

**Outcome Objective Oriented Evaluation on Insecticide Treated Net
Distribution and Utilization in Agaro Town, Jimma Zone, Southwest
Ethiopia,**



**BY
Yohannes Demisse**

**AN EVALUATION THESIS SUBMITTED TO HEALTH PLANNING
AND HEALTH SERVICES MANAGEMENT DEPARTMENT
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JIMMA UNIVERSITY, IN PARTIAL FULFILMENT FOR THE
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IN HEALTH MONITORING AND EVALUATION,**

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JIMMA UNIVERSITY



**Faculty of Public Health
Department of Health Planning and
Health Services Management
Health Monitoring and Evaluation
Postgraduate program**

DECLARATION

I, the undersigned, declare that this evaluation thesis is my original work, has not been presented for a degree in this or any other university and that all sources of materials used for the thesis have been fully acknowledged.

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TABLE OF CONTENT

<u>CONTENTS</u>	<u>PAGE</u>
Acknowledgment.....	iii
Table of content.....	iv
List of tables.....	vii
List of figures.....	viii
Abbreviations.....	ix
Abstract.....	x
CHAPTER ONE: BACKGROUND	
1.1 Magnitude of the problem	
1.1.1 Global.....	1
1.1.2 National.....	1
1.1.3 Regional.....	1
1.1.4 Zonal.....	2
1.1.5 Local.....	2
1.2 National program strategy and objective.	
1.2.1 Strategy.....	3
1.2.2 Objective.....	3
1.3 History of ITNs intervention program.....	3
1.4 Description of ITNs intervention.....	4
1.5 Intervention to avert the problem.....	4
1.6 Program description	7
CHAPTER TWO: STAKEHOLDER DESCRIPTION.....	10
CHAPTER THREE: EVALUATION OBJECTIVE	
3.1 Evaluation question.....	12
3.2 General objective of the evaluation.....	12
3.3 Specific objectives of the evaluation.....	12
CHAPTER FOUR: EVALUATION METHODOLOGY	

4.1 Focus, approach, and process the evaluation.....	13
4.2 Evaluation design.....	14
4.3 Study area and target population.....	14
4.4 Sample size and Sampling techniques.....	14
4.5 Data collection techniques.....	15
4.6 Development of tools/ instruments.....	15
4.7 Data collection procedures.....	15
4.8 Data quality control.....	16
4.9 Data management and analysis.....	17
4.10 Conceptual frame work of ITNs program.....	18
4.11 Matrix of analysis and judgment.....	19
4.11.1 Evaluation dimension.....	19
4.11.2 Judgment criteria.....	19
4.12 Operational definition.....	22
4.13 Ethical issue.....	23
4.14 Evaluation dissemination plan.....	23
4.15 Limitations of the evaluation.....	24
CHAPTER FIVE: EVALUATION FINDING.....	25
CHAPTER SIX: DISCUSSION.....	53
CHAPTER SEVEN: CONCLUSION AND RECOMMENDATION	
7.1 Conclusion.....	57
7.2 Recommendations.....	60
CHAPTER EIGHT: META-EVALUATION	
8.1 Utility standard.....	62
8.2 Feasibility standard.....	63
8.3 Property standard.....	63
8.4 Accuracy standard.....	63
REFERENCES.....	64

Annex 1: Questionnaires

- English version.....68
- “Afan Oromo”.....77
- Amharic version.....81

Annex 2: Expert interview guide.....88

Annex 3: FGDs guide.....90

Annex 4: Document review guide.....90

LIST OF TABLES

- Table 1:** Role and interest of stakeholders in the ITNs program evaluation, and the level of importance and means of communication , Agaro, Southwest, Ethiopia, December 2010
- Table2:** Represents matrix of judgment used for ITNs program implementation in Agaro, Ethiopia, December 2010
- Table 3:** Measuring and judging Availability dimension Agaro, Ethiopia December 2010
- Table4:** Measuring and judging Accessibility dimension Agaro, Ethiopia December 2010
- Table 5:** Distribution of sex of study participants by kebeles, Agaro, Ethiopia, December 2010
- Table 6:** Distribution of sex of study participants headship by kebeles, Agaro, Ethiopia, December 2010
- Table7:** Represents ownership, number of bed rooms, number of sleeping places of study participants houses, Agaro, Ethiopia, December 2010
- Table8:** Represents socio- demographic characteristics of study participants, Agaro, Ethiopia, December 2010
- Table 9:** Represents housing condition of the study participants, Agaro, Ethiopia December, 2010
- Table10:** Knowledge of study participants about malaria cause, transmission, and priority to give for ITNs, Agaro, Ethiopia, December 2010
- Table 11:** Knowledge of study participants about malaria prevention Agaro, Ethiopia, December 2010
- Table 12:** Knowledge of respondents for how long to use mosquito net within a month Agaro, Ethiopia, December 2010
- Table 13:** Knowledge of study participants about mosquito net Agaro, Ethiopia, December 2010
- Table 14:** Represents the Crude OR and Adjusted OR for knowledge predictors associated with ITNs utilization. Agaro, Ethiopia December 2010
- vii
- Table15:** Measuring and judging the awareness creation of ITNs program Agaro, Ethiopia December 2010

Table16: Study participants mosquito net possession and shape of the ITNs, utilization, and condition,. Agaro, Ethiopia, December 2010

Table17: Represents the Crude OR and Adjusted OR for the predictors associated with ITNs utilization. Agaro, Ethiopia December 2010

Table18: Measuring and judging ITNs utilization Agaro, Ethiopia December 2010

Table19: Measuring and judging Acceptability dimension Agaro, Ethiopia December 2010

Table20: Measuring and judging the general ITNs program Agaro, Ethiopia December 2010

- Figure1:** Represents malaria cases seen in Agaro town by the year 2010 and 2011 in the same months from August up to January, Agaro, Ethiopia, December 2010
- Figure2:** Represents the number of ITNs distributed in Oromiya region by the regional health bureau, Addis Ababa, Ethiopia, December 2010
- Figure3:** Represents ITNs distribution system and actors participating in the distribution process Agaro, Ethiopia, December 2010
- Figure4:** Represents stage of the program and focus of the evaluation study, Agaro, Ethiopia, December 2010
- Figure5:** Represents technical and strategic components of ITNs distribution and evaluation study dimensions Agaro, Ethiopia, December 2010
- Figure 6:** Represents the knowledge of study participants on the cause malaria Agaro, Ethiopia December 2010
- Figure7:** Represents study participants choice for ITN shape, Agaro, Ethiopia, December 2010
- Figure 8:** Represents study participants and their sex who slept and do not slept under ITNs the night before the survey Agaro, Ethiopia December 2010
- Figure9:** Respondents family members and family members who slept and do not slept under mosquito net the night prior to the survey Agaro, Ethiopia December 2010
- Figure10:** represents the number of bed rooms and number of respondents slept and not slept under ITNs the night prior to the survey Agaro, Ethiopia December 2010

ANC- Anti Natal Care
CHWs- Community Health Workers
CI- Confidence Interval
EPI- Expanded Program of Immunization
FP- Family Planning
FIDO- Fayyaa Integrated Development Organization
FMOH- Federal Ministry of Health
FGDs- Focus Group Discussions
HMIS- Health Management Information System
HHs- Households
HR- Human Resources
ITN- Insecticide Treated Net
JU- Jimma University
JZHD- Jimma Zone Health Department
KAP- Knowledge, Attitude and Practice
OR- Odds ratio
OHB- Oromiya Health Bureau
PW- Pregnant women
SNNP- South Nations and Nationality People
SMART- Specific, Measurable, Achievable, Realistic, Time bound
WHO- World Health Organization

BACKGROUND: Insecticide-treated nets (ITNs) are regarded as one of the most effective strategies to prevent malaria in Africa. ITNs in an area of intense malaria transmission may be to reduce the overall mosquito population in addition to reducing human-vector contact at the individual level .Widespread use of insecticide-treated nets and other appropriate methods helps to limit human-mosquito contact.

OBJECTIVE: The aims of this study is to assess utilization of ITNs by HHs , under five children, and pregnant women, the level of knowledge of the community about malaria cause, transmission, prevention and ITNs use and usage, the status of ITNs and the factors affecting its use among freely supplied households in Agaro town.

METHODS: The design of the evaluation was community based cross-sectional survey. The techniques used were survey, document review, expert interview and focus group discussions by employing semi-structured questionnaires and observational check-list in the survey, semi-structured interview guide for expert interview, and focus group discussion guideline and document review guide for FGDs and document review. The tools prepared for the survey were pre-tested questionnaires, the sample units were selected by simple random sampling technique and the sample size in each kebeles was assigned according to their population proportion to size. The sampling technique for all qualitative data was purposive. Data collectors were five nurses and two supervisors (one sanitarian and one health officer) training for three days for data collectors and one day for supervisors was given and pre- test was done at Jimma town. The study period was January 10-24, 2011.

RESULT: The total study participants were 424 households of which 411(97.0%) were females and 13(3.0%) were males of the headship of the respondents 386(91.0%) were males and 38(9.0%) was females. Regarding the ownership of the house 331(78.0%) were government houses and 93(22.0%) were private houses. The majority 251(59.0%) of respondents were Oromo, 299(70.0%) were muslim, 381(90.0%) were married,

332(78.0%) were literate, 316(75.0%) were housewife, and the mean age is 40.14 and the mean family size is 4.74. Concerning the knowledge 400(94.0%) accept malaria is their problem, 345(81.0%) mentioned mosquito bite is the main cause for malaria transmission, 387(91.0%) agreed mosquito net can prevent malaria, 96.0% believes malaria can be prevented, 418(99.0%) have heard about mosquito net. Regarding mosquito net possession 269(63.4%) households possess any mosquito net the mean mosquito net per household is 0.92 from the total respondent and 1.47 per households from those households who possess mosquito net. From the 269 households who possess any net 241(90.0%) households possess program ITNs. From the total study participants a total of 389 ITNs was found of which 346(89%) were intact, 293(75.3%) were mounted and according to this study utilization measurement it is found 83.68%.

CONCLUSION: The ITNs program was measured by the evaluation dimensions and these dimensions was measured separately and found as follows the *availability dimension* 76.1% judged as very good implementation, *accessibility dimension* 100% judged as excellent implementation, and *acceptability dimension* 75.0% judged as very good implementation totally the implementation of Agaro ITNs program is found 83.9% which is judged as very good implementation level. Even though the implementation level is very good gaps were identified and most of the gaps are observed in the availability and acceptability dimensions. In the availability dimension the problems observed are *shortage of mosquito net, knowledge gap, ITNs distribution, follow-up (home visit for checking the proper utilization of ITN by HHs), coordination, recording and documentation, lack of on time and enough distribution mosquito nets*. In the acceptability dimension the problems observed are *information gap, lack of proper and regular awareness creation, and leakage of ITNs*. The result of this study calls to do more on intensive ITNs availability, continuous follow up (check-up) for ITNs proper utilization, and targeted and continuous awareness creation activity to be done.

