SQUEAC REPORT

TANA RIVER COUNTY- KENYA

JULY 2013

Acknowledgement

International Medical Corps would like to thank everyone who made it possible for successful completion of coverage assessment whose findings are hereby presented. IMC would like to extend its sincere gratitude and indebtedness to the following actors for their support;

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Special thanks go to IMC Nutrition and M & E Departments and all SQUEAC experts who took their time to review this document and offer their valuable contribution and technical inputs when called upon during the coverage assessment

Acronyms

CHW- Community Health Workers
CU- Community Unit
DHMT- District Health Management Team
FFA- Food for Assets
GFD- General Food Distribution
HINI- High Impact nutrition Interventions
IMAM- Integrated Management of Acute Malnutrition
IMC- International Medical Corps
KFSSG- Kenya Food Security Steering Group
MAM- Moderate Acute Malnutrition
MOH- Ministry of Health
MUAC- Mid Upper Arm Circumference
NDMA- National Drought Management Authority
OTP- Out patient Therapeutic Program
OJT- On Job Training
RUTF- Ready to Use Therapeutic Food
SAM- Severe Acute Malnutrition
SFP- Supplementary Feeding Program
SQUEAC- Semi Quantitative Evaluation of Access and Coverage
TBAs- Traditional Birth Attendants
THPs- Traditional Health Practitioners
UNICEF- United Nations Children's Fund
URTI- Upper Respiratory Tract Infection

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Executive Summary

International Medical Corps in conjunction with Ministry of Health conducted the first coverage assessment for OTP program in Tana River County. The main objectives of the assessment was to determine the program coverage, establish barriers and boosters for the OTP program, capacity build the MOH and IMC staff on coverage assessment using SQUEAC methodology as well as providing recommendations for future programming. This assessment was carried out in the entire Tana River County between 9th and 28th July 2013. SQUEAC methodology was used. Overall point coverage of **47.5% (34.5%-60.8%)** was unveiled by the assessment, which was slightly below the 50% SPHERE standard for coverage in rural set ups

Some of the barriers identified to affect the program negatively included; distance (due to the vastness of the county). This coupled with few, inconsistent and un- integrated outreaches became a big challenge in the implementation of the program. Shortage of staff (leading to absenteeism) was also noted as a major barrier that lead to the program being handled by CHWs. This made the CHWs concentrate in facility work which affected the case finding in the community. Other barriers included; weak community strategy in the county, CHWs in the community have not been trained on IMAM and were rarely handling IMAM related activities; Defaulting majorly caused by weak defaulter tracing mechanism and also migrations in the pastoral livelihood also seems to be a major barrier for the program. It is therefore necessary to put more resources in strengthening, community units, outreaches as well as mobile clinics. However, some boosters were identified and need to be strengthened. Such boosters include; availability of RUTF in the facilities, program awareness even by the TBAs and THPs, positive community opinion as well as appreciation by the community that malnutrition is curable.

1. Introduction

1.1 Background

Tana River County is located in the coastal region of the Republic of Kenya. It borders Kitui County to the West and North West, Garissa to the East, Tharaka-Nithi and Isiolo counties to the North, Lamu to the South East, Kilifi and the Indian Ocean to the South. The county covers an area of approximately 38,782 km² with an estimated population of 269,164[1] persons, with a population of 46,624 under-fives (17.3% of the total population). Out of this, 41,962 are children aged 6- 59 months.

The county consists of 3 sub counties namely; Tana North Sub County which comprised of Bura (Bangale and Madogo divisions), Tana River Sub County comprising of Wenje and Galole divisions and Tana Delta sub county comprising of Tarasaa, Garsen and Kipini divisions. The county has 3 main livelihood zones namely pastoral (accommodating 14% of the population), marginal mixed farming (47%) and mixed farming(37% of the population) as shown in figure 1 below. The county has only one water source (River Tana) that traverses the county from the northern border all the way to the Indian Ocean in the south. The county experiences bimodal rainfall pattern with long rains falling between April and June and short rains between October and December. The mean annual rainfall ranges between 220mm to 500 mm with exception of mixed farming livelihood zone where rainfall could range between 750mm and 1250mm. Retargeting of food aid beneficiaries based on the new KFSSG figures was done in April that saw the figures being reduced from 57,715 beneficiaries to current caseload of 50,800 beneficiaries composed of 45,900 under FFA and 4,900 under GFD. The Government of Kenya is providing relief food to the clash affected victims in Tana Delta[2].

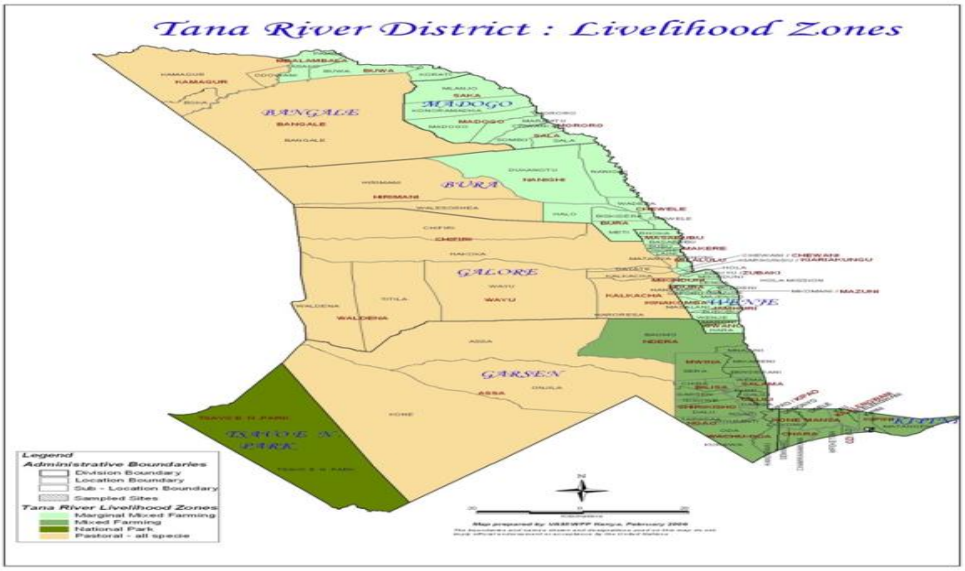


Figure 1: Tana river County Administrative structures and livelihood

[1] Based on 2009 KNBS population and household census projections
[2] Tana river County 2013 Long Rains and Food Security Assessment Report

International Medical Corps (IMC) with financial support of UNICEF has been supporting the Ministry of Health to implementing HINI since May 2010 with a goal of reducing maternal, infant and young children mortality in the county. One of the HINI components that IMC has been supporting is management of acute malnutrition through IMAM model. Malnutrition in Tana River county has remained high above the Minimum standard for emergency setting, According to a nutrition SMART survey conducted in the county in April 2013, the level of acute malnutrition (wasting) in the county was **13.8 %(10.4- 18.0%, 95%CI)** compared to the previous survey (Feb 2012), where the rate of acute malnutrition was **13.5 %(11.3- 16.0, 95% CI.** However, the rate of severe acute malnutrition went down from **3.1 %(2.3-4.3, 95% CI)** in 2012 **to 2.2% (1.3-3.7, 95% CI)** in 2013.

1.2 Survey Justification

Since the inception of the OTP program in Tana River County no coverage survey has ever been conducted. It was therefore important to conduct a coverage assessment to determine how effective and efficient the program has been in regard to meeting its objective of recruitment, retention, and recovery of the targeted beneficiaries. It will also enable determination of barriers and boosters for appropriate recommendations for pragmatic programming.

1.3 Objectives of the survey

The specific objectives of the assessment were;

- To determine the coverage (of OTP program)
- To determine boosters and barriers of significance to program coverage
- To capacity build the MOH staff on SQUEAC methodology
- To capacity build the IMC staff on SQUEAC methodology
- To provide recommendations for programming

2. Methodology

The coverage assessment applied SQUEAC methodology. The methodology is a low resource 3 stage model that can be used on regular basis to monitor program performance, identify barriers and boosters to service access and uptake and hence evaluate coverage. In the first stage, areas of high and low coverage were identified through the analysis of routine program data. A hypothesis is formulated based on the information collected. In stage 2, the hypothesis is tested and confirmed or rejected. Stage 3 involves the use of Bayesian methodology to estimate the overall coverage.

2.1 Stage 1: Identification of Areas of Low and High Coverage

In order to identify areas of high and low coverage analysis of routine program data was done. Data was collected in all 43 sites that offer OTP program in the entire county from May 2010 (the period which the program started to function) to May 2013. Data collected from the sites included; OTP admissions per month, admission MUAC, exits (cured, defaulters, deaths, non-responses) on monthly basis, defaulters based on their villages of residence and defaulting visits, disease calendar. Seasonal calendar was obtained from the county NDMA office since they have been monitoring the county seasons regularly over a period of time.

