



COVERAGE ASSESSMENT

Semi-Quantitative Evaluation of Access & Coverage (SQUEAC)

Bié Province, Angola

Conducted by Marie Vlášková with the support of the CMN

July 2013



ACRONYMS

BBQ	Barriers, Boosters and Questions
CERF	Central Emergency Response Fund
CHW	Community Health Worker (referred as <i>CHW</i>)
CMAM	Community-based Management of Acute Malnutrition
DPS	<i>Direcção Provincial de Saúde</i>
ECHO	European Office for Coordination of Humanitarian Affairs
IYCF	Infant and Young Children Feeding
HC	Health Centre
LQAS	Lot Quality Assurance Sampling
MAM	Moderate Acute Malnutrition
MoH	Ministry of Health
MUAC	Mid-Upper Arm Circumference
PIN	People in Need
PTPA	<i>Programa Terapêutico para Pacientes Ambulatoriais</i>
RUSF	Ready-to-Use Supplementary Food
RUTF	Ready-to-Use Therapeutic Food
SAM	Severe Acute Malnutrition
SQUEAC	Semi-Quantitative Evaluation of Access and Coverage
UEN	<i>Unidade Especial de Nutrição</i>
UNICEF	United Nations Children's Fund
WHZ	Weigh-for-Height Z-score



EXECUTIVE SUMMARY

People in Need implements a CMAM program in all 22 communes of 5 municipalities in the Bié Province as part of a broader intervention implemented by a consortium of NGO (World Vision and Africare) that takes place in three more provinces of the country (Huambo, Kwanza Sul and Zaire). The program, which started as a response to the increased levels of malnutrition due to the drought that affected the country in 2012, focuses on households in remote rural areas that are currently not reached through the existing rural health system by community mobilisation activities and screening.

A coverage assessment based on the SQUEAC (Semi-Quantitative Evaluation of Access and Coverage) methodology took place during the June 2013 to assess PIN's ECHO funded CMAM project and to build the capacity of partner staff in undertaking coverage assessments.

Main barriers identified and recommendations to improve coverage are described in the table below.

Barriers	Recommendations
<ul style="list-style-type: none"> ▪ Scarce integration of the program with national strategy 	<ul style="list-style-type: none"> → Improve integration and coordination of the program with MoH's PTPA program
<ul style="list-style-type: none"> ▪ CHW's incentives vs. money 	<ul style="list-style-type: none"> → Improve availability, involvement and long term commitment of and CHWs
<ul style="list-style-type: none"> ▪ Insufficient means of transport for the Program 	<ul style="list-style-type: none"> → Encourage CHWs and Commune supervisors with distribution of RUTF. Develop a different strategy for RUTF distribution involving more funding allocation to logistics.
<ul style="list-style-type: none"> ▪ Low capacities of CHWs 	<ul style="list-style-type: none"> → Improve training and supervision of CHWs, increase number of CHWs
<ul style="list-style-type: none"> ▪ RUTF stock breaks 	<ul style="list-style-type: none"> → Improve RUTF stock management
<ul style="list-style-type: none"> ▪ Lack of monitoring system of referrals SAM complicated cases 	<ul style="list-style-type: none"> → Improve data management and monitoring. Advocacy with UNICEF and donors to better harmonize purchase with the rest of the program.
<ul style="list-style-type: none"> ▪ Weak availability, reliability and use of monitoring data 	<ul style="list-style-type: none"> → Improve data management and monitoring. Advocacy with UNICEF and donors to better harmonize purchase with the rest of the program.



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1. INTRODUCTION

1.1 CONTEXT

The Bié Province is situated in the Centre of Angola with estimated population 2 804 690 million inhabitants in area 70 314 km². Administratively, Bié Province is divided into 9 municipalities and subdivided into 22 communes¹.

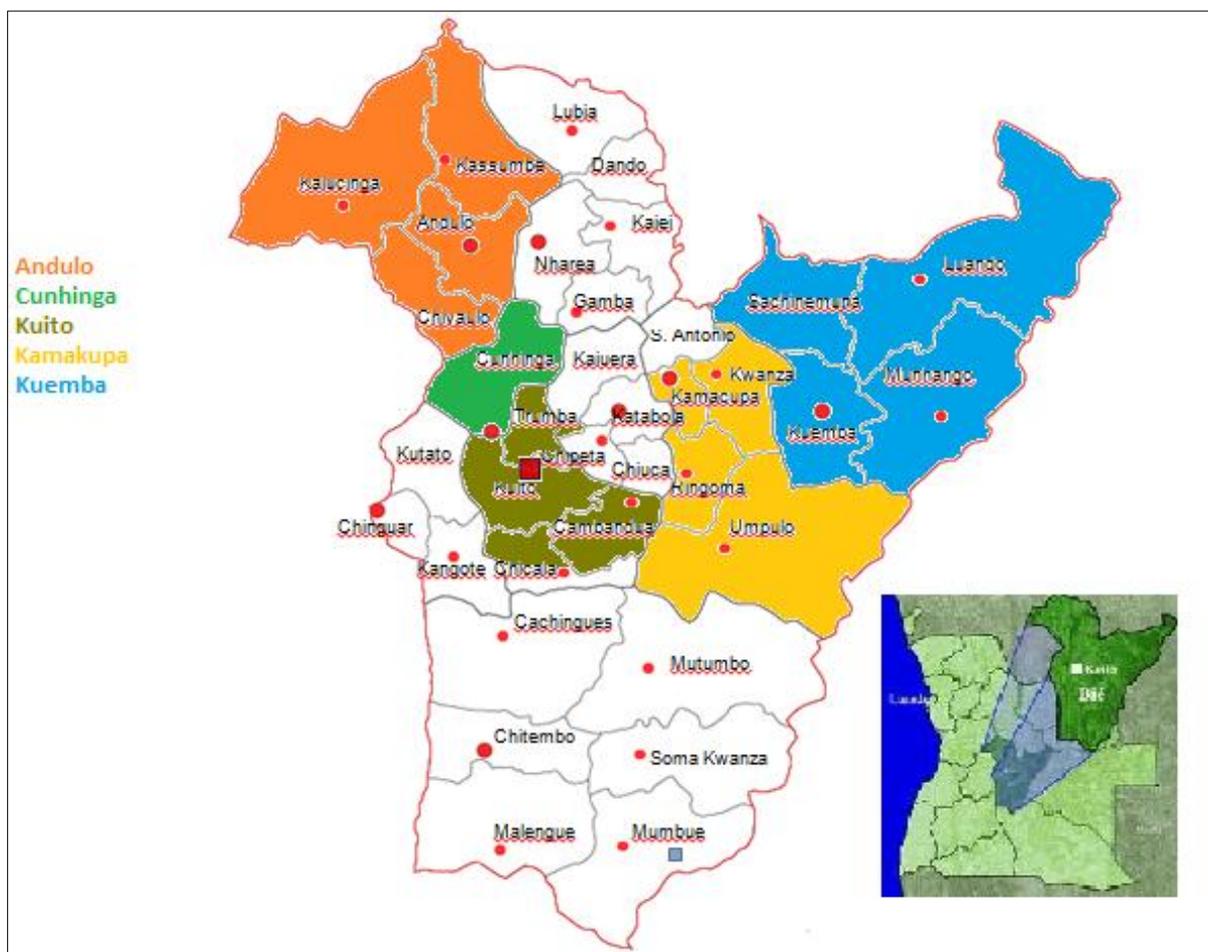


Figure 1. Map of the Bié, Angola²

At the colonist time the Bié was agricultural centre of Angola for its highland tropical climate, numerous water courses and on soil fertility. There were introduced new crops,

¹ Boletim Informativo do governo do Bié, Dezembro 2009

² People in Need, 2013



corn, coffee and fruits like orange, guava. The agricultural sector thus became the engine of the economy of the colony, and Angola became the 2nd African producer of coffee Robusta and 4th exporter of coffee. At that time Angola was self-sufficient in all basic crops (except wheat) and exported besides coffee, maize, sisal, palm oil, sugar cane, bananas and tobacco. After independence and departure of Portuguese traders and farmers Angola has left the agricultural sector unstructured.³

Food problem is one of many consequences of the long-lasting war. Regions most affected by long and heavy fights together with the enormous forced migration of population and troops of soldiers are slowly recuperating from economic and social destruction. Agriculture has been deeply influenced by the war consequences. Casualties, disability, loss of schooling, savings, livestock, seed and tools have led to the current unsatisfactory situation of agriculture. Even though the climate is generally favourable for crop cultivation the soils tend to be of low fertility. Agriculture in the Bié Province is still dependent on the external assistance, especially in terms of knowledge, skills and agricultural inputs supply. 70% of population (MINADER, 2006) is involved in agriculture or related activities. **Food insecurity, a low level of health care, HIV/AIDS prevalence and limited agricultural possibilities increase people's vulnerability**⁴.

