PROJECT MODEL

Community-Based Management of Acute Malnutrition (CMAM)

Community-Based Management of Acute Malnutrition (CMAM) is a decentralised community-based approach to treating acute malnutrition. Treatment is matched to the nutritional and clinical needs of the child, with the majority children receiving treatment at home using ready-to-use foods. In-patient care is provided only for complicated cases of acute malnutrition. CMAM consists of four components: (1) stabilisation care for acute malnutrition with complications, (2) out-patient therapeutic care for severe acute malnutrition without complications, (3) supplementary feeding for moderate acute malnutrition and (4) community mobilisation.

CMAM is an evidenced-based model, currently implemented in more than 70 countries worldwide, and is the globally endorsed standard for management of acute malnutrition. It is an appropriate model to address acute malnutrition, both in development and humanitarian contexts. The key objective of a CMAM programme is to reduce mortality and morbidity from acute malnutrition by providing timely diagnosis and effective treatment of acute malnutrition, and through building local capacity (health system and community) in the identification and management of acute malnutrition.

Contents

List of Abbreviations

ADAPT	Analyse, Design and Planning Tool
ADP	area development programme
CWB	child well-being
CVA	Citizen Voice and Action
CTC	community-based therapeutic care
CHW	community health worker
CMAM	Community Management of Acute Malnutrition
GAM	global acute malnutrition
NGO	non-governmental organisation
MUAC	mid-upper arm circumference
MoH	Ministry of Health
MAM	moderate acute malnutrition
OTP	outpatient therapeutic programme
RUTF	ready-to-use therapeutic food
SAM	severe acute malnutrition
SC	stabilization centres
SFP	supplementary feeding programme
SDG	Sustainable Development Goals
TSO	Technical Services Organisation
WFH	weight-for-height
WFP	World Food Programme
WHO	World Health Organization
WV	World Vision

1. Model Snapshot

1.1. Contribution to global sector approaches and child well-being (CWB) aspirations

Community Management of Acute Malnutrition (CMAM) is the globally endorsed approach for treatment of acute malnutrition. The model is included in government protocols for the management of acute malnutrition in more than 70 countries. The purpose of CMAM is to ensure acutely malnourished children are treated effectively and in a timely manner, thereby reducing the risk of morbidity and mortality. A child with severe acute malnutrition (SAM) is nine times more likely to die than a healthy child. Using the CMAM approach, most children with acute malnutrition (>85%) can receive treatment at home, with weekly visits to a local health centre, making care much more accessible than compared to traditional feeding centres. CMAM is a core project model in the World Vision (WV) Health and Nutrition sector, and it contributes directly to the CWB aspiration of 'children enjoy good health.'

2. Model Description

2.1. Strategic relevance of this model

2.1.1. Contributes to CWB objectives and Sustainable Development Goal (SDG) targets

The project model contributes directly to the CWB objective of 'increase in children who are well-nourished (ages 0-5)' and indirectly to the 'increase in children protected from infection and diseases (ages 0–5)' objective, both of which subsequently contribute to SDG Targets #2 and #3.[1]

2.1.2. Sector alignment

- Primary sector: Health and Nutrition
- Contributing sector: Child Protection
- Contributing sector: Food (CMAM includes targeted supplementary feeding for treatment of moderate acute malnutrition)

2.2. Expected benefits (impact) of the model

2.2.1 Root problem causes and core benefits

Malnutrition is the leading contributor to child mortality, the underlying cause in over 45 percent of under-5 childhood deaths.[2] The associated effects of poverty, inadequate household access to food, infectious disease, inadequate breastfeeding and complementary feeding practices often lead to illness, growth faltering, nutrient deficiencies, delayed development and death, particularly during the first two years of life.[3] Overarching issues such as political and civil conflicts, environmental degradation and natural disasters, increase vulnerability to acute malnutrition.

CMAM provides effective treatment for acute malnutrition, reducing morbidity and mortality. Compared to traditional approaches (institutional therapeutic feeding centres), CMAM uses a decentralised approach, reaching many children and achieving high coverage rates. This model should always be implemented alongside other interventions such as water and sanitation, health, food security/food aid, and livelihoods to address the root causes of malnutrition.

2.2.2 Target beneficiaries with emphasis on most vulnerable children

The primary target group of CMAM are children between 6 and 59 months of age who are suffering from acute malnutrition, and, on a smaller scale, pregnant (in the last trimester) and lactating mothers with an infant less than 6 months of age. All eligible children within a community are screened for acute malnutrition at the beginning

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[1] SDG 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture; SDG 3: Ensure healthy lives and promote well-being for all at all ages.

[2] R.E. Black, C.G. Victora, S.P. Walker and the Maternal and Child Nutrition Study Group, 'Maternal and child undernutrition and overweight in low-income and middle-income countries', *The Lancet*, Vol. 382, Issue 9890 (2013) 427–451, published online June 6. http://dx.doi.org/10.1016/S0140- 6736(13)60937-X.

[3] FANTA, 'Maternal and Child Health and Nutrition' http://www.fantaproject.org/focus/children.shtml.

of the project to identify those with acute malnutrition. House-to-house screening will ensure that marginalised groups such as orphans, children with disabilities, and girls are intentionally assessed for eligibility. Indirect beneficiaries of CMAM programmes include families of children under 5, community leaders and community health workers, all of whom are empowered with knowledge on the causes and consequences of acute malnutrition and on available treatment. The project also indirectly benefits the households of children who are enrolled in CMAM, as families save time and money by effectively treating a malnourished child at home rather than travelling to in-patient care facilities for treatment.

2.2.3 Contribution to transforming beliefs, norms, values and relationships

Frequently, the underlying causes of acute malnutrition are poorly understood. It is attributed to curses, taboos, or evil spirits. Such values act as significant barriers to access treatment for this condition. A core component of the CMAM model is community mobilisation, which involves building the community understanding on the causes of acute malnutrition, and signs and symptoms and effective treatment, thereby working to overcome harmful traditional beliefs and practices. Trusted faith actors have an important role to play in addressing these norms by providing correct health information along with addressing the underlying causes. In addition, CMAM empowers caregivers, giving them responsibility for the treatment and care of their malnourished child through the home-based care approach.

2.3. Key features of the model

2.3.1 Methodology

CMAM is based on four key principles. These include: achieving the greatest possible programme coverage; beginning case finding and treatment before the prevalence of malnutrition escalates; providing simple and effective outpatient care where possible and rehabilitating children in the programme until they recover.

In addition to the 4 principles, CMAM consists of four components:

1. Community mobilisation refers to a range of activities that build a relationship with community members and fosters their participation in the project. These activities are also oriented to build capacity of the community for early detection of acute malnutrition, adequate referral and prevention. Community mobilisation, including engaging faith actors, is an essential component of an effective programme.
2. Supplementary feeding programme (SFP) provides dry take-home rations and routine basic treatment for children with moderate acute malnutrition (MAM) without medical complications. Moderate acute malnutrition is defined by a weight for height Z score (WFH) ≥ -3 and < -2 or a mid-upper-arm circumference (MUAC) ≥ 115 mm and < 125 mm. The SFP seeks to prevent deterioration to severe acute malnutrition and prevent declining maternal nutritional status. A family food ration is sometimes provided to prevent household sharing of the malnourished child's ration. Visibly pregnant and lactating mothers with infants less than 6 months who are affected by acute malnutrition are usually included in the SFP. Not all CMAM programmes will include an SFP component; this depends on context and resources available.
3. Outpatient therapeutic programme (OTP) provides ready-to-use therapeutic food (RUTF) and routine medical treatment for children with SAM without medical complications. Severe acute malnutrition is defined by a WFH < -3 or a MUAC < 115 mm. Around 85 to 90 per cent of children with SAM are treated in OTP, with children attending outpatient care at regular intervals (usually once a week) until they recover (usually a two-month period). In some contexts, families receive rations to prevent household sharing of the child's RUTF ration.
4. Stabilisation centres (SC) provide in-patient care for acutely malnourished children with medical complications. These children are at high risk of death and will receive treatment for their medical complications until their condition is stabilised, usually a 5- to 7-day period. Children are then discharged to the OTP for continued treatment on an outpatient basis. Children under 6 months of age with acute malnutrition or children with a disability that prevents safe consumption of RUTF are treated in stabilisation centres.

The components of CMAM come together to provide early identification through regular community-level screening for acute malnutrition, referral and treatment for acutely malnourished children. In many countries, CMAM is implemented within the context of the health system, in accordance with national protocols for the management of acute malnutrition. Where the health system is not providing treatment for acute malnutrition, or where the capacity of the health system is over-stretched, CMAM can be set up as an independent programme or a surge support to the health-care system. CMAM is equally appropriate for both development and humanitarian contexts – wherever acute malnutrition is considered a problem.