2.1.1 Monthly admission

Analysis of program admission over time revealed that, the program uptake was initially low. This was attributed to few facilities that were offering OTP services at the beginning. As more facilities were opened, the number of admission increased. However, from August 2012 to May 2012, the program admission went down. During this period there were ethnic clashes, nurses' strike, and political campaigns ahead of general elections in March 2013 and floods that affected the program as shown in figure 2 below

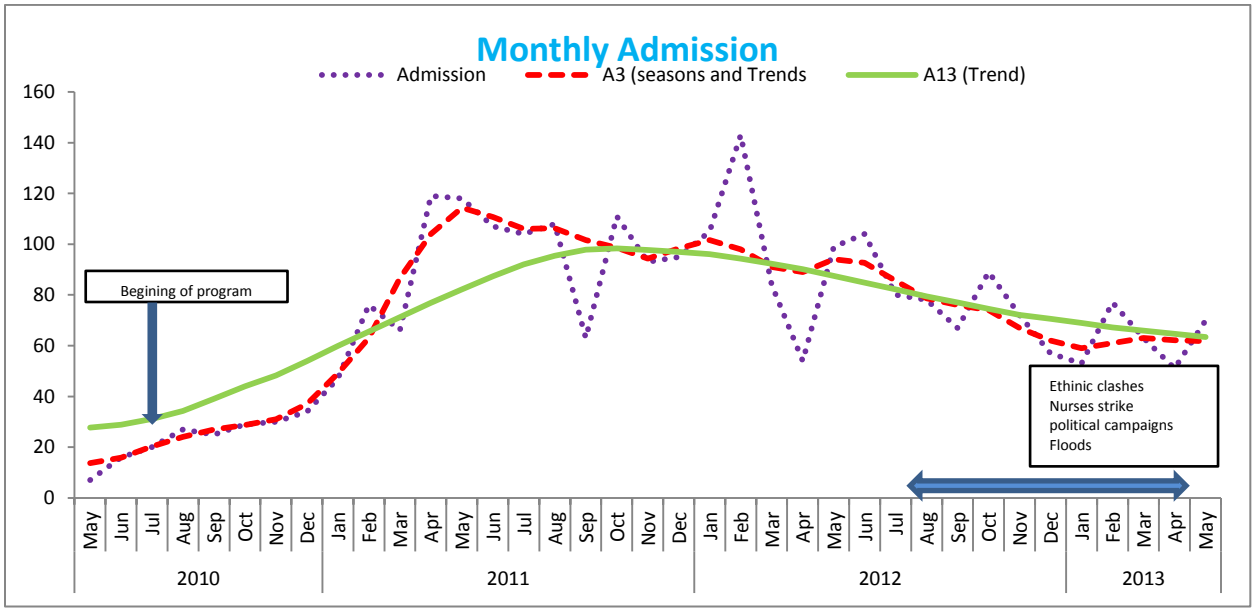
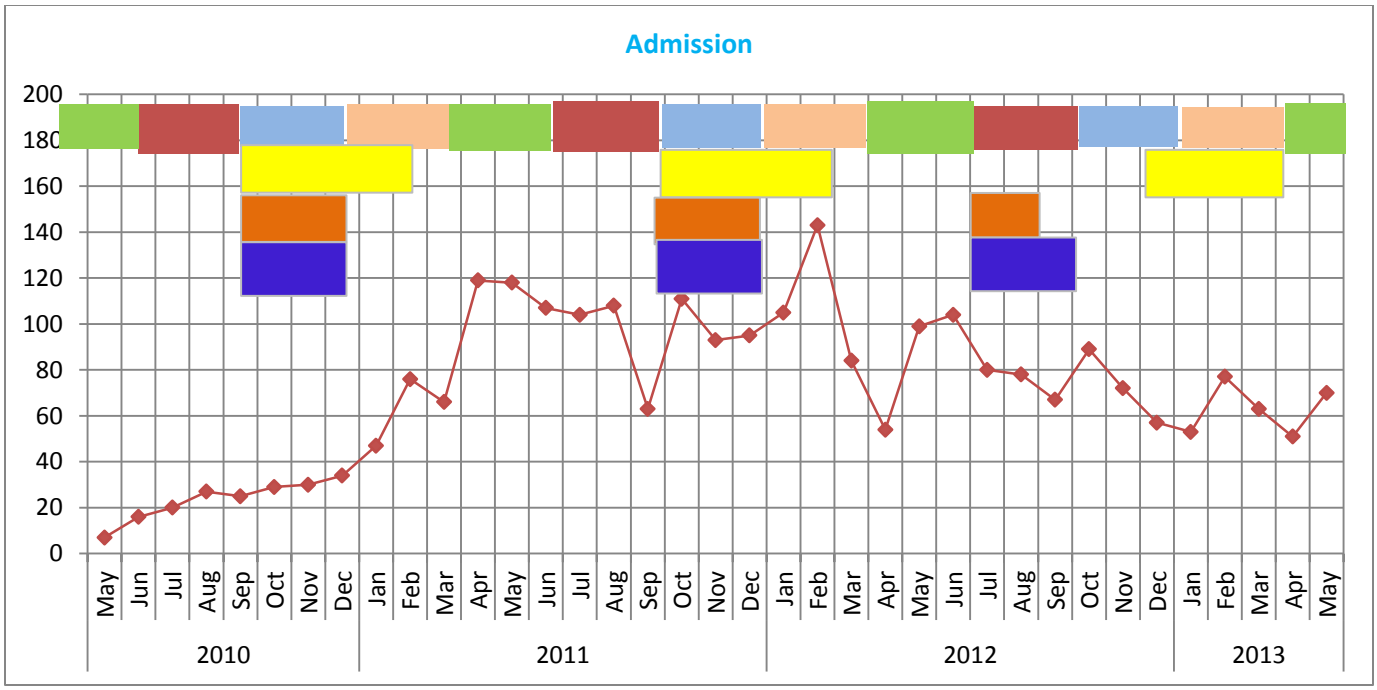


Figure 2: Admission overtime trends

2.1.2. Admission trend in relation to disease and seasons

Admission trend was further analyzed in relation to morbidity and seasonal trends. According to the data collected from the health facilities, the common diseases that affect the under-fives in the county were; diarrhea, malaria and URTI. As indicated in figure 3 below, the admission peak periods include; those with high cases of diseases like URTI and diarrhea (Oct- March). Admissions seem to be affected by season as more admissions are in dry season compared to those in wet season attributed to lack of foods hence wasting.



Key

Morbidity		Seasons	
	Diarrhea		Long Rains
	Malaria		Long dry spell
	URTI		Short Rains
			Short dry spell

Figure 3: Admission trends in relation to disease and seasons

2.1.3 MUAC Admissions

OTP program uptake hence coverage is determined by the number of children who meet the admission criteria (MUAC <11.5cm and or with nutrition edema). If many of these are not in the program, then the coverage is low (Valid 2012). Late admission is usually associated with low program coverage. Plotting MUAC on admission will help in determination of the health seeking behavior. Children who are admitted latter in the program (with lower MUAC) are those who have remained uncovered for some time despite being eligible. Admission MUAC was collected and analyzed as shown in figure 4 below. The median MUAC fall at a MUAC range of 111-114mm (at 1100[3]), signifying early admission, which is a booster to the program. Few cases were admitted with lower MUAC <9cm. This means that most cases are admitted with MUAC close to the admission cut off for OTP. Early admission is a booster to the program as children get admitted with few complications; they stay in the program for a short time and are unlikely to default. Ultimately, there is good outcome.

[3] Median MUAC= (1114+635+242+116+47+30+7+4+4)/2 =2199/2 = 1100

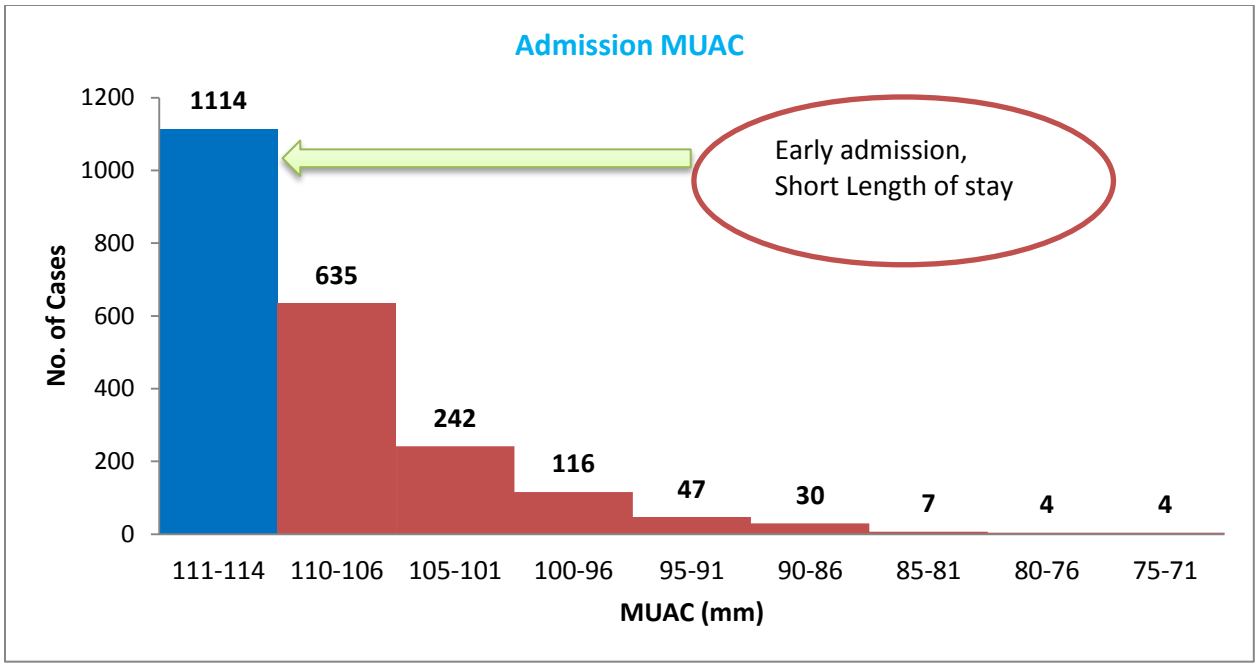


Figure 4: Admission MUAC

2.1.4 Standard Program Indicator Graph: Exits

Admissions alone do not determine the effectiveness of an OTP program. Program retention should also be considered[4]. The program exits which include, cured cases, deaths, defaulters, non- responses and transfers were analyzed to obtain a standard program indicator graph shown in figure 5 below. For a standard program that meet the SPHERE standard the cure line should be at the top of the graph (above 75% minimum threshold), while defaulter and death line should be at the bottom of the graph(below 15% and 10% minimum threshold for defaulter and death rate respectively). In a situation where the cure line is below 75% line, defaulter line and death line are above 15% and 10% respectively, there is a concern.