CHAPTER ONE: INTRODUCTION

1. BACKGROUND

1.1 Magnitude of the problem

1.1.1 Global Situation of Malaria

According to WHO (2009) G.C there were an estimated 250 million malaria cases and nearly a million deaths (863,000), mostly of children under 5 years of age. One hundred nine countries were endemic for malaria in 2008 G.C, 45 of which within WHO African region. About half the world's population (3.3 billion) live in areas that have some risk of malaria transmission and one fifth (1.2 billion) live in areas with a high risk of malaria (more than 1 reported case per 1000 population per year. The largest populations at any risk of malaria are found in the WHO South-East Asia and Western Pacific regions. Africa has the largest number of people living in areas with a high risk of malaria, followed by the South-East Asia Region ^[1, 2, 3, 4, 5]

1.1.2 Malaria Situation in Ethiopia

Almost 68% about 52 million people in Ethiopia live in malarious areas covering almost 75% of the land mass. Transmission is seasonal and predominantly unstable. The major transmission of malaria follows the June – September rains and occurs in the period from September - December while the minor transmission season occurs in April – May following the February – March rains. The bimodal malaria transmission pattern is limited to areas that receive the small “Belg” rains and are mainly located in the eastern part of the country, while the major malaria transmission occurs in all area at risk of malaria. ^[1, 2, 3, 4, 5]

Malaria is the top leading causes of morbidity and mortality in Ethiopia. In 2009 G.C it has been reported as the first cause of morbidity and mortality accounting for 48 % out-patient consultations (OPD), 20.4% hospital admissions and 27.0% deaths. ^[1, 2, 3, 4, 5]

1.1.3 Malaria situation in Oromia Region

Malaria is one of the health problems ranking the top list of the ten top diseases. 3/4 of the land masses and over 90% of the districts are malarious. Moreover over 18 million of the total population is living in malarious areas. All zones of Oromiya region are affected by malaria and have indigenous malaria transmission. Annually, about 1.5 million cases

are reported from health services. Malaria accounts for 6% hospital admission, 5% morbidity and 4% mortality. [6]

1.1.4 Malaria situation in Jimma zone

Jimma Zone is one of the zones in Oromiya regional state and is located 366km away from the capital city Addis Ababa. It has a population of over 2,792,791 of these 1,374,316 are males and 1,358,475 are females. The zone covers 15,568.58 km² areas and the population density/km² area is 175.5. There are 18 districts and 535 kebeles, of these 16 districts and 329 kebeles are known to be malarious. Sixty percent (about 1.7 million people) in Jimma zone live in malaria risk areas. In 2009 G.C alone 132, 998 malaria case were clinically treated. Malaria is the 3rd lists from the ten top diseases. [7]

1.1.5 Malaria situation in Agaro town

Agaro town is one of the districts in Jimma zone and is located 48km away from the Jimma town. It has a total population of 28,162 and of this 14,340 are males and 13,822 are females. The zone covers an area of 8.19 km² and the population density is 3440.6 people/km². There are 5 kebeles in the town and out of these kebeles 4 of them are known to be malarious and the population of these kebeles is 21,828 (79%). Malaria is the 3rd among the ten top diseases. [8]

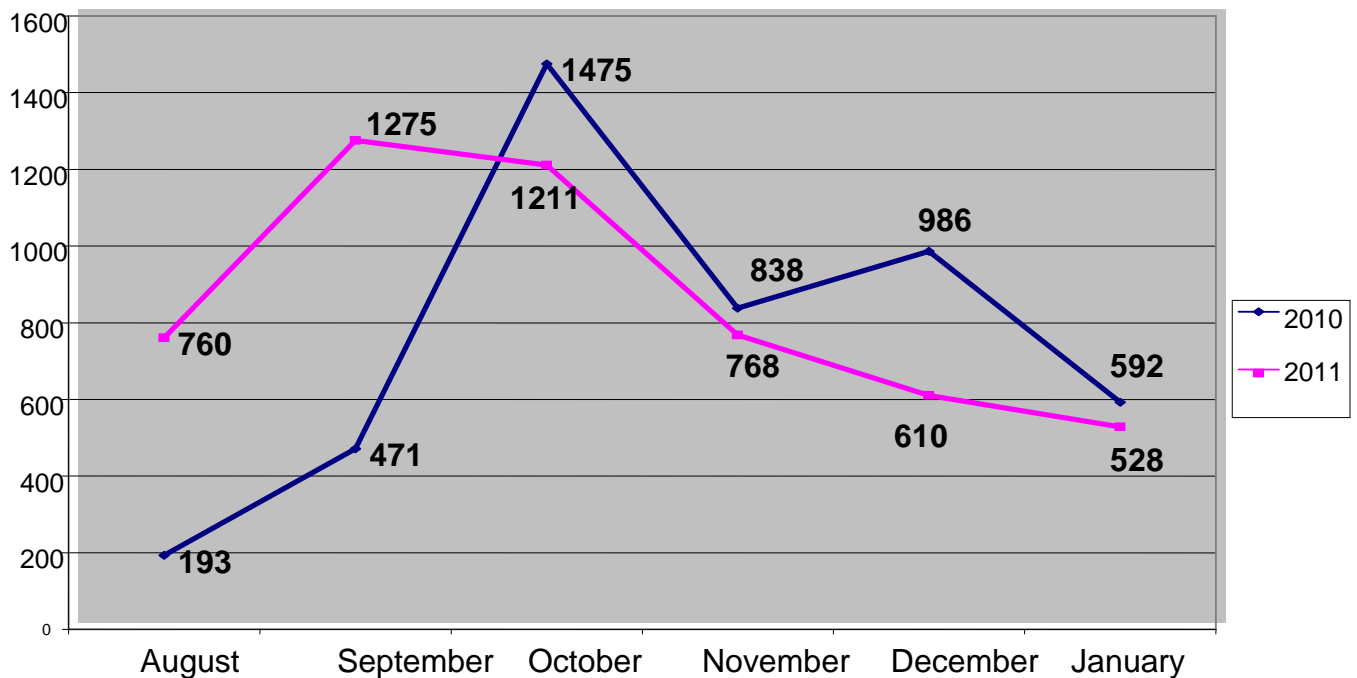


Figure1: Represents malaria cases seen in Agaro town by the year 2010 and 2011 in the same months from August up to January

1.2 NATIONAL PROGRAM STRATEGIES AND OBJECTIVES

1.2.1 Program strategies

- A) Diagnosis and treatment of malaria, including preventive treatment
- B) Malaria prevention through vector control [ITN , IRS (Indoor residual spray)]
- C) Malaria epidemics prediction, early detection and containment
- D) Prevention of malaria during pregnancy^[9]

1.2.2 Program Objectives

- To reduce malaria cases and deaths by
 - 50% between the years 2000 – 2010 G.C
 - 75% between the years 2010 – 2015 G.C

1.3 HISTORY OF ITNs INTERVENTION PROGRAM

In Ethiopia, distribution of ITNs through the health care delivery system was first introduced in returnee and resettlement sites in the Western part of the Tigray Region, in 1997. The program supported with assistance from World Health Organization (WHO) and the Italian Co-operation, distributed ITNs to beneficiaries through a cost recovery scheme where ITNs were sold at a subsidized price of Birr 40 paid in four installments. In 1997-1998, ITNs were also distributed in Oromya, Amhara and SNNPR regional states with the support of WHO and Italian Co-operation. It can be assumed that most of these nets have completed their useful life and no longer form part of the “standing crop” of ITNs in Ethiopia. Following these small scale ITNs distributions, in 2000- 2003 UNICEF donated ITNs. Significant experience has been gained through this program. ITNs are currently being distributed free of charge in all regions in highly endemic malaria areas. A total of 20 million ITNs are required to achieve the target of 100% HH coverage among vulnerable groups in target areas. In order to solve the affordability and access problem of ITNs in the communities, since 2004, fund from Global Fund for HIV/AIDS Tuberculosis and Malaria (GFATM) have already secured and used to distribute 20 million nets free of charge to all Households living in malarious areas by

giving priority for pregnant women and children. It has been agreed that free ITNs will be targeted at prioritized vulnerable malarious areas and during emergency situations. In accordance to the Abuja declarations, the country has done removal of taxes.

USE OF MOSQUITO NET

A **mosquito net** offers protection against mosquitoes, flies, and other insects, and thus against diseases such as malaria, dengue fever, yellow fever, and various forms of encephalitis, including the West Nile virus, if used properly and especially if treated with an insecticide, which can double effectiveness. The fine, see-through, mesh construction stops many insects from biting and disturbing the person using the net. The mesh is fine enough to exclude these insects, but it does not completely impede the flow of air ^[11].

1.4 DESCRIPTION OF ITNs INTERVENTION

The most effective way to prevent malaria is through the selective and safe use of measures that reduce contacts between mosquitoes and human beings. There are two primary options for reducing the risk of malaria transmission: Indoor Residual Spraying (IRS) and Insecticide Treated Nets (ITNs). The choice of which intervention to use should be driven by local conditions and needs. Bed nets treated with an appropriate insecticide ITNs, or manufactured with a wash-resistant insecticide preparation (long-lasting insecticide-treated nets; LLITNs) have been shown to be highly effective in reducing malaria transmission. In addition, the netting acts as an additional protective barrier. ITNs in an area of intense malaria transmission may be to reduce the overall mosquito population in addition to reducing human-vector contact at the individual level. Widespread use of insecticide-treated nets (ITNs) and other appropriate methods helps to limit human-mosquito contact. In areas of SSA with high levels of malaria transmission, regular use of an insecticide-treated bed net can reduce mortality in children less than 5 years of age by as much as 30% and has a significant impact on anemia, reduced low birth weight by 23%, reduce miscarriage/still births by 33% in the first few pregnancies, and increased birth weight by 55% ^[10]. Similar or greater benefits have been achieved for

pregnant women. Consistently sleeping under ITNs has been shown to decrease severe malaria by 45%, reduce premature births by 42% and reduce all-cause child mortality by 17% –63%. When coverage rates reach 80% or more in a community, even those residents not sleeping under ITNs obtain a protective benefit. This “mass effect” or “community effect,” as it is called,, suggests that a major result of the use of ITNs in an area of intense malaria transmission may be to reduce the overall mosquito population in addition to reducing human-vector contact at the individual level .This translates to the prevention of almost 0.5 million deaths each year in SSA. ITNs also protect against the development of anemia in both pregnant women and young children, the groups at highest risk from malaria and malarial anemia. The recent development of long-lasting, wash-resistant ITNs, which will remain effective for up to four years, will avoid the need to re-treat nets with insecticide every six months, which has proved extremely difficult to sustain. The underlying principle of the LLITNs strategy of Ethiopia is to reach 100% coverage of target households in all malarious areas with at least 2 ITNs by the end of the year 2008 and to improve correct utilization, with a special emphasis on pregnant women and children under five.

1.5 INTERVENTION TO AVERT THE PROBLEM

1.5.1 Regional level (Oromiya)

Insecticide treated net distribution in Oromiya region has been started since 2005 G.C. The total number of Insecticide treated net distributed in the region from 1991 to 2009 G.C. is 7,879,999. According to the 2009 G.C. fiscal year report of the health bureau ITN coverage in the region was 100%.^[12].

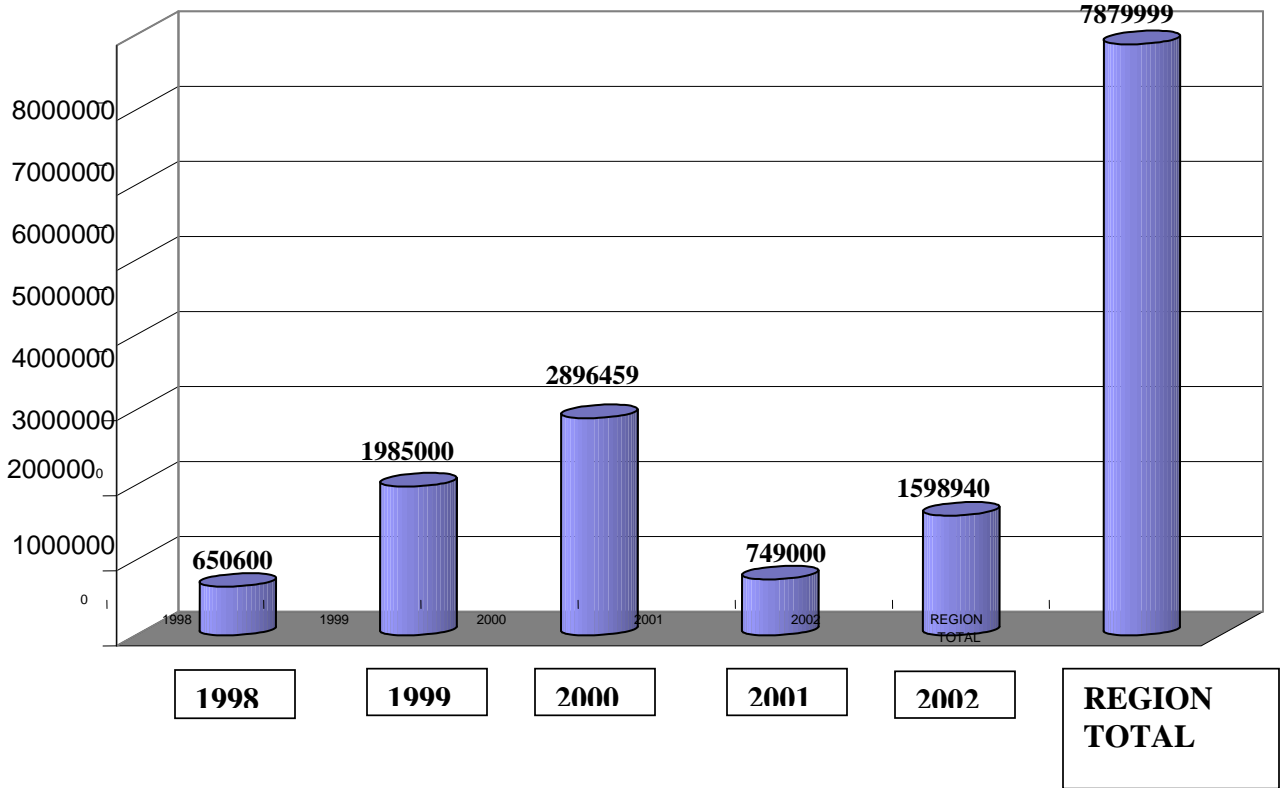


Figure2: Number of ITNs distributed in Oromiya region by the region health bureau, Addis Ababa, Ethiopia, December 2010

1.5.2 Zone level (Jimma)

Insecticide treated net distribution in Jimma zone has been started since 2005G.C. The total number of Insecticide treated net distributed for the zone is 739,993 about (9.4%) of the region, the Insecticide treated net distribution coverage of the zone is 100%.^[13]

1.5.3 District level (Agaro)

.Agaro town was administratively under the previous district called Goma. Agaro as an independent district was established in 2004 G.C. and because of this the exact figure of Insecticide treated net distributed in the district in the past is not known. Insecticide treated net distribution in the town has been started in 2005 G.C, since then the town health office distributed a number of ITNs but the town health office in 2009 alone distributed 830 ITNs.