Although the general nutritional situation has much improved after the end of the civil war in 2002, access for humanitarian agencies to many areas of Bié Province remains limited because of the persistence of land-mine contamination and poor road and bridge conditions.⁵

With regard to the influence of culture on health care, In Angola, there is still a lack of knowledge and systematic opposition to scientific progress. Many individuals still do not believe disease is caused by pathogenic microorganisms, but by the evil eye, a witchdoctor or spirit from another world. When these people are ill, instead of making use of professional health services, then prefer to go Quimbandeiros (witchdoctors) or to curandeiros (herbal doctors), or join certain religious sects; often not only to seek treatment but also to find out who caused the harm.⁶

According to the Ministry of Agriculture, Rural Development and Fisheries (MINADERP), an estimated 366 780 households were affected by the drought and half million children

³ Tempel Costa, Rebeyrotte 2008

⁴ Mazancová, 2007

⁵ Seal, 2013

⁶ Nunes, 2009



affected by acute malnutrition in 10 provinces of the country, being Bié one of the most affected together with Zaire, Kwanza Sul and Huambo. Results from the rapid nutritional assessment carried out by the Provincial Department of Health/WV in Huambo Province (Municipality of Longonjo) during the second week of August 2012 identified levels of GAM in children (12-59 months) of ranging from 9.1% to 19.5% with levels of SAM up to 5.0%.⁷

The health system, especially the Primary Health Care system, is not fully operational. And as well as in other Provinces of the country, in Bié there is a limited access to health services from the population, lack of trained human resources and of supplies, and lack of monitoring and supervision.

1.2 CMAM PROGRAM IN BIÉ PROVINCE

The CMAM program in the Bié Province is part of a broader intervention that also takes place in the provinces of Huambo, Kwanza Sul and Zaire implemented by a consortium of NGO (World Vision, Africare and PIN) and coordinated by PIN. The program, funded with CERF and ECHO funds, started - in coordination with UNICEF - as a response to the increased levels of malnutrition due to the drought that affected the country in 2012.

While UNICEF is in charge of the production of training materials, the training of DPS staff and of giving support to the UENs and PTPAs in HC, CMAM Program focuses on households in remote rural areas that are currently not reached through the existing rural health system by community mobilisation activities and screening.

The objective of the program is “to strengthen the consortium and the community resource network to scale up the implementation of the CMAM programme and to contribute to durable solutions through enhanced monitoring and raising awareness of good feeding habits for children below the age of 5” which is active in all 22 communes of 5 municipalities in the Bié Province: Andulo, Kunhinga, Kuito, Kamakupa, Kuemba.

Community Health Workers (locally referred as CHWs) are the base of this program with a much decentralised management of acute malnutrition. They are identified in the project areas and selected by the community. They do not receive monetary payments but material incentives for their active participation in the project, as a bicycle (to increase productivity), a training kit and project clothing, hygiene items, food items,... each month. They are recruited and trained on nutrition topics including MUAC screening to identify SAM and

⁷ Case study of Huambo, 2013



MAM in their communities through active case detection, as well as conducting education sessions for mothers in order to 1) promote good nutrition and caring practices and 2) to encourage parents to seek help at the appropriate nutritional support.

In remote rural areas where villages are located out of the radius of action of MoH's PTPA program, besides detection and referral of cases of acute malnutrition, CHWs also to handle those SAM children - without complications - admitted in the program by providing them treatment at community level. They mobilize mothers and make door to door visits if necessary. In the other hand, CHW also screen local children in the villages within the radius of action of HC with PTPA but in these cases, SAM children are referred to the municipal and communal health posts and centres supported by the MoH.

The communal supervisors (part time program staff), monitor the screening activities and report the numbers of children screened and referred to the municipality supervisors (5 full time program staff). They are provided with motorbikes to facilitate the supervision of the various CHW of the commune and to help, when needed, in the distribution of RUTF.



2. OBJECTIVES

- Provide training on SQUEAC methodology to program staff.
- Identify high and low coverage areas within the intervention area.
- Identify barriers to access to treatment of severe acute malnutrition based on information collected from mothers/caretakers of children with severe acute malnutrition identified during the investigation and who are not enrolled in the program.
- If relevant, assess the global estimation of coverage of the program.
- Assess the percentage of mothers who have been counselled on nutrition education.
- Make recommendations based on the results of the evaluation to improve the access to treatment of severe acute malnutrition and increase the level of coverage in the program intervention area.
- Write a report presenting the results of the evaluation.



3. METHODOLOGY

3.1 GENERAL APPROACH

The coverage assessment tool Semi-Quantitative Evaluation of Access and Coverage (SQUEAC) was developed by Valid International, FANTA, Brixton Health, Concern Worldwide, ACF and World Vision to provide an efficient and accurate methodology to identify barriers to access to services and estimate the coverage of nutrition programs. This is a quick method; it gathers large amounts of relevant information; promotes the collection, use and analysis of data; and provides information of program activities and possible reforms. The need of human, financial and logistical resources is relatively limited. It is easily reproducible and ensures program monitoring at low cost.

SQUEAC is an iterative, informal and intelligent investigation that collects a large amount of data from different sources (uses routine data that has more data collected in the field) using a wide variety of methods in an organized manner. SQUEAC is a semi-quantitative assessment because combines quantitative and qualitative data.

The analysis of these data is guided by the two fundamental principles of exhaustivity (of information up to saturation) and triangulation: information is collected from different sources using different methods and crossing it until redundancy before being validated. By focusing on the collection and intelligent data analysis during the field phase, the investigation sheds light on the operation of the service, limits the collection of quantitative data and facilitates the interpretation of results.

This investigation aims to assess the coverage of PIN's CMAM program in the Bié Province.

3.2 SPECIFIC OBJECTIVES

The tool SQUEAC thus ensures the regular monitoring of the programs at low cost as well as identifies areas of high or low coverage and the reasons for these situations. All of this information allows planning specific and concrete actions in order to improve the coverage of programs.



The SQUEAC methodology consists of three main stages:

3.2.1 STAGE 1: Identification of high and low coverage areas and barriers to access

This stage is based on the analysis of quantitative data and qualitative information (already available and collected during the investigation) to get to know the various factors influencing coverage. Some of which have a positive effect and some a negative effect on coverage. The SQUEAC approach helps to identify and understand these relevant factors and their effects. The evaluation of them helps to develop a trend in the coverage rate before conducting a field investigation in well-defined areas.

- **Analysis of quantitative program data: routine data** (monthly reports) **and records of individual monitoring** (CHW register book). The analysis of routine data is used to assess the overall quality of service, to identify trends in admissions and performance, and to determine if the program meets needs. This stage also helps to identify potential problems related to the identification and admission of beneficiaries as well as problems related to their treatment. Information as MUAC at admission and defaulters can be exploited to assess early detection and recruitment and effective communication channels. That is to say that it provides information on raw performance differences depending on the area.
- **Collection and analysis of qualitative data** through meetings in the community and health facilities with those involved directly or indirectly in the program⁸. This phase of the investigation is twofold: it serves to better inform and explain the results of the analysis of routine data and it also helps to understand the knowledge, opinions and experiences of all people/structures concerned and to identify potential barriers to access.

Interview guides were used to orientate the process of obtaining information on coverage. These interview guides were developed based on guides already used in other SQUEAC investigations but were not only translated into Portuguese but also adapted to the context and modified/upgraded by the investigation team.

The following methods to gather information were used:

⁸ We took advantage of this meetings in the community and health facilities to identify the local terminology to describe acute malnutrition (Hunbundu, Gangela, Tchoqwe) and the key informants in the community. This preliminary research is essential to facilitate the active and adaptive case-finding methodology that will be used in the stages 2 and 3.



- Focus Group Discussions
- Semi-structured interviews
- Case studies

These focus group discussions, semi-structured interviews and case studies were conducted with the following sources of information:

- Communal supervisors
- Community Health Workers (CHW)/CHWs
- Traditional healers
- *Sobas*
- Religious leaders
- Community of men
- Community of woman
- Mothers/caretakers of SAM children in the program
- Health Centre staff

14 villages spread all around the 5 municipalities of PIN's intervention in Bié were visited for the collection of qualitative information. Even the villages where PIN does not currently work were chosen to better understand the dynamics of the management of acute malnutrition by the different actors involved in the Province. Three kinds of villages were identified and visited:

1. Villages in PIN areas: villages covered by PIN's CMAM program where CHW do screening, refer cases to the UEN if needed, provide SAM treatment for cases without complications, do follow-up visits and give nutrition education to mothers in the community.
2. Villages in MoH areas: villages which are close to the HC (considered to be included within the radius of action of the HC - approximately 3 km) and where SAM treatment is provided by health staff at the HC through the PTPA program. In these areas, PIN CHW only does specific screening campaigns and refer children to the HC to get treatment.
3. Villages in areas where neither PIN nor MoH work, and therefore no CMAM program exists.