As indicated in the figure below the average cure rate is above the minimum SPHERE standard since it is 79%. The death rate was below 10% mark. However the average defaulter rate was above the minimum threshold and a therefore a concern to the program. High defaulting rate is an ultimate indicator that there is no good compliance in the program since children leave the program before meeting the discharge criteria. In Tana River County it is attributed to among other things; lack of proper defaulter tracing mechanism, inadequate case finding and pastoralism which lead to migration. Distance to the health facilities as well as staff absenteeism and competing activities could also factors contributing to defaulting.

[4] 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.

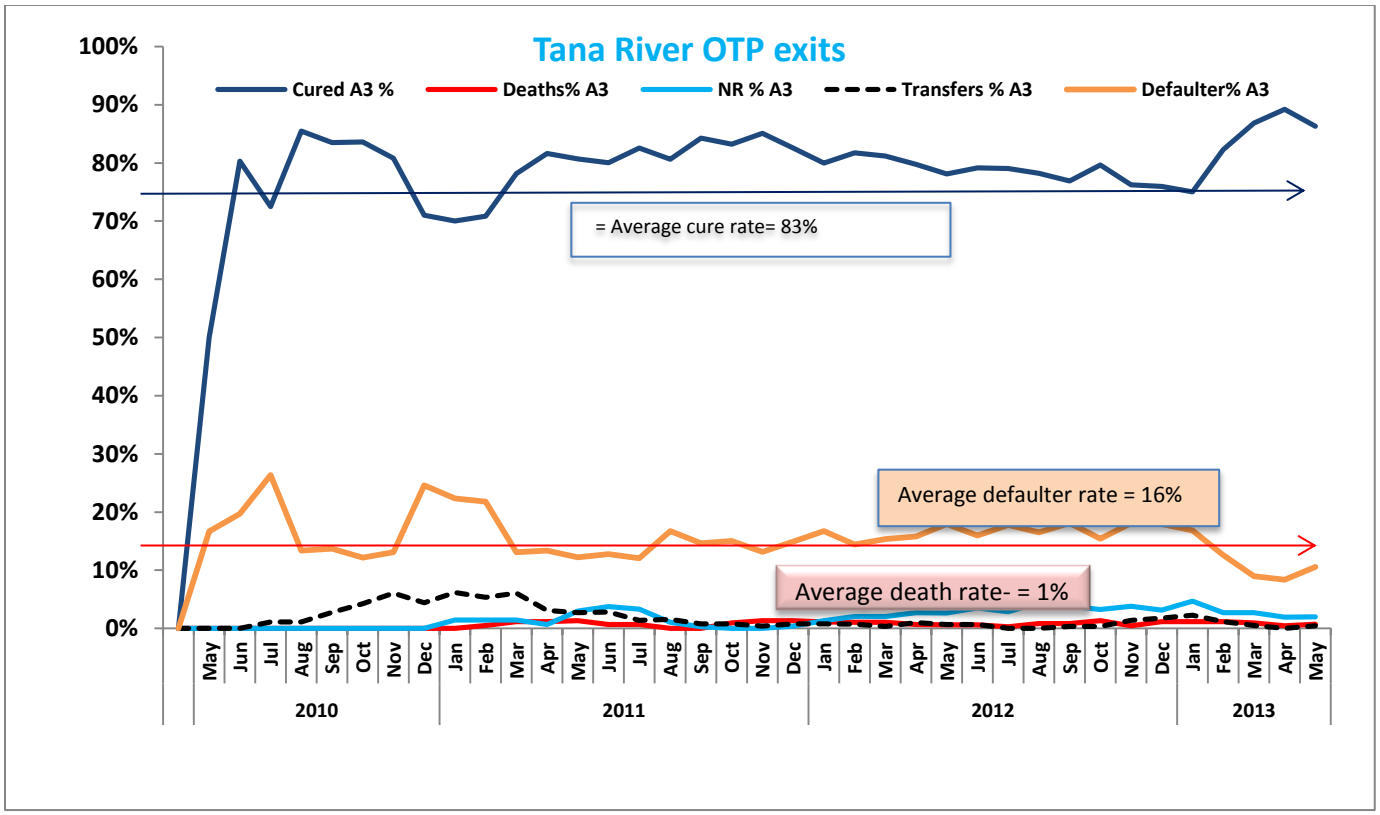


Figure 5: OTP exits

2.1.5. Defaulting

Analysis of defaulting time indicates that most (80%) cases defaulted between week 1 and week 4 as shown in figure 6 below. This is a barrier to the program as earlier defaulters are likely to be active SAM cases compared to late defaulters who could to be recovering cases or recovered cases in the community

Further analysis of defaulting with seasons indicates that the peaks of defaulting are between July and September and January and March. Apparently these are months characterized by long and short dry spell respectively. Defaulting is associated with migration as pastoral communities move with their livestock towards the grazing areas. On the other hand, land preparation for the farming communities took place at the same time therefore having a competing effect to the program attendance. Figure 7 indicate the relationship between defaulting and seasons

