

**Final Evaluation of Concern Worldwide/MoHP Community-based  
Management of Acute Malnutrition (CMAM) Pilot Programme,  
Bardiya District, Nepal**

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## ACRONYMS

ACF	Action Contra la Faim
CDO	Community Development Organization
CMAM	Community-based Management of Acute Malnutrition
CTC	Community-based Therapeutic Care (see CMAM)
DHO	District Health Office
DHS	Demographic & Health Survey
EPI	Expanded Programme on Immunization
FCHVs	Female Community Health Volunteers
GAM	Global Acute Malnutrition
GMP	Growth Monitoring Programme
HMIS	Health Monitoring Information System
HP	Health Post
IMCI	Integrated Management of Childhood Illnesses
LMD	Logistics Management Department (MoHP)
MAM	Moderate Acute Malnutrition
MoHP	Ministry of Health & Population
MoU	Memorandum of Understanding
MUAC	Mid-Upper Arm Circumference
M&E	Monitoring & Evaluation
NGO	Non-Governmental Organisation
NRH	Nutrition Rehabilitation Homes
OTP	Outpatient Therapeutic Programme
RUTF	Ready-to Use Therapeutic Food
SAM	Severe Acute Malnutrition
SC	Stabilisation Centre
SFP	Supplementary Feeding Programme
SHP	Sub Health Post
SLEAC	Simplified-LQAS Evaluation of Access and Coverage
TFC	Therapeutic Feeding Centre
UNICEF	United Nation Children's Fund
WFP	World Food Programme
W/H	Weight for Height
WHO	World Health Organisation

## EXECUTIVE SUMMARY

The primary objective of this final evaluation was to assess the performance and level of integration of the CMAM pilot programme in Bardiya district. The evaluation focused on three main areas: 1) the national CMAM pilot strategy designed to guide and support the implementation of each pilot programme; 2) the performance of the Bardiya pilot programme itself, using standard and pre-agreed indicators, and; 3) the lessons learned from the Bardiya experience and its implications for the future roll-out of CMAM services nationwide.

At a national level, the CMAM pilot successfully created the institutional agreements between the different stakeholders, including the Ministry of Health & Population (MoHP), UNICEF and partners NGOs. It also developed appropriate medical protocols which included the adoption of new admission (MUAC <115mm) and discharge (15% weight gain) criteria. The involvement of international NGOs in the pilot period was also a positive step. As Concern's experience in Bardiya shows, their involvement allowed for the collection, analysis, documentation and dissemination of valuable programme data, essential for the short and long-term success of future CMAM programmes. Although specific provisions were made for coordination of programme activities at a national level (including the creation of the CMAM Task Force), inter-agency coordination was found to be limited and sporadic. The provision of RUTF from national to health facility level was consistent and effective, but it relied heavily on the involvement of UNICEF and Concern Worldwide. This significantly hampered the ability of the pilot to test the efficacy of the MoHP systems to deliver RUTF in a reliable manner. The evaluation found that the Child Health Division (CDH) at the MoHP has shown limited interest in discussing the performance of the programme, or to jointly address programmatic issues with the partners. Limited human resource capacity at CHD has undoubtedly played a role, suggesting that a more labour intensive nationwide implementation of CMAM would require a significant improvement in the staff numbers at CHD.

In terms of programme outcomes, the Bardiya experience shows that CMAM is an effective model for the community-level identification and treatment of SAM. Key indicators, including cure (68.2%) and death rates (0.34%), transfer to SC (2.62%) and non-responders (0.34%), were comparable to those of other (more resource-intensive) CMAM programmes. They were also considerably higher than similar pilots in other Asian countries (e.g. Indonesia and Afghanistan). The indicators show that health workers can treat SAM successfully in their facilities. Other indicators, including defaulter rates (28.47%) and coverage (<50%), suggest that community mobilisation activities were not adequately prioritised, given the revised timeline of programme activities and the timing of Concern-specific inputs (e.g. SLEAC survey). This experience should be avoided in other districts, and UNICEF should ensure that technical support provided (directly, or indirectly via local partners) includes guidance on the planning and implementation of community mobilisation activities. In terms of ownership, the evaluation found health centre staff to be committed and heavily involved in programme activities. They have also shown initiative in the development of strategies for improving programme performance. There is ample evidence to suggest that with ongoing (logistical and technical) support from the DHO, health staff in Bardiya can continue to successfully implement CMAM services after the pilot phase is over.

The Bardiya pilot experience provided a number of key lessons for the implementation of CMAM programmes in other districts. It showed the importance of district-level buy-in, and the need for CHD to actively ensure that DHO are committed to integrating CMAM as part of their regular health activities. The timing of activities showed that community mobilisation must be prioritised and relevant activities carried out in a timely fashion, in order to ensure optimal programme coverage. The use of new protocols also proved adequate and should be maintained. Additional measures to ensure the complete

recovery of children admitted (e.g. through the inclusion of a minimum period of stay) should be included. Similarly, adherence to protocols – in particular the appetite test – should be monitored, as there is strong evidence to suggest that the inclusion of anorexic children in the OTP programme has had a direct impact on the low number of referrals to SC and the high incidence of defaulting.

## **OBJECTIVES**

The main objective of this evaluation was to assess the performance of the Concern-supported CMAM pilot programme in Bardiya district, both in terms of the effectiveness of treatment, as well as on the level of integration of CMAM services into existing health structures. In doing so, the evaluation sought to identify lessons learned both for Concern Worldwide as a support partner, as well as for the future roll-out of services by the MoHP/UNICEF. The evaluation compared the performance of the programme in relation to the indicators outlined in the national CMAM pilot strategy. In particular, it focused on the three primary assumptions made prior to programme implementation:

- CMAM will reduce the barriers of access to treatment for acute malnutrition, and therefore increase the percentage of children receiving treatment (coverage) from less than 1% to 50%
- CMAM can be sustained through integration in the regular health services with existing human resources and facilities
- CMAM can create effective treatment capacity for children suffering from severe acute malnutrition

Finally, the evaluation also took into account strategic, policy and practical changes made during the implementation of the programme.

## **METHODOLOGY**

The evaluation was carried out between February 2<sup>nd</sup> and 19<sup>th</sup>, 2010. It made use of the extensive body of CMAM-related data that has accumulated in Nepal since 2006. This included a review of the CMAM national implementation framework, national pilot protocols, partner agreements, training materials, supervision checklists, programme database(s), nutrition and coverage survey, operational research documents and reporting, treatment and monitoring records. The evaluation made use of the findings of a previous visit to the programme (November 2009<sup>1</sup>) and discussions with inpatient and outreach staff held therein. Activities carried out as part of the evaluation include:

- Visit to OTP sites and meeting with Health Post In-Charge, Health Workers and other staff.
- Meeting with UN agencies including UNICEF and World Food Programme (WFP)
- Meeting with relevant CMAM counterparts at district level including DHO Nutrition Focal Point
- Meeting with District Health Office (DHO) staff from other pilot sites (Accham)
- Meeting with Female Community Health Volunteers (FCHVs)
- Meeting with local partner (Community Development Organisation, CDO) and CMAM Monitors

The evaluation did not succeed in meeting with representatives from the MoHP's Child Health Division (CHD).

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<sup>1</sup> Guerrero & Nyirenda (2009) *Mission Report, UNICEF Nepal* (Valid International, November 8 – 18<sup>th</sup>, 2009)

## INTRODUCTION

The introduction of CMAM in Nepal was significantly influenced by three factors: 1) the prevalence of Severe Acute Malnutrition (SAM) in the country; 2) the capacity and focus of existing Ministry of Health & Population (MoHP) and NGO nutrition programmes, and; 3) UNICEF's national and international support of the CMAM model.

The widely referenced Demographic and Health Survey (2006) found the national prevalence of acute malnutrition in U5 children in Nepal to be 13.4%, with SAM accounting for as much as 2.6%. The survey also found variations across the geographical and ecological regions of Nepal, with the highest prevalence of SAM found in the *terai*, and in the mid and far Western Region. Analysts concluded that these rates implied the existence of more than 90,000 SAM children in Nepal at any given time<sup>2</sup>. Subsequent nutrition surveys carried out in the *terai* have confirmed the initial estimates. The May/June 2008 Nutrition Survey carried out in Bardiya District, for example, identified GAM rates of 16.2% (CI 95%: 12.6 – 16.9, in Z-scores, WHO growth standards) and SAM rates of 2.8% (CI 95%: 1.4 – 4.2, in Z-scores, WHO growth standards)<sup>3</sup>. The survey labelled the situation “critical” and recommended the implementation of a nutrition intervention to address severe acute malnutrition in the district<sup>4</sup>.

The call for increased action in Bardiya came not only as a result of the nutrition needs, but also based on the MoHP capacity to address malnutrition and SAM in particular. The CMAM Pilot Project Implementation Framework, developed six months prior to the nutrition survey results for Bardiya, had concluded that the:

*“Current treatment capacity in Nepal is very limited, with only a few hospitals with trained medical staff and equipped facilities. Bed capacity is limited...health facilities have numerous access barriers, including distance, costs for the stay sustenance of the caretaker, opportunity costs for the family, and lack of awareness about malnutrition as a condition. Therefore, though the treatment facilities do handle around four hundred cases a year, coverage is very low as compared to needs”<sup>5</sup>*

The implementation framework also agreed that standard inpatient alternatives for the treatment of SAM (including Nutrition Rehabilitation Homes and/or Therapeutic Feeding Centres) offered a measure of relief, but would have limited impact<sup>6</sup>. Existing NGO programmes had been addressing malnutrition in Nepal for some time, but there was widespread consensus that they did “*not address the treatment of severe acute malnutrition but rather target underweight (low weight for age) and moderate acute malnutrition*”<sup>7</sup>. A new approach that would increase access and coverage and decrease costs for MoHP structures and beneficiaries was needed.

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<sup>2</sup>MoHP/UNICEF/ACF/Concern Worldwide (2008) *Community-based Management of Acute Malnutrition, Pilot Project Implementation Framework* (January 2008, p1)

<sup>3</sup>Concern Worldwide (2008) *Nutrition Survey Report, Bardiya District Nepal May/June 2008* (Concern Worldwide)

<sup>4</sup>The survey also made a number of recommendations that were important for the future implementation of CMAM in Nepal. It concluded, for example, that “*the private sector is playing a major role in providing medical treatment to children. Therefore case-finding and referral has to include private practitioners and pharmacists*” (p. 6)

<sup>5</sup>MoHP/UNICEF/ACF/Concern Worldwide (2008), p. 6

<sup>6</sup>Impact is defined here as the proportion of the “needs” met by a given intervention

<sup>7</sup>Ibid. p.2

In late 2006, UNICEF carried out a preliminary study to assess the feasibility of implementing Community-based Management of Acute Malnutrition (CMAM) – or Community-based Therapeutic Care (CTC)<sup>8</sup>, as it was known then – in Nepal. CTC had been developed in 2000, as an alternative to traditional inpatient approaches. The 2006 CTC feasibility assessment concluded that the integration of CTC/CMAM services into MoHP structures would first have to deal with a number of barriers (including challenging logistical arrangements and lack of supervision for community outreach). Nevertheless, the assessment concluded that CMAM/CTC offered “*enough advantages to justify a careful pilot and evaluation*”<sup>9</sup>.

The impetus for the implementation of CMAM in Nepal received additional support with the publication in March 2007 of the WHO/WFP/SCN/UNICEF Joint Statement on CMAM, which recognized that “*large numbers of children with severe acute malnutrition can be treated in their communities without being admitted to a health facility or a therapeutic feeding centre*”<sup>10</sup>. Potential stakeholders were approached in 2007 to evaluate possible partnerships for the implementation of a CMAM pilot programme in each of the three geographical areas of Nepal: *terai*, hills and mountains. Based on their existing presence in those areas, selected NGOs were approached to assist in the implementation and support of these pilot programmes. Concern Worldwide, present in both hills (Jumla) and *terai* (Bardiya) was one of the organizations approached. Between August and September 2007, Concern carried out its own assessment to determine their potential role in supporting CMAM in the country. The study also concluded that it was feasible to conduct a “*rigorous pilot in Nepal*”. Between May and July 2008, Concern carried out a Health System Assessment which provided further insights into the opportunities and challenges of implementing an integrated CMAM pilot in Bardiya district. These studies, coupled with the approval of the Emergency Nutrition Policy (which included CMAM pilots) by the MoHP in May 2008, paved the way for the start of the pilot programme planning (at national level) and implementation (at district level) in the first semester of 2009.

