrition resilience of communities, HHs and individuals but not of the health system.

Table 4. Summary of the assessment of planned nutrition strategies that build resilience in the DRC (from Nutrition guidelines).

Target	Strategy	Expected outcome	Illustrative improvements
Communities	Strengthen community leadership. Strengthen capacities of community volunteers and organisations in IYCF, community-based gardening, other income generation. Establish mother cooperatives to improve complementary foods.	Ensured promotion of nutrition and prevention and management of malnourished children. Ensured exploration, availability and use of good-quality locally available foods and recipes. Built capacity to manage crisis, including the use of improved local food recipes.	Expanded community resilience beyond IYCF support groups. Implemented active and aggressive training plan for effective nutrition counselling skills. Ensured more consistent number of community volunteers per health area.
Households	Involve students and parents in learning about nutrition and nutritious foods. Equip caregivers with MUAC tapes. Support most vulnerable families with income-generating activities and/or cash transfers.	Ensured continued screening of malnourished children with increasing treatment coverage. Improved knowledge and behaviours of vulnerable groups.	Ensured resilience-capacity activities to cover more robust community-based GMP, along with well-designed counselling skills development.
Individuals	Provide access to nutritious foods. Provide access to health care for prevention, reduced infections and other treatment.	Strengthened individual (biomedical) resilience.	Ensured access to care and services and improved behaviours. Improved healthy living environment (e.g. BabyWASH).

Abbreviations: DRC, Democratic Republic of the Congo; GMP, growth monitoring and promotion; IYCF, infant and young child feeding; MUAC, mid-upper arm circumference; WASH, water, sanitation and hygiene.

Improving sustainability

The degree to which interventions can induce sustainable improvements is dependent on their characteristics and potential to bring lasting change within health and community systems. The types of interventions considered and their potential for inducing such improvements are:

- **Stand-alone temporary interventions** (i.e. rapid nutrition response and emergency nutrition responses). These interventions are intended to save lives but have limited knowledge of the context, build (temporary) partnerships from scratch, rely on partner programmes with different life cycles, risk duplicating and doing harm and have low/little long-term effect.
- **Emergency nutrition response added to other temporary emergency interventions.** This type of intervention has the advantage of starting quickly and integrating ongoing interventions but cannot bring significant lasting changes.
- **Emergency nutrition response added to ongoing development intervention.** Such an intervention has the capacity to link emergencies with development interventions and therefore is better placed to bring sustainable improvements.

- **Emergency nutrition response set up as a routine child service**. This type of intervention establishes solid working relationships with local institutions, which may pave the way to harnessing local resources and capacities.

In addition to the above considerations, selecting a limited number of CHWs/ReCo to work on temporary interventions indicates lack of understanding of the context, ignores potential negative consequences and misses opportunities for sustainable development gains. Limiting the number of CHWs/ReCo (e.g. to ten per health area), regardless of the pool of existing ReCo, may sound reasonable in terms of available partner funding but in the medium- and long-term perspective may reinforce the wrong message of not needing them. Moreover, it contradicts the "Mother-MUAC" (*Maman–Périmètre brachiale*, or PB*)* approach and be counterproductive, lowering motivation to undertake expected duties and disturbing harmony and cohesion amongst CHW/ReCo team members. However, small- and large-scale development intervention models focusing on strengthening community structures and members have paved the way for strengthening sustainability. These strategies include family or community gardens as part of NAC and food security strategies (along with other health system–based prevention activities), supported by local NGOs with an array of community animators and CHW/ReCo coaches.

Recommendation 7: Improve community and HH resilience and sustainability

Map the different approaches in the DRC that improve resilience capacity—including multisectoral nutrition, health and nutrition and community and HH systems—and explore what works (and how, for whom, in what circumstances and why); identify relevant experiences from the DRC and elsewhere that could inform nutrition resilience approaches in the DRC; and identify resilience-building activities to recommend. The Kruk Resilience Framework (Kruk et al. 2015) is a useful tool to further explore systems resilience (see the recommendations in **Sections 3 to 6** on strengthening the resilience of systems (e.g. by applying TOC, surge and CQI tools).

Explore ways to strengthen the community system by exploring how it overcomes bottlenecks and identifying ways to sustainably motivate and train CHWs/ReCo and organisations.

Expand the availability and use of MUAC tapes and adapted counselling materials in the community to strengthen community capacities to take responsibility for prevention and treatment of AM (creating ownership and accountability), exploring ways to strengthen CHWs/ReCo, involving mothers (MUAC mothers/*mères* PB) and tapping from positive deviants.

8. Humanitarian-development nexus

In the fight against malnutrition, the focus on AM (or wasting and nutritional oedema) used to be the priority for humanitarian response, whilst chronic malnutrition (or stunting) was the priority for development responses. Recent studies have shown that wasting contributes to stunting, and because of the inextricable link of the combined condition to mortality, the divide is being bridged (Schoenbuchner et al. 2019; Khara et al. 2017). The need to strengthen linkages between humanitarian and development programming has been at the forefront since the 2016 World Humanitarian Summit. The New Way of Working has become the reference framework (OCHA 2017) that, in the DRC, has been further expanded by peacebuilding to form a triple nexus.

Given the protracted nature and structural factors of the DRC's humanitarian crisis, it would make sense to set a goal of creating and sustaining a conducive environment for humanitarian and development operational models to complement each other. This has been explicitly envisioned in the 2017–2019 HRP, which prioritises enhancement of the complementarity and operational

synergies with development (OCHA 2018). In addition, HRP has made provisions for a Durable Solutions Task Force that brings humanitarian, development and government actors together to find durable solutions for displaced persons and returnees. So far, a major constraint is the lack of a common pool of resources in a system-wide approach and indicators to jointly monitor progress.

Opportunities to strengthen the humanitarian-development (and peace-building) nexus agenda could include the following: (1) models of an emergency nutrition response set-up as routine child services; (2) strategies of the DFID Global Nutrition Position Paper, which supports HSS (DFID 2017); and (3) the World Bank–funded multisectoral child nutrition and health project (PDSS), which focuses on reducing stunting prevalence and making significant gains in multiple development sectors. The PDSS' main objective—improving the utilisation of nutrition-specific and nutrition-sensitive interventions for children under 2 years old and PLW and *responding to an eligible crisis or emergency*—articulated in a series of projects spanning the next 12 to 15 years, is a window of opportunity to broaden and move forward the HDN discussion. Including emergency response in development and community-based organisation projects can create opportunities for learning across development and humanitarian projects. The challenge will be promoting the status of the nutrition sector within the government system to be an 'influencer' or 'driver' and developing the PRONANUT's good governance and leadership skills and capacities to move the HDN forward. The Scaling Up Nutrition (SUN) Movement in the DRC should also be able to live up to this challenge.

Recommendation 8: Improve the HDN

Explore the feasibility and cost-effectiveness of the proposed hybrid emergency nutrition intervention to work in tandem with development programmes where possible, including the surge approach for key health and nutrition vulnerabilities, preparing for contingencies and building resilience (see **Section 3**).

Adapt the HDN paradigm for preventing and treating AM by learning from country examples and from other countries with a high burden of malnutrition, recurrent and protracted shocks, a large population with multiple vulnerabilities and a weak health system (e.g. Niger, Sudan, Pakistan).

Ensure technical working groups have a longer-term structure that covers emergencies (alert and response built upon existing services and structures and linked to sustainable change) as part of the development strategy (includes preparing for contingencies and building resilience capacities); include the necessary partners and be led and managed by the MOPH/PRONANUT (develop a plan to transition, absorb or merge the NNC and development technical working groups).