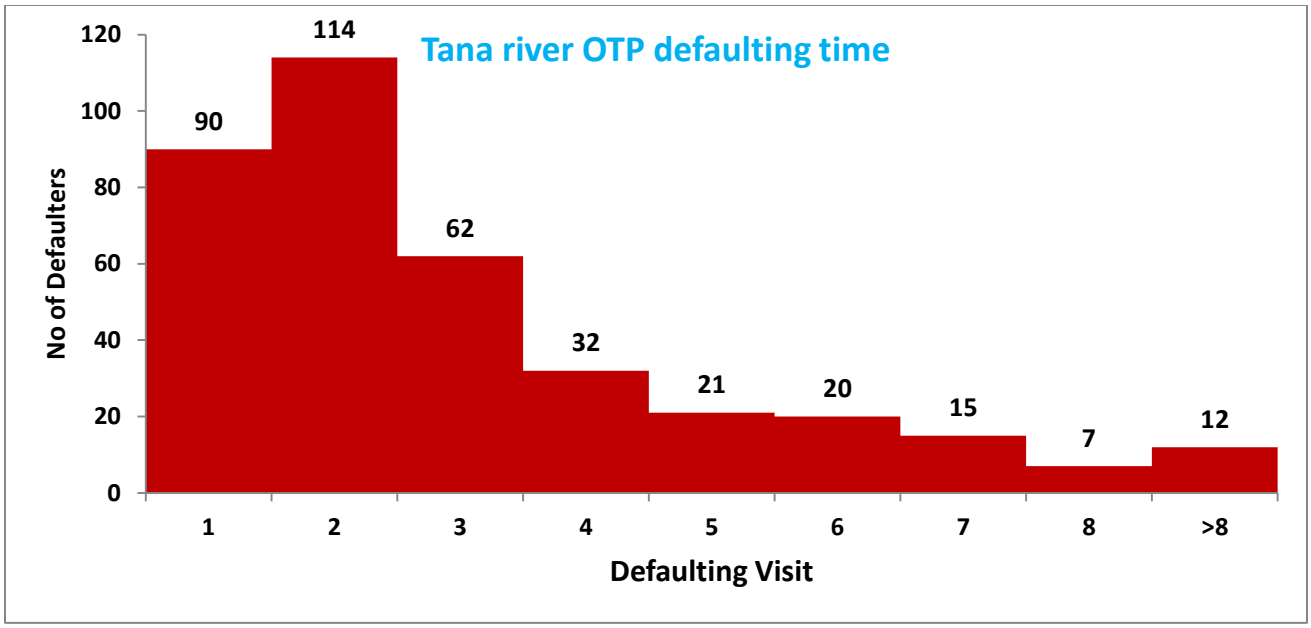


Figure 6: Defaulting

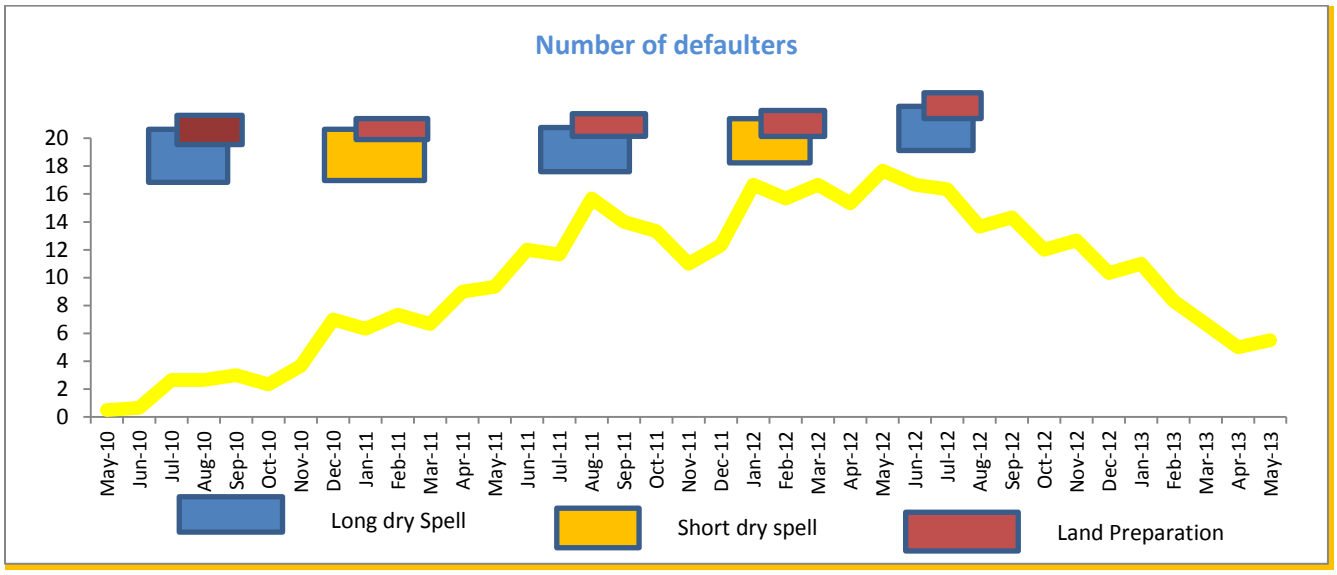


Figure 7: Defaulting and Seasons

2.1.6 Program Documentation

A review of program registers revealed a few documentation challenges in some OTP sites, some of the challenges noted included; partly filled registers for example the average length of stay and exit outcome (not indicated). In other cases, a few registers were not legible due to crowded information. However, in some facilities the situation was different as all columns were well filled and legible. In such facilities it is easier to monitor the child progress. Finally it was noted that the OJT teams visited the facilities and made some correction which was a booster to the program. Lack of enough skilled staff in the county made the situation worse since the responsibility of handling OTP program was left in the

hands of CHW, without strict supervision, recording of information become a challenge. It became worse in situations where the health workers were absent due to a number of reasons.

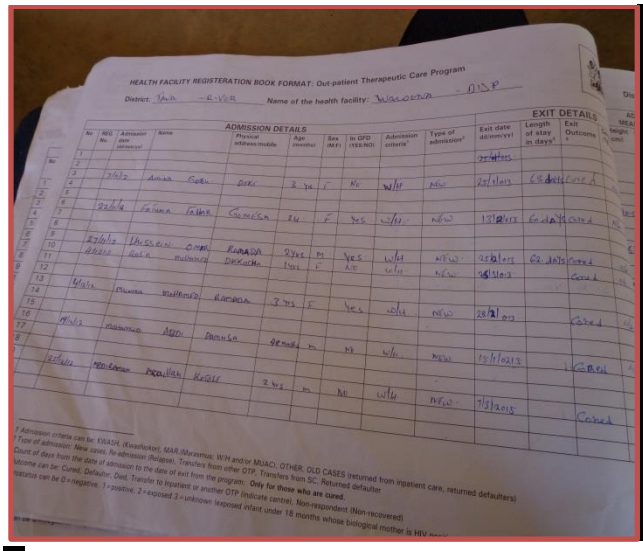


Figure 9: Partly filled OTP register

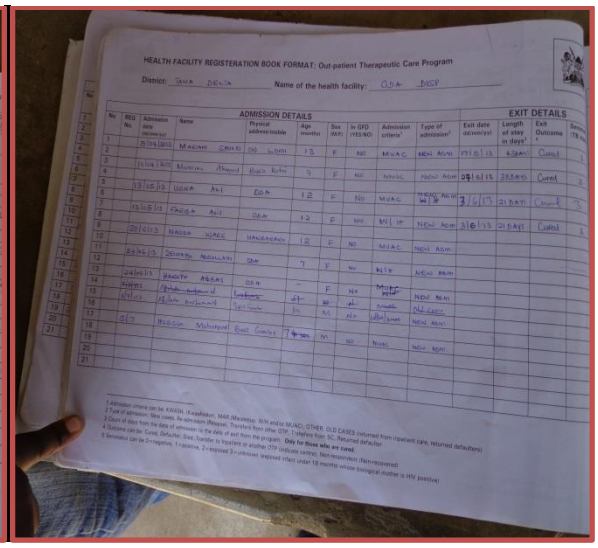


Figure 8: Fully filled OTP register

2.2 Qualitative information

6 survey teams were composed, comprising of 2 members per team, 1 MoH (Team leader) and 1 IMC program staff. 3 methods were used to collect qualitative information. Qualitative information collected was triangulated using different sources. The methods used to collect qualitative information included;

Semi structured interviews: information was collected from facility in charge/program staff and CHWs

Informal group discussions by community leaders, TBAs/THPs, pastoralists and care givers in the community.

In-depth interviews with caregivers of children in program and defaulting children.

An observation checklist was also used to collect information regarding; the presence of IEC materials, RUTF stock, OTP registers and ration cards and also program organization. The information was analyzed to identify program barriers and boosters as well as areas of high and low coverage. Barriers and boosters were further organized in form of a concept map

Figure 10: BBQ Analysis

2.3 Tana River OTP Concept map

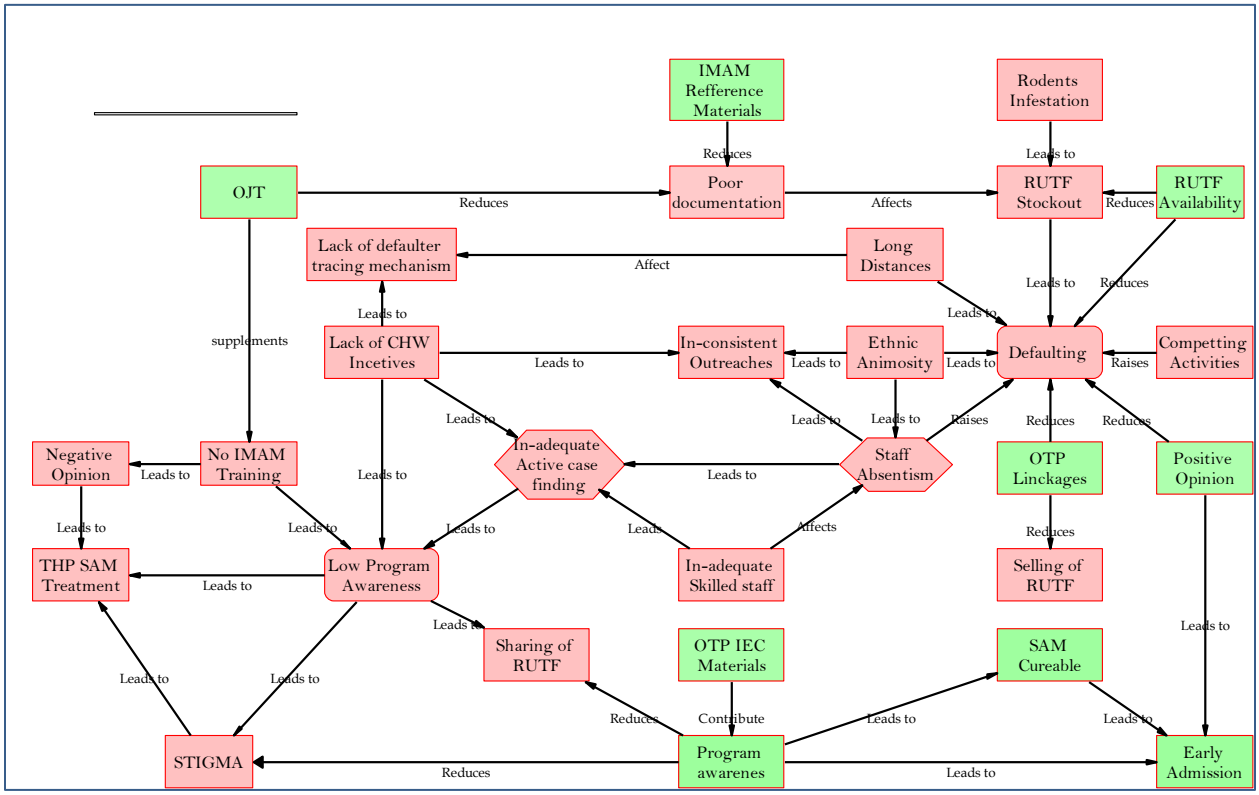


Figure 11: The Concept Map

2.3 Stage 2: Confirming of hypothesis for Areas of low and High Coverage

The objective of this stage was to confirm areas of high and low coverage based on the data collected from stage 1. The hypothesis; *Program awareness is high (>50%) in villages near OTP sites and low in villages far from OTP sites* was formulated due to the following reasons;

- Few and/or inconsistent outreach visits
- Some malnutrition cases were presented to traditional health practitioners/spiritual leaders
- Relatively long distance to OTP sites/vastness of the county
- Weak and few community units (CHWs in the community).