The CMAM model is unique from other nutrition programmes in that it is specifically focused on the **treatment** of acute malnutrition.

2.3.2 Implementation steps

The decision to implement CMAM, requires consideration of the following:

1. **Levels of malnutrition:** A recent nutrition survey or rapid assessment (the information cannot be more than six months old) conducted by WV, Ministry of Health (MoH) or other partners is a potential source of nutrition data. Alternatively, trained individuals may need to conduct rapid nutrition screening (using MUAC) if the programme team suspects that malnutrition is a problem in the area. CMAM is an appropriate intervention if levels of global acute malnutrition (GAM) are >10 per cent in the under-5 population in the community, or between 5 and 10 per cent with 'aggravating factors.'[4] Or, if the absolute numbers of severely malnourished children are high and it is beyond the capacity of the local health facility to manage on its own. (See Appendix A for CMAM decision tree.) If the level of acute malnutrition is lower than 5 per cent, WV recommends focusing on treatment using local resources with the Positive Deviance(PD)/Hearth project model (available on wvcentral) and prevention activities. WV's primary focus in nutrition programming is always on preventing malnutrition and supporting the MoH to strengthen prevention efforts.
2. **National guidelines:** National guidelines for community management of acute malnutrition must exist within the country. In contexts where such national level guidelines do not exist or are outdated, WV should refer to the global guidelines for acute malnutrition management,[5] while working with the government and other partners (such as UNICEF or other organisations) to develop or update national guidelines.
4. **Existing capacity:** A careful review of the available human resources (WV staff as well as MoH staff) is necessary before considering CMAM implementation because CMAM requires trained and experienced health and nutrition staff. Where possible, the local MoH should take the leading role in implementation, with support from WV.
5. **Access to a reliable source of RUTF and essential medicines:** WV should partner with UNICEF and other agencies that provide therapeutic products to ensure a reliable supply chain for procurement and delivery of RUTF and essential medicines. WV will procure a small buffer stock of RUTF and essential drugs to cover gaps caused by a potential break in the supply pipeline. For CMAM in emergency contexts, WV may directly procure all the RUTF and essential medicines, if required, but only for the short term.
6. **Opportunities for partnership:** In most circumstances, WV does not provide in-patient treatment for SAM with complications. Rather, WV refers severely malnourished cases with complications to a stabilisation centre run by a medical organisation or local health centre. A working group focused on health and nutrition priorities will assess the availability and capacity of local partners to collaborate for a CMAM project. In addition, there are opportunities for partnership with churches/local faith actors for community mobilisation activities.

The main steps to implement CMAM are as follows:

1. provide justification for the need for CMAM based on levels of acute malnutrition and/or aggravating factors using secondary data as available (within the last 6 months) or through primary data collection
2. sign a Memorandum of Understanding with implementing partners (e.g. government, UNICEF, World Food Programme [WFP] other NGOs)
3. assess capacity of health system and WV capacity to support CMAM implementation
4. secure supply chain of RUTF and essential medicines (note – in many countries, UNICEF, may be a supplier of these items)
5. review national protocols, in the absence of national protocol, develop operational guidelines for the programme based on international CMAM protocols
6. engage in community mobilisation planning: community assessment, ensure the role of faith actors is included and detailed in the community assessment tool and planning
7. identify OTP, SFP and SC sites
8. set-up CMAM sites on WV CMAM database and train data entry officer on WV CMAM database
9. initiate and continue community mobilisation activities

[4] 'Aggravating factors' include: generalised food insecurity or caloric consumption below 2,100 kcal/person/day, widespread communicable disease (diarrhoea, epidemic of measles or whooping cough), poor child feeding and caring practices, and crude death rate > 1/10,000/day and/or epidemic of measles or whooping cough.

[5] http://apps.who.int/iris/bitstream/10665/95584/1/9789241506328_eng.pdf

10. provide technical training on CMAM protocols for OTP, SFP and SC staff, consisting of both theoretical and field-based practical training; launch of CMAM sites should immediately follow theoretical training so staff can practice learning skills, under observation
11. conduct weekly CMAM sessions
12. enter monthly CMAM site data into WV CMAM database
13. generate monthly site and overall CMAM programme reports from CMAM database

2.3.3. Implementation details

Modular implementation of CMAM is possible. In some contexts, only SAM treatment (OTP and SC care), along with community mobilisation is provided. Supplementary feeding may only be implemented under certain conditions – e.g. an emergency response to drought, dependent on the availability of resources. In addition, WV may partner with other organisations to implement the various components of CMAM. For example, SCs are not routinely implemented by WV. Due to additional requirements for medical staff and logistics, a medical non-governmental organisation (NGO) or existing government facility will provide this component. Community mobilisation is an essential component for an effective programme and should be implemented for all CMAM programmes.

2.4. Level of evidence for the model

2.4.1 Evidence analysis framework

Severe acute malnutrition has traditionally been managed in in-patient facilities; however, several large humanitarian crises in the 1990s made it clear that the traditional approach was unable to provide an effective response. Access to and coverage of treatment was very limited. In 2000, a new approach, known as community-based therapeutic care (CTC) was piloted by Valid International in Ethiopia out of necessity, as the government prohibited the establishment of in-patient treatment units for acute malnutrition. The impact of this initial pilot programme was positive, demonstrating the clinical effectiveness of treating acutely malnourished cases on an outpatient basis. The approach was further studied in 2001, in Darfur, Sudan, where similarly positive outcomes to those seen in Ethiopia were observed. In 2002, Valid International formalised the development of the CTC model and Concern Worldwide agreed to fund a three-year research and development programme. With a focus on operational research, systematic analysis and documentation, a strong evidence base for the CTC model was established. What is now referred to as CMAM evolved from the early CTC work. The evidence base for CMAM consists of clinical effectiveness trials, randomised control trials and retrospective cohort analysis. In 2007, World Health Organization (WHO), WFP, UN Standing Committee on Nutrition, UNICEF issued a joint statement endorsing CMAM as the recommended global approach for the management of acute malnutrition.

2.4.2 Evidence of effectiveness

The available evidence indicates that CMAM is a highly effective model for the treatment of acute malnutrition, with between 85 and 90 per cent of SAM cases receiving treatment at home. The model is considered cost-effective, the cost per DALY (disability affected life years) of CMAM programmes ranges between about US$20 and US$50. Sphere Standards[6] have been set to evaluate the performance of CMAM programmes.

Since 2010, WV has treated over 1.5 million children under 5 and pregnant and lactating women with CMAM programming, with cure rates consistently above Sphere standards. WV has experience implementing CMAM in 21 countries.

2.4.3 Evidence gaps

As the CMAM model is now implemented in over 70 countries worldwide by both government and a wide range of NGO actors, evidence that the model is successful in a variety of contexts is well established. Apart from the core model itself, evidence gaps remain for the following:

- effective approaches for implementing CMAM in hard to reach/inaccessible environments, including role of non-traditional actors in reaching inaccessible communities, e.g. faith actors
- long-term effective community mobilisation strategies, including the role of faith actors
- strategies to manage high turn-over and low capacity of health-care staff
- simplification of CMAM protocols for MAM and SAM treatment

[6] Sphere Standards are evidence-based and represent sector-wide consensus on best practice in humanitarian response http://www.spherehandbook.org/en/3-management-of-acute-malnutrition-and-micronutrient-deficiencies/.

- alternative treatment delivery models (beyond the health-care system) to increase access and coverage for treatment.

While the current CMAM model is considered highly effective, though addressing the issues noted above will improve accessibility and coverage of treatment.

2.4.4 Sustainability of outcomes

The primary objective of CMAM is to save lives. A child with SAM is generally rehabilitated within a two-month timeframe, and once recovered, the risk of mortality decreases significantly. When implemented alongside interventions to prevent malnutrition, CMAM can have a lasting impact. CMAM requires on-going resource investment for supplies (RUTF, essential medicines, staffing). In many countries, these core operational costs are covered by MoH budgets. For CMAM to be sustainable, it needs to be included as part of routine health service delivery and guided by national protocols. Main indicators of sustainability are presence of national protocols for acute malnutrition, sufficient workforce trained on CMAM protocols, adequate financing and supplies, and high geographic and treatment coverage. While CMAM focuses on providing effective treatment for those children already suffering from acute malnutrition, complementary interventions are needed to prevent acute malnutrition.