9. Advocacy priorities

The DRC is at an interesting juncture of dwindling funding for emergency response and possible long-term financial commitment to reducing stunting. As described above, the HDN—expanded into the triple nexus to include peace building—is coming into play. Remaining hurdles include increasing needs, low coverage, weak health and community systems and weak governance and leadership to plan, manage and coordinate programmes to reduce the prevalence and incidence of all forms of undernutrition. To overcome these, key stakeholders—including the government, donor community, humanitarian and development actors and others—must be engaged through well-designed advocacy (see **Table 5**). The aim is to (1) gain acceptance and support for multisectoral nutrition actions in fragile settings, (2) mobilise additional resources for the implementation of the required programmes and (3) raise awareness for continued and longer-term technical and financial support.

Although there is awareness of the damaging burden of undernutrition in the DRC, it would be beneficial to have a nutrition advocacy process that targets the new government leadership,

including the new parliament. Country-specific nutrition advocacy tools are useful tools to assist discussions and create greater political and social commitment for nutrition in a country. For example, Profiles (FANTA III 2018) is a spreadsheet-based nutrition advocacy tool that calculates (1) the consequences if malnutrition does not improve or change over a defined time period and (2) the benefits of improved nutrition over the same time period, including lives saved, disabilities averted, human capital gains and economic productivity gains. Computer simulation models, developed by agent-based modelling or stock-and-flow analysis, may simulate changes over time and test scenarios through changing variables (Bishai et al. 2014).

Table 5. Advocacy priorities by target actor.

Target	Priority
Government of the DRC with partner support	• Strengthen PRONANUT technical and leadership skills to better coordinate the donor, humanitarian and development partners, as well as expand to other available partnerships (e.g. professional associations, academia, research and training institutions). • Establish a multisectoral nutrition entity, if not yet existing, with a base in the Prime Minister's Office with roles and responsibilities to include coordinating actions and actors. • Support the PRONANUT in leading the development of a national advocacy application to target the newly elected government and new members of parliament. • Adopt permanent budget lines to support national nutrition programmes for both nutrition-specific and nutrition-sensitive activities. • Increase the pool of highly trained nutritionists (at Master and PhD levels) to boost PRONANUT technical and managerial capacities at national and provincial levels. • Expand the technical capacity of the SNSAP to make it a useful and robust surveillance system, avoiding duplicative systems. • Plan to transition and absorb (or merge where relevant) development and emergency nutrition technical working groups. • Establish a MOPH-lead child health and nutrition discussion platform to lead and combine humanitarian and development partners and knowledge management for continuous learning together, linking with the multisectoral platform. • Support the NNC to create a normative environment that guides emergency partners and actions towards a context-adapted, flexible response based on evidence and good practice. • Support the NNC to collaborate with other clusters and emergency and development partners for a coordinated comprehensive response that targets the most vulnerable groups and needs, regardless of the divide in their mandates or responsibilities.
Donor community with partner support	• Increase funding for the HDN to ensure better complementarity between humanitarian response and development programmes; help emergency nutrition interventions prepare to sustain services and development interventions to include planning for contingencies (surge approach) and building resilience (see **Section 3**); and establish longer-term support and funding cycles to break the vicious cycle of undernutrition in the DRC. • Provide financial support for expertise to establish a technical advisory group for child health and nutrition with specific tasks (e.g. tackle the wasting-stunting burden, strengthen the surveillance system, adapt the CQI approach, adapt the surge approach, strengthen local leadership) for collaborative learning from evidence and practices (see **Section 10**).

Abbreviations: CQI, continuous quality improvement; DRC, Democratic Republic of the Congo; HDN, humanitarian-development nexus; MOPH, Ministry of Public Health; NNC, National Nutrition Cluster; PRONANUT, *Programme national de nutrition*; SNSAP, *Surveillance nutritionnelle, sécurité alimentaire et alerte précoce*.

10. Knowledge and evidence gaps

Ongoing learning and innovation currently are a mosaic of ad hoc questions with different priorities, resources, opinions, schools of thought and involved research entities, led by researchers in and

outside of the DRC. Also, academic and research institutions may have different agendas, resources and learning systems that are not necessarily collaborating with ongoing interventions. This is a missed opportunity, on top of the many research gaps.

It was impossible for the team in the given time span to make a comprehensive analysis of knowledge and evidence gaps. It is difficult to understand what is ongoing where, and not all active researchers are known or collaborating with key actors in the DRC. **Annex 5** is a modest summary of ongoing and planned innovation and learning initiatives. The existing nutrition research team at the PRONANUT (with its team of over 30 staff) may have a knowledge management system in place and/or learning to build on. The knowledge mosaic calls for improved leadership to provide a frame for coordinating research needs and actions and stimulating collaborative learning.

Recommendation 9: Coordinate research for expanding knowledge management

Establish a knowledge management platform for child health and nutrition with a technical Strategic Advisory Group of the PRONANUT—including other government health actors, academia, donors and partners—with established links to global technical hubs (e.g. Core Group, Emergency Nutrition Network, Global Nutrition Cluster technical groups, International Lipid-Based Nutrient Supplements Project, No Wasted Lives, Society for Implementation Science in Nutrition) to provide a system for ongoing technical support and learning covering both emergency and development contexts. Ensure the knowledge management platform helps prioritise key research questions that need to be addressed/answered based on need, existing evidence, ongoing pilots, etc.

Promote an annual 'Journée Scientifique' (one was planned in November) on development and emergency nutrition interventions to provide updates on the latest evidence.

Explore the feasibility and (cost) effectiveness of a hybrid emergency intervention that prepares for sustaining services where they are lacking, strengthens existing services, includes an adapted surge approach for key health and nutrition vulnerabilities, prepares for contingencies and builds resilience of communities, community- and facility-based health services and zonal health systems.

Conclusion

The RLR, as a short but intense exercise of learning from practice and innovations by key stakeholders, yielded valuable lessons. In summary, they are as follows:

- Emergency nutrition interventions struggle to fill a development gap and, because of low-performing alert and contracting systems, are implemented too late, with approaches and tools that fit neither the purpose nor the fast-changing context. However, some solid examples of promising initiatives in the DRC operate under well-designed development activities, involve community-based organisations, are flexible to absorb shocks and add value to the basic foundations of development.
- Emergency nutrition interventions are meant to build upon existing structures and initiatives and ensure that they 'do no harm'. However, the reality shows that nutrition is difficult to imbed into the fragile foundations of child health care or routine primary health care. This is especially obvious at the implementation level, where no cadre is strong enough to take responsibility. Even a well-designed rapid-response emergency intervention strategy providing primary health care for population movement or epidemics does not cover nutrition.
- Drawing lessons from this review, stakeholders in the DRC's fragile context are encouraged to better catalyse opportunities and adjust strategies and resources to improve emergency nutrition

interventions, based on a sound and robust alert system that can better target vulnerabilities. The recommendations need vetting for feasibility and adaptation by actors with the necessary contextual and technical expertise. The immense unaddressed nutrition needs in both development and emergency settings in the DRC call for strengthened collaboration and out-of-the-box thinking so that emergency interventions can leapfrog ahead and spark transformative change.

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Annex 1. Participating Organisations

Table 6. List of participating organisations.