2.3.1 Small Area Study

The small area study was conducted in purposively selected villages both near and far away from the health facility. 4 teams (each with 3 members), were divided in to two, teams visited villages closer to a health facility and the other 2 visited villages far from the health facility. Each team was provided with a MUAC tape and a packet of RUTF. When they reached the village, they looked for a key informant who lead them to household of caregivers of children under five years of age where the asked whether they were aware of any program that treat malnutrition. They confirmed by showing them MUAC and RUTF.

Table 1: Results of small area study

Purposively Sampled villages	Distance from OTP facility	No of Caregivers aware of the program	No. of caregivers not aware of the program	Total Respondents
High program awareness area: (Laza Mji wa Kale, Hola Secondary Manyatta	1.5- 2 km (Near)	9	1	10
Low program awareness areas :(Hamata, Igle)	37 km (Far	0	5	5

The hypothesis was tested by applying the simplified LQAS formula d= (n/2) against the 50%[5] SPHERE standard

Table 2:Small area study analysis

[5] Tana River County is a rural set up and therefore the minimum SPHERE standard for coverage is expected to be 50%

High program awareness area: (Laza Mji wa Kale, Hola Secondary Manyatta)	Program awareness standard (p)	50%	Number caregivers aware of the program (9) is >5 (>50%)
	Decision Rule(d)	d = 10/2 = [5] = 5	
	Number caregivers aware of the program	9	
Low program awareness areas: (Hamata, Igle)	Program awareness standard (p)	50%	Number caregivers aware of the program (0) is <2 (50%)
	Decision Rule (d)	d= 5/2 = [2.5] = 2	
	Number of caregivers aware of the program	0	

Stage 3: Prior Development

The analysis of routine program data (quantitative), qualitative data and the findings of small area survey provided a numerical representation of a belief about the program coverage (prior). Program barriers and boosters were organized and weighted based on the number of sources. Qualitative data was categorized as booster (positives) or a barrier (negatives) to the program. The prior mode was determined as an average of boosters (build up from 0%) and barriers (knock downs form 100%) as shown in the table below.

Table 3: Weighing Barriers and Boosters

Sno.	BOOSTER	Weight
1	Early admission	5
2	On job training	5
3	OTP/SFP/GFD training	3
4	Awareness of malnutrition	4
5	Malnutrition is Curable	3
6	Program awareness	3
7	Community opinion	4
8	Availability of RUTF stock	4
9	Availability of reference materials	4
10	OTP ration Cards	3
Sum		**38%**
Lower anchor		**0%**
Total		**38%**

Sno	BARRIER	Weight
1	Staff absenteeism	-2
2	No active case finding	-5
3	Malnutrition is treated by THPs/Spiritual leaders	-3
4	Selling of RUTF	-1
5	RUTF stock outs	-1
6	Distance	-4
7	Inconsistent outreach visits	-4
8	Low Program awareness	-3
9	Defaulting	-2
10	No defaulter tracing mechanism	-3
11	Majority of health workers are not trained on IMAM	-3
12	Documentation Challenge	-1
13	Inadequate skilled staff	-4
14	Lack of CHWs incentives	-4
15	Competing activities	-2
16	Rodents infestation of RUTF stores	-1
17	Sharing of RUTF	-1
18	OTP program is mainly handled by CHWs	-1
19	Stigma	-3
20	Negative attitude by health workers	-1
21	Ethnic animosity	-2
Sum		**-51%**
Upper anchor		100%
Total		**49%**

Prior Mode = (38%+ 49%)/2 = 43.5%

By weighing barriers and boosters, a prior mode of 43.5% was obtained. Bayes SQUEAC Coverage Estimate Calculator (version 2.02) was used by adjusting the prior α and the prior β until the mode was obtained with an uncertainty of ± 25. This level of uncertainty was used since this is the first coverage assessment to be conducted in Tana River County

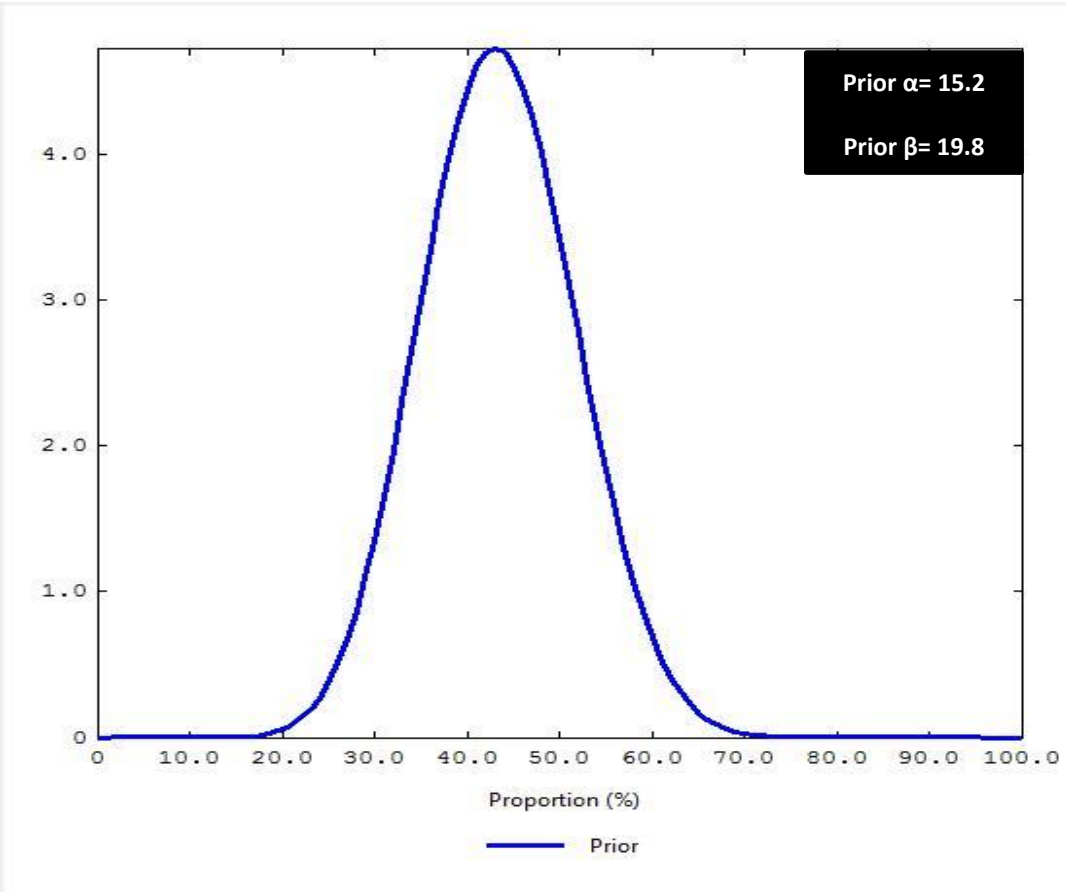


Figure 12: The prior

2.3.2. Wide Area Survey

Sample size Calculation

The following formula was used to calculate the sample size for wide area survey

$$\boldsymbol{n = \frac{mode.(1 - mode)}{(precision \div 1.96)2} - (\alpha + \beta - 2)}$$

Where prior mode = 43.5, precision of ±11.5, α= 15.2, and β= 19.8

Therefore

$\boldsymbol{n = \frac{0.435(1-0.435)}{(0.115 \div 1.96)2} - (15.2 + 19.8 - 2)}$ **= 38 cases**

The number of villages to be visited was determined using the following formula

$$N_{villages} = \frac{n}{average\ villages\ population \times \frac{\%population\ of\ 6-59m}{100} \times \frac{Prevalence}{100\%}}$$

Where n = 38 cases obtained using the previous equation, the average village population for Tana river county is estimated to be 443, the % of 6- 59 months in Tana river county is 17.3[6]. The SAM prevalence by MUAC was 1.2 %(0.6-2.6, 95%CI)[7]

Therefore; $N_{villages} = \frac{38}{443 \times \frac{17.3}{100} \times \frac{1.2}{100\%}}$ ***= 42 villages***

Sampling Method

Since villages in Tana River county are along river Tana (linear settlement), spatial systematic sampling was used. 23 out of 584 villages were not accessible due to security reasons and poor roads. Therefore 561 villages were used as the sampling frame. Since only 42 villages were required, every (13th)[8] village was picked. The first village was picked randomly[9] from a number between 1 and 13

Data Collection

6 teams were composed for the purpose of collecting data from the villages sampled. Each team was made up 2 members (1 MoH staff and 1 IMC staff). This exercise took 6 days. Active case finding was used to look for SAM cases in each of the sampled village. Before the each team began to collect any data, they sought authority from the respective administrative and community leaders. Upon grant, the teams with the help of a village guide visited every household with a child aged 6- 59 months and measured his/her MUAC which they recorded in a tally sheet in case the child met OTP admission criteria[10]. Each team also had a questionnaire for capturing information for reason of "not in the program cases and referral slip for all SAM and MAM cases not in the program. Table 4 below is a summary of wide area survey findings.