2.4.5 Evidence rating

The following table provides a detailed analysis of the evidence review carried out by the project model review panel in 2017. Ratings and colour coding range from 0 per cent (red) to 100 per cent (deep green), indicating poor to high quality respectively.

0%	20%	40%	60%	80%	100%
Very Poor	Poor	Fair	Average	Good	Excellent

The review of evidence materials provided strong support for the effectiveness of the different components of the project model, however not all the elements of the project model were consistently validated, evidence of change was documented without duly control over confounding factors, and study design and sampling procedures were not reported in the evidence materials.

		Evidence Rating		
	Evidence Material	**A**	**B**	**C**
Evidence Criteria	Relevance	**33%**	**66%**	**17%**
	Effectiveness	**67%**	**100%**	**100%**
	Internal Validity	**88%**	**48%**	**90%**
	External Validity	**73%**	**73%**	**73%**
	Average Score	**65%**	**72%**	**70%**

A: Evidence-based interventions for improvement of maternal and child nutrition: what can be done and at what cost
B: Management of severe acute malnutrition in children
C: Treatment of severe and moderate acute malnutrition in low- and middle-income settings: a systematic review, meta-analysis and Delphi process

For more information on the evidence review criteria and process, please contact the Evaluation and Impact Reporting team.

2.5 External validity

2.5.1 Countries and contexts where the model was tested

Initial work on developing the CMAM model took place in Ethiopia and Sudan. CMAM protocols are now part of government guidelines in over 70 countries on all continents. CMAM is the model of choice to address acute malnutrition in humanitarian and development contexts in rural and urban environments.

2.5.2 Contextual factors

The following contextual factors have an impact on the effectiveness of the CMAM model:

- Community engagement – Effective community mobilisation is essential for the early identification and referral to treatment for acute malnutrition cases. Poor community engagement will result in low programme coverage and higher costs of treatment, as more complicated cases of malnutrition will present (requiring in-patient care).
- Health system capacity – In most countries, CMAM services are delivered as part of the health-care system. Low staff capacity and high staff turnover are two common barriers to effective CMAM programming. Focused attention on capacity building, mentoring and supervision is required.
- Supply chain (stock-outs of essential commodities) – RUTF and essential medicines are major barrier for effective CMAM programming and the most common reason for high defaulting rates.
- Physical environment – Whilst CMAM has been successfully implemented in conflict environments, modifications to the approach, such as changing the frequency of follow-up treatment visits or using mobile services versus static sites may be required.

3. Model Implementation Considerations

3.1 Adaptation scope during design and implementation

Essential factors for the success of a CMAM project are as follows:

- availability of nutrition technical support (WV national office nutrition and health advisor, WV Technical Services Organisation [TSO[7]], or external consultants)
- capacity building plan developed and implemented over the life-cycle of the CMAM project to ensure CMAM technical protocols are followed
- field-based technical staff to oversee implementation and provide supportive supervision
- integration with MoH is essential when implementing CMAM in a development context; CMAM implementation must follow national protocols (where they exist); projects planned and implemented with the MoH provide the greatest opportunity for strengthening local institutional capacity, transfer of skills and the sustainability of the project
- community mobilisation – community volunteers, including faith actors, actively participate in case finding and referrals of the project, generating demand for treatment service and ensuring high coverage
- stable supply chain – of RUTF, supplementary food (if SFP component included) and essential medicines
- use of WVs CMAM database for project monitoring and reporting.

Refer to the CMAM Implementation Quality Assurance tools (links provided in Part 3) for the minimum standards to be applied and evaluated during design and implementation of the model.

The following aspects of the CMAM model implementation may be adapted for the context, based on negotiation with partners:

- Management of MAM: When implementing CMAM in the development context, a supplementary feeding programme is often not included. In such circumstances, there needs to be referral mechanisms established to ensure that children discharged from CMAM treatment are enrolled in monthly growth monitoring, programmes to prevent malnutrition and other social safety net services available.
- Management of in-patient care (stabilisation care, SC) for SAM with complications: Stabilisation care requires in-patient treatment and clinical expertise. Where available, WV should partner with a medical NGO or MoH to provide this component for CMAM.
- Additional contextual factors for consideration: Frequency of follow-up treatment visits, use of static versus mobile facilities, role of community health workers (CHWs) in community mobilisation and treatment, are some of the issues that need to be negotiated with partners based upon the local context.

[7] Technical Services Organisation serves WV national, regional and support offices by providing high-quality, timely and needs-based technical sector services https://www.wvcentral.org/TSO/.

Phased approach to implementation:

- Community assessment and mobilisation planning are essential in the preparatory phase of CMAM programming. This consists of formative research in the implementation area selected for the programme in order to understand the following:
  - local understanding of acute malnutrition, the language used to describe the condition and cultural factors guiding health-seeking behaviours
  - where acute malnutrition cases are usually present
  - who makes decision about treatment and how these decisions can be influenced.

  The outcomes of the assessment will be as follows:
  - key terms in local languages to be used in approved communications about SAM and community treatment, and a simple communications strategy for their use (Who? What? Where? and by what medium?)
  - identification of individuals and systems of communication for follow-up of defaulters and absentees
  - an assessment of the likely local barriers, including religious or spiritual barriers, to accessing treatment
  - a mobilisation plan identifying the influential officials, faith actors, community members and institutions who should be involved in orienting the community to the new service and securing participation. Also, the most efficient (cost-effective) means of carrying this out (e.g. including in existing trainings, meetings, transportation and other requirements onto other scheduled activities). Where identified barriers are rooted in spiritual or religious beliefs considering using Channels of Hope for Maternal, Newborn and Child Health (CoH-MNCH) project model (available on wvcentral) as part of community mobilisation plan.
- Community sensitisation sessions are held in implementation areas, covering the following:
  - Employ local terms for swelling and wasting and address misconceptions about SAM or apprehensions about treatment revealed during the community assessments.
  - Describe the new service and the advantages of home-based care, especially the reduced absence of caregivers from the home.
  - State the criteria and procedures for selecting a child for treatment, to minimise false expectations.
- Where both MAM and SAM treatment is to be provided, supplementary feeding programmes should be established first, followed by outpatient therapeutic services, or where possible simultaneously. Where in-patient services do not already exist, this component can be set-up following the establishment of the SFP and OTP.
- Technical training on CMAM protocols is conducted immediately before the launch of CMAM sites, so that theoretical training can be immediately followed by field-based training in newly launched sites.

3.1.1 Fragile contexts

Humanitarian contexts: CMAM projects take place within a hierarchy of interventions aimed at addressing the nutrition crisis. The impact of CMAM on acute malnutrition is considerably reduced if adequate food is not available to the general population and/or if disease outbreaks are not addressed. CMAM goes alongside general food distribution, micronutrient supplementation and selective feeding programmes, along with the primary health care.

CMAM has been successfully implemented in areas with insecurity or conflict. Adaptations are required, such as using mobile services or making treatment visits bi-weekly to reduce beneficiary travel in highly insecure areas. A case study of WV's experience in using mobile teams to delivery CMAM services in South Sudan is available http://www.ennonline.net/fex/53/nutritionprogramminginsouthsudan.

Fragile contexts: CMAM implementation is generally led by NGOs with coordination through the national nutrition cluster or nutrition sector mechanism. Where available, implementation follows the national protocols for CMAM with necessary adaptations agreed upon by nutrition cluster/sector partners. In such contexts, the level of investment by WV is greater, as staffing, supplies and logistics may need to be managed entirely by WV depending on the capacity of partners.

3.1.2 Transitioning economies

In such contexts, Governments tend to provide greater leadership for CMAM, with treatment as part of routine MoH services. WV will play a supporting role in this context, as agreed upon by Government and nutrition sector partners. Possible roles in supporting CMAM in such contexts include: capacity building, mentoring and supportive supervision, strengthening monitoring and reporting systems, logistical support for supply chain,

operational research of innovations to improve treatment outcomes.

3.2 Partnering scope

Key partners and roles:

- **National nutrition coordination structure (Nutrition Cluster or Nutrition sector**). Role: in humanitarian settings, coordinate emergency nutrition partners to ensure CMAM services are available to the affected population; coordinate nutrition assessments, to identify high burden areas; coordinate nutrition information management to determine the effectiveness of the response.
- **UNICEF.** Role: supplier of RUTF and essential nutrition supplies in many countries; provide leadership for CMAM capacity building in some contexts.
- **WFP.** Role: supplier of supplementary feeding supplies for management of MAM.
- **Ministry of Health.** Role: defining national protocol for management of acute malnutrition in accordance with international standards; in many contexts, CMAM is implemented through routine health services, whereby MoH staff are the lead implementers; strong partnerships are required with all levels of the health system (national, regional, district).
- **Community leaders (e.g. religious, political).** Role: Serve as key informants for community assessment and mobilisation planning.
- **RUTF suppliers.** Role: Produce RUTF in accordance with WHO/UNICEF specifications for use in CMAM programming. Note: Where possible WV sources RUTF through UNICEF or through gifts-in-kind (GIK) donations.