1.6 PROGRAM DISCRIPTION

1.6.1 Program theory

Insecticide treated net distribution in Agaro town has been started in 2005 G.C to cover all the households in the district. The amount of Insecticide treated net distributed by the town health office in 2009G.C was 830. The expected target groups to be protected from malaria in the district by using Insecticide treated net were <5 children's 4562, pregnant women 1052. According to the district 2009G.C annual plan, ITNs distribution coverage was 84% and the criteria used by the district for distribution were pregnant women, lactating mothers, under five children's and family size^[14].

Insecticide treated nets distribution system

To distribute ITNs they develop a very good system and they distribute into three ways, The first system is they involve kebeles in the distribution system for this reason they train ten (10) community health workers (CHWs) two from each kebeles together with Fayyaa Integrated Development Organization (FIDO) an NGO which works in the area on awareness creation on ITNs program only. These trained CHWs register Households from their respective kebeles and submit the list of Households to Agaro town health office with formal letter and the health office based on the request of each kebeles they deliver the ITNs to the kebeles office and the CHWs they distribute to the Households they already registered as per the criteria set by the town health office.

The second ITNs distribution system is they involve the health center, the health center distribute ITNs in its ANC and FP and EPI units to reach the target groups. When PWs comes to ANC service and when mothers bring their children to the health center for vaccination the health workers who work in each units ask them if they have ITNs in their home or not if they don't have it they provide them the ITNs as a system the health center also planned to distribute ITNs for the target groups at OPD and delivery room but due to shortage of ITN s they didn't make it practical. The third distribution system is the town health office themselves distribute ITNs for the people who came to their office to get ITNs.

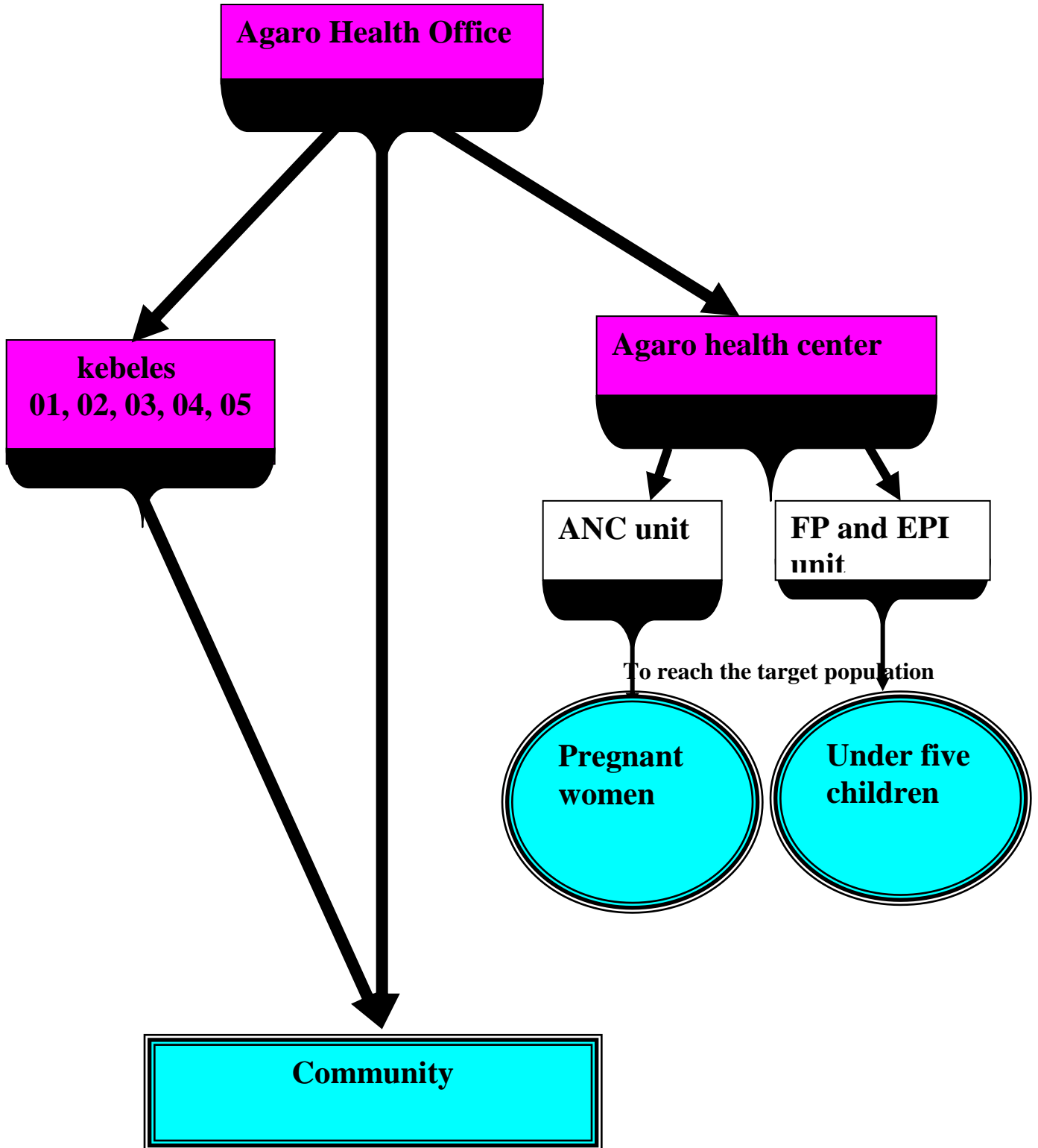


Figure3: ITNs distribution system and actors participating in the distribution process

Agaro, Southwest Ethiopia December 2010

Awareness creation system

For awareness creation the health office designed a system to work with different stakeholders such as schools, edirs, religious organizations (Muslim and orthodox), kebeles and the NGO called FIDO (Fayyaa Integrated Development Organization) who works in the area on ITNs awareness creation only, for this the health office in collaboration with FIDO they train people for a week time on malaria about the cause, transmission, and prevention of malaria and ITNs use and usage, basically those people are trained to do two main tasks: the first task is to disseminate information about ITNs distribution site where the people can get the ITNs for free, the second task is to teach students at school by using the school clubs, edir members whenever they have meeting and also whenever it is necessary, religious people to teach their followers at their gathering days and ceremonies, and CHW's to teach the community. For this to be practical the health office and FIDO (Fayyaa Integrated Development Organization) they prepared tailored key messages and distribute it to the above mentioned bodies to use it so that every people will have common understanding and knowledge on malaria cause, transmission, prevention, and ITNs use. To strengthen the awareness creation FIDO prepared and posted billboard in the town and at the main road side, distribute posters, flipcharts, and fliers, form and organize school clubs and provide them electronic materials like tape recorders and microphones. Even though they develop good awareness creation system health education is given by FIDO and by school clubs at schools otherwise the other actors health office, CHWs, edirs, religious organizations they do not do their part in awareness creation.

1.6.2 OBJECTIVES OF AGARO TOWN HEALTH OFFICE ITNs PROGRAM

- 1, To increase Insecticide treated net distribution from 84% to 100% by the year 2010G.C
2. To increase Insecticide treated net utilization rate from 92% to 100% by the year 2010G.C

CHAPTER 2:

STAKEHOLDERS ASSESSEMENT AND ENGAGEMENT MATRIX

Table1: Role and interest of stakeholders in the ITNs program evaluation, and the level of importance and means of communication Agaro Southwest Ethiopia, December 2010

S/N	Stakeholders	Role in the program	Role in the evaluation	interest or perspective on evaluation	Level of importance High, Medium, Low	Means of communication
1	Fayyaa Integrated Development Organization	Awareness creation	<ul style="list-style-type: none"> • Data source • Utilizing the result • Forming evaluation questions • Defining success or failure of the program 	They want the evaluation to focus on measuring the knowledge and change in behavior on ITN utilization	High	Telephone And meeting
2	District administration office	Coordination	<ul style="list-style-type: none"> • Data source • Utilizing the result • Defining success or failure of the program 	They want the evaluation to focus on measuring the knowledge and change in behavior on ITN utilization	Medium	Telephone, meeting and formal letter
3	District health office	program implementer	<ul style="list-style-type: none"> • Data source • Utilizing the result • Forming evaluation questions • Defining success or failure of the program 	They want the evaluation to focus on measuring the knowledge and change in behavior on ITN utilization and why the people are not using ITNs	High	Telephone, meeting and formal letter
4	Health center	program implementer	<ul style="list-style-type: none"> • Data source • Utilizing the result <ul style="list-style-type: none"> • Forming evaluation questions • Defining success or failure of the program 	They want the evaluation to focus on measuring the knowledge and change in behavior on ITN utilization and why the people are not using ITNs	High	Telephone meeting and formal letter,
5	Municipality	organize, coordinate kebeles and the	<ul style="list-style-type: none"> • Data source • Utilizing the result • Forming evaluation questions 	They want the evaluation to focus on measuring the knowledge and	Medium	Telephone, meeting and formal letter

		community	<ul style="list-style-type: none"> • Defining success or failure of the program 	change in behavior on ITN utilization and why the people are not using ITNs		
6	Kebeles	organize, coordinate register HHs and distribute ITNs	<ul style="list-style-type: none"> • Data source • utilizing the result • Forming evaluation questions • Defining success or failure of the program 	They want the evaluation to identify the problem related with ITNs program and find the solution to	Medium	Telephone, meeting and formal letter
7	Schools	<ul style="list-style-type: none"> • Teach students, form clubs and disseminate information • conduct environmental management 	<ul style="list-style-type: none"> • Data source • Utilizing the result 	They want the evaluation to identify the problem related with ITNs program and find the solution to	Medium	Telephone and meeting
8	Religious leaders and Idirs	Teach their members and encourage to use ITNs	<ul style="list-style-type: none"> • Data source • Utilizing the result 	They want the evaluation to identify the problem related with ITNs program and find the solution to	Medium	Telephone and meeting
9	Community	Beneficiary of the program	<ul style="list-style-type: none"> • Data source • Utilizing the result 	They want the evaluation to show their demand for ITNs and find a means to get it	Medium	Meeting

CHAPTER 3: OBJECTIVE OF THE EVALUATION

EVALUATION QUESTIONS

- Q1. Is the required resource for the program available, if not why?
- Q2. Is the program reaching the target population, if not why?
- Q3. What are the internal and external factors and facilitators that affect the ITNs distribution and utilization rate? Why?