The different people encountered and the different methods used allowed the investigation team to collect information about the barriers and boosters to coverage of the CMAM program. The data gathered was recorded on a daily basis using the **BBQ (Barriers, Boosters**



and Questions). This tool not only permits to organize information day by day to continue with the research of qualitative information in an iterative and directed manner, but also ensures triangulation of information. To guarantee the exhaustivity of the process, the research of information continued until saturation - until the same information came out from different sources and using different methods.

The findings from the quantitative analysis and the conclusions from the investigation team's discussions were included in the BBQ with qualitative data collected in the field to triangulate the set of all knowledge around barriers and boosters to coverage in Bié Province.

- **Identification of potentially high and low coverage areas and formulation of a hypothesis on coverage based on the evaluation of positive and negative factors.** Depending on the barriers and boosters found, the hypothesis on "high" or "low" coverage are developed: the hypothesis about heterogeneity of coverage are based on the identification of areas of good and not so good coverage. Then, small-area surveys are conducted to confirm or refute these hypotheses.

3.2.2 STAGE 2: High and low coverage areas hypothesis testing through small-area surveys

The objective of the second stage of the investigation is to confirm through small-area surveys the assumptions on areas of low or high coverage as well as the barriers to access identified in the previous stages of analysis. The **small geographical survey** method was used to test the assumption of homogeneity/heterogeneity of coverage.

In this case, 10 villages were selected (5 villages in the area with potentially high or satisfactory coverage; and 5 villages in the area with low or unsatisfactory coverage) to test the hypothesis of homogeneity/heterogeneity of coverage. The villages were selected according to the criteria identified to be the most relevant according to the information triangulated up to the moment. The sample of small-area surveys is not calculated in advance; contrariwise the sample of the survey is the number of SAM cases found.

SAM cases are searched using the **active and adaptive case-finding method** (going from house to house based on key informants' information to find all severely malnourished children in the village). The case definition used was: "all children aged 6-59 months with the



following characteristics: MUAC <115 mm and/or presence of bilateral oedema, or who are currently in the CMAM program for the treatment of SAM"⁹.

Analysis of the results are done using LQAS (Lot Quality Assurance Sampling) to obtain a classification of coverage compared to the threshold value set at 70%. The decision rule was calculated using the following formula:

$$d = n \times \frac{p}{100}$$

n: number of cases found
p: standard coverage defined for the area

The number of cases found and the number of cases covered is examined:

- If the number of cases covered is higher than the threshold value (d), then coverage is classified as satisfactory (coverage meets or exceeds the standard).
- If the number of cases covered is lower than the threshold value (d), then coverage is classified as unsatisfactory (coverage does not meet neither exceeds the standard).

Throughout the small-area survey, a questionnaire was done to mothers or other caretakers of all non-covered SAM cases found to know why these children are not receiving treatment. The questionnaire permits to identify barriers to treatment. All "non-covered" MAM or SAM children found along the study were referred to in order to receive the appropriate nutritional treatment. The questionnaires (annex 4) as well as the form (annex 3) used to gather the data from the active and adaptive case-finding by the teams in the field was translated into Portuguese.

During this stage, a question addressed to the mothers/caretakers¹⁰ of all the children screened was introduced to assess the percentage of mothers who have been counselled on nutrition education.

The information obtained through the questionnaires of the non-covered cases in the small-area survey was added to the BBQ to triangulate the set of all knowledge around barriers to coverage in Bié Province.

⁹ The RUTF and/or the program's "cartao da mae" (mother's card) have been the sources of verification used to confirm that a child is currently in the program - and therefore considered as a case covered. Non-covered cases are SAM children that have not received RUTF for more than 2 weeks.

¹⁰ "Have you received nutrition education information from the activist in the last 5 months?"



The software *XMind* was used to develop a *Mind Map* that shows in a visual and orderly manner the summary of all barriers and boosters to coverage identified along the first two stages of the investigation.

3.2.3 STAGE 3: Estimation of global coverage

Due to the findings resulting from stages 1 and 2, stage 3 was not carried out in this investigation - see results' section for justification.

3.3 ORGANISATION OF THE STUDY

3.3.1 Training and investigation

For the realization of the present coverage assessment, Bié's Project Manager and 1 Municipal Supervisor were trained in Huambo by Beatriz Pérez Bernabé, one of the Regional Coverage Advisors (RECO) of the "Coverage Monitoring Network" (CMN) project. The nutrition team in Bié received remote technical support from the CMN along the different phases of the investigation.

An investigation team composed by the PIN Project Manager, WV Program Coordinator, 5 Municipal Supervisors of Bié Province, 2 Logistics Technician, 1 Project Assistant. All team were formed to conduct the investigation (Annex 1).

The coverage assessment took place from June 10th to June 24th 2013 (chronogram Annex 2). Although 2 days of introductory theoretic sessions about the importance of assessing coverage and the SQUEAC methodology as well as workshops focused in the first stage of the investigation, were held as part as the initial orientation, the training process was concurrent with the investigation. In-classroom sessions for each key stage of the study were alternated with guided practical implementation in the field, all framed with iterative briefing and debriefing sessions.

3.3.2 Limitations of the study

Although the research has reached its aims, three main unavoidable limitations were faced:

- Lack of reliable official demographic figures and detailed maps of the area. The population data used for the study was that of PIN; instead of a map, a list of villages was used to randomly select the sample of the wide-area survey ensuring spatial representativeness (stratified random sampling method).



- Lack of data from CHW's register books.
 - Firstly as it is mentioned below (see Table 1) the educational level of CHW's is very low with the result that majority CHWs have difficulties to fill register properly. Despite the two realised trainings and constant supervision by communal and municipal supervisor, the CHW still continues with doubts during the work with community and difficulties infilling in all documents (screening sheet, 2 books of register).
 - Secondly to collect all CHW's register books (560) in short period of time would not work, because it would highly influence CHW's work. Instead of that the communal supervisors were asked to rewrite these data

- Context bias. The results of the assessment may be positively biased in a certain degree due to the strictly required conditions of the Angolan context which needs to be noted when comparing with coverage assessments in other countries. These context specific limitations are the following:
 - Throughout the several field stages of investigation, both during the qualitative research and the active and adaptive case-finding, previous notification of the visit to the village local authorities was required as well as the aim of it. Note that it is the practice of local population to dislocate to the *lavras* and *nacas* for a number of days during the time of harvest and field preparation taking along with them their children, therefore prior notification was essential to ensure that care givers and children are present at the time of the visit.
 - The identification of the team members in the field (using program T-shirts and/or caps with visible WV logos) was a prerequisite at all times to be able to work with the community.

- Short period of time to inform in advance about the visit in the village. In Bié province, the majority of villages is without mobile network coverage, to organize population waiting for the visit could take in some areas up to 3 days.



4. RESULTS

According to the methodology exposed above we present here the main results emerging from our investigations:

4.1 STAGE 1: IDENTIFICATION OF AREAS OF LOW AND HIGH COVERAGE AND BARRIERS TO ACCESS

The objective of this stage is to identify areas of high and low coverage and to have a first idea of the reasons for non-access to treatment by using program's quantitative data and qualitative information collected among different stakeholders.

The analysis of the quantitative information was carried out based on the data available for the first 4 months of actual operation of the program (January – April 2013). Program routine data was available and mainly extracted from monthly reports. Individual monitoring data was collected during the first days of the investigation through the gathering of CHW's registration books - up to 45% of the total records were included in the database for analysis.

4.1.1 Analysis of quantitative programme data – program routine data: monthly reports

A. Admissions: total number, trends over time and capacity to meet needs

First admissions are registered in January 2013, when the program started to be fully operational as a result of initial community mobilisation and screening activities – previous recruitment and training of municipal supervisors, commune supervisors and CHW, took place during the last two months of 2012. Since the beginning of operations, a total of 7 041 SAM children have been admitted into the program.

A seasonal calendar for the various seasonal events (child morbidity, climatic and agricultural activities) and other key episodes (stock breaks) was developed by the team and confronted to the curve admissions of SAM to assess the capacity of the program to meet needs (Graph 1). The short period of actual operation of the program (4 months) makes it difficult to analyse the program's ability to meet the contextual needs.

The curve of admissions shows the usual trend at the beginning of the activities with the highest number of admissions in the attack phase and smoothly decreasing. The sharp decline in last week of February and two first weeks of March is clearly related to the



breakout of Plumpy Nut suffered during all the 3 weeks. Unfortunately, this period coincides with the hunger gap, being the month of March the most critical in terms of access to food. The number of admissions increases again in April as a result of the complete restoration of treatment activities and the likely increased prevalence of malnutrition.