3.2.1 Case studies of successful partnering for this model

UNICEF and WFP – These organisations provide global leadership for the management of SAM and MAM respectively. WV has effectively partnered with both agencies since 2005 to access resources (supplies, technical support, funds for implementation costs). For humanitarian contexts, WV is an active member of the national nutrition cluster (or nutrition sector) coordination mechanism. Through cluster engagement, WV has secured resources for CMAM programming and ensured a coordinated nutrition response with other actors. In addition, WV has partnered with MoH to expand CMAM services in time of emergency through piloting of innovative approaches to increase coverage for acute malnutrition treatment services by using a cadre of trained community volunteers (see Angola-case study http://www.ennonline.net/fex/49/angola).

RUTF Manufacturers – WV has had both successful and failed partnerships with RUTF suppliers. Through support offices, WV has received much needed GIK donations from RUTF suppliers for CMAM programming. Such partnerships are considered successful and highly valued to WVs CMAM programming. Conversely, WV partnered with a start-up RUTF manufacturer to field-test a new RUTF product. This partnership placed large demands on WV nutrition technical staff, with no benefit in the long run. WV should not engage in the business of RUTF product development or field-testing. Based on this experience, WV developed guidelines to inform the selection and use of new RUTF products in field programmes. Any RUTF manufacturer requesting use of their product by WV must be certified by UNICEF or provide necessary documentation to WV, as per WVI Guidelines on Selection and Use of New RUTF products. (http://www.wvi.org/sites/default/files/WV%20Guidelines%20for%20Development%20of%20RUTFs%20FINAL%202015.pdf).

Valid International – Valid International is a UK based NGO that conceptualised and conducted field research on the original CMAM model. World Vision International held MoU agreements with Valid from 2006 to 2011 to develop institutional capacity within WV for CMAM programming. This partnership was a key success factor in the launch and scale-up of CMAM programming in WV. Currently, WV uses internal expertise or a pool of vetted CMAM consultants to provide external technical support for CMAM programming.

3.2.2. Value proposition of partnering

Table 1. Value proposition of partnering

Potential Partner	Value Proposition
Faith communities/faith-based organisations	• Provide key insights on community-level attitudes and practices regarding acute malnutrition; engage with the community mobilisation component of CMAM through promoting uptake of treatment services through faith-based platforms

	• May play a supporting role to families whose children are in treatment, e.g. ensuring completion, mobilising volunteers, ensuring people have access to transportation if needed, families understand and follow through on treatment
Private sector	• Provide resources (RUTF, essential medical supplies) for CMAM programmes; support and further develop WV mhealth application[8] for CMAM; data visualisation, including mapping of CMAM monitoring and performance data (e.g. Geographic Information System (GIS) mapping of CMAM site)
Civil society/other NGOs	• Building upon the expertise and strength of organisations; partner with and implement different complementary aspects of CMAM such as a stabilisation centre operated by a medical organisation
Community groups	• Community mobilisation component of CMAM must be well informed through the inputs of community groups • Where possible, community groups can provide leadership for community mobilisation activities
Government	• Government partnership is critical for long-term sustainability • The government establishes national protocols of management of CMAM, including provision of staff, training, monitoring and supervision, and where feasible, management of supply chain and logistics • Government provides overall coordination of nutrition partners

3.3. Local to national advocacy (as relevant)

Citizen Voice and Action[9] (CVA) can be used as a component of this model. Advocacy activities may focus on increasing local demand for acute malnutrition treatment services or improvements in the quality of such services. CVA has been used to advocate locally for increased government budget allocation for nutrition (for example, see http://www.ennonline.net/communitybasedadvocacykenya). Efforts to use CVA for CMAM programming should include broader nutrition and health issues that affect malnutrition such as improved access to local health services and integration of growth monitoring protocols within the local government health infrastructure.

Where national protocols for management of acute malnutrition exist, implementation of the CMAM model puts these protocols into practise at the community level. This may be initiation of CMAM services where they have not been implemented in the past or strengthening of service delivery through improving quality and coverage. Since 2005, WV has supported CMAM implementation in 21 countries, thereby supporting the implementation of government protocols for management of acute malnutrition.

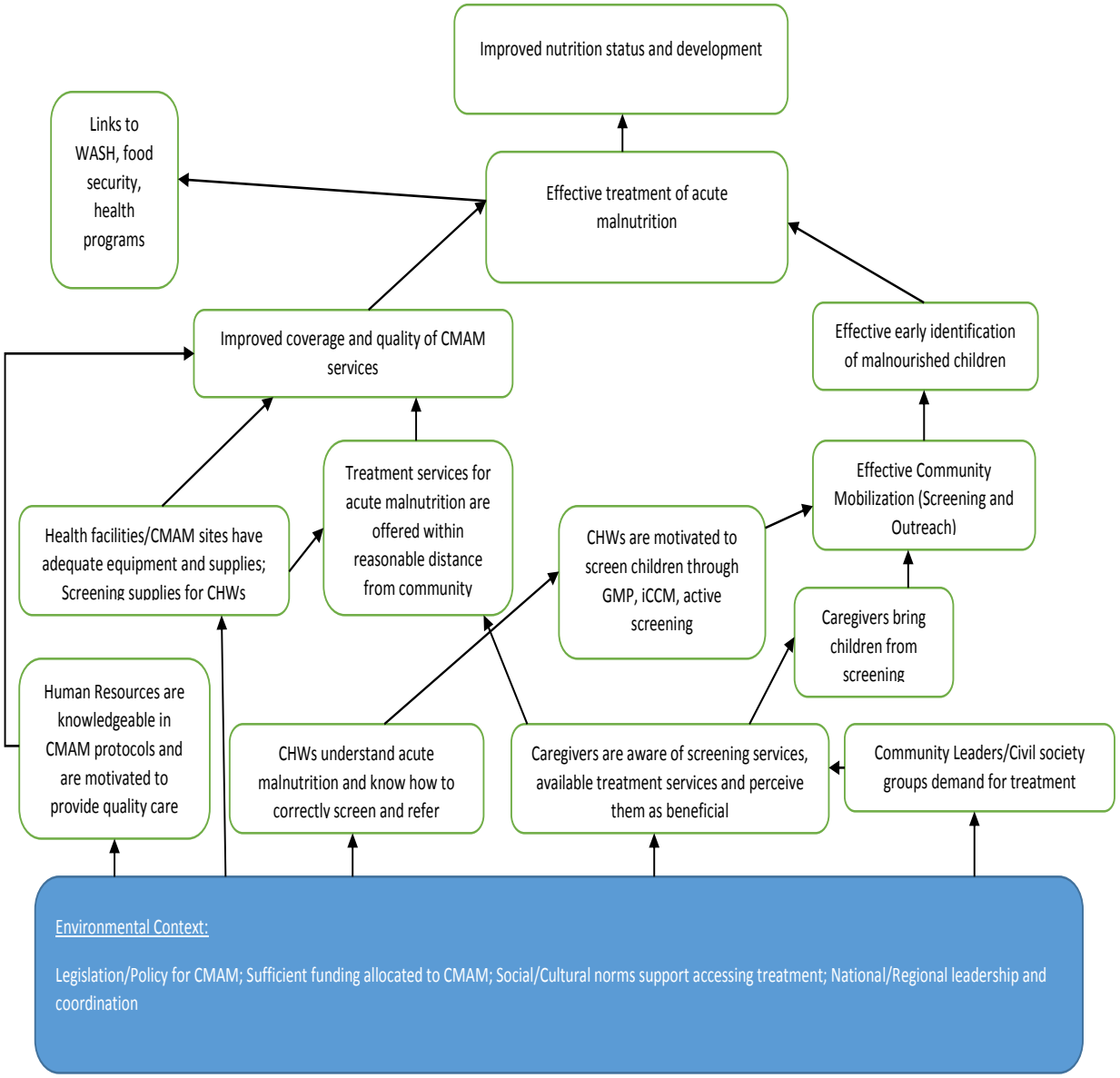
As part of global efforts to expand treatment services for acute malnutrition, government protocols for CMAM exist in over 70 countries. UN agencies, civil-society organisations and donors have been instrumental in this policy development process since 2007. Not all countries with a high burden of acute malnutrition, have updated national protocols in line with CMAM standards. Where this is the case, implementation of the CMAM model provides national/local evidence of the effectiveness of this approach, which can be used for national advocacy efforts to update policy. WV is currently undertaking a pilot CMAM programme in India with the purpose of informing state nutrition policy.