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[6] From the DHIS

[7] Based on April 2013 Nutrition SMART survey

[8] 561/42 = 13

[9] Small papers with numbers 1 to 13 were juggled and one paper was picked. The number picked was the 1st village from a list of villages in the frame. Village number 3 was picked as the first village

[10] MUAC <11.5 and bilateral edema(+)

Table 4: Finding of Wide Area Survey

SAM Case	No. of Cases
SAM cases in Program	10
SAM cases not in program	8
Total Active SAM cases	18
Recovering Cases	8
Total SAM Cases	26

Point Coverage Estimate

The point coverage estimator was used due to lack of adequate active case finding in the community and also due to inadequate screening and outreaches across the county. SAM cases in program (10) were used as the enumerator and total SAM (18) was used as a denominator to generate likelihood. Using Bayes Calculator (combining **prior** estimate and **likelihood** information), a **posterior** is generated, the overall program coverage is estimated at **47.5% (34.5%- 60.8%)**

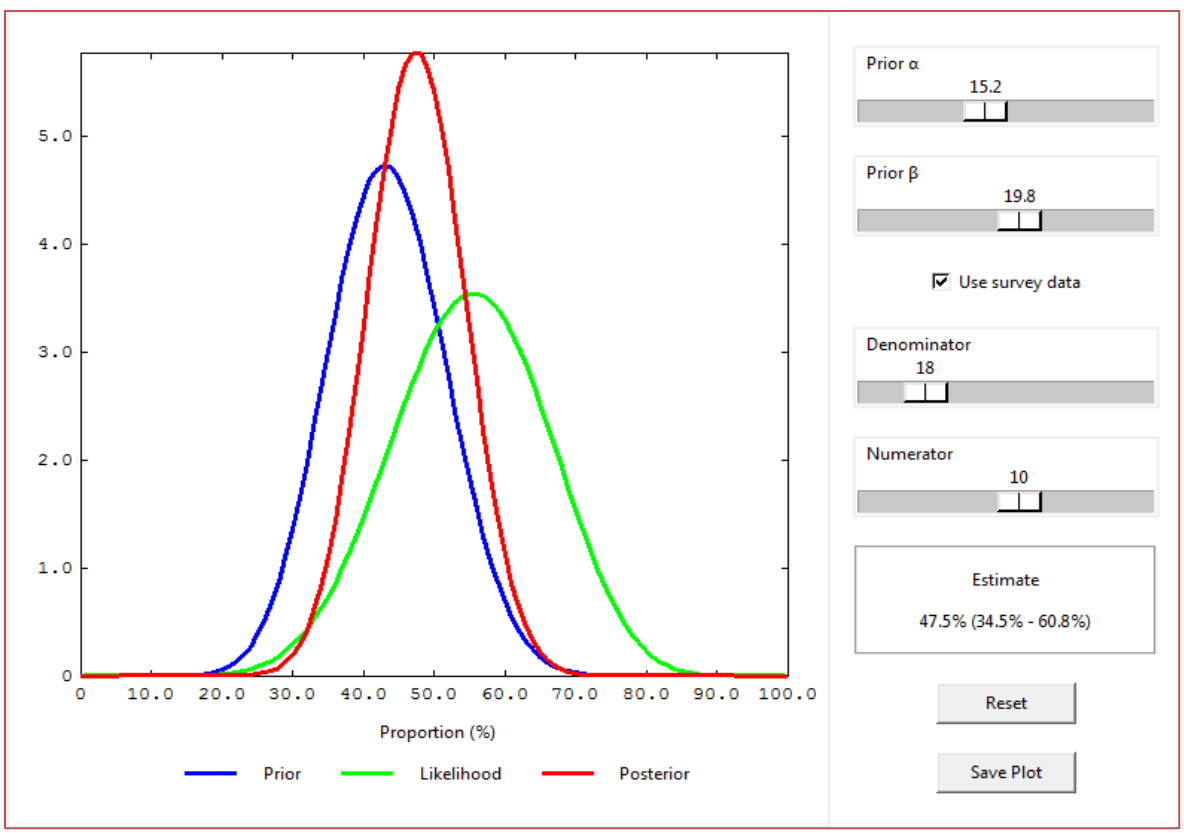

Figure 13: Coverage estimate

Reasons for Non- Attendance

A questionnaire was administered to all cases not in the program. Of the 8 cases not in the program, 5 were not in any program due to lack of awareness, 2 cited distance, while 1 said it was due to lack of time, the other one said she could not attend the program due to difficult in child care as indicated in figure 11 below

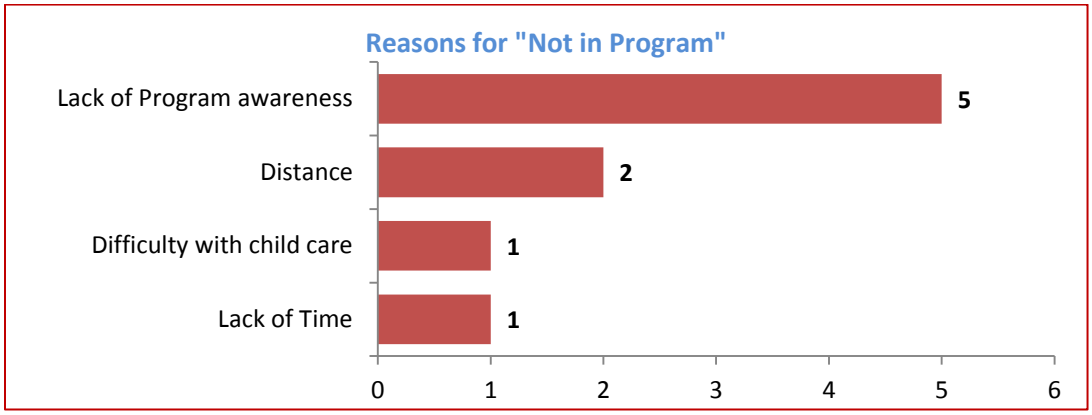

Figure 14: Reasons for Non- Attendance

Discussion

The Overall coverage for Tana River County was estimated to be **47.5%** which is slightly below the coverage SPHERE standard 50%. This means program barriers outweigh boosters. Some of the key issues affecting OTP program in the county include; staff shortage as most health facilities are manned by one staff. This means that when the staff is absent for official or unofficial reasons the facilities are closed cutting the services to the community. This affects the program as the length of stay and defaulting rates increases, the community also have a negative attitude towards the program. It was also revealed that in most sites OTP program is handled by the CHWs alone without proper supervision by the health facility staff. The matter became worse after the reduction of CHWs in the facilities from 2 to 1 as well as lack of incentives to CHWs. It became hard for some of the CHWs work in the health facilities as per the demands of the program.

Inadequate case finding in the community was another barrier to the OTP program. This is because the CHWs who are trained on nutrition concentrate on facility work with minimal activities at the community. Qualitative information collected revealed that most of the CHWs who works in the community rarely concentrate with nutrition issues (including IMAM). Very few have been trained on IMAM. This is attributed mostly to lack of functional community units in the county.

Distance coupled with few, inconsistent and un-integrated outreaches in the county are also a big barrier to the OTP program. From the small area survey, it was established that communities living in villages far away from an OTP site are less aware of the program. Nonattendance according to wide area survey is as a result of lack of program awareness as well as long distances.

Some of the factors that boost the OTP program in the county as the assessment revealed include; awareness of a program that treats malnutrition by the community leaders, the community itself and even the TBAs and THPs. The community also holds a positive opinion to the program and believes malnutrition is curable. The availability of RUTF and on job training are big booster to the program. The table below summarizes the boosters and barriers to the OTP program

SUMMARY OF FINDINGS

Table 5: Summary of Findings

BOOSTER	FINDING
Early Admission	Program data collected revealed that most cases are admitted early(with a MUAC range of 111-114 mm. it is expected that such cases will be admitted with few complications and expected to respond well, thus will stay in the program for a short time. This will lead to a positive opinion to the program and also reduces the rate of defaulting.
On- Job training	As confirmed by facility staff, CHWs in the facilities, DHMT members and implementing partners, OJT took place in the facility to capacity build program handlers
OTP/SFP/GFD linkage	Facility staff, CHWs in the facility reported a linkage between OTP, SFP and in case GFD exists. All health facilities have OTP sites and children who meet the discharge criteria are discharged to an SFP program. Most OTP cases are linked to a GFD program where it exists
Awareness of Malnutrition	TBAs, THPs, caregivers in the community, community leaders, caregivers in the program and CHWs in the facilities reported that they were aware of malnutrition
Malnutrition is curable	TBAs/THPs caregiver in the community, community leaders, farmers and caregivers of children in the program believe that malnutrition can be cured
Program awareness	TBAs/THPs and caregivers in the community indicated that they were

		aware of a program that treats malnutrition
Community Opinion		Facility staff, CHWs in the facility reported that the community has a positive opinion towards the OTP program. Caregivers of children in program and those in the community as well as TBAs and THPs also admitted that they believe that the program treats malnutrition
Availability of RUTF		Both the facility staff and the CHWs in the facilities agreed to the fact that RUTF is readily available in the facilities a fact that was confirmed through observation
Availability of Reference materials		Most Health facilities have relevant IMAM reference material according to the CHWs in the facilities and confirmed through observation
OTP ration Cards		Health facilities have ration cards. CHWs in the facilities confirmed this fact. The same was observed by the teams who visited various facilities during the qualitative data collection exercise. Ration Cards are very important in monitoring the child progress during the treatment of SAM
#	**BARRIER**	**FINDINGS**
1	Staff Absenteeism	It was noted that OTP program is not carried out effectively when the facilities are closed due to health workers absenteeism either when they go on leave, training or sometimes with no particular reason
2	No active case findings	▪ Case finding is not done in the community, a part from the one done at the facilities. ▪ There is only one active CU in the county out of expected 54 ▪ CHWs in the community are not trained on malnutrition as they are not even aware of MUAC tapes