Organisation
Action Contre la Faim
Adventist Development and Relief Agency (ADRA)
AGAPE
Alliance for International Medical Action (ALIMA)
Caritas Congo
Cause rurale
COJDE
Comitato Internazionale per lo Sviluppo dei Popoli (CISP)
Cooperazione Internazionale (COOPI)
Croix-rouge RDC
Cruz Roja Española
Department for International Development (DFID), UK
Division provinciale de la santé (DPS) de Kasaï
DPS de Kasaï Centrale
Embassy of Norway
European Civil Protection and Humanitarian Aid Operations (ECHO)
Femmes solidaires (FESO)
Fondation livre de vie (FONLIV)
Hôpital pédiatrique de référence Kalembe Lembe
Interchurch Medical Assistance - World Health (IMA)
International Medical Corps (IMC)
Médecins d'Afrique (MDA)
Média pour le développement communautaire (MEDEC)
Medical and Global Nutrition Aid (MAGNA)
National Nutrition Cluster (NNC) of the IASC
POP Security RDC
Première urgence internationale
Programme national de nutrition (PRONANUT) nationale
Programme national de nutrition (PRONANUT) provinciale de Kasaï
Programme national de nutrition (PRONANUT) provinciale de Kasaï Centrale
Projet Moringa
Save the Children
Social Development Centre (SDC)
Soins de s*anté* primaires en milieu r*urale* (SANRU)
Solidarité pour le développement (SOLDEV)
U.S. Agency for International Development (USAID)
Union communautaire pour l'appui au développement (UCAD)
United Nations Children's Fund (UNICEF)
Université de Kinshasa
University of Bergen, Norway
World Bank Programme de développement du système de santé (World Bank PDSS)
World Food Programme (WFP)
World Vision International (WVI)

Annex 2. Consultation Schedule

Table 7. Consultation phases and details.

Inception Phase	Teleconferences
Wednesday 18/09	National Nutrition Cluster
Thursday 19/09	Action contre la Faim (ACF) WFP
Monday 23/09	USAID Food for Peace (FFP)
Wednesday 25/09	European Civil Protection and Humanitarian Aid Operations (ECHO) Interchurch Medical Assistance
Friday 25/09	United Nations Children's Fund (UNICEF)
In-country Phase	**Kinshasa, meetings**
Monday 30/09	Travel
Tuesday 1/10	DFID ECHO Interchurch Medical Assistance
Wednesday 2/10	National Nutrition Cluster monthly partner meeting Alliance for International Medical Action (ALIMA)
Thursday 3/10	UNICEF DFID
Friday 4/10	Première urgence Cruz Roja Espagnole ACF
Saturday 5/10	Working meeting
Sunday 6/10	Working meeting
Monday 7/10	PRONANUT DFID Health
Tuesday 9/10	Norwegian Embassy USAID FFP - USAID OFDA DFID COOPI WFP
In-country Phase	**Tshikapa, Kasai Province, meetings and field visit**
Wednesday 9/10	Travel from Kinshasa to Tshikapa Tshikapa Nutrition Cluster meeting, introduction of mission to partners and organisation of field visits
Thursday 10/10	Adventist Development and Relief Agency (ADRA), équipe de visite du terrain *Bureau central de la zone de santé* (BCZS) de Nyanga Hôpital general de reference (HGR) de Nyanga, Zone de santé (ZS) Nyanga Centre de santé (CS) de Kabola
Friday 11/10	Division provinciale de la santé (DPS) du Province Kasaï SANRU/PRODEK CS de reference Bel'Air, ZdS Tshikapa
Saturday 12/10	DPS PRONANUT Première urgence BCZS Kanzala HGR Kanzala UNTI
Sunday 13/10	Working meeting
In-country Phase	**Kananga, Kasai Central Province, meetings and field visit**
Monday 14/10	Travel from Tshikapa to Kananga DPS du Province Kasaï Central IMA
Tuesday 15/10	IMA, équipe de visite du terrain ZdS Lukona CS Mamilabi, Malumba Tresor (IT), PRODEK Bijoux (Animatrice), président CoDeSa, ReCo; Household visit 1 Household visit 2 CS St Martyr
Wednesday 16/10	World Vision International (WVI) Maman avec enfant 24 mois avec MAS

	WFP Kasaï Central
Thursday 17/10	COOPI Territoire Kazumba BCZS Ndekesha HGR UNTI CS Ndekesha
Friday 18/10	COOPI CS Kaka
Saturday 19/10	PRONANUT (teleconference) Working meeting
Sunday 20/10	DFID (teleconference) Working meeting
In-country Phase	Kinshasa, meetings, workshop and field visit
Monday 21/09	Travel from Kananga to Kinshasa & Working meeting
Tuesday 22/10 & Wednesday 23/10	Workshop
Thursday 24/10	World Bank PRONANUT SNSAP and SUN Visit Hôpital pédiatrique de reference Kalembe Lembe
Friday 25/10	Debriefing DFID preliminary findings (teleconference) Debriefing PATH workshop logistics

Abbreviations: CoDeSa, *Comité de développement de l'aire de santé*; COOPI, Cooperazione Internazionale; DFID, UK Department for International Development; DPS, *Division provinciale de la santé* ; IMA, Interchurch Medical Assistance; IT, information technology; PRONANUT, *Programme national de nutrition*; ReCo, *relais communautaire*; SANRU, Santé Rurale; SNSAP, *Surveillance nutritionnelle, sécurité alimentaire et alerte précoce*; UNTI, *Unité nutritionnelle thérapeutique intensive*; USAID, US Agency for International Development; WFP, World Food Programme.

Annex 3. Workshop Agenda

Table 8. Workshop agenda in French.

	Mardi, le 22 octobre, 2019
9:30	**Ouverture** Introduction, Agenda, Déroulement de l'atelier
10:00	**Session 1. Stratégies nationales de réponses humanitaires de nutrition** a) Stratégies de réponses humanitaires pour la prévention et le traitement de la malnutrition aigüe en fonction des besoins de la RDC : Présentation PRONANUT (20 min) b) Théorie de changement (40 min), et c) Analyse des parties prenantes : Travaux de groupes et présentations (30 min) **Tâches/Questions :** 1. Développer la théorie de changement qui reflète les besoins et les approches actuelles en matière de prévention et de traitement de la malnutrition aiguë, qui reflètent les hypothèses implicites des mécanismes qui déclenchent le changement à court et à long terme (Utiliser la phrase « si..., alors.... parce que...» pour identifier les hypothèses implicites et explicites, à court et à long terme.)(a) 2. Identifier les parties prenantes Protocole national de prise en charge intégrée de la malnutrition aiguë (PCIMA) (c) 3. Remplir le tableau et cartographier les acteurs sur la grille d'intérêts / d'influence (c) 4. Qu'est-ce que cette analyse vous dit? Quelles parties prenantes devraient être soutenues, sensibilisées ou plus impliquées ? (c)
11:00	**Pause-café**
11:30	**Session 1. Stratégies nationales de réponses humanitaires de nutrition (suite)**
13:30	**Déjeuner**
14:30	**Session 2. Lignes directrices de nutrition en urgence** a) Lignes directrices de Cluster Nutrition : Cluster Nutrition, en plénière (20 min) b) Comment les lignes directrices facilitent la réponse selon la théorie de changement ? Travaux de groupes et présentations (40 min) **Tâches/Questions** : 1. A partir de (avec l'aide de) la théorie de changement développées, discutez les points forts et les points faibles, et les points manquants des lignes directrices pour qu'elles facilitent la mise en œuvre de la malnutrition en urgence de qualité, adaptée aux besoins du contexte d'urgence complexe et changeant.
15:30	**Session 3. Déterminants de la malnutrition** a) Déterminants de la malnutrition, le cas de Kwango (20 min) : Présentation PRONANUT (30 min) b) Déterminants de la malnutrition aigüe qui mènent à la situation d'urgence en RDC : Travaux de groupes et présentations (60 min) **Tâches/Questions :** 1. Cartographier les déterminants de la malnutrition aiguë (et du retard de croissance?) autour de «Infection» et «apport alimentaire» directs (construire une carte mentale). 2. Quels sont les déterminants clés à prendre en compte en cas d'urgence?
17:00	**Synthèse et clôture de la journée**

	Mercredi, le 23 octobre, 2019
8:30	Récapitulation jour 1, Introduction jour 2
9:30	**Session 4. Résumé des constats suite aux échanges et visite de terrain** a) Aperçu sur les résultats des échanges avec les partenaires et des visites de terrains : Consultants, en plénière (20 min) b) Travaux de groupes et présentations (55 min) **Tâches/Questions :** Est-ce que ces constats sont conformes à vos attentes?