GENERAL OBJECTIVE:

To evaluate the degree of implementation of insecticide treated nets program in terms of distribution and utilization in Agaro town, southwestern Ethiopia

SPECIFIC OBJECTIVES:

- 1. To determine the level of knowledge of the respondents about ITNs use & usage
- 2. To determine the practice of respondents ITNs utilization
- 3. To identify the availability of ITNs
- 4. To identify the accessibility of ITNs
- 5. To identify the acceptability of ITNs

CHAPTER 4: EVALUATION METHODOLOGY

4.1 FOCUS, APPROACH, AND PROCESS OF THE EVALUATION

Focus of the evaluation

The focus of this evaluation study is "Outcome Objective Oriented Evaluation"

Focusing more on the implementation and sustainability parts of the program processes

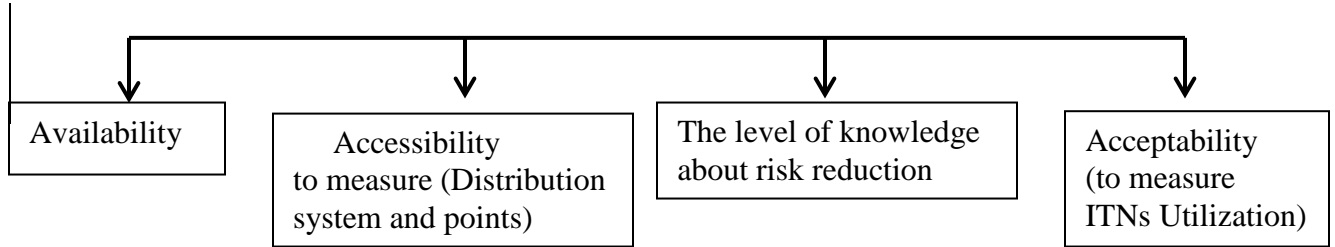


Figure 4: Represents stage of the program and the focus of the evaluation study

Approach of the evaluation Agaro southwest Ethiopia, December 2010

The approach of this evaluation study is "Formative evaluation". As the purpose is program and organizational improvement. The evaluation focus is objective oriented and it touch most part of process evaluation, the evaluation modes are description and classification, and formative evaluation it is the best approach to give answers for the evaluation objectives. Therefore, formative evaluation is considered to provide depth and details about the program strength and weaknesses, aimed at improving the program implementation and quality

Process of the evaluation

The process of the evaluation study was participatory; to successfully conduct the evaluation and come up with good result involving all the stakeholders are mandatory and very useful to avoid resistance of the evaluation findings by the stakeholders. Therefore; the stakeholders were participated on planning stage during the evaluability assessment time, on the implementation by protecting the data collectors and supervisors security, by protecting the evaluation from individuals or groups who may try to interrupt it , by setting judgment criteria to judge the implementation level of ITNs program, during dissemination and in utilizing the evaluation findings.

4.2 DESIGN OF THE EVALUATION

The design of this evaluation was Cross sectional survey. This study has been conducted by using both qualitative and quantitative methods. Under quantitative method community based cross sectional survey and observation was used respectively. Under qualitative method Interview and FGDs, and document review was used.

4.3 STUDY AREA AND TARGET POPULATION

The study area was Agaro town. Agaro is found in Jimma zone southwestern, Ethiopia. Agaro town is located 48km away from the Jimma town. The total population is 27,697 of these 13,572(49%) are males and 14,125(51%) are females. The town has 5 kebeles and out of these 4(80%) of them are malarious kebeles and the population of these kebeles is about 21,828(79%). There is only one health center in the district.

Study period

The study period was from January 10-24, 2011. G.C

Source population

The source population for this study was all the population of Agaro town

Study population

The study populations were all households in Agaro town.

Study units

The study units of this evaluation study were town health office, the health center, town health extension workers and households in the five kebeles and are included in the study and existing documents (registration books, report).

4.4 SAMPLE SIZE AND SAMPLING TECHNIQUE

The sample size for the survey was determined using single proportion formula with 5% margin of error, and 95 % CI of certainty as indicated below

$$n = \frac{Z^2 P (1-P)}{d^2}$$

Where "P" is the prevalence of ITNs utilization and the value for "P" used was **50%** to get the maximum sample size, Z= 1.96 (95%) confidence interval, d= 0.05 margin of error. Ten percent (10%) non-response rate was also considered for adjustment. The

calculated sample size of the study for the survey was 424 households and the study participants were selected by simple random sampling technique, for document review 100%, of registration book and reports at the town health office (monthly, quarterly and annual), health center, and kebeles and the selection was done purposively, for expert interview the sample size was 14 experts and the selection is done purposively, for the FGDs the participants number was 67 of which 23 were males and 24 were females and a total of 4 sessions of FGDs was conducted.

4.5 DATA COLLECTION TECHNIQUES

The types of data that were used are primary and secondary data. The study was carried out by using both quantitative and qualitative methods. Under quantitative method data was collected from Households by using a community based cross sectional survey to identify the socio-demographic characteristics of the respondents and the views of the respondent's knowledge on malaria transmission, prevention, ITNs use and usage, ITNs possession and practice and under qualitative method data was collected from different sources by using document review, expert interview, and by using FGDs.

4.6 DEVELOPMENT OF TOOLS/ INSTRUMENTS

The instruments/ tools applied to collect data from different sources were pre-tested close-ended questionnaires and structured observation check-list for the survey, semi-structured interview guide for experts interview, and FGDs guide and document review guide for FGDs and document review respectively.

4.7 DATA COLLECTION PROCEDURE

Pre-tested questionnaires were prepared and translated in to Oromifa and Amharic the sample for these questionnaires is attached in the appendix part, health professionals from Jimma town who speak and read the local language are recruited for data collection and supervisory role, and trained them for four days about how to administer the questionnaire and how to supervise, about the ethical issues they should know in order to

respect the study participants' interest. Pre-test was done at Jimma town to check the questionnaires developed and the data collection process and this pre-testing was done on 42 households (10%) of the sample size. On the survey data was collected from housewives and husbands only priority was given to housewives

4.8 DATA QUALITY CONTROL

Pre-tested tools were developed from published studies conducted at local and abroad before, trained human resources was recruited the human resources recruited and participated in this study were nurses as data collectors who are diploma holders *five* in number and one health officer and one environmental health professional (sanitarian) as *supervisors* both are first degree holders, the principal investigator, one statistician (degree holder), and one secretary diploma holder in secretary science, training is given for data collector and supervisor for four days, pre-test is done at Jimma town on 42 households (10%) of the sample size, study units selection and house marking is done by the principal investigator keeping the exact sampling interval to avoid the data collectors from collecting information from other households without keeping the sampling interval here the supervisors and the principal investigator also daily checked randomly five households each by asking them whether they are interviewed or not by doing this no room was left for the data collectors to make error, routine follow up (supervision) is done on data collectors and supervisors , meeting is done with data collectors and supervisors daily after 12:30 and discuss with them about their daily work progress and any expected or unexpected problems they faced, 5% of the respondents was randomly selected after the data collection is over and uninformed and sudden home visit was done by the principal investigator to re-interviewed them and observe their households ITNs utilization and cross- check the result with the quality of questionnaires filled by data collectors and all the questionnaires filled by data collectors was consistent with the principal investigator and no mistake was found.

4.9 DATA MANAGEMENT AND ANALYSIS

The collected data was carefully checked for their consistency and completeness by the supervisors and rechecked by the principal investigator, then data entry, coding, and clearing is accomplished using SPSS version 17 software by the principal investigator and the analysis was done by using SPSS version 16 software packages to analyze statistical inferences. Descriptive analysis (cross tabs and frequency), bivariate and multiple logistic regression statistical models were used in order to infer associations and predictions. The qualitative data were manually transcribed from audio tape records and results were analyzed manually by summarizing the ideas according to the ideas obtained from FGDs participants.

4.10 CONCEPTUAL FRAME WORK

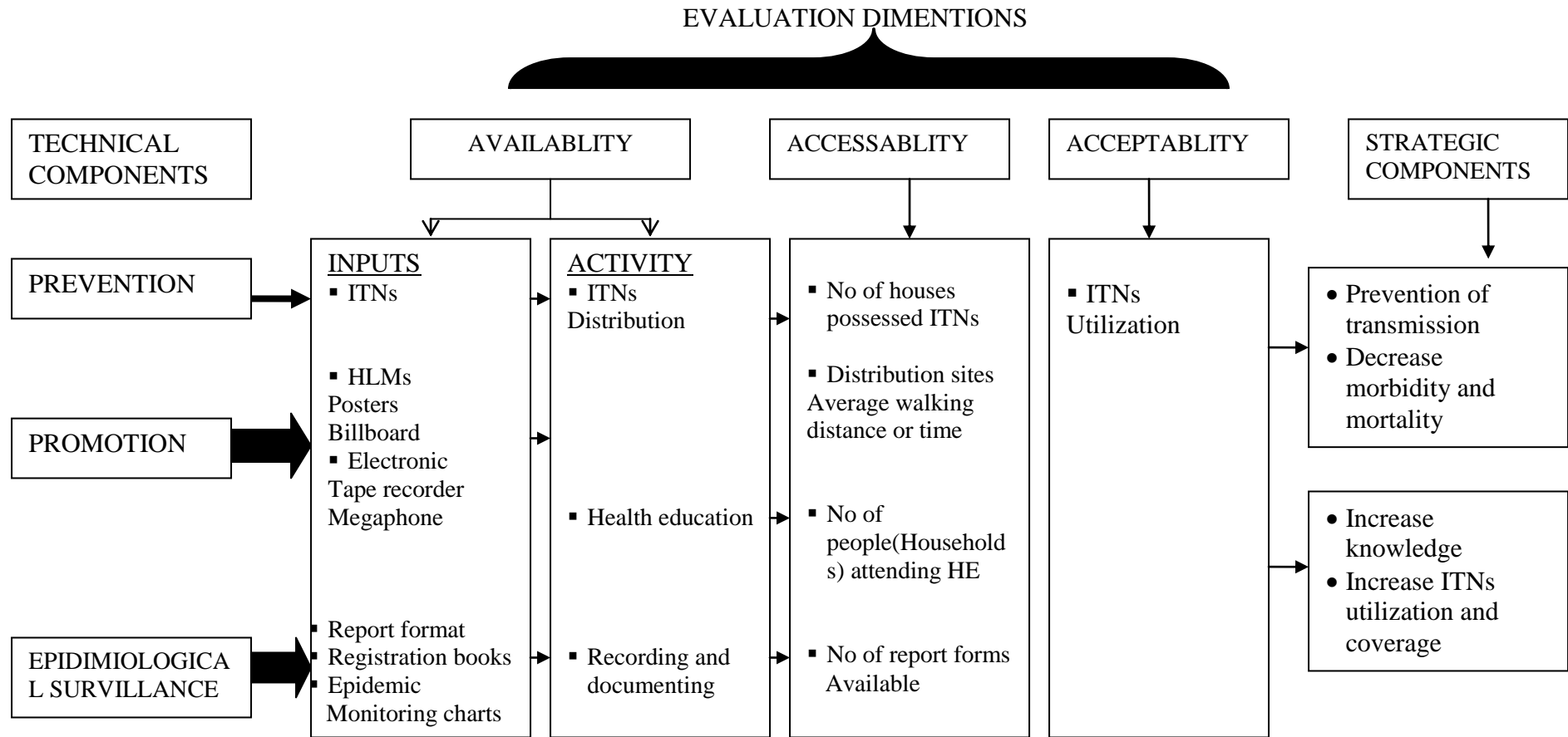


Figure 5: Represents conceptual frame work of ITNs program and the evaluation dimensions, Agaro Ethiopia December 2010

4.11 MATRIX OF ANALYSIS AND JUDGMENT

4.11.1 Evaluation Dimensions and their definition in the evaluation study

Dimensions are specified and defined aspects of components of concepts specified for measurement. Dimensions of concept are identified by the process of conceptualization and they help us to understand a vague concept ^[15]. In this evaluative study, Penchansky and Thomas access dimensions is used these dimensions are Availability, Accessibility and Acceptability and also the knowledge level

Availability: is the relationship of the volume and type of existing services (and resources) to the clients volume and types of needs refers to the adequacy of the supply of physicians, dentists and other providers of facilities; such as clinics and hospitals.(Penchansky and Thomas,1981) ^[15].

Accessibility: is the relationship between the location of supply and the location of clients, taking account of clients transportation resources and travel time, distance and cost.(Penchansky and Thomas,1981) ^[15].

Acceptability: The relationship of clients' attitude about personal and practical Characteristics of providers' to the actual characteristics of existing providers, as well as to provider's attitudes about acceptable personal characteristics of clients (Penchansky and Thomas 1981) ^[15]

4.11.2 Judgment criteria

The field of evaluation, particularly program evaluation, is fertile territory for the investigation of values within social inquiry. One of the fundamental reasons for undertaking program evaluation is to develop value judgments about it. Many procedures are available for setting judgment standards, however little is known of the extent to which different procedures yield consistent values. Because of the lack of knowledge in this area, practitioners are often at a loss as to which procedure to select.

The choice of indicators establishes the criteria for assessing the value of a program through evaluation. Criteria and standards are useful tools to assign values. But a serious issue arises in the choice of specific criteria that can be indicators of real value in an

evaluation. Both criteria and standards should not be seen as essential markers of value. And there is no known method of measuring judgment data against an absolute scale. Even, mathematical rubrics, however carefully devised, are not considered to be judgments. Judgment represents the cognitive resolution of values by reasoning. It is subjective, flexible, and sensitive to human affairs ^[16].