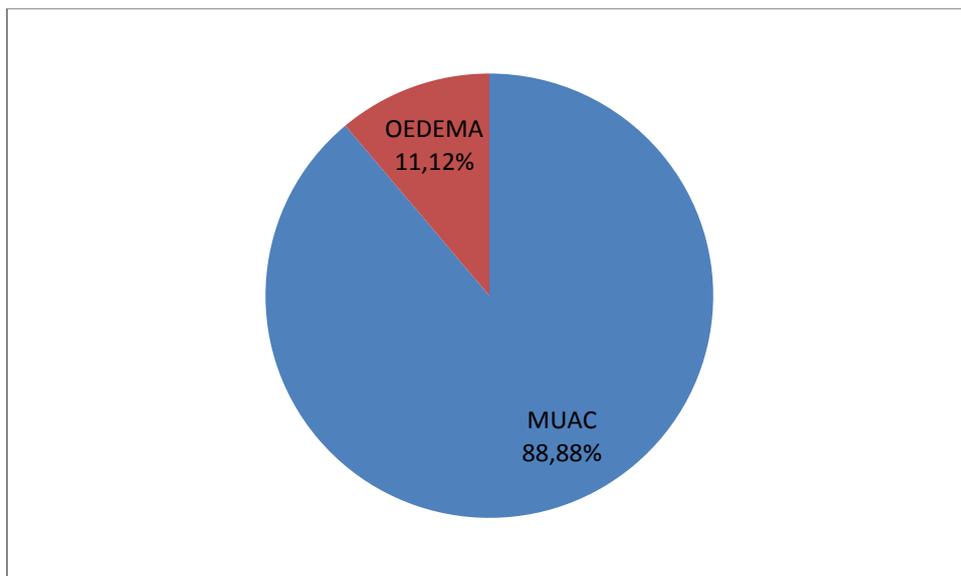


Graph 1. SAM admission trends during a four months period and seasonal calendar (Bié Province, Angola, June 2013)

The period of program activities is takes place during the rainy season when Malaria prevalence is higher. In terms of agricultural activities, even though certain times of the year are busier than others, in general women go to the fields either to cultivate or harvest the crops of *lavras* (field) or *nacas* (garden).

B. Admissions and admission criteria

The analysis of the admission criteria for all the severely acute malnourished children admitted in the program shows that 88.88% correspond to marasmique cases identified by MUAC and a quite significant proportion of 11.12%, to kwashiorkor cases (Graph 2).



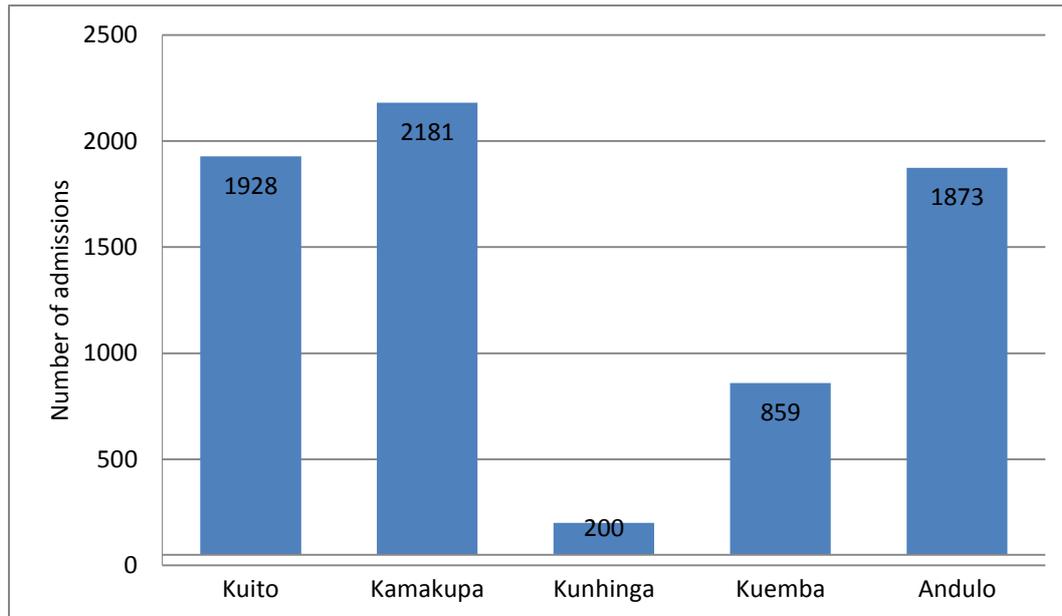
Graph 2. Distribution of SAM admissions by admission criteria from January to April 2013 (Bié Province, Angola, June 2013)

Besides the presence of oedema, MUAC (<115 mm) is used as the one indicator for SAM, not considering WHZ as a criterion (used in the PTPA program at HC level). Although some CHW have been given scales to use it for the calculation of amount of RUFT to give to the children (according to UNICEF guidelines) and although registration books only show the variable “weight” to fill in each week of treatment, CHW only use MUAC as independent criteria of admission and to follow the evolution of the patient on a weekly basis. While the strategy is being revised, this is very practical and positive to coverage in a child reduction mortality program where treatment is decentralized at community level.

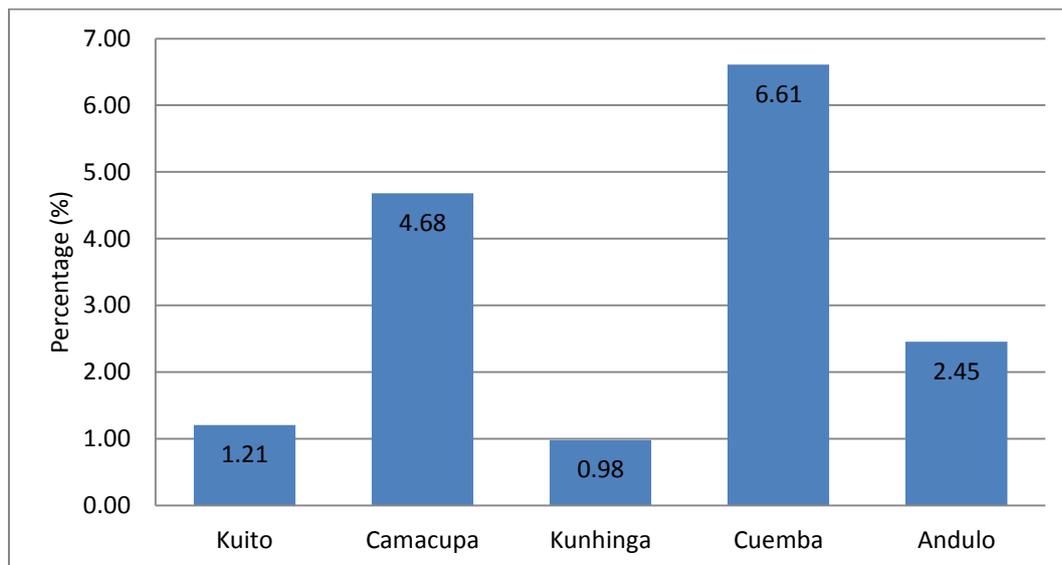


C. Admissions by Municipality

Graph 3 shows the distribution of SAM admissions by Municipality from January to April 2013 which has been compared to the population of children 6 to 59 month (Graph 4).



Graph 3. Distribution of SAM admissions by Municipality from January to April 2013 (Bié, Province, Angola, June 2013)

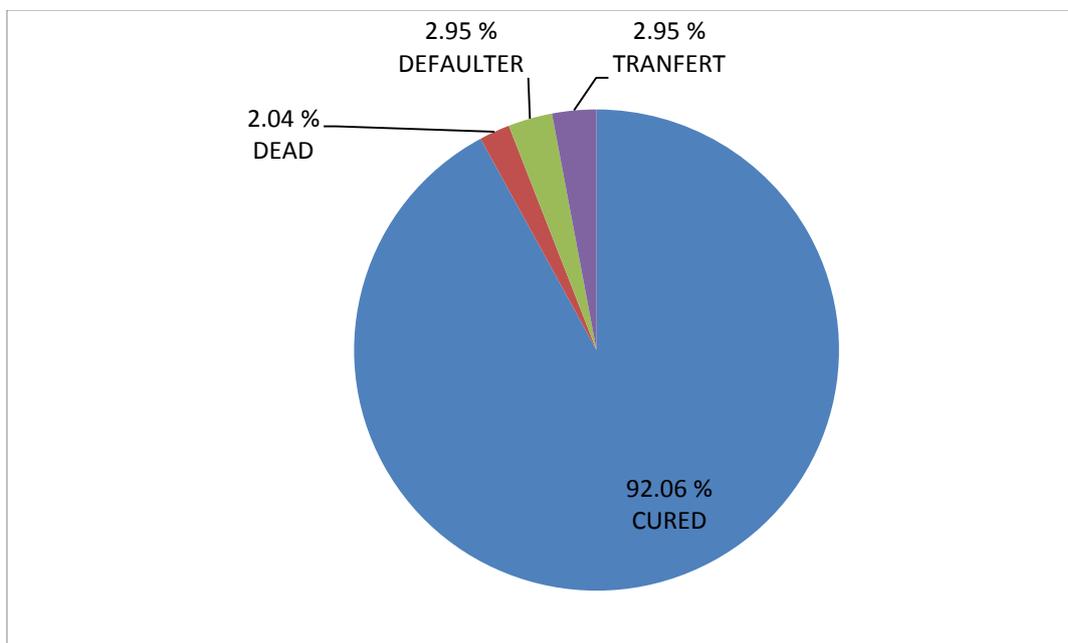


Graph 4. Percentage of SAM children admitted from January to April 2013 related to the population of children 6-59 months in the Municipality (Bié Province, Angola, June 2013)