	1. Quels éléments voulez-vous y ajouter? 2. Quels éléments voudriez-vous reformulés ou éliminés?
10:45	**Pause-café**
11:15	**Session 5. Discussion de concepts clés** Travaux de groupes et présentations (1 h 15 min) **Concepts clés :** 1. Nexus humanitaire-développement (HDN) 2. Résilience du système de santé 3. Leadership et gouvernance 4. Continuum des soins versus soins centrés sur le couple mère et enfant 5. Approche intégrée : *Prise en charge intégrée des maladies de l'enfant* versus PCIMA 6. ANJE versus ANJE-U **Tâches/Questions :** 1. Expliquez ce que vous comprenez sous ce concept clé. 2. Clarifiez le sens de ces concepts pour la mise en œuvre de la malnutrition en urgences.
13:00	**Déjeuner**
14:00	**Session 6. Comment et pourquoi certains aspects clés marchent (ou ne marchent pas)** Travaux de groupes et présentations (1 h 30 min) **Aspects clés :** 1. Système de décision Alerte-Réponse 2. Stratégie de sortie liée au développement (HDN) 3. Rôle de la communauté 4. Que faire quand il n'y a pas de *Prise en charge de la malnutrition aiguë modérée* (PEC MAM) + *Prise en charge de la malnutrition aiguë sévère* (PEC MAS)? 5. Quand il y a PEC MAS mais pas PEC MAM? 6. Quand il y a PEC MAM mais pas PEC MAS? **Tâches/Questions :** 1. Expliquez comment ces aspects clés marchent (ou pas) (focus sur le processus)? 2. Quelles domaines de ces aspects doivent être améliorés, et comment?
15:30	**Session 7. Les pratiques prometteuses et innovations** a) Aperçu sur les résultats des échanges avec les partenaires et des visites de terrains (suite): Consultants, en plénière (10 min) b) Travaux de groupes et présentations (35 min) **Tâches/Questions :** 1. Vérifiez la liste des pratiques prometteuses ou innovantes qui sont en cours, planifiés ou recommandés, et complétez. 2. Selon vous (et en sachant que les ressources sont limitées), quelles évidences clés manquent, ne sont pas encore adressées (maximum trois)?
16:00	**Session 8. Affinement de la théorie de changement et Recommandations** Travaux de groupes et présentations (1 h 15 min) **Tâches/Questions :** En se basant sur les discussions et tenant compte de la théorie du changement, 1. Faites la synthèse sur les discussions des deux jours et tenant compte de la théorie du changement. 2. Quelles recommandations pourriez-vous faire pour améliorer les stratégies de lutte contre la malnutrition aigüe et les autres formes de malnutrition? Identifier maximum 5.
17:15	Évaluation de l'atelier
17:30	**Synthèses des travaux et clôture**

Abbreviations: ANJE(-U), *alimentation du nourrisson et du jeune enfant (en situation d'urgence)*; MAM, moderate acute malnutrition; PEC MAM, *Prise en charge de la malnutrition aiguë modérée*; PEC MAS, *Prise en charge de la malnutrition aiguë sévère*; PRONANUT, *Programme national de nutrition*; PCIMA, *Protocole national de prise en charge intégrée de la malnutrition aiguë*; RDC, *République démocratique du Congo*.

Annex 4. Summary of Nutrition Drivers

Though the real-time learning review (RLR)'s focus was on collaborative learning, in the inception report, the consultants did prepare an overview of key factors driving persistently high levels of acute malnutrition (AM) in the Democratic Republic of the Congo (DRC).

This analysis attempts to describe the context and factors that contribute to poor nutritional status of women and children in the DRC, with a focus on AM. It is based on data from various surveys that provide national averages. But in such a large and diverse country—with huge distances, ethnic and social complexity and variations amongst regions, districts and even villages—these averages can be misleading and mask pockets of severe or extreme vulnerability or excluded populations. Malnutrition and disease outbreaks do not affect all areas of the country equally, and not all vulnerable populations are targeted for humanitarian assistance or have access to development assistance. This overview should be read with this in mind.

Political instability, poverty, insecurity, disease outbreaks and displacement

The DRC is one of the least developed countries in the world, with a human development index ranking 179th out of 189 countries in 2017 (UNDP 2019). In 2017, 73 percent of the population were estimated to be living in poverty (Kakietek 2019). The humanitarian situation is alarming. More than 130,000 Congolese fled to neighbouring countries in 2018 (Human Rights Watch 2019), and regular waves of returnees, internally displaced people and refugees from neighbouring countries resettled in past decades. Economic hardship and almost three decades of conflict and instability have displaced about 4.5 million people (Human Rights Watch 2019), affecting agriculture, depleting livestock and reducing access to markets. About 5.4 million people have been subjected to human rights abuses as a result of armed and intercommunal violence. Moreover, poverty, high population density, weak governance and weak institutional capacity are widespread.

Outbreaks of diseases, including EVD and cholera, affect tens of thousands of people every year. The ongoing EVD epidemic is one of the world's major emergencies in terms of potential humanitarian consequences. Meanwhile, more than 30,000 suspected cholera cases were reported in 2018 and 966 deaths, an unusually high lethality of 3.2 per cent (OCHA 2019).

Population movements, food insecurity and disease outbreaks have contributed to a high prevalence of AM. About 5.2 million children suffer from AM (of which 1.4 million children have SAM), and 2.9 million urgently food-insecure people were estimated to need assistance in 2019 (OCHA 2018). A general deterioration is observed mainly in the Kasais, North Kivu, South Kivu and Tanganyika Provinces.

Food security, access and use

Agricultural productivity in the DRC is one of the lowest in sub-Saharan Africa (Adoho and Doumbia 2018). About 70 percent of the employed population is engaged in agriculture, mostly for subsistence, but only about one-eighth of the country's arable land is under cultivation. Political uncertainty, chronic conflict, illegal mining, displacement and increasing temperatures and changing rainfall patterns have reduced access to land for cultivation and resulted in crop losses and failures, increased livestock mortality and threatened fisheries. Nearly 70 percent of households (HHs) in the

lowest income quintile live in chronic food insecurity, particularly urban and peri-urban HHs. Between July and December 2019, 25 percent of the almost 60 million people in the DRC were in a food security crisis (Integrated Food Security Phase Classification (IPC) 2019).

Political insecurity, low incomes and purchasing power limit access to food, and lack of knowledge and other barriers limit optimal diets. According to the Ministry of Agriculture, the average daily consumption in 2009 in the DRC was 1,836 kcal, substantially less than the minimum daily requirement of 2,500 kcal (Kakietek 2019). Most of the energy comes from staples, and consumption of animal-sourced foods is limited. Even where nutritious food is available, it may not be affordable, prepared and stored safely, distributed equally amongst HH members or fed to children to meet nutritional needs.