The following report documents and analyses the first twelve months of the CMAM pilot programme in Bardiya. The report is divided into three sections. The first section focuses on the national-level strategy behind CMAM, the agreed roles and support networks created to strengthen the individual pilot projects. The aim of this section is to evaluate the national platform on which the pilot strategy was developed. The second part focuses on the performance of the Concern-supported Bardiya pilot programme. It analyses key aspects of its district-level strategy, and evaluates its performance using standard CMAM indicators as well as the level of integration achieved. The third and final part of the report focuses on the lessons learned from the Bardiya pilot, and its implications for the national roll-out of CMAM. In doing so, it seeks to consolidate the findings of the previous two sections and put forward specific recommendations for the future expansion of CMAM services in Nepal.

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<sup>8</sup> The term CTC is more commonly found in the literature prior to the March 2007 Joint Statement, and is often seen as a more “emergency-oriented” version of the community-based therapeutic approach. The term CMAM, coined after the Joint Statement, is often seen as a more “development-oriented” version, typically describing a health-system based approach. In this report, the terms CMAM and CTC are used interchangeable.

<sup>9</sup> UNICEF (2006) Community-based Therapeutic Care Feasibility Assessment Report (UNICEF Nepal, March 2007, p. 33)

<sup>10</sup> WHO/WFP/SCN/UNICEF (2007) *Community-based Management of Severe Acute Malnutrition: A Joint Statement by the World Health Organization, the World Food Programme, the United Nations Standing Committee on Nutrition and the United Nations Children’s Fund* (March 2007, p. 2)

## **1. NATIONAL CMAM IMPLEMENTATION STRATEGY**

This section describes the national CMAM implementation strategy developed by UNICEF, the MoHP and the different partners. It focuses on a number of different issues including the objectives of the pilots, institutional agreements, coordination and communication between stakeholders, agreed timeliness, treatment protocols, training strategy, logistics and monitoring and evaluation systems developed for the purpose of the CMAM pilots.

### **1.1. Objectives**

The primary objective of the pilot was to test the feasibility of the CMAM approach and to examine potential modalities of CMAM implementation for its effective integration into the Primary Health System in Nepal. The pilot aimed to evaluate the practical implications of doing CMAM in Nepal by:

- Creating the capacity for CMAM in two or three districts in Nepal, and by evaluating the effectiveness in increasing coverage of identification and effective treatment of SAM cases, initially over a period of 6-12 months and, in the longer term, effectiveness in reducing SAM prevalence over a period of 5-10 years.
- Trying various modalities for CMAM introduction in the Health System and in relation with other interventions (e.g. Nutrition/Food Security, IMCI).
- Studying specific aspects and challenges of CMAM implementation in Nepal, including the identification of cost-effective ways to recognize and target most-affected communities; anthropological study on social mobilisation configuration; health system capacity assessment and women/health worker's time allocation; logistic supplies arrangements and management; water and sanitation; impact on programme outcomes and; cost-analysis.

The selection of three pilot sites was designed to test the different modalities needed for CMAM to succeed in the different geographical areas, thereby offering valuable lessons for the implantation of a comprehensive (and potentially multifaceted) nationwide CMAM approach. The pilot strategy, however, assumed that each experience would be monitored and evaluated in equal measure across the sites. The lack of continuing support (from international NGOs or otherwise) in two of the sites, however, effectively made the Bardiya pilot the only comprehensive learning site, making a comparable analysis across the regions difficult.

### **1.2. Institutional Agreements**

The CMAM pilot programme combined the efforts and resources of three distinct stakeholders; the national Ministry of Health & Population (including CHD), UNICEF and Non-Governmental Organisations (NGOs). Overall, the relationship proved particularly fruitful during the early planning phase. During this period, stakeholders developed the Pilot Project Implementation Framework and the Memorandum of Understanding (MoU), key documents for the implementation of CMAM in Nepal. The development of these documents, and in particular the national MoU, was a protracted process. The final level MoU was signed in March 2009, three months later than originally scheduled. The delay in the finalisation of the national level MoU had a knock-on effect on the timing of programme activities.

### 1.3. Coordination & Inter-Agency Communication

The pilot strategy proposed a series of (national and district-level) mechanisms designed to strengthen the coordination and information sharing between the different agencies and stakeholders. At a national level, a CMAM Task Force, chaired by the MoHP, was designed to oversee the different pilot programmes through a series of mechanisms which included regular monthly meetings. Although the Task Force was nominally assembled, it met only once in January 2009. Since then, and following staff changes in UNICEF and the departure of ACF from Nepal, coordination at a central level has effectively ceased. At present, most communication about the programme takes place between UNICEF and the partners (i.e. UNICEF-CHD, UNICEF-Concern Worldwide), and there is no regular, standardised forum for the discussion of CMAM in country. CMAM is also receiving limited attention in other MoHP-led discussions forums. In the Nutrition National Priorities Meeting, held in July 2009 (a full two months after the start of the Bardiya pilot programme) CMAM received no formal attention. Concern Worldwide were not invited to present their preliminary findings, and UNICEF did not include it in their agenda. The complexities of the situation notwithstanding, there are no indications that the MOHP at a central level is taking the leadership in coordinating or promoting CMAM (and other approaches, such as the Nutrition Rehabilitation Homes or NRHs) in the country. The involvement of other stakeholders, including the World Health Organisation (WHO), to ensure a more comprehensive coordination with other interventions and approaches, has also been limited. This has proven to be a major obstacle for the integration of CMAM into national level agenda.

### 1.4. Timelines of CMAM Activities

The CMAM national pilot was originally scheduled to begin in early 2008. A number of factors, including the emergency flood response (between August and November 2008) contributed to the delay of programme development of the necessary agreements and protocol until late 2008. The revised timeline was also subject to further delays, due to lack of finalised and approved agreements (MoUs), protocols and training material. The delays at a national level had a knock-on effect on the implementation of programme activities in the pilot districts (*see Table I*).

**Table I. Selected Bardiya CMAM Activities (Scheduled vs. Actual Periods)**

Activity	Scheduled Period	Actual Period
Development of National Training Material	Nov-Dec 2008	Jan-Mar 2009
SC Training	Jan 2009	Aug 2009
Health Worker Training	Feb 2009	April-May 2009
FCHVs Training	Mar-April 2009	May-July 2009
Radio Messages (Sensitisation)	Feb 2009	Nov-Dec 2009
Sensitisation Private Practitioners	Mar 2009	Nov-Dec 2009

Whilst the delay in trainings meant that treatment services could only be offered later than originally planned, the impact on the timing of community mobilisation activities (including key sensitisation procedures essential to ensure optimal programme uptake) had a more significant effect on programme performance (*see sections 2.2 and 2.3.2.*).

## 1.5. Protocols

The medical protocols used in the programme were developed jointly between UNICEF, ACF and Concern Worldwide. Standard, internationally-adopted CMAM protocols were adapted to fit existing health systems and services. Efforts were made to harmonize CMAM with other national protocols. IMCI protocols, for example, were observed and proposed amendments (e.g. adding MUAC to the identification of SAM and MAM) were only made in areas where CMAM programmes were to be implemented. The aim was to ensure maximum integration and harmonization between these programmes, with minimum disruption to standardised health practices in the country. More significant changes were made, however, to reflect current research findings and international practice. This included three primary changes to standard CMAM protocols:

### 1.5.1. Mid-Upper Arm Circumference (MUAC) <115mm as Admission Criteria

A MUAC cut-off point of 115mm was incorporated as the primary referral and admission criteria<sup>11</sup>. This was based on the nutrition survey results that showed a poor correlation between the generally used <110mm cut-off point and the new WHO z-scores. The adoption of a single referral and admission criteria was also designed to maximise the contribution of community volunteers, and to minimise the proportion of rejected cases and resulting negative feedback<sup>12</sup>. Although international validation of the new cut-off points had not yet been provided, the decision was made to adopt these new criteria so as to minimise any future changes that could lead to confusion amongst health workers in the facilities and at community-level<sup>13</sup>. The protocols also used the more standardised Weight for Height (WFH) z-score as an admission criterion to conform to the new WHO Growth Standards<sup>14</sup>. These new admission criteria, and in particular the <115mm MUAC cut-off points, were accepted by the MoHP once official validation had been obtained from WHO/UNICEF. The inclusion of a single MUAC (referral and admission) criteria proved essential in the implementation of the pilot at field level.

### 1.5.2. Fifteen Percent (15%) Weight Gain as Discharge Criteria

The adoption of MUAC as the primary entry criteria required changes to the (generally used Weight for Height, WFH) discharge criteria. Based on existing research<sup>15</sup> and recommendations made by

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<sup>11</sup> Practically speaking, the decision also meant that new, previously unavailable MUAC colour bands that reflected this change had to be organised locally.

<sup>12</sup> For a detailed assessment of the impact of rejection on CMAM programme coverage see Guerrero, S, Myatt, M & Collins, S (2008) *Determinants of Coverage in Community-based Therapeutic Care (CTC) Programmes: Towards a Joint Quantitative & Qualitative Analysis, Disasters* (Overseas Development Institute, March 2010)

<sup>13</sup> The use of MUAC as the primary admission criteria was justified thus: “using Mid Upper Arm Circumference (MUAC) for both screening and admission simplifies screening so that it can be handled by local health workers and community volunteers without the need for bulky equipment. Traditionally, admission to therapeutic feeding programmes is determined on the basis of Weight for Height, which identifies a different population of malnourished children. However, MUAC is the anthropometric indicator with the best prognostic value for mortality. Unlike weight for height, MUAC has a direct relation to muscle mass and is therefore a direct measure of nutrient reserves. Thus screening and admission by MUAC targets malnourished children at highest risk of mortality” (Community-based Management of Acute Malnutrition, Pilot Project Implementation Framework, (MoHP/UNICEF/ACF/Concern, January 2008, p3)

<sup>14</sup> The 2009 WHO Growth Standards define Severe Acute Malnutrition (SAM) as < -3 Standard Deviations, and Moderate Acute Malnutrition (MAM) as < -2 Standard Deviations.

<sup>15</sup> Schofield, L (2008) *Use of Proportional Weight Gain as a discharge criterion in CTC*, in ENN's *International Workshop on the Integration of Community-based Management of Acute Malnutrition* (Washington DC, April 28-30, 2008, Workshop Report, p. 25)

WHO/UNICEF in 2009<sup>16</sup>, 15% Weight Gain was adopted as the discharge criteria for Nepal. The protocols stipulated that children who reached their (15%) target weight, and who could not otherwise be classified as SAM (i.e. no oedema, WFH > -3 SD Z-Scores and MUAC >115mm) could be classified as cured. The protocols, however, did not specify a minimum length of stay in the programme.

### 1.5.3. Referral of Complicated MAM cases to Stabilisation Centre

The protocols stipulated that cases of Moderate Acute Malnutrition (MAM) with complications should be referred and admitted into the Stabilisation Centre (SC). This was largely based on the recommendations made by the Food and Nutrition Technical Assistance (FANTA). In practice, however, no complicated MAM cases were ever referred to the DHO Hospital in Gulariya, suggesting confusion amongst health workers about referral eligibility. Caretaker’s refusal to travel to Gulariya is also likely to be a determining factor.

## 1.6. Training Strategy & Material

### 1.6.1. Training Strategy

A cascade training approach was adopted in order to build the capacity of MoHP staff at all necessary levels. The aim was to train key staff at central level, and to rely on them for the transfer of skills down to the district, health facility, and community level personnel (see Table II). By transforming trainees into trainers, through Master Training of Trainers (MToT), the strategy aimed to strengthen links across the different MoHP tiers and to promote ownership over the programme. The goal was for CMAM services to be provided by all health facilities in the pilot districts, and for the training to be provided to all health staff at the different levels.