The total number of admissions for the 4 months period of study varies greatly between municipalities: from 2.181 in Kamakupa to 200 in Kunhinga. The number of children admitted in the most populated municipalities such as Kamakupa and Kuito is the highest, but when Kuito is compared to the population of children 6-59 months, those municipality show the 2nd lowest proportion. Kamakupa and Kuemba seem to have reached more number of SAM children. In general, the analysis shows that the proportion of admissions in all Municipalities with respect to the population of children 6-59 months is <7%.

D. Performance indicators

The performance indicators based on the data from the monthly statistical reports for the 4 month period of analysis appear generally satisfactory compared to the SPHERE reference standard values (Graph 5). It should be noted that due to the short length of the program, the results of the analysis was calculated using the exits data at the time the assessment was done which corresponds to only 21.34% of the total number of admissions. Anyhow, defaulter rate is low which has both a positive direct and indirect impact on coverage.



Graph 5. Performance indicators of the program from January to April 2013 (Bié Province, Angola, June 2013)

The proportion of children transferred only refers to those children admitted (already in the program) but who had to be hospitalized in the UEN at some point of the treatment, not to children identified in first place (during screening) as SAM with complications.



Nevertheless, the reliability of the data is questionable because variations were identified when the same analysis was done using the data from individual monitoring records (even if not all the data was gathered and available). The collection and gathering of the data from community level by the CHW to the final centralization by the project coordinator goes through many different stages leaving too much place for error without a formal monitoring system of data quality.

E. CHW and screening

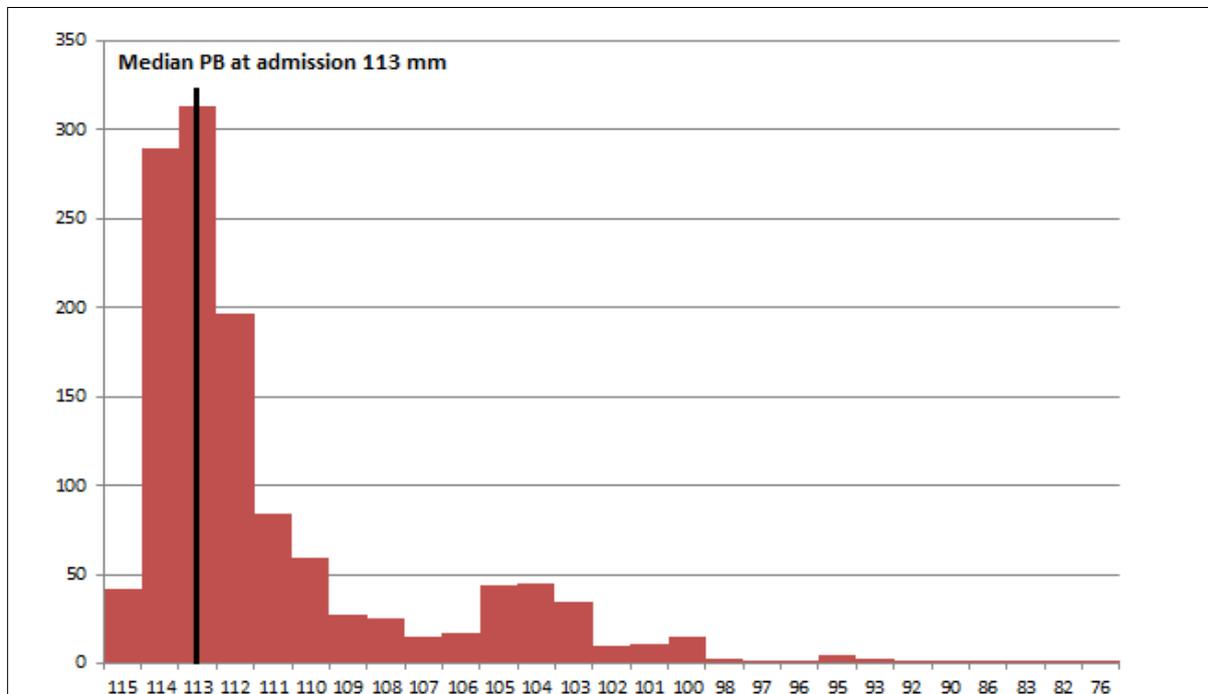
The number of children screened in the province between January and April 2013 was 154 186, being Kuito the municipality with more children screened (also related to the population 6-59 months). The number of children screened was the highest in February, the second month of activity of the CHW.

4.1.2 Analysis of quantitative program data – individual monitoring records: CHW register books

F. MUAC at admission

Although the admission criteria for SAM children is MUAC < 115 mm, individual data shows that same proportion of children admitted as severely malnourished (3.36 %) have a MUAC = 115 mm. Therefore, the analysis of the distribution was done for all this children considered as SAM.

The analysis of the data available (52.0% of all registered) shows that the majority of cases are admitted with a MUAC very close to the admission criteria and with a median value of MUAC of 113 mm (Graph 6). This distribution suggests a good performance in the ability of early recruit marasmus cases. The number of critical cases (PB ≤ 90mm), 5, is extremely low which shows that there are very few SAM cases initiating the treatment with an advanced degree of severity. Most cases are reached and admitted in the program early in the process of the disease which certainly has a positive impact on the possibilities of recovery and length of stay.

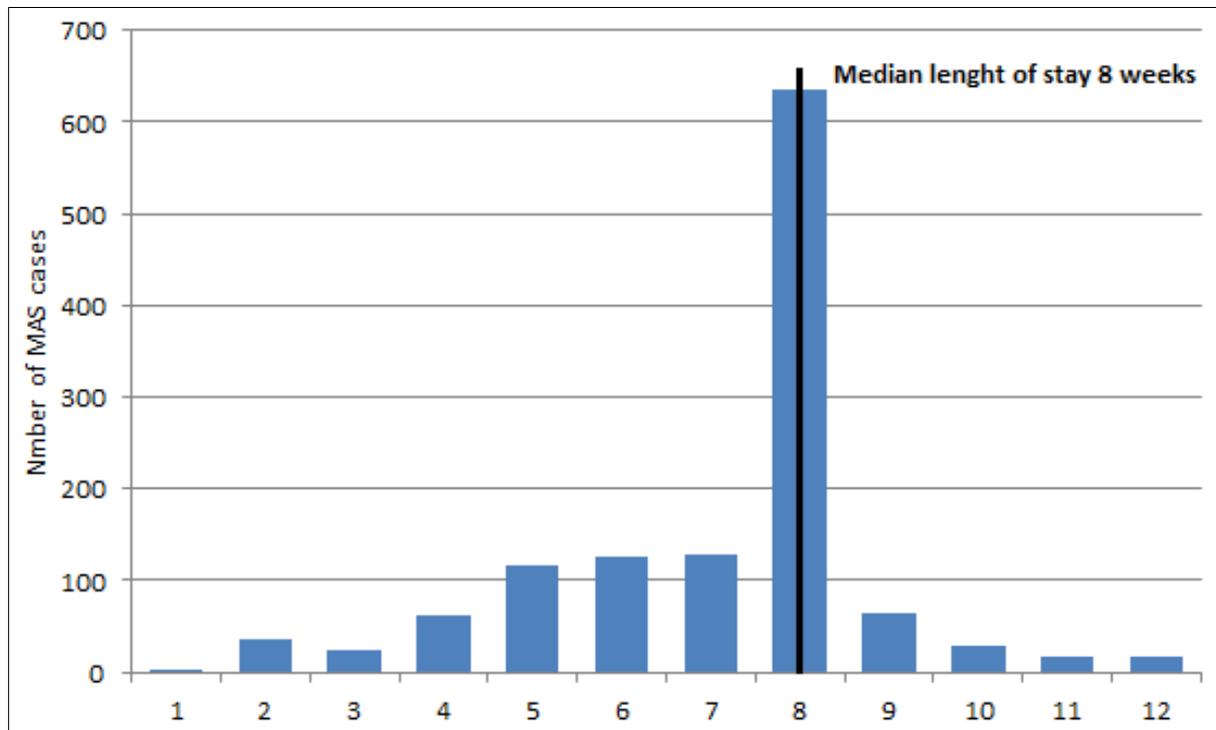


Graph 6. Distribution of MUAC at admission for SAM cases with PB ≤ 115 mm (Bié Province, Angola, June 2013)

It should be noted that SAM children with complications screened and identified in the first place by PIN’s CHW and referred to the UEN for inpatient treatment are not included in the analysis because the data from this children is not registered neither tracked to guarantee admission in the program. If those were included, the median MUAC at admission would probably be lower and the number of critical cases might increase which may imply a different conclusion regarding the quality of screening.