Health policy environment

In 2000, the Ministry of Public Health adopted a National Nutrition Policy and created the *Programme national de nutrition* (PRONANUT), or the National Nutrition Programme, but the programme lacks resources and adequate technical capacities. In 2013, the second National Nutrition Policy aimed to reduce stunting in children 0 to 23 months old by 50 percent by 2023 and recognised the need for a multisectoral response to maternal and child malnutrition. The same year, the DRC joined the Scaling Up Nutrition Movement. In 2015, the Global Financing Facility in Support of Every Woman and Every Child platform brought together health and other line ministries, civil society and development partners to develop a reproductive, maternal, neonatal, child and adolescent health and nutrition investment case which prioritises the interventions in the National Strategic Development Plan 2016–2020 in 14 provinces. Priorities include improving the coverage and quality of nutrition interventions and stunting reduction. The National Strategic Development Plan 2016–2020 prioritises improving the coverage and quality of nutrition interventions and reducing stunting. The National Nutrition Policy was operationalised by the National Multisectoral Strategic Nutrition Plan in 2017.

The National Joint Response Plan to the Ebola Outbreak under the leadership of the Ministry of Public Health includes a Joint Nutrition and Food Assistance Strategy with guidelines on the National Nutritional and Food Strategy for the EVD Response, Nutritional Care Protocol for Ebola Treatment Centre and Community infant and young child feeding (IYCF) that still have to be validated.

Maternal health and nutrition

Women in the DRC experience many challenges related to poverty, economic instability, insecurity and violence. A high percentage of women (50 percent) experience physical or sexual violence. Early marriage (median age of marriage 18.7 for women), which often leads to early pregnancy, and low birth spacing (27 percent of women) increase the risk of negative birth outcomes, which put infants at risk of suboptimal growth. Maternal mortality is amongst the highest in the world, and only 17 percent of women have their first antenatal care visit in the first trimester, only 48 percent receive four antenatal care visits, and 52 percent of women do not receive postnatal care. Only 5 percent of pregnant women receive iron supplementation for at least 90 days, and 38 percent of women are anaemic (though the latter may be related to malaria—one of the three main causes of death amongst pregnant women—and other infections). Reported HIV prevalence amongst women 15 to 49 years old was 1.6 percent overall (compared with 0.6 percent amongst men) but 7.9 percent amongst widows (68 percent of adults had not been tested). Many health facilities lack

prevention of mother-to-child transmission interventions. Women are experiencing the double burden of malnutrition, with almost equal numbers reported as thin (14 percent) and overweight/obese (16 percent). Repeated and untreated infections and poor birth outcomes result from inadequate access to key maternal health services (35 percent of deaths of women were related to maternal causes), as well as low food availability and diversity, low incomes, low levels of education and low social status (Ministère du Plan et Suivi de la Mise en œuvre de la Révolution de la Modernité (MPSMRM) et al. 2014). Traditional healers are the preferred source of information on certain child illnesses and breast milk insufficiency. Poor water, sanitation and hygiene indicators compromise the health and nutrition of both women and children. Fully 10 percent of the population lacked access to drinking water, and 12 percent lacked any basic sanitation services (Institut National de la Statistique (INS) and UNICEF 2019). **Table 9** highlights key examples of maternal nutrition-related indicators.

Table 9. Examples of key maternal health and nutrition indicators.

Indicator	Value
Adolescent girls (15–19 years old) who are thin	21%
Women (15–49 years old) who are thin	14%
Women (15–49 years old) with anaemia	38%
Women who report intervals < 24 months between births	27%
Women who receive the required four antenatal care visits	48%
Women who have the first antenatal care visit in the first trimester of pregnancy	17%
Women who receive micronutrient supplementation during pregnancy	59%
Pregnant women who receive iron supplementation for at least 90 days	5%
Women who do not receive any postnatal care	52%
Women who believe that men are justified in beating women	75%
Women who report being wounded in the past 12 months by physical or sexual violence	50%

Source: (Ministère du Plan et Suivi de la Mise en œuvre de la Révolution de la Modernité (MPSMRM) et al. 2014).

Child health and nutrition

In the DRC, one child in ten dies before his or her fifth birthday. Only 6 percent of newborn babies in rural areas and 12 percent in urban areas received postnatal care within two days after birth (Ministère du Plan et Suivi de la Mise en œuvre de la Révolution de la Modernité (MPSMRM) et al. 2014). Delayed umbilical cord clamping is not practised. Vaccination rates are low, covering only 35 percent of children 12 to 23 months (Institut National de la Statistique (INS) and UNICEF 2019), as are treatment of diarrhoea with oral rehydration solution and provision of zinc. Malaria and lower respiratory infections cause the most child deaths, along with diarrhoea, parasitic infections, schistosomiasis, TB and HIV. High rates of anaemia are likely exacerbated by these infections. EVD affects young children more than others in EVD outbreaks, which may indicate their weak immune system. Poor sanitation and hygiene contribute to widespread environmental enteric dysfunction amongst children, which may have a lifelong impact on their health. The education system has low coverage and poor quality, with 3.5 million children of primary school age out of school and only 67 percent of children who enter first grade completing sixth grade (Kakietek 2019). Children face forced recruitment by armed groups, sexual abuse and loss of parents—9 percent of children 0 to 17 years old are orphaned (Ministère du Plan et Suivi de la Mise en œuvre de la Révolution de la Modernité (MPSMRM) et al. 2014).

Levels of malnutrition, key markers of poverty and vulnerability, are alarming, manifested in seriously high levels of both wasting—7 percent, or 'medium' in the World Health Organization (WHO) prevalence thresholds—and stunting—42 percent, or 'very high' in the WHO prevalence thresholds

(de Onis et al. 2018; Ministère du Plan et Suivi de la Mise en œuvre de la Révolution de la Modernité (MPSMRM) et al. 2014). The DRC has the third-largest population of stunted children in sub-Saharan Africa after Nigeria and Ethiopia (Kakietek 2019). The humanitarian community estimated that, in 2019, over 4 million children are at risk of wasting (UNICEF 2019). In 2018, an estimated 17 percent of children with SAM and 25 percent of children with moderate AM were treated (UNICEF n.d.). SMART (Standardized Monitoring and Assessment of Relief and Transitions) surveys in the Kasais in 2018 indicated a global AM prevalence of 10 to 15 percent and SAM prevalence of 1.5 to 5.0 percent (Programme National de Nutrition (PRONAUT) République Démocratique du Congo Ministère de la Santé Publique 2018). The need to focus on nutrition response to humanitarian crises has diverted attention from prevention, as well as from early identification and treatment of AM.

The areas most affected by AM are the greater Kasai region and the eastern provinces of North Kivu, South Kivu and Tanganyika. Although North Kivu is not a priority area for reducing AM, it has the highest stunting level in the country and has been affected by staggeringly high EVD prevalence in young children, forced recruitment of children, armed attacks on civilians and very poor indicators in many other areas. **Table 10** highlights key child nutrition-related indictors.

Table 10. Example of key child health and nutrition indicators.