To measure and judge the implementation level of the ITNs program, some *standards* are prepared to use them as judgment criteria. The standards were prepared and agreement was reached together with Stakeholders before the evaluation study conducted by reviewing literatures, consultation with experts from the town health office and health center, and using other programs experiences (best practices) especially their adjacent Goma woreda health office. The matrix for judgment of the program implementation used is shown below.

Table 2: Matrix of judgment used for ITNs program implementation in Agaro, Ethiopia
December 2010

Dimension	weight	%	Indicator	Expected value	Observed value	%	Judgment criteria
Availability	76	46	Number of ITNs Distributed	15			85 - 100 Excellent implementation
			Number of HH with ITNs	15			
			Number of ITNs distributors	6			
			No of health education sessions conducted	10			
			Registration & record forms	10			
			Guidelines	5			
			No of training conducted	5			
A=Sub Total				76			
Acceptability	30	23	Distribution site	15			75—84.9 Very Good implementation
			Distance to site	15			
B=Sub Total				30			
Acceptability	60	31	Proportion of Households who believes ITNs prevent malaria	10			50 - 74.9 Fair implementation
			Proportion of Households who use the ITNs properly	15			0 - 49.9 Critical implementation
			Proportion of Households uses the ITNs for < 5 children	10			
			Proportion of Households uses the ITNs for pregnant women	10			
			Proportion of Households mounted ITNs	15			
C=Sub Total				60			

4.12 OPERATIONAL DEFINITION

Completeness of reporting: - is the proportion of reports expected that were received divided by the number of reports expected during a period of time.

Quality information: An information collected and analyzed timely, accurately, Completely and precisely

Timeliness: Number of reports received from reporting institutions according to schedule during a given time period divided by the number of reports expected

ITNs:- Either a long-lasting net that does not require re-treatment or a pretreated net obtained

Bed net:- Any insect nets used for sleeping either treated or untreated with insecticide

Households:- A domestic unit consisting of the numbers of a family who lives together along with non relatives such as servants

Stakeholder:- People, groups or entities that have a role and interest in the aims and implementation of malaria prevention and control program.

ITNs Utilization:- Perception of respondents that ITNs prevents from mosquito bite and mounted the ITNs at sleeping area or on bed during the survey time and intact ITNs

ITNs distribution Coverage:- the total N^o of ITNs distributed to households as per the annual plan of Agaro town health office times 100%

Possession of ITNs:- Households who possess program ITNs only

ITNs distribution points:- the No of permanent sites/places the town health office uses to distribute ITNs.

Households knowledge about ITNs use and usage:- Total households who exactly respond about ITNs use and usage during the survey time

Available Registration book:- total No of registration book practically found at Agaro town health office and kebele offices and are used only for the ITNs program.

4.13 ETHICAL ISSUE

Ethical approval and clearance from Jimma university college of public and medical sciences ethical clearance committee was obtained before data collection and formal letter to Jimma zone, Agaro town health offices and municipality from Jimma university is delivered by the principal investigator, Informed written consent is delivered to Agaro town kebeles from Agaro health office and they are also informed about the evaluation by the principal investigator, Informed verbal consent with respondents prior to data collection is done and they are also informed not to participate in the study if they do not want , if they participate not to answer any questionings delivered by the data collectors if they are not convenient with that they are also informed that they can resign from the study in the middle if they feel not comfortable or not interested they are also informed that whatever information they give is just between them and the data collectors and no other person or organization is informed about that and their safety is secured and not to afraid in the future something will happen to them just because of the information they give to assure the confidentiality, consciences was reached with Agaro town health office to whom to inform(report) if unusual or unexpected things happens.

4.14 EVALUATION DISSEMINATION PLAN

The main purpose of the report is delivering the message - informing the appropriate audience(s) about the findings and conclusion resulting from the collection, analysis, and interpretation of the survey information ^[17, 18]. The report is prepared considering the audience(s) backgrounds, interests, preferences, and motivations for them to use it. The report will provide information and judgments about the evaluation result and the programs value to these who wish to adopt it, who determine resource allocation for its communication and who have a right to know about the survey for other reasons. The report of this survey will be disseminated to all the stakeholders who are directly and indirectly involved in the prevention of malaria using ITNs program primarily in the study area, and be published to use it nationwide. Here the dissemination is done by giving feedback, organizing dissemination workshops and community board after approval by JU and by issuing interim report.

CHALLENGES ENCOUNTERED IN THE EVALUATION PROCESS

1. The malaria expert at the town health office was transferred from other woreda and it was difficult to get some documents and information
2. The town health extension workers all of them are recruited two months before this evaluation is conducted so this make it difficult to collect their opinion about the ITNs program
3. During the time of this evaluation study there was a meeting conducted by the town administration and all the sector offices was participating on the meeting and it was difficult to get the important persons to discuss with them and because of this the data collection period was extended.
4. At some kebeles office the executive and vice leaders were newly assigned and they cannot give full information about their kebeles ITNs program implementation.

4.15 LIMITATIONS OF THE EVALUATION STUDY

1. Lack of exact measurement of ITNs utilization

Because there is no exact measurement for ITNs utilization the indicators used in this study to measure the utilization rate may affect the result of the study and also the judgment of the ITNs program implementation of Agaro health office.

2. The time of data collection is not malaria season and the practice of ITNs utilization is affected because some people do not use the ITNs unless it is rainy season and this practice affects the result of the study and the program too.
3. Respondants recall bias; some respondants were not remembered when they received the ITNs, from where they get the ITNs, etc...

CHAPTER 5: RESULT OF THE EVALUATION

5.1 AVAILABILITY DIMENSION

5.1.1 Availability of registration book, report form, and guideline

Registration book was found in the health office and health center level only otherwise all the CHWs they do not have registration book they use simple plane papers for registering the households. Concerning report form the health office they have a standard form developed by the FMOH and they used that form properly, the CHWs they do not have standard reporting form they report using simple paper and the health center and the other actors like the schools, edirs, and religious organizations they do not have report form at all. Regarding guide line the health office has the guideline but the other stakeholders do not have it and the health office is expected to supply them by preparing at least the main points only so that they know what they are working and how to work it.

5.1.2 Trainings conducted

The health office and FIDO in collaboration they select and train people from the community to participate them on ITNs distribution, awareness creation, and to follow-up ITNs utilization so far they train 20 CHWs from the five kebeles.

5.1.3 Insecticide treated nets distributed

The health office and kebeles offices they distribute ITNs for the people using the distribution criteria set by the FMOH. In 2010 the health office planned to distribute 1500 ITNs but practically they distribute 930 ITNs only which is 62.0% of their plan.

Table 3: Measuring and judging Availability dimension Agaro, Ethiopia December 2010

Indicators	Expected Value	Observed Value	%	Judgment criteria	Judgment
Number of program ITNs distributed by Agaro health office and/ or kebeles	15	9.3	62.0	(85 – 100)% Excellent implementation (75 - 84.9)% Very good implementation (50 - 74.9)% Fair implementation (1- 49.9)% Critical implementation	76.1% Very good implementation level
Proportion of households possess program ITNs	15	9.51	63.4		
Number of health education sessions conducted about malaria cause, transmission, prevention, and ITNs use	10	8	80.0		
Number of ITNs distributors	6	6	100		
IEC materials distributed	10	10	100		
Availability of registration book and report form	10	5	50.0		
Availability of guideline	5	5	100		
Number of trainings given	5	5	100		
TOTAL FOR AVAILABILITY	76	57.81	76.1		

The expected value for each indicator in all dimensions was given by taking into consideration their role and importance for the expected activities and its result besides this Agaro health office capacity and their practical situation was also taken into consideration like the supply of ITNs they get and the values are agreed with all stake holders before the study was started.

5.2 ACCESSABILITY DIMENSION

To make the ITNs accessible for the community the health office distribute ITNs at different sources at their office level, at the health center to reach the target groups (pregnant women and under five children) and at kebeles offices the people easily get ITNs from their respective kebeles by traveling less distance not more than ten minutes time.

Table 4: Measuring and judging Accessibility dimension Agaro, Ethiopia December 2010

Indicators	Expected Value	Observed Value	%	Judgment criteria	Judgment
Number of ITNs distribution sites	10	10	100	(85 – 100)% Excellent implementation	100% Excellent implementation level
Average walking distance/ hour to distribution site	10	10	100	(75 - 84.9)% Very good implementation	
Means of transportation to distribute ITNs to distribution sites	10	10	100	(50 - 74.9)% Fair implementation	
TOTAL FOR ACCESSABILITY	30	30	100	(1-49.9)% Critical implementation	

5.3 LEVEL OF KNOWLEDGE ABOUT MALARIA CAUSE, TRANSMISSION, PREVENTION, AND MOSQUITO NET USE AND USAGE

SOCIO-DEMOGRAPHIC CHARACTERISTICS

The total number of study participants was 424 households, from these selected households interviewed by the survey from the five kebeles. Of which 47(11.0%) were from kebeles 01, 90(21.0%) were from kebeles 02, 123(29.0%) were from kebeles 03, 51(12.0%) were from kebeles 04, and 113(27.0%) were from kebeles 05. From the total study participants the majority 411(97.0%) of the respondents were women and 13(3.0%) were males. Of which 38(9.0%) women were head of households and 386(91.0%) men were heads. The sex and headship of participants are presented in table 1 and 2 below.

Table 5: Distribution of the sex of study participants by kebeles, Agaro, Ethiopia, December 2010

Kebele	Households Interviewed	Sex			
		Male		Female	
		No	%	No	%
01	47	1	2	46	98
02	90	2	2	88	98
03	123	6	10	117	90
04	51	0	0	51	100
05	113	4	3	109	97
TOTAL	424	13	3	411	97

Table 6: Distribution of the sex of study participants headship by kebeles, Agaro, Ethiopia, December 2010

Kebele	Households Interviewed	Sex of headship			
		Male		Female	
		No	%	No	%
01	47	41	87	6	13
02	90	88	98	2	3
03	123	112	91	11	9
04	51	41	80	10	20
05	113	104	92	9	8
TOTAL	424	386	91	38	9

From the total 424 households visited the total family size was 2009 of which 961(48.0%) were females and 1048(52.0%) were men. The mean age of respondents was 40.14 and the mean family size was 4.74. From the total houses surveyed 331(88.0%) were owned by kebeles and the rest 93(22.0%) were private houses. From the total 424 houses holds visited by the survey 285 HHs have one bed room, 129 HHs have two bed rooms, and 10 HHs have three bed rooms and the average number of bed rooms and sleeping places of the total houses is 1.67 and 1.89 respectively.

Table 7: Ownership of houses, average bedrooms, average sleeping place, and average family size of study participants Agaro, Ethiopia December 2010

Kebele	Ownership of the house		Average bed room	Average sleeping place	Average family size
	Private house	Government house			
01	10	37	1.28	2.06	4.13
02	18	72	1.69	2.24	5.12
03	21	102	1.35	1.68	4.22
04	15	36	1.33	1.91	5.45
05	27	86	1.21	1.57	4.91
TOTAL	93	331	1.67	1.89	4.74

The majority of the respondents age lies between the ages of 30-49(33.0%). From the total study participants nine (9) different ethnic groups were participated of which the majority 251(59.0%) were Oromo, 70(16.0%) Amhara, 63(15.0%) Gurage, 23(5.0%) Dawro, 8(2%) Tigray, 5(1.2%) Kefa, 2(0.5%) Yem, 1(0.25%) Hadiya, and 1(0.25%) Wolayita. In religion the majority 299(70.0%) were Muslim, 88(21.0%) Orthodox, and 37(9%) Protestant. With regard to their marital status of the study participants 381(90.0%) are married, 32(7.0%) single, 10(2.0%) divorced, and 1(1.0%) widowed. Of the total study participants 332(78.0%) were literate and 92(22.0%) were illiterate. With regard to respondents occupational status 316(75.0%) are housewife, 80(19.0%) businessman (Traders), 39(9.0%) government workers, 18(4.0%) daily laborers, and 1(0.25%) is broker. The summary of socio-demographic characteristics of study participants is presented in table 8 below.