**Table II. CMAM Training Strategy**

LEVEL	APPROACH	PARTICIPANTS	TRAINERS
Central	Master Training of Trainers (MToT)	MoHP Selected Individuals	UNICEF ACF Concern Worldwide
District	Training of Trainers (ToT)	Nutrition Focal Person HP/PHC In-Charges District Health Supervisors	Concern Worldwide 1 Central MToT Participant
Health Facility	Training	All remaining HP/PHC staff SHP In-Charges	Concern Worldwide HP/PHC In-Charge District Health Supervisors
Community	Training	All FCHVs All remaining SHP staff	SHP In-Charges HP/PHC In-Charges District Health Supervisors Concern Worldwide

<sup>16</sup> WHO & UNICEF (2009) *WHO child growth standards and the identification of severe acute malnutrition in infants and children: a Joint Statement by the World Health Organization and the United Nations Children’s Fund* (WHO/UNICEF, 2009, p. 5)

The selection of MToT as the primary training strategy was in line with MoHP operating procedures for the introduction of a new programme. UNICEF had also validated this approach in their 2006 feasibility study<sup>17</sup>. Nevertheless, there is evidence to suggest that national-level MToT was inappropriate for the larger objectives of the national pilot. On the one hand, as the feedback from the two MToT's sessions (March and November 2009) revealed, participants expressed concern about the lack of a practical component. With no exposure to the practical intricacies of programme implementation, trained staff continually expressed doubts as to their ability to train others. In addition, only one of the trainers included in the first MToT (March 2009) actually participated in subsequent trainings in Bardiya. The absence of capable and willing trainers to assist at district-level led to the second, UNICEF-sponsored MToT (November 2009). At district level, the Training of Trainers (ToT) approach seems to have been more effective, with staff from the DHO playing a central role in the training of Health Facility staff and FCHVs.

The original training plan made two assumptions; 1) that CMAM could be included in the WHO ToT for selected Gulariya hospital staff, and; 2) that WHO-trained staff could train all remaining hospital personnel, on both TFC and its integration with CMAM services. Nevertheless, poor inter-agency coordination meant that Concern was not informed about the timing of the WHO ToT, and CMAM was therefore not included. In addition, WHO-trained staff were not given adequate (financial) resources to conduct further trainings for other hospital personnel. As a result, Concern was forced to bridge this gap by providing training on both inpatient and outpatient treatment of SAM. In order to do so, an external (WHO-trained) consultant was recruited. The consultant's lack of experience with CMAM, however, significantly hampered the provision of a unified CMAM/Inpatient training.

Logistics training also proved necessary to facilitate the inclusion of CMAM-specific items in the regular procurement systems at DHO level<sup>18</sup>.

### *1.6.2. Training Material*

The CMAM material for Nepal was developed jointly by UNICEF, Action Contre la Faim (ACF) and Concern Worldwide. The MoHP/CHD played only a minimum role in the development of these tools. The material was developed gradually and chronologically to fit with the different levels of training.

- **MToT Manual**: was developed by UNICEF/ACF/Concern based on the draft Food and Nutrition Technical Assistance (FANTA) manual. The OTP and SC components of the FANTA manual proved helpful, but the community mobilisation and Monitoring and Evaluation (M&E) required strengthening. National CMAM treatment protocols were also used for the MToT. Reporting formats were adapted from the Malawi CMAM programme, and steps were taken to harmonize these with existing IMCI formats.
- **District Level Training**: the MToT training material was translated into Nepali for its use at district level trainings. The task of translation was divided between UNICEF, ACF and Concern Worldwide (each using a different translating approach). Due to time constraints, the combined

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<sup>17</sup> The study suggested that "a national training of trainers (TOT) workshop for ministry and NGO staff will be necessary to create in-country training capacity for the pilot project as well as for further expansion" (UNICEF, 2007, p. 24)

<sup>18</sup> These additional trainings were reportedly not driven by the need to bridge technical gaps at DHO level, but instead, were presented as a means to provide financial incentives (though the provision of standard training allowances/per diems) for staff not formally included in the CMAM pilot.

material was not appropriately cross-checked to ensure consistency, and post-training feedback suggests that the material/translation should be revised and simplified.

- Health Facility Training: was adapted from the District level training material. Certain components (e.g. SC treatment) were either removed or simplified.
- FCHV Training: literacy was the primary determinant shaping the material used in the FCHV training. UNICEF/ACF/Concern Worldwide jointly develop a series of training and counselling, mostly pictorial flipcharts for the FCHVs. A trainer's manual, based on a simplified version of the MToT, was developed to assist in this training.
- Stabilisation Centre Training: a Nepali translation of the MToT chapter on stabilisation care, in conjunction with WHO Inpatient protocols, was used by Concern Worldwide for this training.

The observations above notwithstanding, the overall training package was evaluated in November 2009 by Valid International and was deemed to be adequate.

## **1.7. Logistics & Supply Systems**

As part of the January 2009 meeting, stakeholders agreed that the overall CMAM logistics and supply systems should not undermine existing MoHP (national, regional and district) channels. Instead, partners should identify key areas to support and strengthen. Three issues received particular attention;

### *1.7.1. CMAM Routine Drugs*

The provision of CMAM routine drugs as part of the essential drug list provided by UNICEF meant that no additional changes were necessary for the implantation of CMAM. UNICEF did agree to keep a back-up stock to be used in case of emergencies. The strength and reliability of delivery systems (in particular from DHO to Health Posts (HPs)/Sub-Health Posts (SHPs)), however, was found to be weak, and partners – including ACF and Concern Worldwide– were encouraged to support DHO in stock management and requests for distribution of drugs.

### *1.7.2. Therapeutic Foods (F75, F100 & RUTF)*

In order to reduce costs, and ensure adequate supplies, partners agreed that therapeutic foods (including F75, F100 and RUTF) should only be provided to facilities (hospitals and HPs/SHPs) who had received appropriate training and who were therefore capable of delivering inpatient and outpatient treatment.

The national level agreements stipulated a specific logistic support role for UNICEF and the NGOs. UNICEF committed to delivering supplies to the Logistic Management Department (LMD) at central level, and oversee the transportation of these to the appropriate Regional Medical Stores (RMS). NGOs supporting CMAM implementation would in turn oversee the request and delivery of therapeutic foods from the RMS to district level stores, and on to health facilities implementing the programme. In practice, however, the supply of RUTF has been consistently delivered from LMD directly to DHO warehouses, bypassing the widely-used RMS. The use of a direct supply route, inconsistent with standardised MoHP procedures, has been attributed to the lack of funds to cover expenses associated with distributing through this additional tier.

### *1.7.3. Alternative Sourcing of RUTF*

The sustainability and cost-effectiveness of introducing RUTF into the Nepal health services has been at the forefront of CMAM discussions. Importing RUTF (Plumpynut®) is widely perceived as costly, and difficult for the MoHP to do without external financial assistance. As a result, UNICEF and its partners committed to evaluating the cost-effectiveness of the programme so as to determine the need for alternative, more affordable alternatives (e.g. local production, regional imports).

## **1.8. Monitoring & Evaluation (M&E)**

### *1.8.1. Monitoring*

The CMAM monitoring plan was based on existing monitoring and supervision structures and mechanisms in the health services system. The aim was to integrate CMAM activities into existing registration and reporting formats (e.g. IMCI), with additional CMAM-specific formats developed only when strictly necessary. CMAM data would then be reported back to DHO using existing reporting channels. At DHO level, supporting NGOs would provide support for their regular analysis based on previously agreed<sup>19</sup>. At a national level, the Task Force and UNICEF would both play a role in the monthly evaluation of pilot programme activities.

### *1.8.2. Evaluation*

The criteria for the overall evaluation of pilot performance were outlined at the start of the process. Stakeholders agreed that the overall effectiveness of the pilot programmes would be based on their performance in six specific areas:

- Effectiveness of treatment: based on ; 1) recovery rate of admitted SAM; 2) average duration of rehabilitation; 3) case fatality rate; 4) defaulting rate, and; 5) relapse rate at three months, half year, and one year.
- Coverage: as a primary measure of impact, or how malnutrition “needs” were met by CMAM programmes. The findings of the coverage survey would also help identify barriers to access and the efficacy of different screening mechanisms in each area.
- Barriers to access: affecting the different components of CMAM programmes (community screening, Outpatient Therapeutic Programme (OTP) and Stabilisation Centres (SC) would also be evaluated.
- Staff and volunteer capacity: to detect, classify and treat malnutrition according to existing protocols would be assessed. Community capacity to identify and refer children for treatment would also be assessed.
- Integration of CTC in health system: would also be carefully evaluated, in particular the integration of CMAM activities and logistics into the health systems at DHO and health facility level.

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<sup>19</sup> Monitoring indicators included: recovery rate of admitted SAM cases; death rate of admitted SAM cases; defaulting rate of admitted SAM cases; average duration of rehabilitation; relapsing rate (at 3/6/12 months); average duration of rehabilitation; age and sex of all beneficiaries; percentage of complicated SAM cases from community referrals; percentage of complicated SAM cases during regular consultations (self-presentations); percentage of effective referrals of complicated cases for stabilisation at hospital level; therapeutic food amounts dispensed; type and amount of medicines dispensed, and; transportation and distribution costs.

- **Impact indicators:** through pre and post-pilot surveys, implementers would measure the (mid-term) impact of the intervention on the nutritional knowledge and status of children in the pilot areas.

The performance of the different CMAM pilot programmes vis-à-vis these indicators was designed to facilitate their comparative analysis, as well as the overall feasibility of the model in the Nepalese context.

## 2. BARDIYA CMAM PILOT PROGRAMME PERFORMANCE

The primary aim of Concern Worldwide was to support Bardiya's District Health Office (DHO) in implementing and integrating CMAM services in the primary health care systems. The evaluation therefore focused on both these issues; on the performance of the CMAM pilot programme and the level of integration into existing health structures. To evaluate programme performance, two sets of complementary data were used. Firstly the CMAM programme database covering the period May-December 2009<sup>20</sup>. The database, referred here as "Database A", contains basic quantitative information about programme admissions and exits. It does not, however, provide any detailed information about individual cases. At the time of the evaluation, the database had recorded a total of 1,213 admissions and 878 exits. Secondly, an additional database containing the full OTP records of 682 of the 878 exits was also used to provide a more in-depth profile of cases treated in the programme. This smaller, but more comprehensive database is referred to here as "Database B"<sup>21</sup>. In order to reduce confusion, data sources have been appropriately referenced throughout this section.

### 2.1. Key Programme Indicators

#### 2.1.1. Programme Admissions

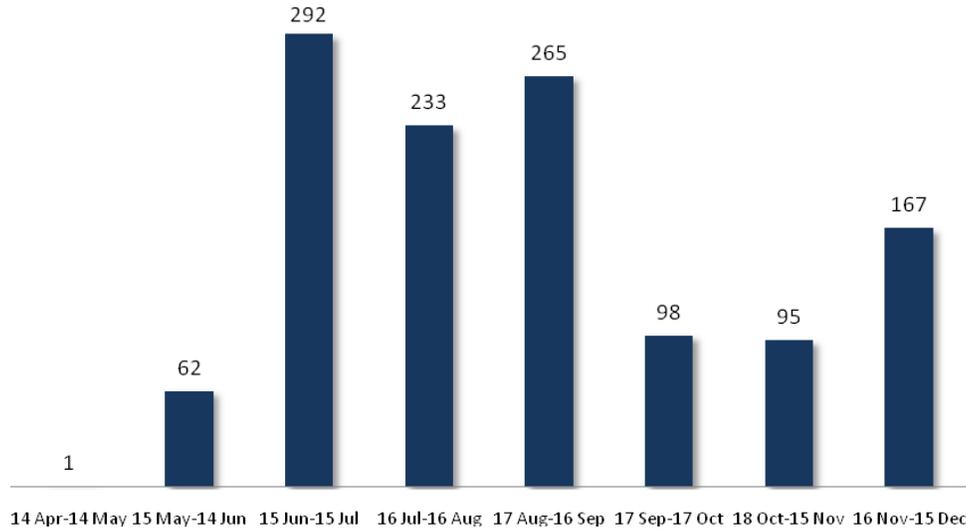
Between May and December 2009, the programme admitted a total of 1,213 SAM cases. This exceeds the estimated targets set by Concern prior to the implementation of the programme<sup>22</sup>. Admissions in the first two months of the programme (April-June) were low, partly due to trainings (of health workers and Female Community Health Volunteers, or FCHVs) not having been completed. During the following three month period (June-August) the programme recorded a much higher number of admissions. This can be attributed to more active screening and referral from recently-trained FCHVs. Admissions significantly decreased in the following two months, during the so-called "festival period". Once this period was completed, admissions resumed their upward pattern (*see Figure 1*). The CMAM programme is yet to complete a full-year cycle, which prevents a more detailed evaluation of admission trends. Nevertheless, the impact of social and cultural events (and other activities, such as agriculture) is notable, and should continue to be monitored.