G. Length of stay

The median length of stay for all cured SAM children (based on the analysis of 59.22% registered for which this variable was available) is 8 weeks, which is accordance with length compared to the average duration of 6 to 8 weeks of treatment according to different studies SAM treatment. 8 weeks is also the most frequent duration of treatment for patients.



Graph 7. Distribution of number of weeks in the program for SAM cases cured (Bié Province, Angola, June 2013)

4.1.3 Analysis of qualitative data

The qualitative data was collected in the different kinds of villages identified¹¹ and using methods and sources of information described in the methodology. The findings were triangulated using the BBQ on a daily basis.

A high level of patchiness/heterogeneity in terms of coverage with regards to the aforementioned zones (villages) within the whole project area - Bié Province - was confirmed by the information collected during the qualitative work in the field: those areas where any kind of intervention was taking place (nor MoH neither PIN) showed a wide (often complete) lack of awareness of malnutrition and of the treatment of SAM. In the other hand, relevant differences were found in MoH areas of intervention due to the characteristics of the approach of the PTPA program.

¹¹ Kind of villages visited:

1. Villages in PIN areas where CHW is possible contact in one day
2. Villages in MoH areas
3. Villages in areas where neither PIN nor MoH work

As the diagram below, taken from the SQUEAC/SLEAC Technical Reference¹², demonstrates clearly, that obtaining a coverage rate for a region with heterogeneous coverage becomes meaningless as the overall rate does not apply to any one area.

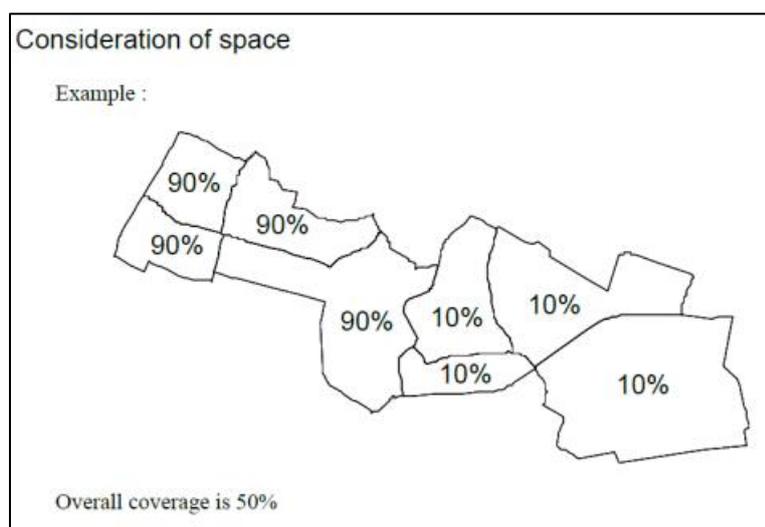


Figure 2. Representation of the overall coverage as the average coverage across the entire survey area and how it does not convey information about the spatial pattern of coverage (Bié Province, Angola, June 2013)

Therefore, it was concluded that giving a global estimate of coverage for the whole Province would not be informative neither useful for the program. Also, the results from the study of barriers and boosters to coverage, as well as the identification and confirmation of high and low coverage areas, was decided to be limited to PIN intervention areas.

Regarding these areas identified (see Footnote 11), was considered to select the villages and to be able to triangulate the findings from each type of area, no main differences were found.

Table 1 shows the list of the main boosters and barriers to coverage identified in PIN intervention areas through the completion qualitative work in the field and the following triangulation and analysis of information.

¹² Myatt, Mark et al. 2012. Semi-Quantitative Evaluation of Access and Coverage (SQUEAC)/Simplified Lot Quality Assurance Sampling Evaluation of Access and Coverage (SLEAC) Technical Reference. Washington, DC: FHI 360/FANTA.



BARRIERS	
RUTF Stock-outs	During the qualitative research RUTF stock-out was considered as main barrier almost in all areas. There was really negative feedback from mothers which started to have doubts about quality of CHW's work. Stock-outs seem to be mostly related to a problem in supply at country level.
Low capacities of CHWs	Despite the two realised trainings and constant supervision by communal and municipal supervisor, the CHW still continues with doubts during the work with community. The most highlighted gaps are wrong number RUTF distributed to mothers (confusion between RUTF and RUSF).
Insufficient coordination/communication among group	In some areas, there is continuing misunderstanding among work team (SM, SC, CHWs). Those seem to be mostly related to the following points: <ul style="list-style-type: none"> • unclear initial training (criteria of admission and discharge) • using/not using of the balance • the lack of means of transport or insufficient means of transport (weak motorbike unusable for remote area, delayed bicycle distribution) • majority of communes without mobile network coverage
BOOSTERS	
Awareness about malnutrition	The community is able to identify the signs of malnutrition and knows about its causes and consequences.
Awareness about the Programme	Not only the existence of the program is well known but also how it works.
Positive opinion of the program and treatment	There is a positive opinion of the program and the efficacy and simplicity of the treatment is recognized. The influence of work in couples has a great impact on coverage.
Confidence in the program	In Angola there is very strong culture related with traditional medicine and shamanism. Via CHWs' intervention was reached that mothers prefer to be admitted in the community-based program rather than by healer.



<p>Satisfaction with CHW's work</p>	<p>Mothers highly respect and appreciate work of activists, mainly in remote areas the CHW is the only health reference. Communes referred many cases when children were cured because of CHWs' help.</p>
<p>Gratuity</p>	<p>The gratuity of the program was reported as a booster to the coverage by almost all actors encountered.</p>
<p>Motivation of CHWs</p>	<p>CHWs are motivated and involved in the program, due to monthly incentives distribution, some other factors as development of professional career were identified. The volunteers are very aware of the importance of their contribution to the community; however there is still big discussion. Incentives have to be chosen carefully, they should serve for CHWs' own use not as a work tool.</p>
<p>Weekly follow-up children with SAM</p>	<p>CHWs visit every week MAS children in their villages and bring RUTF which saves time and money of the mother and life of children. Almost in all cases mothers do not have money to spend on traveling and consider visiting healer.</p>
<p>Nutrition education</p>	<p>Nutrition education sessions are carried out in the community for all community members, not only for the parents of children in the program, as a prevention measure. These sessions are usually carried out even when there are stock outs to help the parents to cope with the absence of treatment by showing them how maximize the use of local foods and also to maintain them motivated. Awareness about the topics and compliance to the meetings was detected during the qualitative research.</p>
<p>Good relation between mothers and activists - respect</p>	<p>Mothers are happy and very respectful towards CHW's work and their availability and amount of time spent with them. There is a good relationship between them as well as between CHWs and other community members.</p>
<p>Referral to UEN</p>	<p>CHW is able to refer really serious cases to UEN. Firstly he discovers MAS children which need to be referred to UEN and in some cases arranges ambulance to pick up children.</p>



<p>Coordination with community actors</p>	<p>There is a smooth coordination and collaboration between administrative authorities, <i>Sobas</i>, churches, HC personnel and PIN staff, commune supervisors and CHW both for sensitization and operational aspects of the Program.</p>
<p>Support and active involvement of the <i>Sobas</i></p>	<p>The coordination with the <i>Sobas</i> is a must to implement any activity at community level. <i>Soba's</i> involvement and support to the program is very positive: in most cases they do an informal monitoring of cases and refer to HC's PTPA program when needed.</p>

Table 1. Boosters and barriers to coverage emerged from the qualitative research (Bié Province, Angola, June 2013)

4.1.4 High and low coverage zones

Given the different positive and negative aspects influencing access to treatment and the major importance of the role of the CHW in this Program, the load of work of the CHW appears to be a factor influencing coverage.

So it was decided to test the following hypothesis regarding the potentially high and low coverage areas:

- Coverage is probably satisfactory in areas where CHW has a low load of work, means that works maximum in 2 villages.
- Coverage is probably unsatisfactory in areas where CHW has a high load of work, means that works in or more than 3 villages.