Table 8: Socio-Demographic characteristics of respondents Agaro, Ethiopia, December 2010

Variable (n=424)	Number (%)	Crude OR	Adjusted OR
Age (in year)			
20-29	76 (18%)		
30-39	140 (33%)		
40-49	115 (27%)		
50-59	42(10%)		
> 60	51(12%)		
Sex of respondents			
Male	13(3%)	1.607(0.487, 5.305)	0.000
Female	411(97%)	2.113(0.580, 7.694)	0.000
Ethnicity			
Oromo	251(59%)	1.531(1.009, 1.413)*	4.600(2.006, 10.548)*
Amhara	70 (16%)	0.835(0.544, 1.281)	3.409 (1.353, 8.589)*
Garage	63 (15%)	1.068(0.670, 1.703)	4.045 (1.583, 10.337)*
Others	40 (10%)		
Religion			
Muslim	299 (70%)	1.782 (1.044, 1.367) *	0.000,-
Orthodox	88 (21%)	1.054 (0.725, 1.534)	3.913(0.000_)
Protestant	37 (9%)	0.218 (0.106, 0.449)	8.302 (0.000,-)
Marital status			
Married	381(90%)	0.825(0.430, 1.583)	2.249(000, _)
Single	32 (7%)	1.882(0.849, 4.174)	4.129(0.000, _)
Divorced	10 (2%)	0.461(0.128, 1.658)	1.077(0.000, _)
Educational status			
Literate	332(78%)	4.267(2.599, 7.004) *	4.267(2.599, 7.004)*
Illiterate	92 (22%)	1.384(1.226, 1.561)	1.561(_)
Occupational status			
House wife	316 (75%)	0.676(0.444, 1.031)	0.672(0.036, 12.458)
Merchant	80 (19%)	2.236(1.299, 3.847)*	1.489(0.080, 27.628)
Government worker	39 (8%)	1.054(0.988, 1.125)	0.460(0.023, 9.118)
Daily laborer	18 (4%)	1.566(0.579, 4.179)	1.162(0.054, 25.194)

* Statistically significant at p<0.05

Table 9: Housing condition of the respondents Agaro, Ethiopia, December 2010

Variable (n=424)	Number	Percent
Possession of the house		
Private house	93	22
Government house	331	88
Average number of bed room	1.67	--
Average sleeping place	1.89	--
Average family size	4.74	--

The result of the survey conducted in the town to assess the study participants knowledge on malaria cause, transmission, prevention, the use and usage of ITNs, and their practice of ITNs utilization the following result was found on each topics.

5. 3.1 Knowledge of respondents about malaria transmission

From the total 424 households interviewed by the survey the majority 400 (94.0%) has high acceptance that malaria is their community major health problem, 16 (4.0%) do not accept malaria is the major health problem to their community and 8 (2.0%) said they don't know. Concerning the cause of malaria six different reasons has been mentioned but the result shows there is good understanding about what cause malaria of the total study participants 345(81.0%) mentioned mosquito bite is the main cause for malaria transmission, 41(10.0%) bad and collected water, 22(5.0%) eating raw sugar cane, 8(2.0%) whether change, and 6(1.0%) mentioned hunger is the cause of malaria transmission.

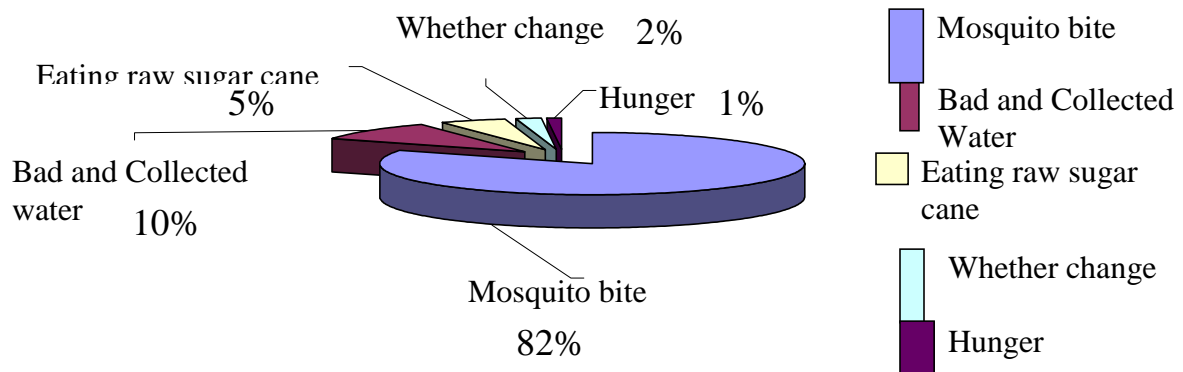


Figure 6: Represents the knowledge of study participants on the cause malaria Agaro, Ethiopia December 2010

Concerning the knowledge of respondents about when a mosquitoes bite a person, the majority 304(72.0%) mentioned mosquitoes bite a person during the night, 112(26.0%) mentioned that mosquitoes can bite a person any time i.e. during the day and night time, and 8(2.0%) mentioned that they don't know when a mosquito bit a person. Regarding the knowledge to which group of people is malaria more serious, about six answers were given by the respondents, of which 299(54.0%) mentioned for everyone, 93(22.0%) mentioned for children only, 87(21.0%) mentioned for children and pregnant women,

11(3.0%) mentioned for pregnant women only, and 2 of them mentioned malaria is more serious to elders. A question was delivered for the study participants to assess their knowledge on whether ITNs can prevent malaria or not and 387(91.0%) of them do agree that ITNs can prevent malaria, 4(1.0%) of them mentioned that they do not agree because they believe ITNs cannot prevent from malaria on the FGDs the participants support the survey result that they have already seen people get sick even if they use ITNs for this they strongly disagree the idea, and 2 of them mentioned that they don't know whether ITNs can prevent or not, and 31(7.0%) of them abstain from giving their opinion. With regard to who should get priority in the household if there is shortage of ITNs in that house, of the total respondents the majority 388(92.0%) give priority to pregnant women and children, 27(6.0%) said they give priority to children only, and 9(2.0%) said they give priority to pregnant women. Table 10 below presents the knowledge of study participants on malaria cause and priority to give.

Table 10: Knowledge of study participants about malaria cause, transmission, and priority to give for ITNs, Agaro, Ethiopia, December 2010

Variable (n= 424)	Number	Percent
Is malaria a major health problem in this community?		
Yes	400	94
No	16	4
What causes malaria?		
Mosquito bite	345	81
In bad & sleeping water	41	10
Eating raw sugar cane	22	5
Whether change	8	2
Hunger	6	1
Drinking bad water	2	0
During which part of the day mosquito usually bite a person?		
During the night	304	72
Day & night	112	26
Don't know	8	2
To which group of the population is malaria more serious?		
Every one	229	54
Children	93	22
Pregnant women & children	87	21
Pregnant women	11	3
Elders	2	0
Don't know	2	0

Do you agree that bed net can prevent malaria?		
Agree	387	97
Disagree	4	1
Don't know	2	0
No comment	31	7
Whom do you think get priority in shortage of ITNs in the household?		
Pregnant women & children	388	92
Children	27	6
Pregnant women	9	2

5. 3. 2 Knowledge of respondents about malaria prevention

Concerning the study participants knowledge on malaria prevention, there is good understanding the majority of respondents 406(96.0%) believes that malaria is preventable disease however 13(3.0%) they mentioned that they do not believe malaria is preventable disease, and 5(1.0%) mentioned that they do not know whether malaria can be prevented or not. With regard to respondents malaria preventive measures they know about twelve response has been given 256 using ITNs, 148 mentioned DDT spray, 138 smoking the house with (leaves/ cow dung), 134 mentioned drain mosquito breeding site around the house, 54 mentioned eat garlic. Regarding the knowledge of respondents about where mosquitoes are found the majority of the respondents 408(96.0%) mentioned in stagnant water and 7(2.0%) mentioned they do not know where mosquitoes are found.

Table 11 below present knowledge of respondents about malaria prevention

Table 11: Knowledge of study participants about malaria prevention Agaro, Ethiopia, December 2010

Variable (n= 424)	Number	Percent
Is malaria preventable disease?		
Yes	406	96
No	13	3
Don't know	5	1
What are the different malaria preventive measures that you know?		
Use ITNs & reduction of breeding site	70	17
Use ITNs & smoking the house	69	16
Use ITNs & eat garlic	52	12
Use ITNs & DDT spray	43	10
Smoking & DDT spray	41	10
DDT spray	39	9
Reduction of breeding site	33	8

DDT spray & reduction of breeding site	25	6
Use ITNs	22	5
Smoking	22	5
Smoking & reduction of breeding site	6	1
Eat garlic	2	0
Where can mosquitoes are found?		
In stagnant water	408	96
Around the house	8	2
In dirty place	1	0
Do not know	7	2

5. 3. 3 Knowledge of respondents about ITNs use and usage

Of the total study participant the majority 418(99.0%) mentioned that they have heard about mosquito net and the source of their information was from the health center, radio, television and CHWs. About the use of mosquito net 206(49.0%) mentioned to prevent malaria, 174(41.0%) mentioned to kill mosquitoes, 33(8.0%) mentioned the use is to kill mosquitoes and other insects, and 2 participants mentioned that they do not know.

With regard to the source of getting ITNs the majority 209(49.0%) mentioned from Agaro town health office, 177(42.0%) mentioned from kebeles office, 13(3.0%) mentioned from shop, 5(1.0%) mentioned from both the health office and kebeles office, 5(1.0%) mentioned from the health office, kebeles office and shop, and 15(4.0%) mentioned that they do not have information from where to get the ITNs, the above figures indicates that there is high understanding of the source of getting ITNs however thought the figures is small the respondents who respond the source is from shop they told us that the program ITNs is available at the shop and some of them bought it from there with 30.00 birr the implication of this for the program implementation is not good since the program ITNs is distributed for free not for sale. Regarding the duration for how long to use mosquito net in a month time there is very poor understanding, the majority 366(86.0%) mentioned that they do not know this implicate that the information they get is not either sufficient or good on the other hand this really can affect the quality of the program unless it is supported with awareness creation. Table 12 below presents the response of study participants for how long to use ITNs within a month

Table 12: Knowledge of respondents for how long to use mosquito net within a month Agaro, Ethiopia, December 2010

Days	Number	%
30 days	48	11
29 days	1	0
20 days	2	0
4 days	1	0
3 days	2	0
2 days	3	1
1 day	3	1
Don't know	366	86

Only 48(11.0%) respondents correctly mentioned that the mosquito net should be used for the whole 30 days this is what the ITNs program principle is all about otherwise the above table clearly shows how bad the result is on this point. Concerning the knowledge of study participants about when to use ITNs there is good understanding the majority 345(81.0%) mentioned during the night time, 78(19.0%) mentioned ITN should be used every time (day and night), and only one(1) respondent mentioned during the day time.

Table 13: Knowledge of study participants about mosquito net Agaro, Ethiopia, December 2011

Variable (n= 424)	Number	Percent
Heard about mosquito net?		
Yes	418	99
No	6	1
Use of mosquito net		
To prevent malaria	208	49
To kill mosquito	174	41
To kill mosquitoes and other insects	33	8
To kill other insects	9	2
Where can someone get mosquito net?		
From the town health office	209	49
From kebels office	177	42
From shop	13	3
From kebels office, shop, and town health office	10	2
Don't know	15	4
When should someone use mosquito net?		
During night time	345	81
Every time (day and night)	78	19
During day time	1	0

Table14: Represents the Crude OR and Adjusted OR for knowledge predictors associated with ITNs utilization. Agaro, Ethiopia December 2010

Variable	Crude OR 95%CI	Adjusted OR 95%CI
Mosquito bite is the cause for malaria	13.220 (1.798, 97.212)	4.435 (0.575, 34.196)
Mosquito bite during the night	1.054 (0.682, 1.628)	0.907 (0.463, 1.778)
Bed net prevent malaria	1.140 (0.387, 3.364)	0.673 (0.206, 2.194)
The use of mosquito net is to kill mosquitoes	1.242 (1.019, 1.514)	0.401 (0.199, 0.807)

A respondent who believes mosquito bite is the main cause for malaria transmission are 4.435(95% CI 0.575, 34.196) times more likely to mosquito nets than the other respondents. Respondents who respond mosquito bite during the night are 0.907 (95% CI 0.463, 1.778) times less likely to have the same practice of mosquito net use. Respondents who believe bed net prevents malaria are also 0.673 (95% CI 0.206, 2.194) times less likely to have the same practice. These respondents who believes the use of mosquito net is to kill mosquitoes are 0.401 (95% CI 0.199, 0.807) times less likely to have the same practice

Table15: Measuring and judging the awareness creation of ITNs program Agaro, Ethiopia December 2010

Indicators	Expected Value	Observed Value	%	Judgment criteria	Judgment
Malaria is major community problem	4	3.76	94	(85 – 100)% Excellent implementation (75 - 84.9)% Very good implementation (50 - 74.9)% Fair implementation (1-49.9)% Critical implementation	92.7 Excellent implementation level
Cause of malaria?	6	4.86	81		
When mosquitoes bite?	4	3.92	98		
Mosquito net prevent malaria?	6	5.82	97		
Priority to give in shortage of mosquito net?	4	3.68	92		
Where can mosquito be found?	4	3.84	96		
Heard about mosquito net?	4	3.96	99		
Use of mosquito net?	6	5.85	97.5		
When to use mosquito net?	6	5.1	85		
LEVEL OF KNOWLEDGE	44	40.79	92.7		

Even though there is no any base line data found in the study area to compare the measured level of knowledge on malaria cause, transmission, prevention, and mosquito net use the result of the survey based on the above indicators (measurements) shows 92.7% and this result can be used as a base line data to measure the difference that the program awareness creation brought in the area.