Indicator	Value
Children who die before the age of 5 years old	10%
Children 0–59 months old who are underweight (low weight-for-age)	23%
Children 6–23 months old with adequate food diversity	20%
Children 6–59 months old with anaemia	60%
Children 6–59 months old who received vitamin A supplements in previous 6 months	70%
Children 6–59 months old who lived in households with iodised salt	92%
Children with diarrhoea who received oral rehydration solution or a home solution	42%
Children who test positive for malaria with the rapid diagnostic test	31%
Children who test positive for malaria and are treated with antimalarial drugs	29%

Source:(Ministère du Plan et Suivi de la Mise en œuvre de la Révolution de la Modernité (MPSMRM) et al. 2014)

Infant and young child feeding practices

IYCF practices that contribute to malnutrition in the DRC include a low exclusive breastfeeding rate and early cessation of breastfeeding, as well as poor dietary quality and quantity. Complementary feeding of children 6 to 23 months old is inadequate in terms of quality, diversity and frequency. IYCF counselling interventions have poor reach and coverage. **Table 11** highlights key IYCF indicators.

Table 11. Key IYCF Indicators.

Indicator	Value
Infants breastfed within 1 hour of birth	52%
Infants exclusively breastfed until 6 months old	48%
Infants 4–5 months old exclusively breastfed	22%
Infants receiving a pre-lacteal feed	11%
Children 6–23 months old receiving a minimum acceptable diet (consuming 4+ food groups, plus the minimum number of recommended feeds)	8%
Children 6–23 months old receiving 4+ food groups	20%
Children 6–23 months old with adequate meal frequency	35%

Source: (Ministère du Plan et Suivi de la Mise en œuvre de la Révolution de la Modernité (MPSMRM) et al. 2014).

Health system capacity

Scale-up of evidence-based actions to reduce child mortality and morbidity is constrained by weak **governance and management capacity** at all levels, limited partnerships and coordination across sectors, inefficient use of international and domestic resources, disproportionate management costs, unpaid health worker salaries, limited funding, poor data quality and availability, low availability and quality of health services, limited government supply chain management and logistics with frequent occurrence of duplication, weak coverage and synergy of maternal nutrition-related interventions with fragmented services and programmes.

Health expenditure in the DRC is only 10 percent of the average for sub-Saharan Africa (World Bank International Finance Corporation Multilateral Investment Guarantee Agency 2018). Underdeveloped infrastructure, low-quality services and financial barriers contribute to low utilisation of health services. Health worker salaries go unpaid, and health clinics are abandoned in favour of free services when the latter are suddenly available in the communities. Providers rely on patients' out-of-pocket payments, which excludes the poor, who cannot pay to access care and therefore avoid seeking care. Corruption is endemic at all levels of government and in all sectors of the economy.

The country had only 0.09 physicians per 1,000 people in 2018 (Kakietek 2019), whilst the WHO recommendation is 1 per 1,000 people. Provincial health directorates lack computer equipment, cars and fuel budgets and managerial and technical skills. District health management teams may represent different partner programmes with overlapping resources and no functional coordination of training and supervision. Many health zones lack skills and resources. Also, PRONANUT is understaffed compared with other vertical programmes, with low technical and managerial capacity and lack of resources for oversight, management and supervision at the service delivery levels.

The **District Health Information System II** collects routine health data at health facilities but does not report on nutrition. Some efforts have been made to expand it to cover nutrition indicators. Identification of malnutrition pockets relies on partners.

Health infrastructure is limited, sparsely staffed and poorly maintained, especially in rural areas, whilst the need for services has increased due to population increases. Nevertheless, because of out-of-pocket payments for services or drugs and poor quality, the utilisation of public health services is low, and trust of the community in public services has deteriorated.

There is no coordinated platform for **community-level health and nutrition service** provision and mobilisation in the DRC. Although policies and guidelines have been developed, community health services have been rolled out only on a small scale, largely by donors and their implementing partners. Community health workers / *relais communautaires* appointed by their communities are entitled to provide basic nutrition services to pregnant and lactating women and children under 5 years old, but the strategy has covered only about one-third of the health zones, largely by donor

programmes, and lacks standardisation and coordination. In 2018, nearly 60 organisations supported nutrition activities at the community level, 16 provided IYCF counselling, and 58 provided water, sanitation and hygiene interventions; but coverage of essential nutrition interventions—such as iron and folic acid supplementation, therapeutic zinc and management of SAM—were limited. Community health workers often refer and accompany families to health facilities but rarely provide nutrition counselling. Health facility committees act as mechanisms for citizens to interact with health authorities and service providers, but they have not been effective, especially in regions with many internally displaced people and sporadic outbreaks of conflict.

Annex 5. Summary of Innovative Approaches

Table 12. Summary of innovative approaches.

Topic	Location	Status	Lead agency
Ongoing			
OPTIMA—simplified treatment protocol for MAM/SAM continuum-of-care (Plus planned Cost-efficiency study with U of Harvard) (SAM/MAM management)	Kamwesha, Kasaï	Started 22 July, 6 months inclusion phase, 6 months follow-up	ALIMA
Impact of intervention approach with local recipes (SAM/MAM management)	Kasaï	Planned with U of Tulane	Interchurch Medical Assistance
New strategic plan for WFP operations 2012–2024, including nutrition-sensitive approaches (Prevention)	Country-wide	Started in 2019	WFP and partners
Pilot studies combining IYCF in emergencies with general food distribution; early detection and referral of acute malnutrition; cash-based transfer; WASH and/or improved women dietary diversity (Prevention)	Kananga	6 months	WFP, PRONANUT, CSP, WV
Local recipes study with *Groupe d'appui et d'accompagnement pour un développement durable* / U of Kinshasa (Recipes)	Kananga, Kasaï Central	Ongoing	UNICEF
Cost of a diet analysis of local nutrient-dense food access (Recipes)	Tanganyika, Kasaï Central	Ongoing	WFP, PRONANUT
Joint nutrition-sensitive resilience project (Resilience)		2019	WFP and partners
SCOPE—digitised beneficiary management for cash-based transfer integrated with nutrition (use of tablets with Open Data Kit for process monitoring) (Registration)	Kasaï, Kasaï Central, Ituri, North Kivu, South Kivu, Tanganyika	2019–2020	WFP
SCOPE CODA—community information management system for MAM and SAM (Registration)(Performance)	Tshikapa, Kasaï	2019–2020	WFP, PRONANUT, COOPI
Admitting low birthweight infants to strengthen breastfeeding (Prevention)	Kananga, Kasaï Central	Ongoing	COOPI
Curriculum development and Training of Trainers (Capacity development)		Started in 2017	
Recommended and planned			
Develop research protocols and test alternative recipes of RUTF—for example, Zeinata blend (*maïs*, *chenilles*, soya, *algues*, palm oil, sugar and salt), peanut milk, *spiruline* mix (*spiruline*, *maïs*, oil, sugar) and super mwamba (peanuts, moringa leaves, honey, amaranth grains)—and, based on findings, develop guidelines on use of local recipes (Recipes)		Recommended during the April 2019 workshop	Save the Children
Test alternative recipes of RUSF (Recipes)		2020; Recommended during the	WFP
Improve targeting of acute malnutrition with adapted tools/approaches (Early detection/Diagnosis)			WFP

Topic	Location	Status	Lead agency
Promote MAM treatment in the community for increased coverage (SAM/MAM treatment)		September 2019 workshop	WFP
Use MUAC for MAM (Early detection/Diagnosis)			WFP
Scientific day (*Journée scientifique*) to gather local evidence on the efficiency and effectiveness of nutritional products made from locally available ingredients (Knowledge management)		Planned for November 2019	WFP, PRONANUT
Sustainability study 24 months post intervention (SAM/MAM management)		Pending	Cruz Roja
Recently completed			
MUAC mothers / *mères périmètre brachiale* — Use by mothers of MUAC to assess and monitor acute malnutrition in the household (Early detection/Diagnosis)	Various	2018–2019	ALIMA, COOPI
Feasibility study on the support of nutrition resilience in Kwango Province, with Tufts University (Causal analysis)	Kwango	2018–2019	ACF
Food security and nutrition situation review to inform WFP's new country strategy (Causal analysis)		2018–2019	WFP, Government

Abbreviations: ACF, Action contre la Faim; ALIMA, Alliance for International Medical Action; COOPI, Cooperazione Internazionale; IYCF, infant and young child feeding; MAM, moderate acute malnutrition; MUAC, mid-upper arm circumference; PRONANUT, *Programme national de nutrition*; RUSF/RUTF, ready-to-use supplementary/therapeutic food; SAM, severe acute malnutrition UNICEF, United Nations Children's Fund; WFP, World Food Programme.