3	Malnutrition is treated by THPs/spiritual leaders	▪ In some cases children with malnutrition are taken to traditional health practitioners and spiritual leaders as confirmed by TBAs/THPs, community leaders, caregiver in the community and farmers
4	Selling of RUTF	▪ There is selling of RUTF in the county even though the source of RUTF is outside the county; Garissa. ▪ Some shops that sell RUTF can be identified ▪ No RUTF sold in the county is sourced from the facilities or beneficiaries
5	RUTF stock outs	▪ Although it is not a major problem, RUTF stock outs was reported by; some facility staff, caregivers of children in program, community leaders, observations, TBAs and THPs, caregivers in the community and CHWs in the facilities ▪ Stock outs in Tana Delta district is sometimes due to the fact that all the county supplies are done in a central point (Hola District Hospital)
6	Distance	▪ Some people live in villages far away from the health facilities or outreach sites
7	Inconsistent outreach visits	▪ In some instances, outreaches are conducted but not regularly leading to poor follow up of SAM cases ▪ Sometimes such outreaches are not integrated
8	Low program awareness	▪ Some people do not know where to seek help when their children have SAM
9	Defaulting	▪ Defaulting is a barrier to the program as reported by facility staff and CHWs in the facilities. ▪ The average defaulting rate from the program data collected was 16% (above 15% threshold)

10	No defaulter tracing Mechanism	▪ The defaulter tracing mechanism is not effective ▪ Nomadism makes it impossible for tracing of defaulters
11	Majority of health workers have not been trained on IMAM	▪ No classroom training has been done on IMAM since 2008 ▪ OJT is done but staff think classroom training is important since it will not be interfered by their work ▪ OJT should be used as a way of updating the HW and CHWs
12	Documentation Challenge	▪ Keeping records is a problem in um facilities making it hard to make follow ups ▪ Some facilities do not have ration cards
13	Inadequate skilled staff	▪ There are few trained personnel to undertake nutrition activities ▪ In the entire county there are only 4 government nutritionists ▪ CHWs are acting as nutritionists in the county
14	Lack of CHWs incentives	▪ IMC/Unicef initially supported 90 CHW, the number was scaled down to 45 ▪ IMC supported the 45 CHWs with bicycles to facilitate their work ▪ CHWs in the community have not been provided with incentive
15	Competing activities	▪ Some mothers are not able to attend the program due to competing activities including nomadism
16	Rodents infestation to RUTF stores	▪ In some facilities RUTF is infested by rodents (rats) due to lack of proper structures and proper store management
17	Sharing of RUTF	▪ Caregivers of children in program confessed there is sharing of RUTF which negatively affect the curing period of SAM
18	OTP program mainly handled by CHWs	▪ In Most facilities OTP is handled specifically by CHWs
19	Stigma	▪ SAM is seen as a condition related to infidelity on the side of parents. It is also seen as a condition related to curse and HIV
20	Negative attitudes by Health Workers	▪ Some health workers see OTP program as an activity out of their job description
21	Ethnic Animosity	▪ Ethnic animosity that previously affected the county made it impossible for certain facilities to offer services to certain communities who were perceived as enemies in the places

		where such facilities are located ▪ Some communities found it difficult to go for services in some facilities whose health worker were of the other (opposing) community

Recommendations

Table 6: Recommendations

#	BARRIER	RECOMMEDATION
1	Staff Absenteeism	▪ More regular supervisions need to be done by DHMTs and CHMT to the facilities to have them address staff absences ▪ Map out the health work force (nurses and nutritionist available) and advocate for the increase (at least 2 health workers in every health facility) and staff retention.
2	No active case findings	▪ Strengthening of community units in order for CHWs to reach many community members ▪ Training of CHEWs on nutrition who should work hand in hand with CHWs ▪ CHWs should be provided with incentives ▪ Partners and MOH should occasionally organize for medical camps in far to reach areas where the screening should be conducted ▪ Train lead mothers on screening and referral and also involve them.
3	Malnutrition is treated by THPs/spiritual leaders	▪ More sensitization need to be done to the community, and community leaders through barazas and during community dialogue days. ▪ Train the THPs and spiritual leaders on identification and referral of malnutrition cases.
4	Selling of RUTF	▪ It is important to inform the community that selling of RUTF is an

		illegal business ▪ Local authorities (chiefs and Dos) should be involved to stop the illegal business ▪ RUTF should be labeled "GOK. Not for Sale". This will make it easier for public health personnel to prosecute those who are selling RUTF ▪ Public Health officers need to be involved to stop this business ▪ An Act need to be formulated to protect nutrition supplements ▪ Social responsibility interventions and campaigns to the public on the role of RUTF in saving of lives. ▪ Monitoring of the stock to correspond with the number of the beneficiaries and only delivering with the contingency to avoid excesses in the facilities ▪ Ensure that caretakers bring back the empty sachets of RUTF and held accountable
5	RUTF stock outs	▪ Monthly reporting was a major reason for the few facilities that experienced stock outs and therefore should be strengthened ▪ Distribution of RUTF to be done at the district and county level to ensure there is enough stock in all districts ▪ Accurate predictions of SAM cases ▪ Improve early awareness in case of increases of cases ▪ Anticipate difficult access during the rainy season by planning for buffer stock in hard to reach facilities.
6	Distance	▪ Sensitization to the community to prioritize their health needs ▪ Consistent integrated outreaches ▪ Opening of closed facilities in the county. Support is needed for equipping the facilities ▪ Employing more staff to man the facilities
7	Inconsistent outreach visits	▪ More Health workers need to be employed to address the staffing gaps and need to address absenteeism of the health workers ▪ Logistical and financial support need to be provided

8	Low program awareness	▪ Thorough sensitization need to be done to the communities ▪ Use radio messages to explain the project and its goals. ▪ Educate the public on the ill effects of malnutrition.
9	Defaulting	▪ Thorough health education need to be given to the caregivers ▪ There is a need to strengthen defaulter tracing mechanism in the facilities
10	No defaulter tracing Mechanism	▪ Regular home visits need to be done by the CHWs ▪ Inter facility linkages need to be enhanced to curb defaulting that results from nomadism
11	Majority of health workers have not been trained on IMAM	▪ There is need to do capacity assessment in the county to establish their training need (Capacity assessment is planned in September 2013) ▪ Health workers need to be trained on IMAM ▪ Classroom training need to be done before OJT ▪ Better policy on staff retention need to be put in place in hardship areas
12	Documentation Challenge	▪ More OJTs, mentorship and supervision need to be done
13	Inadequate skilled staff	▪ There is need to deploy more nutritionist in the county
14	Lack of CHWs incentives	▪ Plans are underway to start providing incentives by county governments
15	Competing activities	▪ Health education needs to be done to the mothers in program. The mothers need to be thoroughly informed of the need to attend the OTP program in order for them to give it a priority ▪ More awareness need to be done to the communities
16	Rodents infestation to RUTF stores	▪ There is need to liaise with PHOs in order for the facilities to put up proper structures ▪ Regular fumigation/ poisoning of the pests. ▪ Train health workers on safe commodity storage ▪ DHMTs supervision of the facility storage spaces (government procurement/logistics officers should be involved in supportive

		supervision.
17	Sharing of RUTF	▪ Through health education need to be done to caregivers of children in program ▪ Strengthening of linkage of OTP program to other protection ration programs in the county ▪ Home visits for SAM cases in program
18	OTP program mainly handled by CHWs	▪ There is need to enhance program ownership ▪ There is need to inform the health administrators in the county to include nutrition as one of the counties health agenda ▪ Need to employ more nutritionists in the county
19	Stigma	▪ There is need to make community and community leaders aware of what malnutrition is all about.
20	Negative attitudes by Health Workers	▪ There is need to integrate all nutrition activities to other health services
21	Ethnic Animosity	▪ County government conflict resolution mechanism – involving all the concerned parties ▪ Involve peace building organizations in the county.