<sup>20</sup> The CMAM database is organised using the Nepalese calendar system. The data used for this evaluation covers the period between the months of *baisak* and *mangshir* 2066.

<sup>21</sup> This distinction was made solely for the purpose of this report and does not reflect any existing programme procedure.

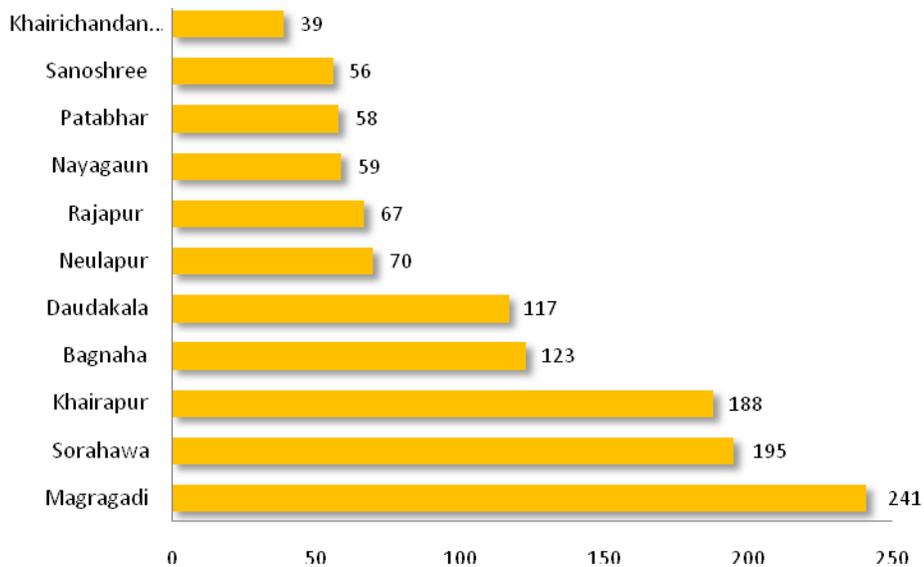
<sup>22</sup> In the CMAM Mid Year Report (2008), Concern estimated the number of direct (SAM) beneficiaries at 1,105.

**Figure I. CMAM Programme Admissions, May-December 2009 (by month)**



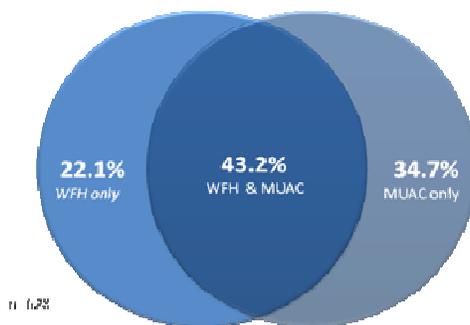
Based on the total admission figures, each facility admitted an average of 110 children during the first seven months of the programme. This seems positive, but further desegregation of admission data by health facility shows significant discrepancies between the different OTPs (see Figure II). Magragadi, Sorahawa and Khairapur Health Posts, for example, have the highest rates of enrolment and together they account for over half of all programme admissions. Khairichandanpur, Sanoshree and Patabhar, on the other hand, each admitted less than the programme average, and together they account for only 12% of all admissions.

**Figure II. OTP Admissions May – December 2009 (by health facility)**



The geographical location of the facilities is a significant factor; Khairinchandanpur and Pathabar are both located in the Rajapur delta, an area isolated from the rest of the district for most of the year. Yet, according to the 2008 Nutrition Survey Rajapur "...may be the most vulnerable section of Bardiya district"<sup>23</sup> suggesting that low admissions are a reflection of poor coverage rather than lower prevalence. The overall admission trends, and the performance of sites in the Rajapur area, suggest that coverage and programme impact is not spatially homogenous. In terms of admission criteria, 34.7% of children admitted met only the MUAC (<115mm) criteria, whilst another 22.1% only met the Weight for Height (<-3 SD) criteria. The largest group, accounting for 43.2% of all admissions, were eligible for admission on both MUAC and Weight for Height (WFH). This suggests that the use of MUAC as the primary criteria can effectively identify the majority of SAM cases.

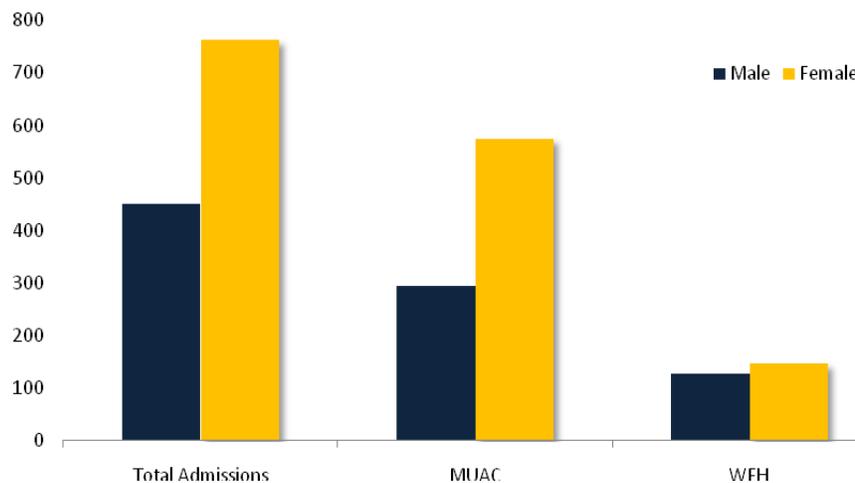
Figure III. CMAM Admissions (by entry criteria eligibility)



Admission data also shows a correlation between entry criteria and gender (see Figure IV). Overall, the programme has admitted more female (62.9%) than male (37.1%) cases. When entry criteria is analysed, MUAC shows similar discrepancies (66.2% v 33.8%) whilst WFH shows comparable ratios (53.7% v 47.3%). These findings are particularly relevant when compared to the 2008 Nutrition Survey, which found no apparent correlation between SAM prevalence (WFH z-scores) and gender.

<sup>23</sup> Concern Worldwide (2008) *Nutrition Survey Report, Bardiya District Nepal May/June 2008* (Concern Worldwide, p. 6)

Figure IV. CMAM Admissions May-December 2009 (by gender & entry criteria)



### 2.1.2. Programme Exits

A total of 878 children exited the programme between May and December 2009. In order to evaluate the performance of the programme, programme exits were evaluated in relation to international indicators and general CMAM experiences (see Table II).

Table III. Bardiya CMAM Programme Performance vs. Selected Indicators<sup>24</sup>

Approach	Cases (n)	Recovered	Death	Default	Transferred	Not cured
SPHERE standards	-	>75%	<10%	<15%	-	-
TFC	-	70	1-20	-	-	-
CTC	23,511	79.4%	4.0%	11.0%	3.3%	2.3%
Bardiya CMAM Pilot	878	68.22%	0.34%	28.47%	2.62%	0.34%

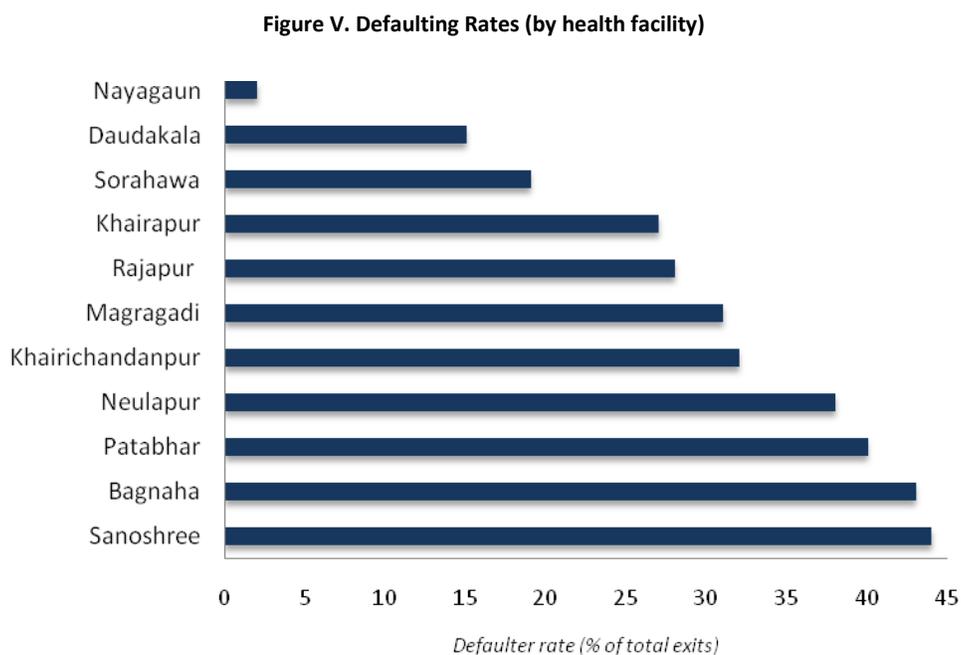
Cured/Recovery Rate: Of the 878 programme exits, 599 or 68.22% had been discharged cured<sup>25</sup>. This was below the 75% SPHERE minimum standard, and just below the >70% benchmark normally achieved by CMAM programmes. These indicators should be used for reference rather than evaluation purposes. Firstly, because the SPHERE standards were developed for resource-intensive, NGO-led emergency programming, not integrated programmes in developmental contexts. Secondly, much of the documentation available on CMAM programme performance is also based on this type of programmes, and a comprehensive revision of available data from integrated, MoH-led CMAM programmes (to evaluate, for instance, possible adaptations to programme indicators) is yet to be carried out. When compared to other integrated programmes, the cure rate of the Bardiya programme is positive and proves that the intervention can effectively treat the large majority of cases admitted.

<sup>24</sup> Table adapted from MoHP/UNICEF/ACF/Concern Worldwide (2008) *Community-based Management of Acute Malnutrition, Pilot Project Implementation Framework* (January 2008, p.14)

<sup>25</sup> Database A

However, when data from discharged cases is analysed inconsistencies were identified. Although 15% weight gain was established as the primary discharge criteria, the protocols also stated that children discharged should also be above SAM classification (i.e. no oedema, MUAC  $\geq$ 11.5cm and WFH  $>$  -2 SD). When programme data<sup>26</sup> was analysed, however, it was found that of the 396 children discharged cured between May-December 2009, 33 (8.9%) were still malnourished (WFH  $<$ -3 SD). Lack of adherence to programme protocols may be largely responsible for this. Nevertheless, had national protocols included a period of minimum stay in the programme, many of these children would have not been discharged before a complete recovery.

**Defaulter Rate:** Of the 878 exits, 250 or 28.47% had defaulted from the programme<sup>27</sup>. The defaulter rate is almost twice as high as originally expected ( $<$ 15%). Whilst the pre-pilot targets should be approached with caution, the defaulter rate in the programme is undoubtedly high. In order to understand possible reasons behind it, defaulting data was analysed in detail<sup>28</sup>. Initial analysis showed no significant trends across the health facilities (see Figure V).