Annex 6. Appraisal of the Nutrition Cluster Guidelines

The National Nutrition Cluster guidelines have been revised through a collaborative process with Cluster partners to ensure assent between key stakeholders. Below, a summary of suggested changes are recommended for the review team to finalise the document. The document with tracked changes may also be useful and will be shared separately.

Overall comments

The guidelines were developed as a normative document, with frequent, clear instructions. However, there are instances where these are either too directive or restrictive or not adapted to the Democratic Republic of the Congo (DRC) context. There is also opportunity to ensure consistency in the presentation of topics, which can help provide a clear picture on the level of importance of each. Additionally, a judicious review would be in order to omit or include specific items in the main body versus the document annexes. further, this review found that some essential key pieces are missing which, if deliberately excluded, should be reconsidered.

It is important to alert readers of the guidelines that a good understanding of the context, with existing resources, structures and systems, is crucial to tailor emergency interventions. Any planned strategy or activity should build on and strengthen these rather than undermine them. Therefore, it is important that users are enabled to adapt implementation of the guidelines to continually changing contexts. For example, the multiple 'packages' described in the guidelines should be fluid rather than fixed, and the final package of activities provided should be a blend of existing and newly added activities that together contribute to a comprehensive approach.

For communities to be fully aware and committed partners, and for community resources to be used optimally, planned community support projects should include a specific and comprehensive technical package to strengthen community capacity. Strengthening capacity, taking time to negotiate effectively and seriously with community representatives and ensuring their participation in emergency projects should be part of each intervention design and plan, including specific expertise and other resources.

Specific comments

Content to be added

The following content should be added:

- Add treatment of acute malnutrition in infants 0 to 5 months old; refer to the national protocol and explore whether the 'management of at-risk mothers and infants' (MAMI) tool (simplified) could be applied (see recommendation).
- Refer to the national protocol annex on local therapeutic food recipes and ways to access combined mineral-vitamin mix (CMV) to ensure the WHO standard.
- Explain the role of the Alert-Response system.

- Review training norms for community volunteers (*relais communautaires*): more flexibility is needed to secure a greater number of trained volunteers, as their expected contribution to undertake prevention of malnutrition is very high.
- Include and underline the need to identify and work with a set of diverse community structures (e.g. women's groups, lending and savings organisations, religious groups). Community support groups are not enough to ensure sustainability of infant and young child feeding, as well as moderate acute malnutrition (MAM) and severe acute malnutrition (SAM) interventions.
- Include a decision tree with realistic options for preventing acute malnutrition versus treating MAM, as in *Moderate Acute Malnutrition: A Decision Tool for Emergencies* (Global Nutrition Cluster MAM Task Force 2017).
- Include an explanation on the use of the generic annual conversion factor (2.6) to estimate caseload in the DRC. It is a pity not to have accepted the newly proposed one (5) by the recent Harvard study, which would result in better planning (more realistic resources) and quality improvement (reduced stockouts, more realistic monitoring of progress and better flagging of low effective coverage). Also, it is strange to talk about a 'correction factor' when the factor is about converting annual incidence (unknown) from prevalence (known) and to use 2.6 as an annual conversion factor instead of 1.6 (that also give 1+1.6=2.6 to addition prevalent plus annual incident cases), which may lead to inconsistencies when used on shorter time periods (see **Box 2**). It would be important to:
    - Explain how the 2.6 factor is generated, suggest (1) understanding what 2.6 means and using it correctly and (2) understanding—in the future when the factor will be adapted for the DRC—why it changes and, again, how to use it.
    - Note that the application of the 2.6 'correction' factor is misused and gives different results than when the 1.6 'conversion' factor is used, in case the time period is not 12 months. For example, (2.6/12) x 6 = 1.29 is not the same as the correct 1+(1.6/12) x 6 = 1.79.

Box 2. Estimating SAM and MAM caseload

If: Prevalence = incidence x average duration of untreated illness
7.5 months is duration of untreated SAM (best understanding to date)
there is no change in prevalence and population figure during the time period

Then: annual incidence = prevalence x 12 months/average duration of illness
360 days / 225 days (or 7.5 months) = 1.6

Then: To estimate expected number of cases in a year for a given population, one adds the number of prevalent cases at the start of the activities (or, 1 x prevalence x population size) to the number of incident cases during the time period (or, 1.6 x prevalence x population size), or

(1 x prevalence x population size) + (1.6 x prevalence x population size)
= 2.6 x prevalence x population size

Note: If the time period is less than 12 months, the incidence conversion factor 1.6 will be divided by 12 and multiplied by the number of months, and the calculation assumes that both prevalence and population size are stable (which is not the case).

For example, for 6 months, the estimate caseload for SAM (or MAM) will be calculated as follow:
(1 x prevalence x population size) + ([(1.6/12) x 6] x prevalence x population size), =
(1+[1.6/12] x 6) x prevalence x population size)

Content to be expanded

The following content should be expanded upon:

- Improve and align the discussion on exit strategy, humanitarian-development nexus, early recovery and resilience.
- Provide more details on the technical content of the training: training curricula and length of the training should be tied together in the guidelines.
- Explain the use of the 'Prioritisation System'. The one described is used by the Nutrition Cluster (for the annual Humanitarian Needs Overview and Humanitarian Response Plan), which detects/monitors vulnerability but not peaks (surges), as delays are huge (reviewed quarterly, on data from previous six months or older).
- Use an 'improved, simplified, strengthened' alert-response / sentinel-sites system of the *Surveillance nutritionnelle, sécurité alimentaire et alerte précoce* (SNSAP) that would not be re-verified by a nutrition SMART (Standardized Monitoring and Assessment of Relief and Transitions) survey, which would be more powerful and still respect the national decision for a response while having increased and decentralised accountability.
- Ensure that all proposed indicators have realistic means of verification that are well explained (e.g. child mortality > 2/10,000/day can only be measured in special surveys). A proxy indicator could be something like increase in child mortality registered at the health centre / hospital (biased) or a strengthened surveillance system (SNSAP) with community volunteers monitoring child deaths in their communities.

Structure

The following are suggestions regarding structure:

- Rearrange sections or chapters or paragraphs in a logic flow and put some of them in annexes; put same/similar subjects together and separate different subjects. Some pieces should move into the annexes, and some of the annexes into a chapter.
- Ensure consistency of concepts and lists of activities. For example, the document lists elements of the nutrition response in various locations or describes these from different viewpoints in slightly different or less comprehensive ways, which may be confusing. It would be good to decide when-where-what is listed in the same logical way (start with information, priorities, then promotion/prevention, treatment etc.).