[8] mHealth is an abbreviation for mobile health, a term used for the practice of public health supported by mobile devices http://www.wvi.org/mHealth.
[9] Citizen Voice and Action is World Vision's approach to social accountability http://www.wvi.org/health/citizen-voice-and-action-0.

4. Programme Logic

4.1. Pathways of Change and Logic Diagram

CMAM Pathway of Change



The CMAM approach should be considered a continuum of prevention, with the aim of community mobilisation being to prevent acute malnutrition, the aim of SFP being to prevent SAM, and the aim of outpatient treatment being to reduce need for stabilisation care. The inputs as per the model include:

- leadership and coordination
- CMAM policy and guidelines
- financing, service delivery, human resources, equipment and supplies
- management and supervision capacity
- community resources including civil society groups, community leaders, informal health sector, caregivers and extended family

The activities and processes needed are:

- assessments of the nutrition situation, the health system and community capacity
- training health workers
- rehabilitating and equipping health facilities
- storing and delivering supplies

- monitoring, supervising and reporting on the activities.

The main outputs are:

- mobilised communities
- children with MAM and SAM identified, referred, admitted, treated and followed up
- trained health workers and community volunteers
- well-equipped and supplied health facilities/CMAM sites.

CMAM is implemented among varying socio-demographic, political, economic, geographical and cultural contexts that influence its implementation. There are linkages between CMAM and the other nutrition and health interventions targeting under-5 children that may influence the expected CMAM outcomes and impact. These outcomes are improved nutritional status and development of children. Outcome indicators are child mortality and morbidity prevalence, GAM, MAM, and SAM prevalence. The impact is manifested through the survival of children because of better quality of life, as well as the ownership of the government for CMAM, where possible.

4.2. Framework of indicators and alignment to CWB objectives

Table 2. CMAM indicators[10] and alignment to CWB objectives

	Hierarchy of objectives	Recommended standardised indicators	Means of verification
Goal	To improve nutrition status of children 6 to 59 months in the community	% of children aged 6 to 59 months with weight-for-height < -2 SDs from the median (WHZ) and/or MUAC <12.5 cm (or WHZ < -3 SD and MUAC <11.5 cm, if project is only addressing SAM)	SMART survey, caregiver survey
Outcome 1	To provide effective and accessible treatment for children with acute malnutrition	# and % of children aged 6–59 months living within less than one day's return walk from management of OTP site (optional) # and % of children aged 6–59 months with MAM who live within less than one day's return walk from SFP food distribution site (optional) # and % of discharged cases (usually children aged 6–59 months) who recovered** (calculate separately for SAM, and MAM) (mandatory) National protocol for management of acute malnutrition exits and is up to date (mandatory) # and % of facility experiencing a stock-out of RUTF in previous 3 months. (optional) **segregate by gender, disability group, or other relevant category	SMART survey, caregiver survey Enrolment records, WV CMAM database

[10] Sustainability indicators (highlighted in orange) and faith in development or faith actors' indicators (highlighted in green)

Outcome 2	To improve local capacity to manage malnutrition and related illness	# and % of health institutions able to manage malnutrition cases and meeting Sphere performance standards (optional) # and % of health institutions that integrated CMAM in their routine health services (optional)	Transition plan defined and evaluated Supervision reports
Output 1.1	Children (6–59 months of age) with SAM plus complications are treated through stabilisation care (SC)	# of children aged 6–59 months admitted into Stabilisation Centre (SC) (mandatory) # and % of discharged cases (usually children aged 6–59 months) who recovered from SC (mandatory) # and % of discharged cases (usually children aged 6–59 months) who defaulted from SC (mandatory) # and % of discharged cases due to death from SC (mandatory) # and % of discharged cases (usually children aged 6–59 months) who did not recover from SC (mandatory) segregate all indicators by gender, disability group, or other relevant category	WV CMAM database: Weekly tally sheets, monthly compilation reports Referral records
Output 1.2	Children (6–59 months of age) with SAM and no complications are treated through OTP	# of children aged 6–59 months admitted into OTP** (mandatory) # and % of discharged cases (usually children aged 6–59 months) who recovered from OTP** (mandatory) # and % of discharged cases (usually children aged 6–59 months) who defaulted from OTP** (mandatory) # and % of discharged cases due to death from OTP** (mandatory) # and % of discharged cases (usually children aged 6–59 months) who did not recover from OTP** (mandatory) Average weight gain for cases with SAM receiving treatment (optional)	WV CMAM database: Weekly tally sheets Monthly compilation reports Admission cards/OTP

		Average duration of SAM treatment. (optional) **segregate by gender, disability group, or other relevant category	
Output 1.3	Children (6–59 months of age) with MAM and no complications are treated through SFP	# and % of moderated malnourished children admitted to SFP (mandatory) # and % of discharged cases (usually children aged 6–59 months) who recovered from SFP (mandatory) # and % of discharged cases (usually children aged 6–59 months) who defaulted from SFP (mandatory) # and % of discharged cases due to death from SFP (mandatory) # and % of discharged cases (usually children aged 6–59 months) who did not recover from SFP (mandatory) segregate all indicators by gender, disability group, or other relevant category	WV CMAM database: Weekly tally sheets Monthly compilation reports Admission cards/SFP
Output 1.4	Pregnant and lactating women are treated through SFPs	# of pregnant and/or lactacting women admitted into SFP (mandatory)	WV CMAM database: Monthly tally sheets
Output 2.1	Improved expertise of MoH staff management of malnutrition	# of health workers trained in CMAM (mandatory) % of health workers CMAM trained who are working in CMAM services (optional) # and % of community health workers (CHW) engaged in community outreach for acute malnutrition (optional)	Training reports Results of pre- and post-tests MoH reports MUAC screening reports OTP/SFP/SC site monthly reports
Output 2.2	Increased ability of community members and local partners to identify/screen for	# and % of communities mobilised for acute malnutrition (mandatory) # and % of volunteers engaged in community outreach for acute malnutrition** (mandatory)	Training reports, OTP/SFP/SC facility records

	malnutrition and refer for treatment	# community members or local partners trained on MUAC and oedema screening** (optional) # community members or local partners trained on MUAC and oedema screening** (optional) **disaggregate by faith actors/faith communities	

4.3. Information flow and use

Effective monitoring of a CMAM programme requires:

1. monitoring of the individual child at the treatment site
2. monitoring and reporting on the effectiveness of the service as a whole
3. regular supervision of health-care workers who are providing CMAM services.

Individual child-level monitoring: At each CMAM site (OTP, SFP, SC) *individual child treatment records* are kept recording clinical status at admission, treatment progress and discharge outcomes.

Routine service data by site: Routine service data are recorded on *site tally sheets* at each site, based on quantitative data recorded after each session. (See WV CMAM database – Field Guides.)

Monthly reports: Monthly site tally sheets are compiled into site reports (See WV CMAM database – Field Guides). Site reports are compiled into district reports. District reports combine the information from individual sites (e.g. all OTPs or all SFPs) to report on routine data and performance. Site reports should be reviewed by supervisory and site-level staff each month. District-level reports are reviewed by district officials and shared monthly with national MoH. Monthly review of caseloads and performance outcomes assists with supply chain management and allows for the identification of weaker performing sites requiring additional supervisory support.

The **WV online CMAM database** (https://cmam.wvncoe.org/) has been developed to standardise and centralise data collected across all WV-supported CMAM projects. It is the *mandatory reporting tool* for WV-supported CMAM projects. Monthly tally sheets (by site) are entered by WV data entry staff into the online database and site and district reports are generated automatically, comparing programme performance against international standards. Stakeholders at multiple levels – facility, district, regional and national – can view programme performance.

Monthly reports on CMAM performance outcomes (e.g. per cent of children cured) and caseloads by site will be reviewed by WV along with CMAM stakeholders (e.g. district health team). It will be used to inform programme management decisions (e.g. where to prioritise supportive supervision, pre-positioning of supplies for high case-loads). Other WV entities (e.g. regional GAM team, SO, GC) will use monthly reports to engage with donors regarding the reach of WV CMAM programmes as well as the impact. Monthly data on caseloads can be used to advocate for increased resources for areas with a high burden of acute malnutrition, particularly in times of emergency. Monthly reports will be shared with the health facilities providing the CMAM services and reported back to communities through the existing leadership structure.