The data analysis did show that on average, children are defaulting after only one visit to the programme. Discussions held during the evaluation suggested that miscommunication between health workers and caretakers, distance and the perceived recovery of the child are the primary reason for defaulting. These are common reasons affecting CMAM programme attendance in other contexts. Experience has also shown that addressing these issues can rapidly improve programme performance.

<sup>26</sup> Database B

<sup>27</sup> Database A

<sup>28</sup> Database B

**Death Rate:** Only 3 deaths have been reported since the start of the programme. They account for 0.34% of all exits, which is significantly below the SPHERE minimum standard of 10%, and the 4-5% generally achieved by CMAM programmes. Given the absence of any existing treatment prior to the implementation of the programme, and the late presentation of cases, it is likely that a number of deaths may be going unreported, in particular amongst the defaulter and transfers to inpatient care (*see below*). Information collected during this evaluation showed some deaths occurring amongst defaulters. This is not likely to represent a large proportion of all defaulters, but further investigation is advisable. There are also reports that the admission of children with no/poor appetite into the OTP is also directly responsible for the subsequent defaulting (*see below*).

**Transfer to SC:** only 23 cases (2.62% of all exits) were referred to DHO Hospital (Gulariya) for stabilisation/inpatient care. This is below the 3.3% generally achieved by CMAM programmes and consistent with the reportedly low number of cases presenting health problems (*see Table IV*)

**Table IV. OTP Admissions (by health condition reported<sup>29</sup>)**

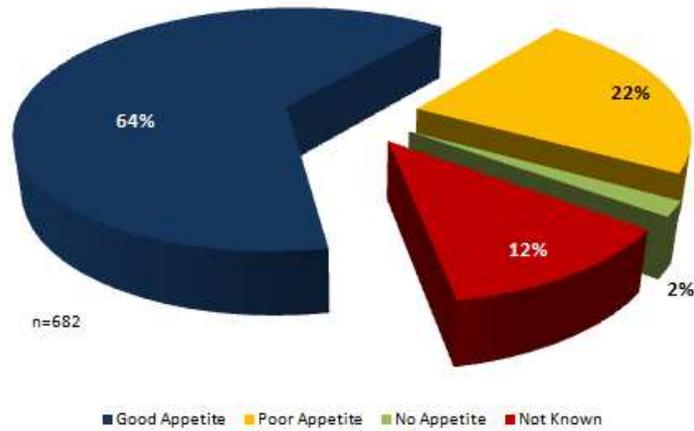
Health Condition	Number of Children	Percentage (%)
Ear Problems	3	0.44
Oedema	4	0.59
Fever	4	0.59
Enlarged Lymph nodes	4	0.59
Chest in-drawing	9	1.32
Disability	14	2.05
Vomiting	16	2.35
Skin Changes	17	2.49
Moderate or Severe Dehydration	26	3.81
Eye Problems	36	5.28
Cough	69	10.12
Diarrhoea	71	10.41
Poor/No Appetite	166	24.34
No health condition reported	398	58.36

The records do show, however, that a large number of admitted cases are reporting “poor” or “no appetite” (*see Figure VI*)<sup>30</sup>. In spite of appetite being a key component of the action protocols (requiring referral to SC), only a small proportion of cases were actually referred to inpatient care. Monitoring reports have consistently shown high levels of awareness amongst health facility staff about SC referral criteria and the links between lack of appetite and medical complications. The evaluation found evidence that caretaker’s transfer refusal to SC was the determining factor in the decision to admit them into OTP.

<sup>29</sup> Some children reported multiple health conditions.

<sup>30</sup> Database B

Figure VI. OTP Admissions (by Appetite Test Results)



Whatever the reason for the admission of these cases into OTP, lack of appetite seems to have directly affected their treatment outcome. Data analysis found that out of the 24% of cases reporting “poor” or “no appetite” a significant proportion (22.9%) eventually defaulted. The caretaker’s decision to return to the programme is likely to have been heavily influenced by the child’s lack of appetite (and consequent “rejection” of RUTF). Assuming the existence of a direct correlation, lack of appetite could account for as much as 4% of all programme defaulters.

Non-Responder Rate: only 3 (0.34%) of all discharged cases had not recovered within three months of treatment. This is a positive result attesting to the efficacy of the CMAM approach in the Nepalese context.

Average Length of Stay (LoS): in order to calculate the average length of stay in the CMAM programme, a sample of 401 admission records was used<sup>31</sup>. This represents around 33% of all programme admissions in 2009. The average length of stay was found to be 47 days, or just over 6 weeks. This was found to be in line with comparable CMAM programmes implemented elsewhere (see Table V)

Table V. Average Length of Stay & Weight Gain (Bardiya Pilot Programme & Selected CMAM Programmes)

CTC/CMAM Programme	Period	No. of SAM cases treated (sampled)	Average Length of Stay (LoS)	Average Weight Gain (g/kg/day)
<b>Ethiopia</b> (Wollo)	02/03 – 12/03	590	80	4.5 (M), 4.0 (K)
<b>Malawi</b> (Dowa)	01/05 – 12/05	1,696	45	5.8
<b>Nepal</b> (Bardiya)	05 09 – 11/ 09	401	47	6.1

<sup>31</sup> These 401 records represent all cured cases in Database B

Average Weight Gain (g/kg/day): all 401 children discharged as cured<sup>32</sup> were used to calculate average weight gain (g/kg/day)<sup>33</sup>. The average weight gain was found to be 6.1 g/kg/day. This was also found to be in line with comparable CMAM programmes implemented elsewhere, and further evidence of the effectiveness of CMAM treatment in the Nepalese context.

## 2.2 Programme Coverage

In order to evaluate programme coverage, a Simplified-LQAS Evaluation of Access and Coverage (SLEAC) was carried out in Bardiya in November 2009. All 11 health facilities were included in the survey, over 3,000 children screened and a total of 47 SAM cases found. The survey concluded that 7 out of the 11 facilities had coverage below 50%, one facility over 50%, and the rest could not be classified due to incomplete sample size. Overall coverage for Bardiya district was classified as being below 50%. The SLEAC survey identified three main contributing factors: lack of knowledge about the programme, distance and the condition not being recognised as malnutrition<sup>34</sup>. The survey results showed that in the first six months of the pilot, the CMAM programme had not yet succeeded in its aim of increasing coverage (from <1% to >50%) of therapeutic services in the district.

The findings of the survey must be understood in the context of one fundamental factor: the timing of the survey in relation to the implementation of community mobilisation activities. Before November 2009, when the survey was conducted, only a limited amount of community mobilisation activities had been carried out in the district. Many of the most important mobilisation activities were in fact, only carried out after (or during) the survey. This was highlighted in the survey itself, which noted that the *“...impact of [community mobilisation] activities may not have been fully reflected [in the results] as word-of-mouth about them in the community may still be spreading”*<sup>35</sup>. The link between mobilisation activities and coverage was also revealed in the barriers to access, and in particular, the prominent role of awareness (about malnutrition and the programme) as a major determinant of programme attendance. The survey also made two important findings. Firstly, that distance was a key barrier to access, even if calculations suggest that average walking distances are well within the norm of CMAM programmes elsewhere. This suggests a low cost-benefit ratio (high effort, low reward) and/or the need for further decentralisation of CMAM services (e.g. to SHP level). Secondly, the survey also found that up to 15% of non-covered cases had defaulted from the programme due to the child’s refusal to eat RUTF. This emphasises previous conclusions about the importance of the appetite test, the risks associated with admitting anorexic children into the programme, and the need for further investigation.

It is also important to consider the type of methodology used for this survey. Unlike other methods (including CSAS), SLEAC does not provide a precise categorisation of coverage that can be used to evaluate the impact of the programme vis-à-vis specific numerical indicators. Instead, SLEAC was developed as a simple-to-use, audit tool, designed to provide timely information about programme performance and suggestions for appropriate remedial action. This differentiation is relevant for two

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<sup>32</sup> Database B

<sup>33</sup> Individual weight gain was calculated using the formula [(discharge weight (g) – minimum weight (g)) / minimum weight (kg) x no. of days (discharge date – date of minimum weight)]. Average weight gain was calculated by adding all individual weight gains / number of cases.

<sup>34</sup> Schofield, Lilly (2009) *SLEAC Coverage assessment of CMAM pilot in Bardiya District, Mid-Western Region, Nepal* (Concern Worldwide, November 2009)

<sup>35</sup> Schofield, Lilly (2009) *SLEAC Coverage assessment of CMAM pilot in Bardiya District, Mid-Western Region, Nepal* (Concern Worldwide, November 2009, p.12)

reasons. Firstly, because it means that the “classification” of coverage (<50%) is insufficient to evaluate the programme comparatively against agreed performance indicators. Secondly, because the choice of method did have a significant impact on the programme itself. The survey, and the inclusion of DHO and health facility staff, helped improve staff’s understanding of the importance of community mobilisation and other barriers to access, whilst also motivating them to develop additional ways to increase coverage in their respective facilities. From strengthened house-to-house screening, to CMAM days at community level, health facilities developed individual approaches to help improve their own performance. The survey helped cement the importance of community mobilisation amongst health workers, and it led to improved ownership over the programme. Based on this, it is possible to conclude that the SLEAC survey was a timely and appropriate means to audit the *development* of the programme, but an inappropriate tool to evaluate its *impact*.

### 2.3. Integration of the CMAM Programme

The importance of integration was widely recognised by Concern Worldwide since the beginning of the programme. In 2008, Concern commissioned a Health System Assessment to better understand the opportunities and challenges of supporting the MoHP structures. The assessment concluded that

*"In order to profit more of the advantages and confront better the challenges of the health system, the leading role of the analysis, decision making, planning and implementation of the new component of the nutritional program should be on the DHO, the health staff and the FCHV. Concern staff should be playing a facilitating role"<sup>36</sup>*

Concern Worldwide adopted a supporting role in line with this recommendation. The decision to locate their Bardiya offices within the DHO Hospital was a clear (and commendable) sign of their approach. Nevertheless, encouraging the MoHP at all levels to take the active lead in the planning, implementation and monitoring of programme activities proved challenging. At a national level, CHD played a limited role in the supervision, monitoring and dissemination of information about the programme. At a district level, the DHO placed a number of (unconventional) administrative and bureaucratic hurdles that prevented the rapid implementation of activities in the district. Although DHO staff did participate in a number of the activities outlined in the pilot agreement – including the training of health workers and the coverage survey – there is no evidence to suggest that they have taken the leadership, or achieved any degree of real ownership, over the programme. There is, however, ample reason to believe that had CHD actively worked to ensure local support for the pilot, the involvement and ownership of the DHO in Bardiya would have been considerably higher.

Ownership of the programme at health centre level does seem to have exponentially grown since CMAM was introduced. This evaluation, like the Health System Assessment two years before, found health staff knowledgeable, motivated, and optimistic about the future of CMAM services in the district. In many ways, it is there – at health facility level – where ownership and integration have a direct impact on programme performance, and the positive results achieved by the pilot in 2009 attest to the degree of integration and involvement of local facilities in providing CMAM services to the communities.

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<sup>36</sup> Herrera, Judith (2008) *Health System Assessment of Bardiya District for the Introduction of the CMAM Programme Pilot Project Nepal* (Concern Worldwide, May-June 2008, Internal Document, p.24)

In order to offer a more complete assessment of the integration of CMAM into existing structures, the evaluation focused on five key aspects of the programme; 1) treatment of SAM (Outpatient and Inpatient); 2) community mobilisation; 3) monitoring & evaluation, and; 4) logistics & supplies.

### 2.3.1. Treatment of SAM (Outpatient and Inpatient)

The screening, admission and treatment of all children enrolled in the programme was exclusively carried out by DHO staff in their corresponding locations (community, health facility and district hospital). Unlike many other CMAM programmes, there was no introductory or transition period in which Concern staff (or personnel from their local partners) carried out these activities. Available monitoring data shows that at health facility (OTP) level, screening using MUAC, WFH and oedema checks were carried out in accordance with programme procedures. The staff also provided appropriate drug regimes to all cases, with only anti-malarial (chloroquine) not being given on a routine basis. Staff in all of the health facilities showed adequate knowledge about admission criteria and referral criteria (to SC). The amount of RUTF given, and the explanations for its use, was also found to be appropriate<sup>37</sup>. The inpatient treatment of children also proved satisfactory, partly due to the additional efforts of Concern Worldwide to train and provide technical support to Hospital staff.