**4.2 STAGE 2: VERIFICATION OF HIGH AND LOW COVERAGE AREAS
HYPOTHESIS – SMALL AREA SURVEY**

To test the hypotheses of high and low coverage areas, ten villages (five in the area of satisfactory coverage and five in the area of unsatisfactory coverage) from 7 communes were selected the basis of the criteria identified: load of work of the CHW. From the previous research it seems likely that the villages with CHW that has a low load of work would have a more satisfactory coverage compared to those having a CHW with a high load of work.



	Village (Commune/Municipality)	Load of work of CHW
Satisfactory coverage area	Hunga (Kuito Sede/Kuito)	+
	Ngonde (Kuquema/Kuito)	
	Kuquema (Kunhinga Sede/Kunhinga)	
	Bumba (Kunhinga Sede/Kunhinga)	
	Sambalanda (Andulo Sede/Andulo)	
Unsatisfactory coverage area	Ndoma (Trumba/Kuito)	-
	Saccassova (Kunhinga Sede/Kunhinga)	
	Cambanda (Andulo Sede, Andulo)	
	Kakoyo (Muinha, Kamakupa)	
	Barragem (Kamakupa Sede, Kamakupa)	

Table 2. Villages in satisfactory and unsatisfactory coverage areas according to the selected criteria (Bié Province, Angola, June 2013)

Results from the active and adaptive case-finding are presented in table 3 and the analysis of the results in table 4:

Satisfactory coverage area	Total number of SAM cases found	5
	Covered SAM cases	4
	Non-covered SAM cases	1
	Recovering cases	11
Unsatisfactory coverage area	Total number of SAM cases found	28
	Covered SAM cases	3
	Non-covered SAM cases	25
	Recovering cases	3

Table 3. Results from active and adaptive case-finding - small-area survey (Bié Province, Angola, June 2013)



Calculation of decision rule/results		Deductions
Satisfactory coverage area	Target coverage	70%
	n	5
	Decision rule (d)	= $n * (70/100)$
	d	= $5 * 0.70$
	d	= 3.5
		Number of covered cases (4) > decision rule (3)
		Point coverage > 70%
		Satisfactory coverage hypothesis CONFIRMED
	Covered SAM cases	4
Unsatisfactory coverage area	Target coverage	70%
	n	28
	Decision rule (d)	= $n * (70/100)$
	d	= $28 * 0.70$
	d	= 19.6
		Number of covered cases (3) < decision rule (19)
		Point coverage < 70%
		Unsatisfactory coverage hypothesis CONFIRMED
	Covered SAM cases	3

Table 4. Analysis of survey results of the small-area survey – Classification of coverage (Bié Province, Angola, June 2013)

The reasons of the 26 total non-covered cases found are the following:

Satisfactory coverage area	Lack of knowledge about malnutrition	1
	Lack of knowledge about malnutrition	10
Unsatisfactory coverage area	Lack of knowledge about the program	5
	Caregiver thought that children need to go to the hospital	3
	Insufficient communication with CHW	1
	Distance	1
	Children was rejected by CHW	1
	Other occupation of Caregiver (lavra)	1
	Without response	3

Table 5. Reasons of the non-covered cases found in the small-area survey (Bié Province, Angola, June 2013)



The hypothesis of heterogeneity within PIN's current area of intervention was therefore confirmed reflecting the influence of the load of the work of CHW in coverage.

From all the mothers/caretakers of children screened during the wide-area survey that were asked about nutrition education counselling, 99% reported to have received nutrition education from the CHW during the past 5 months.

The information obtained throughout this stage was added to the previous findings and conclusions from quantitative and qualitative data. The *MindMap* below shows barriers and boosters to coverage in PIN's intervention area in Bié identified along the stages one and two of the investigation.

As previously explained, due to the high level of patchiness of coverage found during the qualitative research it was concluded not to give a global estimate of coverage for the whole Province and therefore not to advance to stage 3.

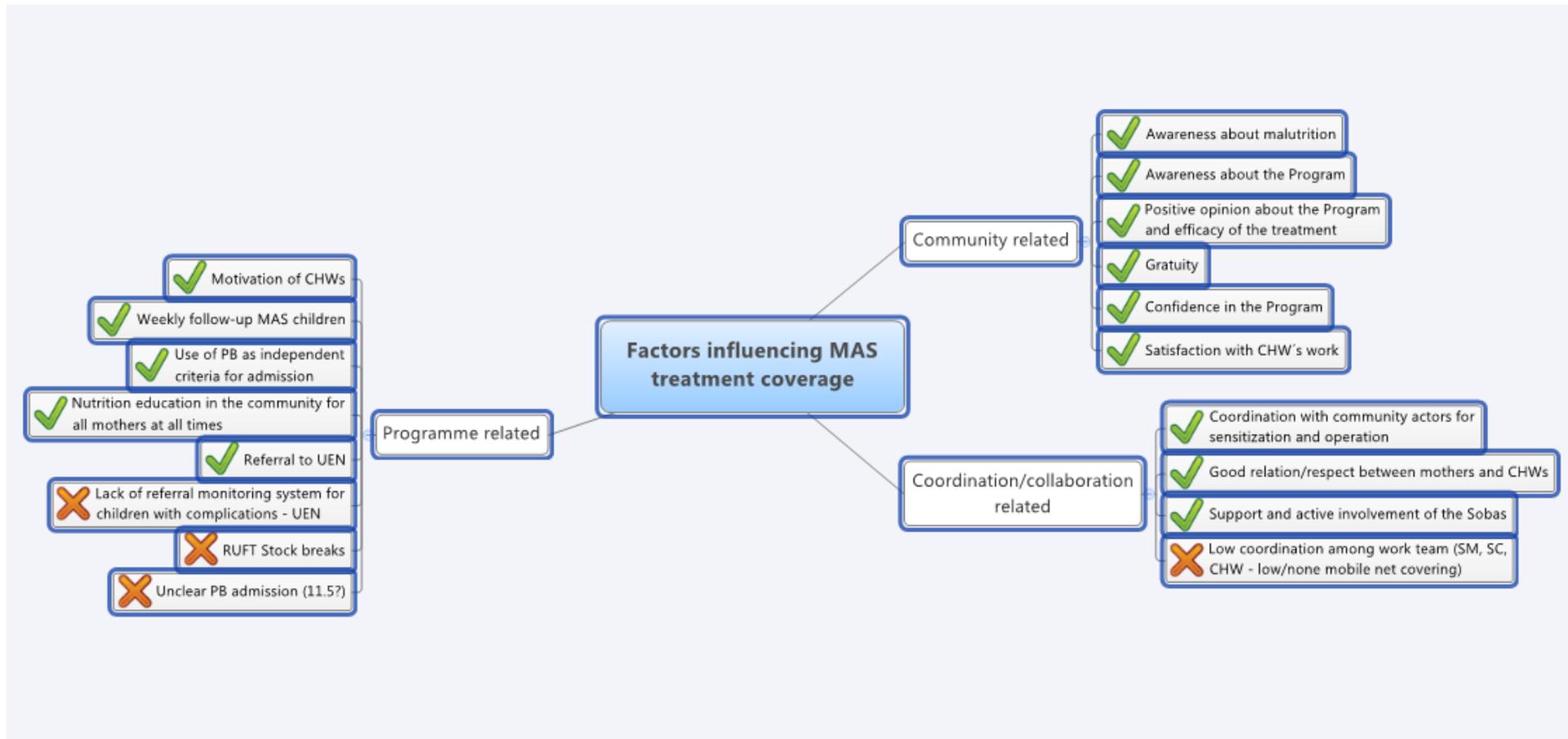


Figure 3. Main barriers and boosters to coverage in PIN's intervention identified along stage (Bié Province, Angola, June 2013)



5. DISCUSSION

As small area survey confirmed, in Bié the **load of CHW's work** has a strong influence on Program coverage in the area assessed. CHW has to face barriers as distance among villages of his intervention and high amount of work caused by high number of villages which he/she is responsible for. In the areas where CHW is responsible maximum for 2 villages, it was discovered that factors as regular weekly visits avoid defaulters and help at early identification of SAM cases.

Program's coordination and collaboration with local actors such as administrative authorities, mainly with *Sobas* and churches is another key element of success of the program. One of the most important barriers is **unclear CHW's intervention area**. At the beginning of the project, it was established that CHW should work in communities, which are further than 3 km from a Centre with PTPA. In reality there is no limit, due to a low screening capacity of the HC and CHW works "everywhere". Other difficulties confronted by CHW are **number of villages of intervention**. From the beginning MS, CS and CHW were explained that all the villages in each commune should be included in the program. Due to very large area and very low number of CHWs it results, that in some communes CHW is responsible for example for 7 villages which causes very low work quality in each village. Other barriers which should be mentioned are **insufficient means of transport**. Bié Province has low mobile network coverage therefore the mobility of CHW and supervisors are essential. Motorbikes which SC received are not convenient for the terrain in remote rural areas; distribution of bicycles was delayed and still has not been done everywhere. A big question is distribution of RUTF, which is almost impossible by provided means of transport.