Monthly tracking of caseloads and, importantly, performance outcomes provides a direct measure of the quality of service provided. This allows WV and stakeholders to be held accountable for the quality of service provided and make necessary adjustments to implementation.

5. Management Considerations

5.1 Guidelines for staffing

Table 3. CMAM staffing

No. required	Position	Job Overview
1	CMAM Coordinator	Overall coordination of SFP, OTP, SC and community components
1	Project Assistant	Assist Project coordinator
Community Mobilisation		
Depends on size of project*	Community Mobiliser	Implement community mobilisation activities
Supplementary Feeding Programme		
1	SFP Team Leader	Coordination of SFP activities
2	SFP Measurers	Weigh and measure children
1-2	Health workers/MoH nurses	
1-2	SFP General Assistants	To register children
1	SFP Food Distributor	To mix commodities and distribute rations
Outpatient Therapeutic Programme		
1	OTP Team Leader	Coordination of OTP. Note: Should be a qualified health worker (a nurse or medical assistant)
1 per project site	OTP Nurse (context-specific)	Depending on size and caseload of OTP, a dedicated OTP nurse may be required
2 per project site	OTP Measurers	Weigh and measure children and can help the OTP team leader with tasks such as counting packets of RUTF, etc.; this role is usually filled by CHWs
Stabilisation Centre		
1 per shift of 24 hours care	SC Clinical Nurse	Should be qualified according to national policy
1-2 per project site	SC Nutrition/Assistant Health Staff	Role will vary according to patient numbers

* Note: The size of the Community Mobilisation team varies from project to project and is determined through the initial community assessment. Factors that assist in determining size include number of children in the area, geographic size of programme and ease of movement, capacity of local volunteers, and choice of mobilisation method (active or passive case-finding, self referral). In Ethiopia, for example, 1 CM conducted all training and follow-up, as the CHW network (Health Extension Workers and Community Health Promoters) was strong and the MoH included the task of MUAC measurements, default follow-ups, etc., in their job descriptions. In Lodwar, Kenya, restrictions on mobility because of safety concerns demanded that each area development programme (ADP) (3) have a CM worker.

	SC Support Staff	To prepare or help prepare therapeutic milk and food and clean SC
Other		
	NGO Nutrition Technical Advisor	Provide technical back-stopping support to CMAM coordinator; liaise with regional/national MOH
	Volunteers	Case-finding of malnourished as well as follow-up and tracking of children following rehabilitation

The following competencies are required for CMAM project implementers:

Role	**ICD competencies**
CMAM coordinator	HEA 003; HHN 001

Key elements and behaviours

Design, Implementation, Monitoring and Reporting of Nutrition Programme

- Adapts programmes to local contexts
- Monitors programme performance, using WV monitoring systems and standard indicators (including *CMAM database*)
- Assesses local capacity and ensures programmes are integrated into existing health systems where appropriate
- Ensures strong monitoring systems are in place that collect data for key nutrition indicators
- Ensures all data is analysed, reviewed and responded to on an on-going basis
- Clearly presents data, using appropriate graphs and tables
- Submits good quality narrative and financial reports in a timely manner

Capacity Development and Training

- Assesses training needs of CMAM implementers
- Designs, delivers, and supports staff training

Management of Moderate and Severe Acute Malnutrition

- Maintains and supports CMAM programme activities (*SFP/OTP/SC*)
- Provides technical assistance and support to all levels
- Ensures all staff adhere to protocols
- Maintains and shares WV CMAM database

Role	**ICD Competencies**
OTP/SC/SFP clinical staff (MOH staff)	N/A

Key elements and behaviours

Management of Moderate and Severe Acute Malnutrition

- Knowledge of and skills to apply national CMAM protocols (or international standards if no national protocol)
- Adherence to CMAM clinical protocols

Monitoring and Reporting of CMAM programme

- Understanding of CMAM reporting requirement
- Ability to complete individual treatment records, weekly tally sheets and monthly reports
- Ability to complete weekly stock reports

Two elements must be in place at the national office level before a CMAM project can begin:

1. A thorough review of the available human resources (WV staff as well as MoH staff): CMAM requires trained and experienced nutrition and health staff. Technical assistance must be available for CMAM design and implementation. National offices implementing a CMAM project must ensure that staff recruited for this project are qualified and experienced in management of acute malnutrition. The national office health and nutrition manager will provide technical support for the project. However, it is also necessary to place qualified health and nutrition staff at the project level. In addition, it is important that all involved are knowledgeable on ensuring protection of children from abuse, neglect, exploitation and violence. This will be particularly relevant

while selecting and building capacity of community volunteers and health workers to be child safe, as well as being able to identify any signs of potential abuse and make necessary referrals.

2. Access to a reliable source of ready-to-use therapeutic food and essential medicines: WV should partner with UNICEF and other agencies that provide CMAM supplies, or should purchase supplies.

There are four points of technical assistance in the CMAM project life cycle:

- preparation, feasibility and community mobilisation planning
- set-up, design and implementation
- mid-term review and coverage survey (if planned)
- final evaluation.

When designing a CMAM project, planning for and including budget for technical support activities is essential. Technical support needs should be determined based on country context – see Table 4 for decision-making. Technical support can be sourced in-country (e.g. national office health and nutrition advisor or MoH) through WV Partnership resources (e.g. TSO, Global Technical Resource Network, or through an experienced external consultant).

Table 4. Guidance for CMAM capacity building planning

Groupings: CMAM Capacity Building	**Group One**	**Group Two**	**Group Three**
Characteristics of group:	**-new CMAM programme -no previous CMAM programme implemented by WV in the past -CMAM may not be 'new' to the MOH**	**-CMAM programme implemented by WV in the past -MOH staff received training (WV and/or MOH/UNICEF) -WV staff retention issues; recent staff departures and new staff on board**	**-existing CMAM programme continued (new funding cycle) -WV & MOH staff have received training (WV's and/or MOH/UNICEF)**
Directions on how to develop a CMAM capacity building plan:	**-budget for Activities 1, 2, 5 & 6 -determine whether or not a budget for Activities 3 & 4 are necessary based on capacity of national CMAM programme manager**	**-budget for Activities 2 & 3 as a bare minimum -determine wither or not a budget for Activity 1 is necessary based on capacity of new CMAM staff**	**-budget for Activities 2 & 3 as a bare minimum -determine whether or not a budget for Activity 1 is necessary based on existing need**
CMAM Technical Assistance (TA) Package of Activities **Additional considerations: -IYCF into CMAM -CMAM database -SMART**	1. Preparation & Assessment	1. Technical Support: Nutrition & Community Mobilisation Mentorship	1. Technical Support: Nutrition & Community Mobilisation Mentorship
	2. Combined Visit: Set-Up, Design & Implementation + Community Mobilisation		
	3. Nutrition Technical Follow-Up Visit: *To be conducted only if it is requested and/or required*		
	4. Community Mobilisation Follow-Up Visit: *To be conducted only if it is requested and/or required*		
	5. Coverage Survey/Midterm Review	2. Coverage Survey/Midterm Review	2. Coverage Survey/Midterm Review
	6. Final Evaluation	3. Final Evaluation	3. Final Evaluation

5.2. Budget

The estimated costs of treating a child in CMAM (as an outpatient) range from US$80 to US$160/child, this includes the cost of RUTF (which generally makes up about half of the total costs). In-patient treatment for children with SAM with complications is estimated at US$225/child. The resources and budget required for CMAM can vary significantly depending on the context. Some of the key variables are:

- geographical spread and density of malnourished children (greater spread and lower population density will lead to increased costs)
- basic infrastructure available
- existing health and logistic infrastructure and staff
- rate of recovery of children
- quality of roads and therefore cost of transport
- availability of storage at CMAM distribution sites
- technical support and capacity building required. (If the national office has little CMAM experience, external technical support is required for project implementation. The costs of capacity building will vary depending on the level of technical support required and who provides it.)[11]

These variations are reflected in Table 5, which provides a few examples of the average cost per beneficiary of various CMAM programmes.

Table 5. Overall cost of CMAM programmes[12]

Country	Duration of project	Number of beneficiaries admitted	Cost per beneficiary (US$)
South Sudan (Non-WV)	4 months	3,144	$160
Malawi (Non-WV)	12 months	8,164	$208
Ethiopia (Non-WV)	7 months	7,635	$87
Ethiopia (WV ADP area)	12 months	4,370	$41
Niger (ADP areas)		20,761	$63

6. Linkages and Integration

6.1. Child focus

Child participation: CMAM targets children between 6 to 59 months of age. Thus, it does not focus on an age group where participation in decision-making should be encouraged. However, the primary caregivers are responsible for the treatment of their children through home-based care and ensuring weekly follow up at the health clinic, in order that their child can recover from acute malnutrition and thrive. CMAM is a life-saving intervention – the health and well-being of the child are at the heart of the project model.