In November 2009, Concern Worldwide carried out a series of evaluation questionnaires with CMAM staff, including the 11 health workers responsible for CMAM in each facility, and 10 of CMAM Monitors from the local NGO partner. A number of programme-related questions were posed (*see Table V*). The results of these self-assessments showed great improvement on the staff's perceived competency to treat SAM (before and after the introduction of the programme), as well as a growing capacity to use this experience to train others. Ownership was also found to be high, in spite of the 46% workload increase that respondents associate with the introduction of CMAM services.

**Table V. Health Workers/CMAM Monitor Questionnaire Results<sup>38</sup>**

Questions	Health Workers (%)	CMAM Monitors (%)	Total score (%)
How competent do you think you were <b>one year ago</b> in assessing and treating children with acute malnutrition? (%)	35	29	32
How competent do you feel <b>today</b> in assessing and treating children with acute malnutrition? (%)	82	81	81
Health workers: How competent do you feel to train health workers transferred to your health facility in CMAM? (%) / CDO Monitors: How competent do you feel to train others as CMAM monitors? (%)	72	80.5	76
How strong do you feel ownership for the CMAM programme? (%)	94	95	94
Health workers: How much has your daily workload increased due to the introduction of CMAM? (%) / CDO Monitors: How much do you think has the daily workload of health workers increased due to the introduction of CMAM? (%)	45	46.5	46
In Bardiya as per today to what degree do you feel CMAM has been integrated into the routine health service of the government? (%)	69	59	64

<sup>37</sup> Data based on the 20 monitoring reports submitted in 2009 by CMAM Monitors.

<sup>38</sup> Data compiled and analysed by Concern's CMAM Advisor prior to this evaluation

When asked specific questions about the practicalities of implementing CMAM, the majority of respondents agreed that the most time consuming activities were the anthropometric measurements, appetite test and filling in the record cards. When asked what areas needed to be the focus of integration, respondents mentioned Health Monitoring Information System (HMIS), monitoring/supervision and ownership of the programme. This rightly suggests that with stronger logistical and supervisory support from the DHO, health facilities are currently in a position to treat SAM independently.

### *2.3.2. Community Mobilisation*

The CMAM pilot in Bardiya adopted a two-level community mobilisation strategy. Firstly, the pilot set out to integrate existing health outreach structures to perform CMAM-specific mobilisation activities. Secondly, it employed a number of mass-communication channels to support community-level work, and increase awareness about malnutrition and the CMAM services on offer. The adoption of an enhanced sensitisation approach is commendable in light of the numerous reports suggesting low-levels of awareness about malnutrition, as well as the reported difficulties in visually assessing SAM in the Nepali context<sup>39</sup>.

Based on the recommendations made by studies conducted prior to the implementation of the programme, Female Community Health Volunteers (FCHVs) – working to support other health interventions at community level – be given the tasks of sensitising, screening and following-up CMAM children. Between May and July, all 839 FCHVs operating in the catchment areas of the CMAM Health Posts were trained. The training was conducted by SHP and HP in-charges and the District Health Supervisors with the technical support of Concern Worldwide. Monitoring reports have consistently showed that FCHVs are competent in the use of MUAC and knowledgeable about child feeding practices and danger signs<sup>40</sup>. There is no reliable quantitative data measuring the impact of FCHVs on programme admissions, but discussions held with Health Workers do suggest that FCHVs are screening and referring children on a continuing basis. Routine monitoring data also supports this conclusion; 62% of children in non-CMAM households have been screened by MUAC in the previous three months, whilst 83% of households interviewed knew about the CMAM programme.

Ensuring that FCHVs continue to play a central role in community mobilisation requires support and supervision. Due to financial and time constraints, DHO staff and health facilities in-charges have done little or no supervision of the FCHVs, and the task has fallen largely on the local NGO partner (*see sections 2.3.4*). All health facilities visited during this evaluation concurred that the supervision of FCHVs and other community activities was one of the most significant contributions being made by the CMAM monitors. The involvement of CMAM Monitors from the local NGO partner was designed to be a short-term measure, and the evaluation found no evidence of the creation of alternative, more sustainable supervisory mechanisms at health facility level. So whilst community level activities have been successfully integrated into the existing outreach networks, the mechanism to support and supervise these networks has not yet been put in place.

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<sup>39</sup> Typical signs of wasting are rarely seen in Nepal, and caretakers generally refer to SAM children as being “weak” rather than “thin”. Community mobilisation strategies in other CMAM contexts have generally relied on the ability of caretakers to recognise SAM as a specific condition. The difficulties faced in the Nepalese context required a stronger sensitisation approach.

<sup>40</sup> Community Monitoring Reports (Concern Worldwide, 2009)

Prior to the implementation of the programme, there was strong evidence supporting the need for a comprehensive sensitisation campaign around both SAM and CMAM. Firstly, due to the reportedly low levels of awareness in the communities about the child malnutrition and SAM in particular. Secondly, because those that did seek treatment often relied on “private practitioners” including pharmacists, herbalists and Traditional Health Practitioners<sup>41</sup>. Thirdly, because the treatment of SAM at health post level was previously unavailable in the communities, thus suggesting that self-referrals would be limited until adequate information about the programme became available in the communities. Concern Worldwide developed a strategy to ensure that the sensitisation work carried out by FCHVs was complemented using broader channels. Local NGO partners<sup>42</sup> were selected in the district to develop and carry out different activities including the production of a radio informational material<sup>43</sup>, cooking demonstrations<sup>44</sup>, nutrition days in local schools, and street drama performances, all designed to sensitise communities about malnutrition and the CMAM programme<sup>45</sup>. In addition, a CMAM orientation was given by one of Concern’s partner NGOs<sup>46</sup> to private practitioners in the district. All of these activities were crucial to increase public awareness about malnutrition and to increase programme uptake. Nevertheless, the timing of these activities (November 2009 – January 2010) meant that assessing their specific impact (through coverage survey results for example) is not currently possible. Previous experience with integrated CMAM programmes has shown that complementary, mass media activities to support grassroots efforts (e.g. FCHVs) significantly increase programme performance. Limited human and financial resources is likely to hamper any integration of these activities into MoHP national and district level plans, but as part of the national roll-out of CMAM, alternatives should still be explored.

### 2.3.3. Logistics & Supplies

All drugs used in the programme were requested and delivered to the facilities using the existing health systems. Monthly DHO meetings, bringing together in-charges from all health posts, were identified as positive medium for ensuring drug supplies to the facilities. Drug availability throughout the programme has been adequate, with 90% of monitoring reports finding a month supply (20 children) of routine drugs (including amoxicillin, albendazole and measles vaccinations) available. Anthropometric tools, including MUAC bands, height boards and weighing scales, were also available in all facilities. The reports also noted, however, that 40-50% of health posts are stocking expired medicine. This needs to be investigated further.

The provision of RUTF, from the central Logistics Management Department (LMD) down to the facilities implementing the programme, has been strongly supported by both UNICEF and Concern Worldwide. The preliminary agreement to deliver from LMD to the Regional Medical Stores (RMS) and on to the DHO has in practice been replaced by a direct, UNICEF-led, delivery from central level to the DHO, bypassing the RMS. This is reportedly the result of financial constraints that would prevent deliveries between RMS and the DHO. Whilst UNICEF’s decision to deliver directly to the DHO has ensured

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<sup>41</sup> Herrera, Judith (2008) *Health System Assessment of Bardiya District for the Introduction of the CMAM Programme Pilot Project Nepal* (Concern Worldwide, May-June 2008, Internal Document, p.36)

<sup>42</sup> They included

<sup>43</sup> Developed by Tharu Mahila Utthan Kendra and Phulbari FM

<sup>44</sup> Carried out by Muslim Mahila Utthan Sangh, Madheshi Dalit Sewa Samaj and Jan Jagara Mahila Sangh.

<sup>45</sup> Developed and performed by Samajik Bikas tatha Sanskriti Sanrakshan Kendra, Suryoday Sanskriti Pratisthan,

<sup>46</sup> Samajik Bikas tatha Sanskriti Sanrakshan Kendra

adequate supplies, it has not been possible to evaluate the efficacy of using regular (or complete) MoHP channels. UNICEF has expressed their commitment to ensuring the inclusion of transport for RUTF transport in the 2010-2011 MoHP budget.

Concern Worldwide has also played a direct role in the delivery of RUTF from the DHO to the health posts. Normally, health posts make quarterly requests (four times a year) around January, April, July and October. The aim of the pilot was to use these systems for requesting and delivering RUTF to the facilities. Yet, in order to ensure availability of RUTF for the first few months of the programme, quarterly requests were not used, and Concern adopted a more active role in the delivery of RUTF to the facilities. Only in October/November 2009 did the DHO express an interest in integrating the supply of RUTF into the quarterly system. At the time, however, the DHO requested supply training for staff before taking over responsibility for handling of CMAM supplies. It was found that most facilities did not have a logistics/procurement officer, and that therefore a training at this point of time was not recommendable. In December 2009, a short training was given to DHO procurement officers, with the aim of incorporating RUTF into the January 2010 quarterly deliveries. Even then, Concern Worldwide was asked by the DHO, and subsequently by UNICEF, to provide the requested amounts.

The logistics of providing RUTF from central level to the health facilities is yet to be tested in full. The partial use of the system has shown promising results, but more efforts will need to be made on the part of UNICEF and Concern Worldwide, to ensure that the system shows its full capacity before the end of the pilot period. Overall, the evaluation found that the primary barrier for including RUTF into the MoHP delivery systems is not the capacity of staff to identify and communicate needs across the different tiers – but instead, of the MoHP to cover the costs of transporting the (high volumes of) RUTF. It is essential that UNICEF and Concern continue to lobby for the inclusion of transport costs in the upcoming July (2010-2011) government budget.

#### *2.3.4. Monitoring & Evaluation*

For the purpose of monitoring and evaluation activities, Concern Worldwide in conjunction with the DHO, recruited the local partner (Community Development Organisation or CDO). CDO recruited CMAM monitors for each of the eleven health centres, from within the *ilaka*/catchment area of each facility. The role of the CMAM monitors was two-fold. Firstly, to support the implementation of CMAM activities at health facilities through the monitoring of health worker performance, compliance with programme protocols and adequate data reporting. Secondly, to support the implementation of community level activities, including carrying out sensitisation activities at Village Development Committee (VDC) level and monitoring the work of volunteers (FCHVs). Overall, the monitors were designed to serve as a technical and communication bridge between communities and health facilities on the one hand, and between health facilities and the DHO/Concern Worldwide on the other.

The decision to incorporate civil society (local NGOs) into programme activities had a number of positive implications. Firstly, it helped ensure permanent on-the-job support for health workers implementing the programme. All health staff consulted during this visit considered the involvement of CMAM monitors as key in the development of their technical capacity to treat malnutrition. Secondly, the approach effectively ensured that members of the local communities were entrusted with the supervision of their own programme. Not only from a conceptual point of view, but more importantly, from a practical perspective. By having local community members actively supporting the programme, it helped promote CMAM as a local rather than an external intervention, a rare achievement in CMAM

programmes elsewhere. Thirdly, it offered alternatives for the ongoing support of CMAM activities in the district after the departure of Concern Worldwide in 2010. The experiences from the CMAM pilot in Mugu, where the staff from local NGOs were assimilated into the DHO structures following the departure of ACF, is a good example of the opportunities available.

In terms of integration, the active involvement of a local partner does seem, however, to have come at the expense of the involvement of DHO staff in the regular monitoring of the programme. The involvement of the Nutrition Focal Point and other members of the DHO, in the supervision of CMAM activities has been limited. This is reportedly linked to the lack of financial incentives, as well as due to the absence of formal and informal commitment on the part of the DHO to prioritise the supervision of CMAM pilot activities. The Nutrition Focal Point, interviewed during this evaluation, reported that his job description does not stipulate the supervision of health facilities doing CMAM, and that allocation of resources (financial and otherwise) was therefore not prioritised. In addition, there are reports that the DHO also discouraged the focal point from partaking in supervisory activities that were deemed to fall under Concern's roles and responsibilities.