5.4 ACCEPTABILITY DIMENSION

5.4.1. Mosquito net possession

From the total study participants covered by the survey 269(63.4%) households possess at least one mosquito net and 155 (36.6%) households do not have. From these households who possess any mosquito net a total of 389 mosquito net were found of which 354(91.0%) were program ITNs. The average mosquito net per households is 0.92 from the total study households and 1.47 from those households who possess mosquito net. From the 269 households who possess mosquito 164(61.0%) households possess *one* ITNs, 90(24.0%) households possess *two* ITNs, and 15(5.0%) households possess *three* ITNs generally. Regarding the shape and color of ITNs from the total 389 ITNs found in the study households 354(91.0%) are rectangular and the rest 35(9.0%) are conical in shape and of the color the majority 298(76.6%) are blue, 49(12.6%) are white, and 42(10.8%) are green when we look the possession of rectangular ITNs in the households 194 households possess one (1) rectangular ITNs, 41 households possess two rectangular ITNs, and 6 households possess three rectangular ITNs in their house about the conical mosquito net 31 households possess one(1) conical net and 2 households possess two conical net in their house.

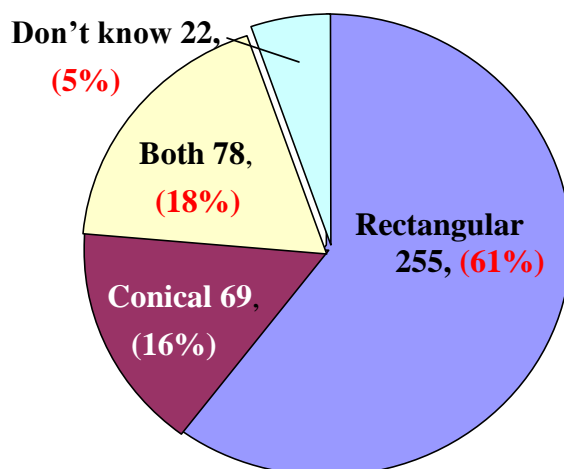


Figure 7: Represent respondents choice for shape of ITN, Agaro, Ethiopia, December 2010

With regard to the source of mosquito net 107 households get the mosquito net they have now from Agaro town health office, 142 households get the mosquito net from their respective kebeles office, 14 households bought the mosquito net from shop, 3 households got from church aid, 2 households got it from other place, and 1(one) household bought the mosquito net from private clinic.

5.4.2 Condition of the ITNs

Regarding to the condition of the mosquito net found in the study houses the majority 362(93.0%) are new, 27(7.0%) are old and 362(93.0%) are intact and the rest 27(7.0%) are not. From these intact mosquito nets 293(81.0%) were mounted and 69(19.0%) were not. Table 16 below presents study participants ITNs possession, the shape and color of the ITNs.

Table16: Study participants mosquito net possession and shape of the ITNs, utilization, and condition,. Agaro, Ethiopia, December 2010

Total number ITNs			Shape of ITNs		No of people sleep under ITNs			Condition of the ITNs		
possessed	Program ITNs	Non-Program	Rectangular	Conical	<5 children sleep under ITN	PW sleep under ITN	Any one sleep under ITN in the previous night	Not intact	Intact ITNs	Mounted

5.4.3 Utilization of ITNs

Regarding to utilization from the total respondents 257(61.0%) respondents slept under ITNs the night prior to the survey and 167(39.0%) respondents did not slept the mean respondents slept under ITN the night prior to the survey is 1.40. From the 257 respondents who slept under ITNs 250(98.0%) were females and only 7(2.0%) were males and from 167 respondents who did not slept under ITNs 161(96.0%) were females and 6(4.0%) were males.

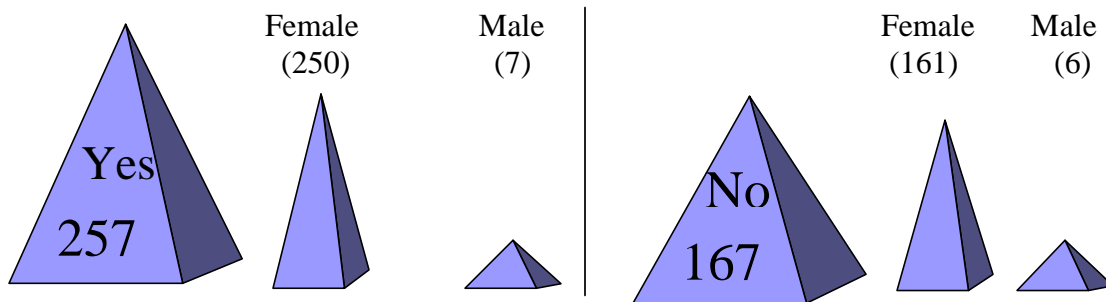


Figure 8: Represents study participants and their sex who slept and do not slept under ITNs the night before the survey Agaro, Ethiopia December 2010

From the total study participants included in the survey 194 under five children and 12 pregnant women were found from these 49(25.0%) under five children and 6(50.0%) of pregnant women slept under ITNs respectively the night prior to the survey time, on the other hand the total **2009** family members of study respondents 1356(67.0%) slept under ITNs and 653(33.0%) do not. In 108 households 100% of the family members slept under ITNs and in 149 households 60% family members slept under ITNs.

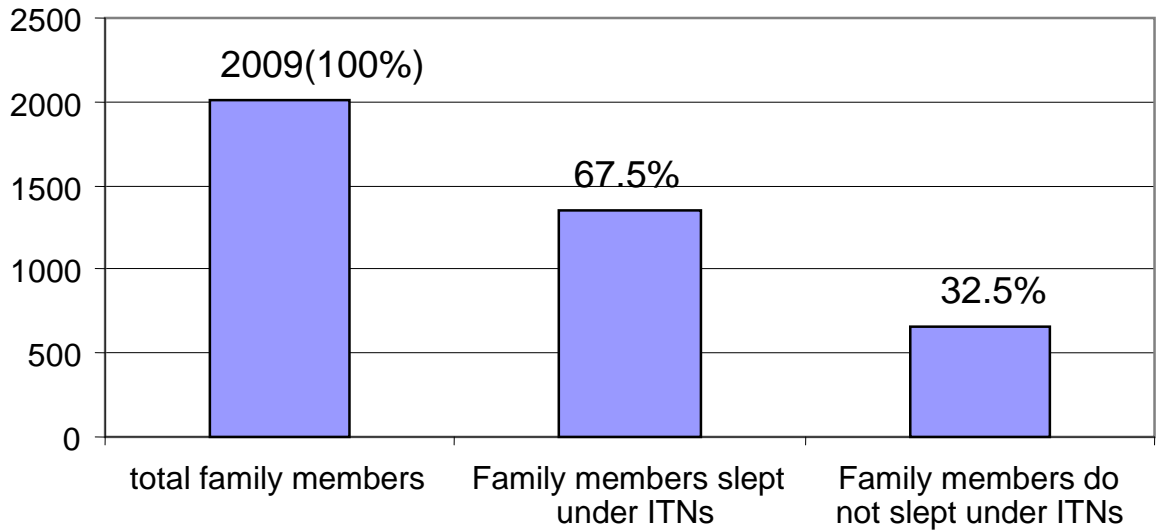


Figure 9: Respondents family members and family members who slept and do not slept under mosquito net the night prior to the survey Agaro, Ethiopia December 2010

Availability of bed room

From the total study participants 285(67%) households have one bed room and from these households 62.0% of them use the ITNs and 38.0% do not use, 129(30%) households have two bed rooms and from these 54.0% of them use the ITNs and 36.0% do not use, and 10(4%) households have three bed rooms from them 80.0% uses the ITNs and 20.0% do not use the ITNs. The result shows that as the number of bed rooms increases the number of people who do not sleep under mosquito net decreases when the bed room was one the percentage of people not slept under mosquito net was **38.0%** and when the number of bed rooms is three the people not slept under mosquito net decreases to 20%. Figure 10 below shows the number of respondents bed room and who slept and not slept under ITNs

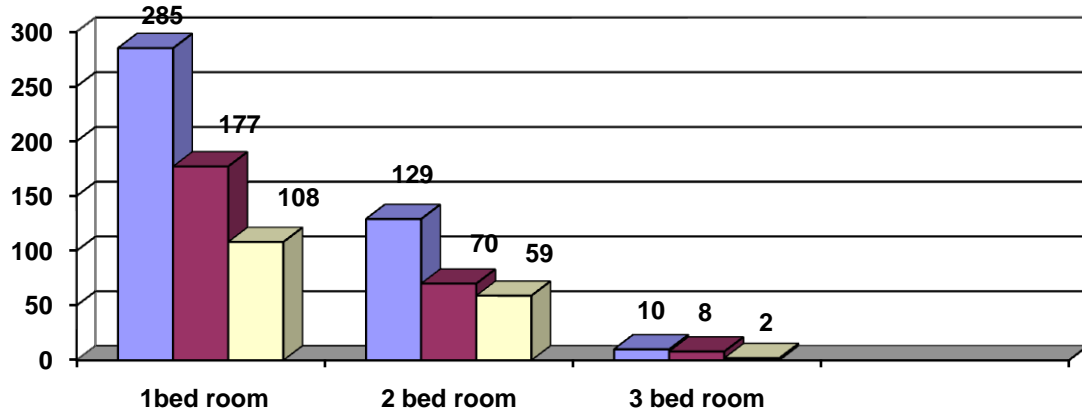


Figure10: represents the number of bed rooms and number of respondents slept and not slept under ITNs the night prior to the survey Agaro, Ethiopia December 2010

Regarding home visit for checking the proper utilization by the people, a question was delivered for the study participants in this survey whether they have been visited and checked for their ITNs utilization and from the total study participants 67(16.0%) of the households mentioned that they were visited by the town health office once and the majority 357(84.0%) (Adjusted OR= 19.072, 95% CI: 9.298, 39.1210) mentioned that no one has visited them at all, this result shows that there is poor follow-up by the town health office and the CHWs who are directly responsible for this

Table17: Represents the Crude OR and Adjusted OR for the predictors associated with ITNs utilization. Agaro, Ethiopia December 2010

Variable	Crude OR 95%CI	Adjusted OR 95%CI
Availability of separate bed room	1.994 (1.103, 3.605)	2.008 (1.001, 4.352)*
Home visit	23.311 (11.649, 46.645)	19.072 (9.298, 39.121)*

The document review of the town health office shows that they were conducted a checkup visit on 168 households who received program ITNs for their proper utilization in 2010 G.C and the result of the visit shows there was good utilization, the majority 155(92.0%) households were properly used their ITNs and the rest 13(8.0%) households were not used they kept it as it is packed. In this study also there are some households who kept the ITNs they received as it is packed the reason for this was assessed on the survey and on FGDs and the reasons mentioned were the same.

One medium aged mother on the female FGD group say

"You guys must be crazy, you want us to use your net but you didn't understand one thing we are mothers as a mother we have a responsibility to look after our children equally but you want us to discriminate our children which we can't do for example I have 8 families in my house but they gave me only two nets I ask them to give me more because it is not sufficient/ enough for my families and they told me that there is shortage of net and also this is what the criteria says, then look if I want to use the two nets we sleep at three different sleeping places and if I let the children to use the net the rest of my children will be sorry about what I did they think as if I let them to die and you know I don't want my children be sorry and judge me like that, if we die we all die together after all the almighty God will keep us. So if you want us to use it please give us the amount of net we want otherwise this is the main reason we didn't want to use it."

The reason for not using the ITNs by the study participants was tried to assessed by the survey and 277(65.0%) households mentioned that they do not sleep under mosquito net because the number of mosquito net they have and the sleeping place is not matched, 44(10.0%) households mentioned there is no rain mosquitoes are not a problem and only 8(2.0%) households mentioned that they did not use because they forgot , 7(2.0%) households mentioned that they did not use it because the net is not clean, and the rest 88(21.0%) households did not mentioned their reason.