Child protection: The following activities implemented with the context of CMAM will ensure the protection of children:

- As part of capacity building of various actors, including health workers, include awareness-raising on signs of potential abuse and ways to report and refer a child.
- Make sure that community volunteers and other stakeholders involved are child safe (e.g. background checks).
- As part of parental/caregiver education, include topics related to positive parenting to avoid neglect.

The issues of child protection might become even more serious if a child has disability. In such circumstances, attention should be paid to ensure treatment is provided for children with disabilities who are suffering from acute malnutrition.

Child sponsorship (as relevant): CMAM projects include all children (both registered and non-registered) within a community who suffer from acute malnutrition. Monitoring of the nutrition indicators included in the

[11] The TSO can assist in capacity building planning and costing.
[12] Programme costs include costs for all items used directly for programme beneficiaries (e.g. weighting equipment, supplementary foods), costs for outreach, and distribution staffing and costs of overheads.

Sponsorship Minimum Programming Standards[13] will assist the project in identifying registered children who require treatment. Child sponsorship monitors trained in MUAC may also assist with MUAC screening activities for registered children. Regular contact with children and families during child sponsorship monitoring or group gatherings can be used to reinforce key messages regarding treatment of acute malnutrition. Child sponsorship can be a platform to raise awareness about childhood nutrition, its importance and how the community can prevent malnutrition in the future.

6.2 Development Programme Approach (DPA)

Lack of access to effective and life-saving treatment for acute malnutrition is the root issue addressed by the CMAM model. A pre-implementation assessment should be undertaken to determine the feasibility of implementation and to assess factors affecting the sustainability of the intervention. This assessment will cover the following:

- review of national protocol (if present)
- human resource capacity of health system for acute malnutrition management
- supply chain and logistics capacity
- availability of essential commodities
- opportunities for partnership (Government, UN agencies, NGOs and other community partners).

Effective CMAM programming requires a strong community mobilisation component, where communities are actively identifying and referring acutely malnourished children for treatment. This requires community exploration of the following:

1. How does the community understand acute malnutrition? What are the community perceptions on causes?
2. What are the pathways of treatment used in the community?
3. What are the barriers to accessing treatment for acute malnutrition?
4. Who makes decisions about treatment? How can these decision-makers be influenced?
5. What factors affect health-seeking behaviour in the community?
6. What services for treatment of acute malnutrition currently exist within the health system? (Prior to undertaking CMAM, a capacity assessment should be conducted – refer to Part 3, 'Field Guide', *Valid CTC manual*.)

During the LEAP programme assessment, it may have become clear that acute malnutrition is a problem within the programme impact area. If acute malnutrition is at an unacceptable level or caseloads exceed the ability of the MoH to manage, it may be necessary to initiate a CMAM project with local partners earlier in the critical path process than Step 5, in order to save lives. CMAM is recommended when the level of GAM is >10 per cent and the situation is considered critical when GAM is >15 per cent. (refer to Appendix A for CMAM decision tool) However, a current as well as historical understanding of the context is needed. Root causes of the identified community child well-being priorities are explored in Step 5.3 of the critical path. At this point, a working group of local partners will use the Analyse, Design and Planning tool (ADAPT) for Health and Nutrition (https://www.wvcentral.org/community/health/Pages/ADAPT.aspx) to explore root causes related to health and nutrition priorities. The working group collects additional data to assist in the analysis of the root causes and the identification of the most appropriate projects to consider.

6.3 Faith

The Scripture tells us to care for the poor, oppressed and vulnerable in pursuit of spiritual, relational and physical transformation. CMAM seeks to build capacity of families, households, communities and health facilities to treat and prevent acute malnutrition in children and pregnant women who are among the most vulnerable in their communities. It is particularly suited to reaching those most vulnerable (such as orphans, or those with caregivers unable to take them to in-patient care facilities for treatment) because they can be treated in their own homes. In contexts where women are the primary caregivers of children, increasing women's ability to respond appropriately to malnutrition can empower women and support positive female influence at the household or community level. Improved self-esteem and confidence of women can contribute to improved well-being of their children.

[13] All registered children (RC) in the age group 0–59 months are monitored for their participation in health and nutrition activities, and all RC in the age group 0–59 months are following their growth curve, and if not, appropriate action is taken. https://www.wvcentral.org/sponsorship/Quick%20Reference%20Guide/Sponsorship%20Minimum%20Programming%20Standards%20-%20QRG%20English.pdf#search=child%20sponsorship%20standards%20health%20and%20nutrition.

In some contexts where boys are culturally valued over girls, girls can receive less care and less food and may therefore be more susceptible to malnutrition. All monitoring and evaluation activities must include data that is collected and processed in a way that allows gender-based analysis of results. The project can also ensure that all children suffering from acute malnutrition, regardless of gender, ability, ethnicity or faith have equal access to care by taking an intentional effort in screening all children (i.e. house-to-house MUAC screening). In areas where organisations exist for people who are disabled, CMAM projects should involve them in the design phase. Also, traditional beliefs and harmful cultural practices can contribute to the development of acute malnutrition, or may result in an unwillingness to seek treatment. The community assessment undertaken at the beginning of a CMAM programme, should uncover these issues, and a strategy to address them will be part of the community mobilisation activities.

God calls us to humbly and graciously serve others following Christ's examples. The CMAM project enables the communities to serve by helping them to reach out to the most vulnerable members (i.e. acutely malnourished children and pregnant women). It actively promotes and encourages community participation and enables the community members (community workers, health staff, volunteers, and community leaders, etc.) to take an active role in detecting, treating and preventing acute malnutrition in their communities, helping the affected to experience God's love and care through their services.

WV has implemented CMAM in 21 countries in which local faith leaders are included as key informants in the community assessment and are involved in community mobilisation activities.

6.4 Integration and enabling project models

Many factors contribute to malnutrition. Therefore, a broad, multi-sectoral approach is required to both prevent and treat malnutrition. While CMAM will provide treatment for acute malnutrition, other interventions are required to address the underlying causes, and ultimately to prevent malnutrition.

Collaboration between sectors may include (but is not limited to) the following:

- Food security/Livelihoods: Target food security projects to include families with a child who is enrolled in a CMAM project (e.g. household gardens, small animal production, savings groups)
- Nutrition: Link malnutrition prevention activities to CMAM projects by ensuring children discharged from CMAM are participating in local nutrition related projects (such as growth monitoring and promotion, vitamin A supplementation, and PD/Hearth projects)
- Water, sanitation and hygiene: Link to projects focused on the provision of appropriate latrine and water facilities within the community; promotion of personal hygiene and safe water handling and storage practices
- Food Programming: CMAM programmes can be part of broader food programming, occurring alongside general food distributions or blanket supplementary feeding programmes
- Cash Programming: Cash transfer can be linked to CMAM programmes, through conditional cash transfers.

7. Field Guides

Resource name	Description	Link
CMAM Toolkit	Online toolkit of CMAM resources for programme design and management; specifically tailored to emergency context, developed by Save the Children	https://sites.google.com/site/stcehn/documents/cmam-toolkit
State of Severe Malnutrition	Online repository of CMAM-related materials: national policies, technical guidelines, research articles	http://www.severemalnutrition.org
Valid International CTC manual	Field handbook for CMAM programme, should be used in conjunction with national protocols	http://www.validinternational.org/docs/CTC%20Field%20Manual.pdf
FANTA CMAM Training materials	A set of CMAM training modules designed for use by experienced CMAM staff to train implementers	https://www.fantaproject.org/focus-areas/nutrition-emergencies-mam/cmam-training
CMAM project model landing page on wvcentral	Internal WV website that provides links to project model resources and supporting documents and reports	https://www.wvcentral.org/community/health/Pages/Community-basedManagementofAcuteMalnutrition.aspx
Guideline: Updates on the management of severe acute malnutrition in infants and children (WHO, 2013)	Global guidelines for acute malnutrition management developed by World Health Organization	http://apps.who.int/iris/bitstream/10665/95584/1/9789241506328_eng.pdf
WV's CMAM database, Tally Sheets, Monthly Reports	An online database developed to standardise and centralise data collected across the entire WV partnership and allows project managers to track the effectiveness of the CMAM project relative to international standards **Monthly reports are generated automatically through the database**	https://cmam.wvncoe.org/ Orientation video on CMAM database: https://app.box.com/s/ljil2pbz8bc0a96q41ey CMAM Tally Sheets: SC, OTP, SFP  CMAM TALLY SHEETS (Ver. Apr Monthly report format