Commune supervisors do not usually have strong knowledge about the program's organization and activities in the areas they are in charge of. **CSs are paid by PIN** (part-time) but they are also employees of MoH, therefore some of them are very much occupied. In these cases PIN involved a good strategy to train the best CHW to replace these SC. It has to be mentioned that Commune supervisors are the strongest line in the chain.

Low capacity of CHW seems to be underlying for program coverage. Despite the two realised trainings and constant supervision by communal and municipal supervisor, the CHW still continues with doubts during the work with community. The most highlighted gaps are wrong number RUTF distributed to mothers (confusion between RUTF and RUSF) and admission criteria (classifying SAM children as MAM, which was caused by unclear initial



training). Further investigation should be done to implement more supervisors for CHW and reduce the load of work per CHW.

Fundamental barrier is **RUTF stock breaks** which was caused by provider during month March, out of control PIN's program.

The **awareness about malnutrition and the program** was considered to be high and almost complete in those areas where the program is well established and active, gratuity and relation with *CHWs*, the need for keeping sensitization activities on-going remains essential to guarantee access and improve program's coverage. According to research, 99% of women reported to have received **nutrition education sessions** during the last 5 months but it should be noted that the information they received is only based on the information included in the brochure incorporated to the "cartao da mae" - formal IYCF services are currently not implemented.

Evidence of children transferred to UEN seems to be challenge of the Program. System for evidence referrals of SAM cases with complications found by the CHW is missing and should be improved.

The most discussed topic is **CHW's incentives**. In Bié Province different strategy was implemented in comparison to the other locations. It was agreed with CHWs that incentives will be distributed on monthly bases. The question of incentives is very sensitive it cannot happen that CHW considers incentives as means of work and not as remuneration for work done as happened at the beginning of the program (bicycles – serve for transport and distribution of RUTF, T-shirts and caps – serve for identification). Incentives have to be chosen carefully, they should serve for CHWs' own use not as a work tool.



6. RECOMENDATIONS

In line with what the study has found, recommendations and activities to improve coverage are:

Recommendation	Activity
<p>Improve integration and coordination of the program with MoH's PTPA program</p>	<p>Meet with UNICEF and MoH to update CMAM's program strategy in the Province to re-define areas of intervention and activities of each partner. Involve commune supervisors' inputs in the discussions</p> <hr/> <p>Design a global database of villages receiving different kind of CMAM services and use it to:</p> <ul style="list-style-type: none"> - track on-going activities and ensure coordination - identify needs and plan intervention in areas not yet reached
<p>Improve availability, involvement and long term commitment of commune supervisors and CHW</p>	<p><u>Long term:</u> Meet with DPS to discuss possibilities to pay money for CHWs instead of incentives. In the better case involved DPS to be responsible for CHWs payment.</p> <hr/> <p><u>Short term:</u> Incentives should be distributed on monthly base in promised time. Also Incentives have to be carefully chosen and being served for personal use of CHWs not for CHW's work.</p>
<p>Improve supervision of CHWs, increase number of CHWs</p>	<p>Although the two realised training and constantly supervising by communal and municipal supervisor, the CHW still continue with doubts during the work with community. The best one CHW per commune should be trained and nominated as Supervisor of CHWs to correcting mistakes in Register books during the work in field.</p>
<p>Improve RUTF stock management</p>	<p>Advocate at national level to ensure timely and sufficient supply of RUTF</p> <hr/> <p><u>Long term:</u> Alleviate workload of CHW on distribution of RUTF – Majority of SC have own car, it is possible to pay oil costs and amortization of their cars and support RUTF distribution in villages with distant/for those without cars buy stronger motorbike.</p> <p><u>Short term:</u> For each community rent a tricycle with driver to support CHW's RUTF distribution in each village of intervention.</p>



Improve data management
and monitoring

Introduce a column on CHW screening sheets to register SAM cases referred to the UEN and create a system to ensure the follow-up of these cases from admission to cure. Involve UEN staff and increase the interaction between programs' staff

Integrate active data analysis as a monitoring tool of the program by developing a strategy for periodic availability of reliable indicators

Stimulate sensitization
activities

Incorporate IYCF activities



ANNEX 1: EVALUATION TEAM

Investigation team

- ✓ Marie Vlášková, CMAM Project Manager PIN
- ✓ Dr. Hector Jalipa, CMAM Program Coordinator WV
- ✓ José Manuel, Municipal Supervisor PIN - Kuemba
- ✓ Artur Tobias, Municipal Supervisor PIN - Andulo
- ✓ Maria Elizabeth, Municipal Supervisor PIN - Kunhinga
- ✓ Esperanca Sandala, Municipal Supervisor PIN – Kamakupa
- ✓ Domingas Josepha, Municipal Supervisor PIN - Kuito
- ✓ Bonifacio Cambonque, Project Assistant PIN - Kuito
- ✓ Izreal Cavilembi, Logistics technic PIN - Kuito
- ✓ Eliseu Enrique, Logistics technic PIN – Kuito



ANNEX 2: CHRONOGRAMME

Date	Activities
Monday 10.06. – Wednesday 12.06.	SQUEAC Orientation: <ul style="list-style-type: none"> - Introduction to the coverage assessments and to the SQUEAC methodology - Stage 1: <ul style="list-style-type: none"> - Quantitative data review - data analysis workshop and seasonal calendar - Qualitative research methods and preparation of field work: work and review of questionnaires and selection of villages
Thursday 13.06. – Tuesday 19.06. (without weekend)	Qualitative data collection: interviews in the community and health structures – Daily restitution of findings with Kuito and Kunhinga team, with those that travelled far away after research (BBQ) Collection of additional information needed for stages 2
Friday 21.06.- Sunday 23.06. (weekend included)	Quantitative and qualitative information summary Preparation of stage 2: Study of spatial distribution of coverage and selection of villages Training on the Active and Adaptive case-finding method
Monday 24.06. – Tuesday 25.06.	Small-area survey, Synthesis and analysis of stage 2 information



ANNEX 3: DATA COLLECTION FORM

SQUEAC: Formulário da colecta de dados Municipio: _____ Comuna: _____

Aldeia: _____ Equipa: _____ Data: _____

Nome e apelido da criança	Idade (meses)	PB	Edema (+, ++, +++)	Caso de MAS	Caso de MAS no programa (coberto)	Caso de MAS não no programa (não coberto)	Caso em estadio de melhoramento	Verificacao: Plumpy Nut/Cartao da mae
								<input type="checkbox"/> Plumpy Nut <input type="checkbox"/> Cartao da mae
								<input type="checkbox"/> Plumpy Nut <input type="checkbox"/> Cartao da mae
								<input type="checkbox"/> Plumpy Nut <input type="checkbox"/> Cartao da mae
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								<input type="checkbox"/> Plumpy Nut <input type="checkbox"/> Cartao da mae
			TOTAL					



ANNEX 4: QUESTIONNAIRE FOR NON-COVERED CASES

Questionario para cuidadores de criancas com MAS, quais nao estao no programa (casos nao cobertos)

Município: _____ Comuna: _____

Aldeia: _____ Nome e apelido da criança: _____

1. Voce acha que esta crianca tem malnutricao?

SIM

NAO ➡ STOP!

2. Voce conhece um programa de malnutricao?/Lugar a onde estao criancas com malnutricao tratados?

SIM

NAO ➡ STOP!

3. COMO SE CHAMA O PROGRAMA/ONDE ESTA ESSE PROGRAMA?

4. PORQUE ESTA CRIANCA NAO ESTA NO PROGRAMA?

1. Muito distante ➡ Qual e a distancia que voce tem que andar? _____ Quantas horas? _____

2. Nao tempo/muito ocupado para atender programa ➡ Qual atividade o ocupa? _____

3. O cuidador esta doente

4. O cuidador nao pode viajar com mais de uma crianca.

5. O cuidador tem vergonha participar no programa.

6. Os problemas da segurancia

7. Nenhuma outra pessoa na familia pode cuidar dos outros filhos.

8. A quantidade de Plumpy Nut nao e suficiente.

9. A crianca foi anteriormente rejeitado ➡ Quando? (periodo aproximado)

10. Filho de outra pessoa foi rejeitada

11. O marido proibiu

12. O cuidador pensou que crianca precisava ir para hospital

13. O cuidador nao acredita que programa pode ajudar da crianca (prefere curandeiro, etc.)

14. Outras razoes: _____



5. A criança ja esteve no programa da malnutricao?

NAO ➔ STOP! SIM

Se sim, porque a crianca actualmente nao esta em programa?

Abandono, quando? _____ Porque? _____

Curado and descarregado ➔ Quando? _____

Descarregado porque sem progresso ➔ Quando? _____

Outras: _____

(Obrigado/a)