Language and tone

The following are suggestions regarding language and tone:

- Do not use trade names but use instead generic names of the products (ATPE, ASPE, LNS).
- Make text more concise and remove repetitions where possible. Ensure first use of abbreviations are spelled out, but do not use the plural form of abbreviations in French. Further, be consistent in word and acronym use by selecting and using one term consistently (e.g. selecting one of '*structures de santé*', '*formation sanitaire*' or '*structures sanitaires*').

Table 13. Revised Table of Contents with suggestions in blue.

Section	Suggestion
Acronymes	
I. Introduction : Importance des lignes directrices du cluster nutrition	• Use the text of the first chapter as introduction to the guidelines. • Add who is the intended user of the document and envisage a wide circulation, including, for example, the Zonal Health Bureau (*Bureau central de la zone de santé*). • Adjust list of emergency axes (as an example) but see comment and harmonise in the document.
II. Rôle et fonction du cluster nutrition	• Move entire Annex 1 here. • Reformat table; use first column as subheadings. • Since table was further completed, verify if acceptable—for example, strategy and role of Strategic Advisory Group; expanded partnership, involve in multisectoral rapid assessments and decisions; and technical support by working groups led by PRONANUT, covering both emergency and nutrition; as for the first, build upon what exists as for the latter, prepare for contingencies and builds resilience; verify if more is missing.
III. Priorités et seuils d'intervention du cluster nutrition	• Expanded suggestions provided, including merge priority bits from other chapters into here and correct for consistency.
IV. Le paquet minimal d'action requis ~~par le cluster nutrition~~	• Rearrange the chapter to have a logical flow and decide to add the proposed additional topics—for example: *A. Participation à la coordination des activités* *B. Renforcement des capacité du système communautaire* *1. Sensibilisation de la communauté* *2. Mobilisation de la communauté - Organisation et coordination des groupes* *C. Renforcement, organisation et appui à la promotion de la nutrition et la prévention de la malnutrition* *1. ANJE-U* ▪ Explain the overlap of prevention of malnutrition and treatment of MAM. ▪ Include a realistic decision tree with realistic options and ensure that the absence of a supply does not halt activities. *2. Alimentation de couverture* *3. Système de changement social et de comportement* *D. Renforcement, organisation et appui au traitement de la malnutrition* *1. Estimation du nombre de personnes dans le besoin et le ciblage* *2. Planification des activités de prise en charge dans les structures sanitaires* *3. Système de dépistage communautaire actif et dépistage de routine aux structures sanitaires* ▪ Add. *4. Système de référence et de contre-référence* ▪ Add. *5. Prise en charge de la malnutrition aigüe sévère chez les enfants de 6 à 59 mois* *6. Prise en charge de la malnutrition aigüe sévère chez les cas spéciaux* *7. Prise en charge de la malnutrition modérée chez les enfants de 6 à 59 mois* ▪ Include a decision tree with realistic options (see above). *8. Prise en charge de la malnutrition modérée chez les FEFA et les cas spéciaux* *9. Prise en charge de la malnutrition aigüe nourrisson de 0 à 5 mois* ▪ Add. *10. Soutien psychosociale du couple mère-enfant* ▪ Add. *11. Stimulation sensorielle et soutien émotionnel/affectif de l'enfant malnutri [To add]*

Section	Suggestion
	12. *Système de visites à domicile* ▪ Add. E. *Renforcement des capacités* 1. *Supervision formative* 2. *Formation* 3. *Système d'intrants et matériels* F. *Renforcement du système d'information nutritionnelle* 1. *Evaluation initiale: système de sites sentinelles, Multisectoral Initial Rapid Assessment* 2. *Système de suivi et de rapportage* 3. *Système d'alerte* 4. *Organisation des enquêtes SMART et de couverture* 5. *Évaluation* 6. *Recherches* G. *L'approche multisectoriel* ▪ Develop as part of the minimal package or a separate chapter. ▪ Simplify existing text and headings (e.g. select what is key and essential to 'ideally' include or consider). ▪ Perhaps move Objectifs into Pourquoi, and further simplify the text.
V. La multisectorialité	• Integrated into minimal packet above.
VI. Les thèmes transversaux	~~*A. Résilience*~~ *A. La résilience: la résilience du système de santé, communautaire, du ménage, et individuelle* *B. Liens entre l'urgence et le développement* ▪ Possibly merge with Resilience and/or Exit strategy. *C. Genre* *D. VIH/SIDA* *E. Relèvement précoce* ▪ Possibly merge with Exit strategy. *F. Environnement* *G. Redevabilité*
VII. Stratégies de sorties	*A. Intégration et passation des activités* ▪ Ensure to provide alternative options, including that of preparing RUTF/RUSF, complementary high-quality food with local recipes. *B. Stock d'intrants* ▪ Be exhaustive: add *bandes PB*, *laits thérapeutiques*, ATPE, ASPE, LNS, etc. *C. Outil et matériels*
~~***IIIV. Paquet minimum d'activités des projets selon la durée***~~	• Remove from here; added in chapter IV
~~***IX. Coût standard des activités de nutrition***~~	• Remove here and address in annex 2.
X. Plaidoyer en faveur de la nutrition	
~~***XI. Suivi et évaluation***~~	• Remove from here; added in chapter IV.
~~***Priorisation***~~	• Remove from here; added above in chapter III.

Section	Suggestion
Annexe 1: Recommandations techniques	• Previously Chapter III. *A. Calcul du nombre de bénéficiaires* ▪ Add ANJE-U, as well pregnant and lactating women (FEFA) and special cases. *B. Respect du protocole de prise en charge PCIMA* *C. Couverture du projet* ~~*D. Multisectorialité*~~ ▪ Remove here and merge above. *E. Quantité d'intrants pour la prise en charge de la malnutrition aigüe chez un enfant* ▪ Add ANJE-U, as well FEFA and special cases. *F. Normes pour la formation* *G. Normes pour les relais communautaires* *H. Supervision* *I. Suivi et évaluation* *J. Surveillance nutritionnelle* *K. ONG de mise en œuvre*
Annexe 2: Coût standard des activités de nutrition	• Move Chapter X here. • Add '*Méthode de calcul cout unitaire*' for ANJE-U and FEFA.
Annexe 3: Protocole PCIMA 2016	• Merge Annexes 3–7 in one with hyperlinks to all key manuals. • Add hyperlinks to crucial information platforms, such as the DRC National Nutrition Cluster, the Global Nutrition Cluster and more. • Add '*Manuel des procédures des structures et approches communautaires*, 2016' and '*Cadre stratégique de la participation Communautaire en RDC*, 2016', *du Direction de développement des soins de santé primaires du Ministère de la santé*.
Annexe 4: NAC	
Annexe 5: CPS	
Annexe 6: Stratégie WASH in Nut	
Annexe 7: Manuel *d'orientation* ANJE-U	
~~***Annexe 8 : Priorisation du cluster***~~	• Since blank, remove from here and potentially address all in Chapter III.

Abbreviations: ANJE-U, *alimentation du nourrisson et du jeune enfant en situation d'urgence*; CPS, *consultation préscolaire*; DRC, Democratic Republic of the Congo; MAM, moderate acute malnutrition ; NAC, *Nutrition à assise communautaire*; PB, *périmètre brachiale*; PCIMA, *Protocole national de prise en charge intégrée de la malnutrition aiguë*; PRONANUT, *Programme national de nutrition*; RDC, *République démocratique du Congo;* RUSF/RUTF, ready-to-use supplementary/therapeutic food; SMART, Standardized Monitoring and Assessment of Relief and Transitions; WASH, water, sanitation and hygiene.