		 Copy of OTP - Summary Report.xls  Copy of SFP - Summary Report.xls  Copy of SC Summary Report.xlsx
CMAM Implementation Quality Assurance (IQA) Tools	The IQA tools are a set of qualitative self-assessment tools to determine programme fidelity to essential elements of the project model	https://www.wvcentral.org/community/health/Pages/IQA.aspx Design phase (Word version): https://www.wvcentral.org/community/health/Documents/CMAM%20IQA%20Design%20FY16%20Final.doc Implementation phase (Word version): https://www.wvcentral.org/community/health/Documents/CMAM%20IQA%20Implementation%20FY16%20Final.docx
Analysis, Design and Planning Tool (ADAPT) for Health and Nutrition	This tool supplements the 7-11 Start-Up Field Guide[14] and is designed to help programme staff and local-level partners identify possible health and nutrition interventions appropriate to context	https://www.wvcentral.org/community/health/Pages/ADAPT.aspx
WV CMAM project model contact – Colleen Emary (colleen_emary@worldvision.ca). WVI Global Health Sector team is responsible for maintaining and updating this document. Project Model Hope page: https://www.wvcentral.org/EandL/Pages/Project-Models.aspx		

[14] 7-11 is WV's Global Health and Nutrition Strategy https://www.wvcentral.org/community/health/_layouts/15/WopiFrame.aspx?sourcedoc=/community/health/Documents/7-11%202%200_COP%20meeting%20Overview%20of%20Changes.pptx&action=default&DefaultItemOpen=1.

Appendix A. CMAM Decision Tree

Is the prevalence of global acute malnutrition (GAM) measured within the past three months >10% with aggravating factors*

OR

Are there large numbers of children with severe acute malnutrition in the area?

↓ **NO**

Focus on addressing the underlying causes of malnutrition and refer the few severely malnourished children to the nearby health facility.

↓ **YES**

Consider GAM in relation to the context. Is the context appropriate for CMAM?

1. Have the key causes of malnutrition been identified (e.g. disease, food insecurity, caring & feeding practices) AND
2. Has the socioeconomic context been reviewed (e.g. assessment of market trends to help understand future vulnerability of the community) AND
3. Has the environmental context been reviewed in order to identify harvest calendar, food security situation, etc., AND
4. Have community coping strategies been reviewed to determine what behaviours may be creating vulnerability now and in the future, AND
5. Have additional potential aggravating factors been identified and plans for mitigating been considered (e.g. insecurity, population movement, vaccination levels, water and sanitation)?

↓ **NO**

Analyse the contextual factors (If additional capacity is needed to do this, seek assistance via TSO).

↓ **YES**

Are sufficient resources available?

1. Does the MoH have a policy which supports CMAM programming (or will allow CMAM, in the absence of a policy) AND
2. Are sufficient technical staff available AND
3. Are sufficient supplies available AND
4. Are reliable logistic systems available AND
5. Is sufficient funding available AND
6. Does local health system capacity exist (e.g. staff are employed, basic infrastructure exists) AND
7. Is access to a reliable source of RUTF available?

↓ **NO**

Reconsider CMAM. Advocate for the above resources. Some acute situations may allow for implementation (seek advice from TSO).

↓ **YES**

Consider implementing CMAM. Contact TSO for further advice.

*Aggravating factors include:

- Crude death rate greater than 1/10,000/day
- Epidemic of measles or whooping cough
- General food ration below 2,100 kcal/person/day

Appendix B. Key Indicators for Programme Monitoring and Evaluation

Indicator	Characteristics	What to monitor?
Monitoring	What the rehabilitation programme is providing	• The routine collection of medical, nutritional and follow-up data, recorded on cards and maintained in an efficient filing system. • Effective exchange of information on individual children among the programme components and between the programme and the community. • Record cards review: case review for proper filling, decision on transfers, defaulters, deaths, cures, absence, non-cure, weight gain, weight loss and SC transfer, numbering system. • Ration cards: information on progress (weight, height, ration received) & damage.
	Programme appropriateness	Quantitative indicators, such as mortality, default and cure rates. It is complemented by qualitative information and help to identify issues affecting the programme at a community level as well as to strengthen the community's sense of programme ownership. It is conducted by key informants interviews and focus groups discussions.
	Programme effectiveness	Effectiveness of programme activities are monitored by: • total admissions, exits and the number of children in the programme • the number of admissions by category • the number of exits by category • additional information on exits, weight gains and lengths of stay.
Evaluation	Programme design	Qualitative aspects to consider: • how is the need identified? • beneficiaries' involvement, right target population • complementarities to the existing health programme • baseline analysis versus need, impact on the community if the programme did not take place, consideration of alternatives • use of updated procedures and guidelines • how different components implemented • assumptions considered and risk analysis carried out, • partnership and parallel programme • staffing.
	Programme efficiency	Measures the outputs – qualitative and quantitative – in relation to the inputs. Analyses the cost of the programme with staffing, procurement, transport, overhead, per child treatment, finance and admin procedures.
	Programme effectiveness/impact	Effectiveness: record cards maintained in an efficient filing system, regular meetings and progress review participants, actions taken to solve problems and difficulties, analysis carried out to determine why some eligible children were not in the programme, discussions held with local communities. Impact: standard data used to assess the programme – includes death rates; default rates; recovery; rate of weight gain; and coverage. In addition, impact upon siblings of those in the programme, adverse effect of participating in the programme like stigma, queuing and actions for mitigation, participation of local health facilities and its impact on the staff (moral and new CMAM techniques)
	Programme sustainability/connectedness	What will happen when the programme closes? Longer-term provision of RUTF and other programme inputs, short-term decisions made and its impact, skills transferred to sustain the interventions and future actions.
	Programme Relevance/appropriateness	Timeliness, programme start date and onset of the problem, cultural appropriateness and foodstuff acceptability, inclusion in the programme and demands upon families and communities, women's access to the programme.
	Programme coherence	Coordination with other agencies, presence of general food and other developmental interventions, alignment with local government priorities, fulfilment of humanitarian principles, protection of beneficiaries (better or worse) staff security.
	Programme coverage	Were any children excluded from the programme? Were there gender/age/geographical/ethnic/conflict biases to participant children or women in the programme?

Appendix C. Suggested CMAM Project Timeline

Key Activities	Quarter							
	0	1	2	3	4	5	6	7
Conduct baseline nutrition assessment								
Sensitise the WV national office and partners on the importance of CMAM programming once the assessment results identify the need								
Assess staffing and volunteer needs for community mobilisation, supplementary feeding programmes, outpatient therapeutic programmes and stabilisation centres in collaboration with partners								
Identify the equipment and supplies required for each of the various components of a CMAM programme								
Identify transport needs for each of the CMAM programme components								
Determine collaboration and partnership opportunities with other NGOs that are implementing CMAM								
Plan for appropriate integration of CMAM in the programme environment (if required)								
Develop a phase-out strategy for CMAM with MoH								
Develop, submit and gain proposal funding								
Source and order relevant commodities, supplies and equipment								
Recruit staff and volunteers								
Sensitise community on programme's aims, methods and target group and gain support to mobilise communities								
Plan for appropriate integration of CMAM in the programme environment (if required)								
Develop a phase-out strategy for CMAM with MoH								
Sensitise community on programme's aims, methods and target group and gain support to mobilise communities								
Establish SFP								
Establish OTP (at existing health facilities where possible)								
Train health staff (MoH and WV) and volunteer outreach workers								
Community mobilisation and screening of the population to identify the beneficiaries								
Establish SC either through MoH partnership, direct implementation and/or with partnering NGOs								
Promote immunisations and vaccinations in conjunction with MoH, especially measles, VAC supplementation and de-worming								
Provide health and nutrition education for beneficiaries and the community								
Referral of children with SAM with complications to SC, in case the child needs a hospital referral to higher level health services								
Progressive transition over of all aspects of CMAM programme to MoH and NGO partners as sufficient capacity is reached								
Conduct ongoing monitoring of programme with all local stakeholders (MoH to lead the process)								
Undertake community assessment								
Undertake mid-term evaluation								
Undertake coverage survey								
End-of-project evaluation								
Conduct lessons learnt event								

Appendix D. Evidence for CMAM model

Project Model Levels of Evidence_F

https://www.wvcentral.org/community/health/Documents/Project%20Model%20Levels%20of%20Evidence_FY16_CMAM.doc