Appendices

Appendix I: Findings of Wide area survey

Village	SAM cases in Program (a)	SAM cases not in program (b)	**Total SAM cases c (a+b)**	Recovering Cases (d)	**Total OTP cases (c+d)**	**SFP Cases**
VI SHIRIKISHO BULA WACHU /V 2	0	1	1	0	**1**	3
HALLO MADERTE	0	0	0	0	**0**	1
WADESA DAM	0	0	0	0	**0**	1
KORATI 'B'	0	0	0	0	**0**	0
GHAMAGHERE/WACHOLO/HOSINGO	0	0	0	0	**0**	2
GOLOSH JUU	0	0	0	0	**0**	0
GASURA	0	0	0	0	**0**	0
SUKELE/MSIKITI GOMBENI/NAGELE	0	0	0	0	**0**	1
ABASHEKOU	0	0	0	0	**0**	0
MARAMTU 'B'	0	0	0	0	**0**	1
ELDERA /MAJA WASESA	0	1	1	0	**1**	1
BAMBA	0	0	0	0	**0**	3
BULTO BANTA WELLS	0	1	1	0	**1**	0
MADERTE	0	0	0	0	**0**	1
RIGABAODHO 'A'	0	0	0	0	**0**	1
PAMBA/ODOKE	0	0	0	0	**0**	7
MWANGAZA	0	0	0	0	**0**	1
HOLA MISSION 'B'	0	0	0	0	**0**	0
MALINDI YA GWENA'B'	0	0	0	0	**0**	1
KONGOWEA	1	0	1	1	**2**	2
HAMESA/KONE A	0	0	0	0	**0**	2
GAFURU 'A'	1	0	1	0	**1**	0
HARA 'B'	1	0	1	0	**1**	3
BOJI	1	0	1	1	**2**	1
MAKUTANO	0	0	0	0	**0**	2
ODOMA/ODOWAN	0	0	0	1	**1**	3
MTETEMO	0	0	0	0	**0**	0

GUMBA	0	0	0	0	**0**	0
BURA KOFIRA B	3	0	3	0	**3**	0
TANASALT	0	0	0	0	**0**	0
BELESONI	1	1	2	0	**2**	0
HANDAKINI	0	1	1	1	**2**	2
UMADE A	0	0	0	1	**1**	3
KIBAONI B	0	0	0	0	**0**	0
BAINAMI	0	0	0	0	**0**	4
MAHOMBE	0	0	0	0	**0**	0
MAWENI B	0	0	0	0	**0**	0
BORAIMANI	0	0	0	0	**0**	0
DHANISHA A	0	0	0	0	**0**	0
BUBESA A	0	0	0	1	**1**	1
LASHABUNA	0	0	0	0	**0**	2
SITARA	0	1	1	0	**1**	4
Total	**8**	**6**	**14**	**6**	**20**	**53**
Masalani	0	1	1	0	**1**	0
Kilindini	0	0	0	2	**2**	0
Sailoni	0	0	0	0	**0**	0
Kulesa	0	0	0	0	**0**	0
Walsorea	0	0	0	0	**0**	0
Subukia	0	0	0	0	**0**	0
Matagara	0	0	0	0	**0**	0
Malkadende	2	1	3	0	**3**	0
Total	**10**	**8**	**18**	**8**	**26**	**53**

Appedix 2:Tana River County Seasonal Calendar

▪ Milk yield drops ▪ Livestock move towards dry season grazing areas ▪ Decline in livestock prices ▪ water stress in the traditional grazing areas	▪ Increased milk yield ▪ Livestock move towards the traditional wet season grazing areas. ▪ High Calving and lambing rates.	▪ Low milk availability ▪ Livestock move towards the dry seasons grazing areas (riverine and delta) ▪ Water and pasture stress experienced in the hinterland	▪ Increased milk yield ▪ Livestock move back to the traditional wet season grazing areas. ▪ Calving rates increases ▪ Decline in livestock sales

						pastoral dominated areas. ▪ High incidence of conflicts between farming and pastoral communities.					
Lean period for the pastoralists						Lean period for the pastoralists					
Short dry spell			**Long rains**			**Long dry spell**			**Short rains**		
Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**
Short rains harvest		Land Preparation	Planting/weeding		Crops at green maturity	Long rains harvest		Land Preparation.	Planting/Weeding		Crops at green maturity

Appendix 3: Village Sampled

#	District	Division	Location	Sublocation	Villages	Population Size
1	TanaNorth	Bura	Bura	Biskidera	VI SHIRIKISHO BULA WACHU /V 2	541
2		Bura	Bura	Biskidera	HALLO MADERTE	244
3		Bura	Chewele	Wadesa	WADESA DAM	260
4		Bangali	Buwa	Korati	KORATI 'B'	330
5		Bura	Chewele	Chewele	GHAMAGHERE/WACHOLO/HOSINGO	340
6		Bura	Nanighi	Dokanotu	GOLOSH JUU	447
7		Bura	Nanighi	Nanighi	GASURA	238
8		Bura	Bura	Meti	SUKELE/MSIKITI GOMBENI/NAGELE	1185
9		Madogo	Madogo	Madogo	ABASHEKOU	367

10		Madogo	Madogo	Maramtu	MARAMTU 'B'	497
11		Madogo	Saka	Konoramadha	ELDERA /MAJA WASESA	642
12		Madogo	Saka	Mulajo	BAMBA	286
13		Bangali	Bangali	Bangali	BULTO BANTA WELLS	457
14		Bangali	Buwa	Buwa	MADERTE	361
15		Bangali	Kamagur	Kamagur	RIGABAODHO 'A'	234
16		Bangali	Mbalambala	Pamba	PAMBA/ODOKE	210
17	Tana River	Galole	Zubaki	Kibuyu	MWANGAZA	1980
18		Galole	Chewani	Hola mission	HOLA MISSION 'B'	602
19		Galole	Chewani	Chewani	MALINDI YA GWENA'B'	457
20		Galole	Makere	Ghorei	KONGOWEA	404
21		Galole	Mikinduni	Mikinduni	HAMESA/KONE A	333
22		Wenje	Mazuni	Gafuru	GAFURU 'A'	413
23		Wenje	Gwano	Hara	HARA 'B'	342
24		Wenje	Kinakomba	Majengo	BOJI	207
25		Galole	Kalkacha	Kalkacha	MAKUTANO	258
26		Galole	Waldena	Titila	ODOMA/ODOWAN	351
27	Tana Delta	Tarasaa	Ngao	Ngao	MTETEMO	150
28		Garsen	Shirikisho	Dalu	GUMBA	290
29		Tarasaa	Wachu Oda	Oda	BURA KOFIRA B	600
30		Tarasaa	Wachu Oda	Kurawa	TANASALT	360
31		Tarasaa	Chara	Chamwanamuma	BELESONI	400
32		Kipini	Kipini	Matangeni	HANDAKINI	364
33		Kipini	Kipini	Matangeni	UMADE A	619

34		Kipini	Kipini	Kipini	KIBAONI B	229
35		Kipini	Kilelengwani	Kau	BAINAMI	420
36		Kipini	Kilelengwani	Kau	MAHOMBE	222
37		Kipini	Kilelengwani	Kilelengwani	MAWENI B	144
38		Garsen	Bilisa	Garsen	BORAIMANI	300
39		Garsen	Galili	Dhanisa	DHANISHA A	1020
40		Garsen	Mwina	Mikameni	BUBESA A	110
41		Garsen	Shirikisho	Dalu	LASHABUNA	100
42		Garsen	Ndera	Mnazini	SITARA	200

Appendix 4: Barrier Booster Tool

No.	BOOSTER	Source	No.	BARRIER	Source
1	Early admission	w	1	Staff absenteeism	*YZ√0X#=
2	On job training	Δ=Z√	2	No active case finding	Y0Δ=☙
3	OTP/SFP/GFD training	Δ=X	3	Malnutrition is treated by THPs/Spiritual leaders	#Y0*<
4	Awareness of malnutrition	#Y0☙=	4	Selling of RUTF	#=Δ
5	Malnutrition is Curable	#Y0<0☙	5	RUTF stock outs	Δ☙x#0Y=
6	Program awareness	#Y	6	Distance	0#ZΔ<Y
7	Community opinion	Δ=☙#Y	7	Inconsistent outreach visits	0√Z#
8	Availability of RUTF stock	X=Δ	8	Low Program awareness	0Δ*#X☙
9	Availability of reference materials	X=	9	Defaulting	Δ=
10	OTP ration Cards	X=	10	No defaulter tracing mechanism	Δ=☙
KEY			11	Majority of health workers are not trained on IMAM	Δ=*

Δ	Facility Staff	12	Documentation Challenge	Δ=X
0	Community leaders	13	Inadequate skilled staff	Δ=
◘	Pastoralists	14	Lack of CHWs incentives	√=Z
*****	CHWs in the community/CBVs	15	Competing activities	♀0
#	TBAs/THPs	16	Rodents infestation of RUTF stores	XΔ
=	CHWs in the facility	17	Sharing of RUTF	♀
Y	Caregivers in the community	18	OTP program is mainly handled by CHWs	Z√Δ
♀	Caregivers of children in the program	19	Stigma	Y#0
@	Caregivers of defaulters	20	Negative attitude by health workers	Z√=
$	Caregivers of DNAs	21	Ethnic animosity	Δ♀
>	Chemist/Pharmacy			
X	Observation			
<	Farmers			
w	Program data			
√	DHMT			
Z	Nutrition implementing partners			