Monitoring and evaluation activities will be essential for the continuing success of CMAM in Bardiya. The development of realistic and sustainable monitoring activities that can be incorporated into the DHO routine schedules should be prioritised by Concern Worldwide prior to their departure. It is also important to ensure that all activities that CMAM Monitors are currently conducting – in particular the more resource-intensive such as the support of FCHVs and the compilation of programme statistics – is handed-over to health facility staff to assess any possible impact. This process is likely to be influenced by the limited human resources available at the facilities, so a process of prioritisation and simplification of duties should take place.

## **2.4. Programme Costs**

The CMAM pilot in Bardiya was also set to provide valuable data for determining the cost-effectiveness of treatment. Cost-effectiveness analysis of CMAM programmes, however are notoriously difficult and time consuming. In addition, they require access to financial data (including the costs of procuring and distributing RUTF and CMAM-specific drugs) which are seldom readily available. A cost-effectiveness analysis of CMAM in Nepal was therefore beyond the scope of this evaluation. Instead, the evaluation focused on the costs of Concern's involvement in the pilot project. The aim was to identify core costs that could help in the comparative analysis of the different pilots, thus determining the cost-effectiveness of NGO involvement in the future expansion of the programme (i.e. NGO technical support costs vs. Improved programme performance).

Concern's core costs throughout the pilot period totalled €214,483. Running costs, including (national and international) staff salaries and transport accounted for 37.21% of the total. The health system assessment and the two surveys (nutrition and coverage) conducted during the pilot accounted for 24.83%. Although these surveys provided valuable data for the implementation and evaluation of the pilot programme, they are not likely to be a standard component of future CMAM programmes in Nepal, thus significantly reducing the costs of the programme. The training and hiring of local partners accounted for a small proportion (11.50%) of the overall costs, suggesting that the replication of the model could prove cost-effective in other districts. The training of MoHP staff, including DHO, HP/SHP and FCHVs, accounted for 11.62% of the costs. Other expenses, including the material incentives (e.g. t-shirts), MUAC tapes and OTP reporting formats accounted for 14.84% of Concern's expenses. The

decision to produce MUAC tapes locally proved necessary (in the absence of UNICEF supplies) but also comparatively costly (see Annex V for a full breakdown of Concern costs).

### 3. CONCLUSIONS & RECOMMENDATIONS

#### 3.1. Conclusions

- At a national level, the decision to pilot the CMAM approach in different geographical areas prior to the national roll-out of services is commendable. Experience has shown that starting small and gradually expanding the geographical coverage of CMAM, allows for improved monitoring, higher programme performance and the lesson learning platform required for future expansion of CMAM.
- The involvement and degree of ownership of the programme at a national level is a source of concern. Throughout the duration of the pilot in Bardiya, CHD has shown limited interest in discussing the performance of the programme, or to jointly address programmatic issues with the partners. Limited human resource capacity at CHD has undoubtedly played a role, suggesting that a more labour intensive nationwide implementation of CMAM would require a significant improvement in the staff numbers at CHD. Both Concern Worldwide and UNICEF have shown interest in exploring alternative models through local partnerships. Recent decisions suggest that the future involvement of a local partner is likely. This, if appropriately supported (technically and financially), may prove advantageous for CMAM in Nepal.
- The involvement of international NGOs in the pilot period was also a positive step. As Concern's experience in Bardiya shows, their involvement allows for the collection, analysis, documentation and dissemination of valuable programme data, essential for the short and long-term success of future CMAM programmes. Concern's extensive CMAM experience was evident in many key (programmatic) decisions, including its indirect support to health structures and local civil society, both key players in the future of CMAM in the district.
- In terms of programme outcomes, the Bardiya experience shows that CMAM is an effective model for the community-level identification and treatment of SAM. Key indicators, including cure (68.2%) and death rates (0.34%), transfer to SC (2.62%) and non-responders (0.34%), were comparable to those of other (more resource-intensive) CMAM programmes. They were also considerably higher than similar pilots in other Asian countries (e.g. Indonesia and Afghanistan). This shows that health workers can treat SAM successfully. However, other indicators – including defaulter rates (28.47%) and coverage (<50%) suggest that community mobilisation activities were not adequately prioritised, given the revised timeline of programme activities and the timing of Concern-specific inputs (e.g. SLEAC survey). This experience should be avoided in other districts, and UNICEF should ensure that technical support provided (directly or indirectly via local partners) includes guidance on the planning and implementation of community mobilisation activities.
- At a community level, the pilot programme succeeded in integrating existing community networks for the purpose of sensitisation and case-finding. The integration and strengthening of

the FCHV system is a positive outcome - not only for the purposes of the pilot, but also for ensuring the successful continuation of the CMAM programme in the district.

- After six months of programme implementation, ownership of the programme at HP/SHP level seems positive and high. Staff are committed and heavily involved in programme activities. They have also shown initiative in the development of strategies for improving programme performance. As health workers themselves have highlighted, they are now capable of treating SAM in their facilities as long as appropriate logistic and technical support is provided by the DHO. Ensuring that the DHO establishes permanent mechanisms for the delivery of RUTF and for the supervision of programme activities, should be prioritised by Concern prior to their departure.
- The capacity of the MoHP at national, regional and district level to effectively integrate RUTF into their regular procurement and delivery systems is yet to be seen. The direct involvement of UNICEF and Concern in the delivery of RUTF ensured the availability of supplies uninterrupted throughout the pilot period. Yet, it also prevented a full-scale trial of the MoHP logistic systems that could have helped identify and tackle existing barriers. In spite of this, the decision by UNICEF/LMD to bypass the RMS and to supply directly to the DHO is a clear sign that financial constraints can have a significant impact on programmes in Bardiya and elsewhere. Efforts need to be made by Concern and UNICEF to ensure that RUTF-related transport costs are included in the 2010-2011 MoHP budget.

### **3.2. Recommendations**

#### *Overall Strategy*

- Ensuring district-level buy-in prior to the introduction of the CMAM programme has proven to be an essential step. The expansion process must be, whenever possible, a demand driven process. Securing this level of district support should be the responsibility of CHD, not UNICEF or their NGO partners.
- The involvement of an NGO (local or international) in the roll-out process is highly recommended. The Bardiya experience has shown that technical support cannot be provided by UNICEF directly, and that an experience intermediary is needed. The creation of a CMAM Support Unit at CHD, with an experienced CMAM advisor seconded by UNICEF, should be explored. This would help create the capacity in country, and would offer a mid-term solution to the staffing problems affecting CHD.
- The Bardiya strategy of training by tier (DHO, health workers and FCHVs) rather than by facility meant that services across the district could only begin in earnest once the final training was conducted. Experience from other contexts has shown that providing complete (medical and community) training by health facilities/cluster of neighbouring facilities, can help introduce full services in a more timely fashion. Alternative strategies like these should be tested in new districts to evaluate the comparative advantage of different approaches.

### *National Protocols*

- Ensuring the smooth integration of CMAM into routine health services will require the simplification of some aspects of the current protocols. The routine collection of weight and height data, for example, has proven burdensome and may actually be unnecessary. The process could be simplified by recording (weight and) height on admission (thus allowing for admission on WFH) and discharge (thus ensuring that child is discharged cured as per WFH).
- The decision to use MUAC as an independent referral and admission criteria has considerably strengthen the community aspect of the programme, whilst ensuring the adequate identification of SAM cases. The MUAC cut off point (<115mm) should not be revised until a more comprehensive Nepal data set is collected and analysed.
- 15% weight gain should continue to be used as the discharge criteria, but programmes must ensure that children meet all other requirements (i.e. no oedema, MUAC >115mm, WFH > -2 z-scores) before they are discharged.
- The inclusion of a minimum stay period in the protocols is strongly suggested. This has proven to be an essential aspect in the successful treatment of SAM in other integrated programmes. A two-month minimum stay in the programme is advisable.
- Some aspects of the current protocol must be adhered to more closely. The appetite test, for example, must be routinely performed on all children visiting the programme. Efforts need to be made to ensure that anorexic children are referred to the SC. In the event that transfer is refused by the caretaker, children should be monitored on a weekly basis by the appropriate FCHVs.
- The Bardiya experience showed that the referral of complicated MAM cases to SC is difficult to implement in practice. The removal of this procedure from the medical protocols is recommended.

### *Training*

- The ToT approach should be followed only when the provision of practical experience can be guaranteed, or to build the capacity of experienced staff (e.g. Bardiya health workers). Experience has shown that a CMAM orientation at central level is adequate. At local level, different groups (e.g. FCHVs, SHP staff) should be trained separately, to reflect the skills and responsibilities of each group.
- Staff turnover has proven to be high, and this should be addressed through the training of all health facility and hospital staff in CMAM districts.
- CMAM experience elsewhere has shown that WHO inpatient protocols can be adapted to the needs of CMAM programmes. Ensuring a complete harmonization of outpatient and inpatient treatment does require stronger communication and coordination with WHO. More efforts need to be made by UNICEF and CHD to ensure that WHO trainings and the roll-out of CMAM services are better integrated.

- FCHVs should be provided with more regular training. Concern is currently exploring different options designed to minimise the (financial and time) resources necessary to do this, including the provision of radios to FCHVs and the dissemination of training lessons using local radio stations. These alternative training models should be tested.

### *Community Mobilisation*

- The Bardiya experience helped emphasise the importance of timely community mobilisation. The roll out of CMAM services must be accompanied by technical and financial support for the implementation of community mobilisation activities. These need to be carried out in the first weeks of programme implementation. Delays in the timing of these activities will reduce the impact of CMAM interventions in other districts.
- FCHVs have proven effective at increasing awareness and identifying eligible cases at community-level. As such, they should continue to be integrated into CMAM programmes in other districts. The involvement of other key community figures should also be actively pursued. The sensitisation and partial integration of private practitioners (e.g. pharmacists, Traditional Birth Attendants) has consistently been identified as a key in ensuring the timely identification of SAM cases. In spite of the MoHP reluctance to actively involve private practitioners in interventions such as CMAM, UNICEF and other partners should continue to advocate for their inclusion in future activities.
- The inclusion of MUAC screening in the bi-annual Vitamin A campaigns is also strongly recommended.

### *Logistics & Supplies*

- The delivery of RUTF to new CMAM district should be done through the complete MoHP system – including LMD, RMS, DHO and on to the health facilities. UNICEF and future partners should provide only technical guidance (e.g. stock management) and should limit their involvement in the actual delivery of supplies. This will be essential to assess potential weaknesses in the MoHP structures, and develop appropriate responses.
- UNICEF should also ensure that CMAM routine drugs, and anthropometric tools (e.g. scales, height boards and MUAC tapes) are available at health facility level prior to the introduction of CMAM services, so as to avoid unnecessary delays in their implementation.

## ANNEX I. TIMEFRAME

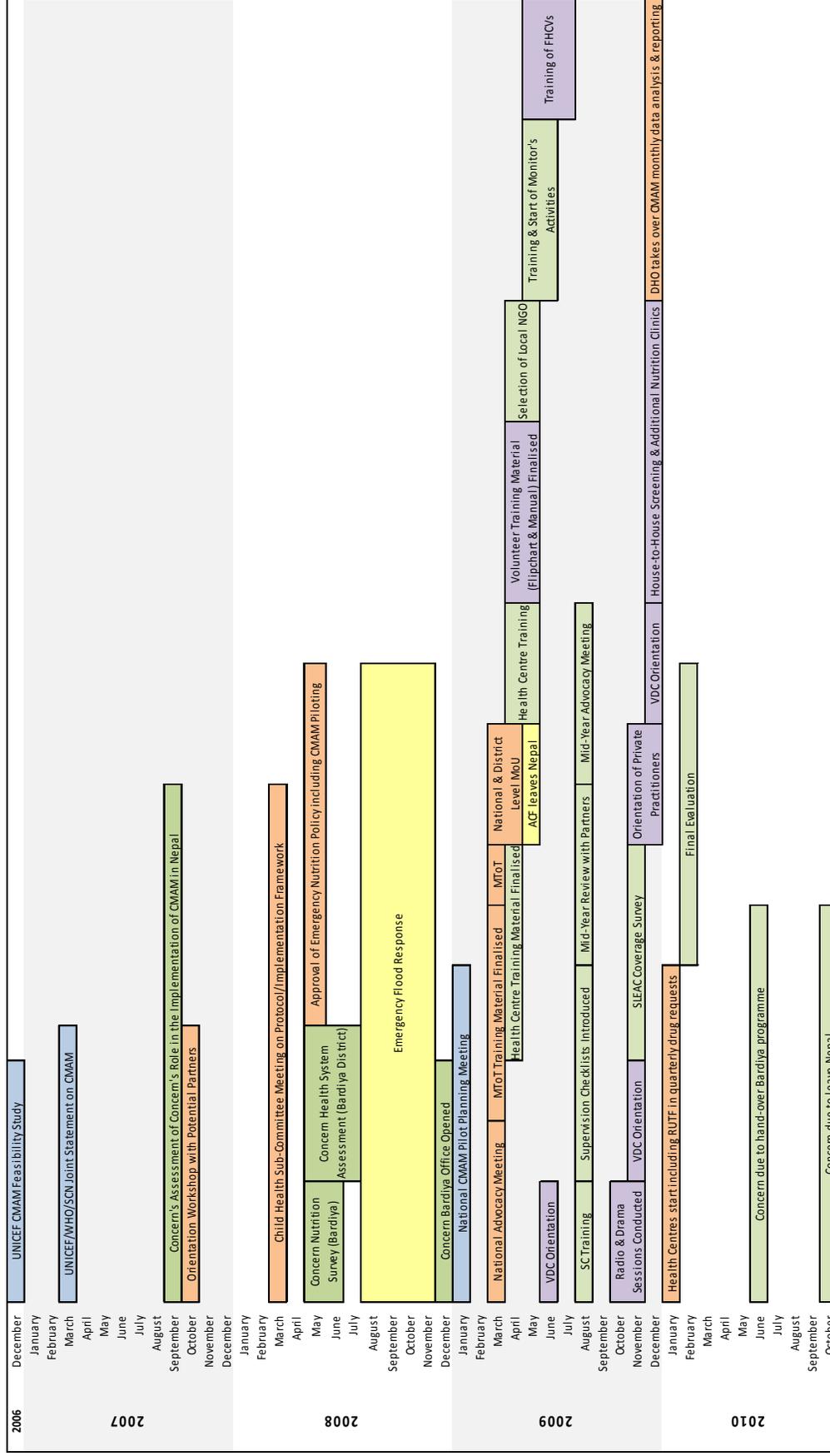
Date	Location	Activities
02/02	Depart Paris	Travel
03/02	Arrive Kathmandu	Meeting with Concern's CMAM Programme Advisor
04/02	Kathmandu	Review of Programme Data
05/02	Kathmandu	Review of Programme Data, Meeting with CMAM Programme Advisor, Meeting with Concern Country Director
06/02	Kathmandu	Review of Programme Data
07/02	Kathmandu - Bardiya	Review of Programme Data, travel to Bardiya
08/02	Bardiya	Review of Programme Data, planning of field visits
09/02	Bardiya	Visit Deudhakala HP (OTP), Meeting with DHO Nutrition Focal Person, Review of Programme Data
10/02	Bardiya	Visit Patabhar HP (OTP), Visit Khairichandapur HP (OTP)
11/02	Bardiya	Visit Khairapur HP (OTP), meeting with FCHVs (Khairapur HP), meeting with CDO
12/02	Bardiya	Review of Programme Data (National Public Holiday)
13/02	Bardiya	Review of Programme Data
14/02	Bardiya	Review of Programme Data (National Public Holiday)
15/02	Bardiya/Kathmandu	Travel to Kathmandu
16/02	Kathmandu	Meeting with DHO Accham, meeting with Concern Bardiya CMAM Programme Manager, meeting with UNICEF, meeting with WFP
17/02	Depart Kathmandu	Leave Nepal
18/02	Arrive Paris	Travel

## ANNEX II. DOCUMENTS REVIEWED

- CMAM Pilot Project Document (Concern Worldwide/UNICEF, August 2008)
- CMAM Proposal for Social Welfare Council (Concern Worldwide, August 2008, internal document)
- CMAM Activity Plan, 11/11/08 (Concern Worldwide, internal document)
- CMAM National Launching Presentations (Various Authors, February 2009)
- CMAM Mid-Year Review Meeting Report (Concern Worldwide, Bardiya 12-14<sup>th</sup> of August, 2009, internal document)
- CMAM 2008 Mid-Year Report (submitted to Concern Worldwide-US, July 2008, internal document)
- CMAM 2008 End of Year Progress Report (submitted to Concern Worldwide-US, January 2009, internal document)
- CMAM 2009 Mid-Year Report (submitted to UNICEF Nepal, August 2009)
- CMAM 2009 Mid-Year Report (submitted to Concern Worldwide-US, August 2009, internal document)
- CMAM Bardiya & Accham Progress Report November/December 2009 (submitted to UNICEF Nepal, Concern Worldwide, January 2010)
- Community-based Therapeutic Care Feasibility Assessment Report (UNICEF, March 2007)
- Community-based Management of Acute Malnutrition, Pilot Project Implementation Framework, (MoHP/UNICEF/ACF/Concern, January 2008)

- Concern Worldwide Head Office Quarterly Reports (Jan/April 2009, May/August 2009, internal documents)
- Concern CMAM 2010 Concept Note (submitted to UNICEF Nepal, Concern Worldwide, December 2009)
- District Memorandum of Understanding (MoU) - Concern Worldwide & District Health Office (DHO) Bardiya (March 2009, internal document)
- Enlightened Path: Street Drama Script (Concern Worldwide, internal document)
- Guerrero Saul & Nyirenda Gertrude (2009) *Mission Report, UNICEF Nepal* (Valid International, November 8 – 18<sup>th</sup>, 2009)
- Health Post Information Checklist (Concern Worldwide, internal document)
- Herrera, Judith (2008) *Health System Assessment of Bardiya District for the Introduction of the CMAM Programme Pilot Project Nepal* (Concern Worldwide, May-June 2008, Internal Document)
- Kiess, Lynnda (2007) *Assessment of the Potential Role of Concern Worldwide in CMAM in Nepal* (Concern Worldwide, August 26<sup>th</sup> – September 12<sup>th</sup> 2007, internal document)
- Local NGO Selection Guideline Model (Concern Worldwide, internal document)
- Local NGO Supervision Checklist (Concern Worlwide & CDO, internal document)
- National Memorandum of Understanding (MoU) - Implementation Plan for Community-based Management of Acute Malnutrition (CMAM) Pilot Project (GoN/MoHP/DoHS/CHD/Nutrition Section/UNICEF/Concern, 2009)
- Nutrition Survey Report, Bardiya District Nepal May/June 2008 (Concern Worldwide)
- Project Agreement Community Development Organisation (CDO) & Concern Worldwide (Final Draft & Amendments, May 2009, internal document)
- Rana, Deepika (2009) *Role of caste in malnutrition: a study of major caste groups in Bardiya district* (Research Report, Concern Worldwide, November 2009)
- Report/Minutes of CMAM Pilot Project Planning Meeting (Grand Hotel, January 28<sup>th</sup>, 2009, Kathmandu)
- Sadaula, Binita (2009) *Breastfeeding Knowledge & Practices among Women in Bardiya District* (Research Report, Concern Worldwide, 2009)
- Schofield, Lilly (2009) *SLEAC Coverage assessment of CMAM pilot in Bardiya District, Mid-Western Region, Nepal* (Concern Worldwide, November 2009)
- Supply Deliveries as per PCA (Concern Worldwide, internal document)

### ANNEX III. TIMELINE OF KEY PROGRAMME ACTIVITIES/EVENTS



#### ANNEX IV. AVERAGE OTP CHILD IN BARDIYA IN 2009 (DATABASE B)<sup>47</sup>

Indicator	Value
Length of stay in programme	47 days
Weight Gain (g/kg/d)	6.1g
Age (months)	16.46
Body Weight on Admission (kg)	6.46 kg
Height on Admission (cm)	71
MUAC on Admission (mm)	112 mm
WAZ WHO admission	-3.71 SD
HAZ WHO admission	-2.66 SD
WHZ WHO admission	-3.24 SD
Distance to OTP (in min)	76 min
Family size	7.4
Father alive	Yes
Mother alive	Yes
Twin	No
Oedema	No
Diarrhoea	No
Vomiting	No
Cough	No
Appetite	good
Breastfeeding	yes
Temperature	Normal
Eyes	Normal
Ears	Normal
Lymph nodes enlarged	No
Chest in-drawing	No
Skin changes	No
Dehydration	None
Measles vaccination	Yes (320), not filled (320)
Fully immunized	Fully (324), not known (319)
Number of visits at OTP	3.26 (incl. admission)
Number of missed visits per child	0.77
MUAC in mm on discharge (for all)	120 mm
Weight on Exit (kg)	7.34kg
Height on Exit (cm)	72.49 cm
RUTF consumption (sachets)	82 ( <sup>48</sup> )
WAZ WHO Exit	-2.70 SD
HAZ WHO Exit	-2.14 SD
WHZ WHO Exit	-2.16 SD

<sup>47</sup> Data compiled and analysed by Concern Worldwide CMAM Advisor prior to this evaluation

<sup>48</sup> Average length of stay (47) times number of sachets per day for average body weight (3) indicates an average consumption of 141 sachets which would be in line with quantity of RUTF received in the district

## ANNEX V. CORE COSTS (BARDIYA CMAM PILOT PROGRAMME)

	Unit	Costs (NR)	Costs (€) <sup>49</sup>	% Total Costs
<b>Concern Worldwide Expenses</b>				
<i>Staff salaries (incl. CMAM advisor)</i>	6	7,305,156	72,793	33.94
<i>Running Costs (incl. Transport)</i>	1	704,201	7,017	3.27
<i>Subtotal</i>		<b>8,009,357</b>	<b>79,810</b>	<b>37.21</b>
<b>Surveys &amp; Assessments</b>				
<i>Health System Assessment</i>	1	1,967,374	19,604	9.14
<i>Nutrition Survey</i>	1	2,453,199	24,445	11.40
<i>Coverage Survey</i>	1	924,454	9,212	4.29
<i>Subtotal</i>		<b>5,345,027</b>	<b>53,261</b>	<b>24.83</b>
<b>Local Partner (Sensitisation Activities)</b>				
<i>Staff costs</i>		155,390	1,548	0.72
<i>Activities</i>		592,305	5,902	2.75
<i>Subtotal</i>		<b>747,695</b>	<b>7,451</b>	<b>3.47</b>
<b>Local Partner (Monitoring &amp; Evaluation)</b>				
<i>Staff costs</i>		1,047,750	10,440	4.87
<i>Activities (meetings, etc)</i>		678,985	6,766	3.15
<i>Subtotal</i>		<b>1,726,735</b>	<b>17,206</b>	<b>8.02</b>
<b>Trainings</b>				
<i>Health System (incl. DHO, HP/SHP and FCHV)</i>		2,502,058	24,932	11.62
<i>Subtotal</i>		<b>2,502,058</b>	<b>24,932</b>	<b>11.62</b>
<b>Other Costs</b>				
<i>Incentives/Visibility (tshirts, etc)</i>		338,541	3,373	1.57
<i>MUAC tapes</i>	10,000	2,830,000	28,200	13.15
<i>OTP reporting formats (for 2000 children)</i>	2000	25,000	249	0.12
<i>Subtotal</i>		<b>3,193,541</b>	<b>31,822</b>	<b>14.84</b>
<b>Total</b>		<b>20,776,718</b>	<b>214,483</b>	<b>100</b>

<sup>49</sup> Costs in Euros were calculated using the exchange rate (€1 –NPR 100.32) at the time of the evaluation.