5.4.4 DETERMINANTS OF ITNs UTILIZATION

Knowledge of respondents about *mosquito bite is the cause of malaria* (Adjusted OR=4.435 95% CI: 0.575, 34.196), *home visit* (Adjusted OR= 19.072, 95% CI: 9.298, 39.121), *Availability of separate bed room* (Adjusted OR= 2.008, 95% CI: 1.001, 4.352) were associated with the use of at least one of their ITNs by the households.

5.4.5 MEASURING ITNs UTILIZATION

Selected variables to measure ITNs utilization

Possession of program ITNs = $242/424 * 100 = 57.08\%$

Intact ITNs = $346/354 * 100 = 98.0\%$

Mounted ITNs = $293/354 * 100 = 83\%$

Proportion of households who believes ITNs prevent malaria = $386/424 * 100 = 91.0\%$

Point given to each variable and their observed value

A. Possession of program ITNs = 20 point

If 20 point is taken as - 100%, then 57 % will be how much?

= $20 * 57 / 100 = 11.4$

B. Intact ITNs = 30 point

= $30 * 98 / 100 = 29.4$

C. Mounted ITNs = 30 point

= $30 * 83 / 100 = 24.9$

D. Households believes ITNs prevent malaria = 20 point

= $20 * 91 / 100 = 18.2$

Table 18: Measuring and judging ITNs utilization Agaro, Ethiopia December 2010

Indicators	Expected Value	Observed Value	%	Judgment criteria	Judgment
Proportion of households possess program ITNs $242/424 * 100 = 57.08\%$	20	11.4	57	(85 – 100)% Excellent implementation	83.9% Very good implementation level
Proportion of intact program ITNs $346/354 * 100 = 98\%$	30	29.4	98	(75 - 84.9)% Very good implementation	
Proportion of program ITNs mounted $293/354 * 100 = 83\%$	30	24.9	83	(50 - 74.9)% Fair implementation	
Proportion of households believe that ITNs prevents malaria $386/424 * 100 = 91\%$	20	18.2	91	(1-49.9)% Critical implementation	
TOTAL FOR ACCESSABILITY	100	83.9	83.9		

Table19: Measuring and judging Acceptability dimension Agaro, Ethiopia December 2010

Indicators	Expected Value	Observed Value	%	Judgment criteria	Judgment
Proportion of households using program ITNs	15	13.5	90.0	(85 – 100)% Excellent implementation	65.35% Fair implementation level
Proportion of under five children slept under ITNs	15	3.75	25.0	(%75 - 84.9)% Very good implementation	
Proportion of pregnant women slept under ITNs	15	7.5	50.0	(50 - 74.9)% Fair implementation	
Proportion of households mounted ITNs	15	14.46	96.4	(1 - 49.9)% Critical implementation	
TOTAL FOR ACCEPTABILITY	60	39.21	65.35		

DOCUMENT REVIEW RESULT

Different documents at the health office, health center and kebeles level was reviewed.

At kebeles office level

The documents planned to be reviewed was their registration book, report and different letters exchanged with Agaro health office with regard to ITNs issues but during the time of this study there is no registration book found in all kebele offices rather they use a pieces of paper to register the households and on this paper they register the name of the households, their house number, and their signature even though the registration book bears house number they did not register the house number except very few of the households. About report form they have no standard reporting form and they just report to the health office using their own form written with a bare hand bearing the stamp of the kebeles and again the information they report is the amount of mosquito nets distributed and the number of households only. The problem seen here is that because they did not register the number of mosquito net given to the households they do not

know how many households have one, two, three mosquito net and they did not report this at all on the report form. The other thing observed on the report form is that the report they already submitted to the health office and what is practically seen on the registration are not consistent for example kebeles 05 reported 200 ITNs distributed but on the distribution list 204 households were registered and from these people there are some people who did not received or get ITNs and the rest ITNs are kept locked in the kebeles office, the CHW as well as the town HEWs have no any idea whether there is ITNs in their kebeles or not they are informed before a week time this study was conducted by the former kebeles chairlady, this clearly shows that the amount of ITNs reported to the health office is not the true figure to check the rest of ITNs locked at the kebeles no one can show us because no one have any idea where the ITNs are kept here the ITNs are lost somewhere without the understanding of the workers who are assigned there and this implicates that there is no control over the ITNs. Concerning their documentation system it is not well organized they do not kept the information according to their category in a file folder.

At the health center

At the health center the documents planned to review were registration books at FP and EPI unit and ANC unit in both units they have registration book and they register only the name of the mother or pregnant women and their signature but there is no address listed on the registration book and the amount of ITNs given to each mothers or PWs is not listed because they say they give only one ITN for each mothers and PWs. Here the problem observed is they give service not only to their target groups but also to the people who came from the nearby adjacent kebeles of the other woreda and they did not separately register or keep the record of these people rather they register all on the same list and it is very difficult for them and to anyone who want to know this separately, on the other hand they share the ITN they got for their respective target area and target population and because of this definitely their coverage becomes low again when they report the amount of ITNs they distributed to the health office they report all the list again this creates problem on the exact ITNs coverage of the town. From the document review

in 2019 and 2010 **30** pregnant women has received ITNs from the FP and EPI unit alone and **70** pregnant women in ANC unit. They got one roll of ITNs to distribute from the health office so far they distribute a total of **100** ITNs and they do not have ITN since 2011 in their hand for this reason they did not give ITN for their clients. On the other hand they did not report the amount of ITNs they distributed for the PWs to the health office in their report formally but both the experts reported to the health office malaria expert orally which is not good and not accepted one.

At health office level

The documents planned to be reviewed were malaria registration book, report (monthly, quarter and annual), models, graphs, charts and letters regarding ITNs program with different offices and organizations. From the observation there is one registration book but this registration book is not properly used, they did not register all the households they gave to them and some of the households did not signed on it. Regarding reports, the figure on the report they reported to Jimma zone and what is practically done in the town is totally different this is because they did not collect proper report of activities from the health center and kebeles for example the health office they did not included the **100** ITNs distributed by the health center and again it is observed that there is one church which distribute ITNs for their members and if they were collecting information from them definitely the figure were good again some kebeles like kebeles 05 mentioned before what they distribute and what they report is not the same on the other hand their documentation and recording system is very poor records are not kept in a proper way and the chance of losing data is very high. The other thing which holds their bad recording and documenting system is that all the kebeles showed the different lists of households they request to get ITNs and report the amount of ITNs they distributed but in the health office almost more than a quarter of what the kebeles reported was not found the only report observed /found was kebeles 01 reported on 23/02/2002 that 239 HHs and kebeles 03 on 18/01/2002 that 75 HHs received ITNs otherwise all the others were lost somewhere, the expert working in the health office because he is new he cannot give or tell the data and information needed.

EXPERT INTERVIEW RESULTS

Health extension workers: Because all the five HEWs are newly recruited one, it is two month time yet for them to start work and they did not start their work they are doing base line survey and because of this they cannot give information and their views about the program and they are also not part of this study.

Community health workers (CHWs): These peoples are official kebele workers and the health office in collaboration with Fayyaa Integrated Development Organization (FIDO) they trained them for three days time to do the ITNs distribution and follow-up work within their respective kebeles. The problem observed with in this area is that first of all because they are kebele workers they work this job as an additional duty not as their main job; secondly even if they want to do it their bosses did not allow them. One CHW says

"We are in great risk the kebeles select us to get the training and do this job but practically when we ask our bosses to go out and register households and to distribute the ITNs we already got from the health office them would not allow us for two reasons; first of all they do not believe us, they thought that we are going out for our sake or to go somewhere else, second they thought that we want to go out not to do our kebeles job, for this reason we are sometimes working our job on our weekend time for this the health office as well FIDO they did not see us or support us we got nothing rather we suffered a lot and we are not interested by now we have no moral at all.

On the other hand the experts mentioned that the health office and/or FIDO they should provide us at least registration book but they did not and we have no file folder and if we ask our kebeles we know it is impossible and we expect this file folder and other stationeries support from FIDO but they did not and that is why we cannot keep our documents properly. Regarding their capacity they say that the training they got for three days is not enough and most of them ask to get refresher training by someone. Regarding the community outlook they mentioned that the community demand to mosquito net is very high they ask us every day but because of shortage we cannot give them and for this reason the community loss trust on us.

On the other hand one CHW says

"I afraid we already lost acceptance by the community, unless and otherwise we provide them the ITN they want not only us but also the HEWs will not be accepted for this the health office has to bring mosquito nets"

Another CHW says

Here all the CHW unanimously agreed or shared one thing that

"if this job is wanted to be done and if we are expected to perform our duty properly ITNs must be brought, routine follow-up by the health office must be there, us".

ANC, FP and EPI experts: These experts they do have good knowledge about the goal, objective, and strategy of the program but they say they cannot implement what is expected from them because of ITN shortage they have good work relation with the health office.

Office head: He has good knowledge about the goal, objective, and strategy of the program but he complains more on the shortage of mosquito net and they ask many times the zone health department but they did not get any response we prepare a plan but our performance is always low because we did not get what we want this thing really disappointed us and for the future we will not plan but when we get ITN we will do what is expected from us .Regarding the check up of ITN utilization he agreed that there is weakness but the reason for this is that he blamed the previous people who work in the office for the leakage they done it is the main problem and it is what creates influence on this program till know.

Malaria expert: The malaria expert at the town health office is newly assigned and he is out of this study because of this his opinion is not assessed.

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STRENGTH OSERVED

They develop a very good system for ITNs distribution and awareness creation even though they did not use it; they have good motive and initiation to improve the program, they have already evaluated their program achievement before by themselves and they

do know the poor performance this is very good for one program implementer to know their position to improve it, They select people from the community and train them to participate in the program especially ITNs distribution and follow up this is also good practice for the sustainability of the program, there is high demand for ITNs by the community and this positive demand will help the program implementers to be successful if they get the ITNs in sufficient amount they need of course they use MCH unit to distribute ITNs Despite the fact that maternal child health clinics were well placed in promoting the use of insecticide-treated nets to the mothers who brought their under five year children, very little was being done to this effect. MCH clinics need to be more aggressive in motivating mothers to use insecticide-treated nets ^[20].

GAPS IDENTIFIED

INTERNAL PROBLEMS

Different gaps were identified and most of the gaps are observed in the availability and acceptability dimensions. In the availability dimension the problems observed are *shortage of mosquito net, knowledge gap, ITNs distribution, follow-up (home visit for checking the proper utilization of ITN by HHs), coordination, recording and documentation*. In the acceptability dimension the problems observed are *information gap, shortage of mosquito net, lack of on time and enough distribution mosquito nets, lack of proper and regular awareness creation, lack of follow-up, and leakage*

Mosquito net shortage: It is the most serious and critical one problem, for the shortage there are different reasons observed first of all; there is no enough, timely, and consistent supply of ITNs to the town health office from Jimma zone health department since 2009 for this the study result shows 65.0% households mentioned that they do not sleep under mosquito net because of shortage of the net, second; there was ITNs leakage , third; misusing of the ITNs, even though the health office designed very good system ITNs were misused by the distributor on one hand and by the people on the other hand, many program ITNs are sold in the market(shops) which causes bad implication for the program and program implementers.

Knowledge gap: When the ITN program is designed the awareness creation is expected to be done side by side otherwise it is not possible to achieve the intended result, what is really observed in this area during the study period is that there is no awareness creation done by the town health office and the CHWs the study result shows that 10.0% households they do not sleep under mosquito net because there is no rain in the area and there is no mosquitoes problem, 8.0% households were not used the ITNs they received and they kept it as it is packed, 5.0% households mentioned that they do not know what types of shape of ITNs are there, 89.0% households do not properly mentioned for how long someone use mosquito net in within a month time, etc... this knowledge gap can affect the utilization of mosquito net, Education was the most important factor affecting bed net use in the villages outside Kinshasa. Development of an educational program, particularly one directed toward parents, is necessary to reduce misconceptions and increase prevalence of bed net use among all age groups ^[21].

ITNs distribution: In this area the problem observed is at the CHWs level they distribute the ITN to these households who have reported that there is sick person by malaria otherwise they keep the mosquito net in their office they say they did this because of the shortage here there is still knowledge gap among the CHWs themselves, besides this the kebeles officials forced them to give the ITNs for these people who already have the ITNs and not according to the distribution criteria of the program. At the health center they distribute ITNs for all the clients who came to get service at ANC and FP and EPI units, it is good to give if they have extra ITNs but as far as we know there is shortage and as the same time if they share what they have to other area that will definitely create shortage they cannot cover their own target population unless and otherwise they use it for themselves only.

Follow-up (home visit for checking the proper utilization of ITN): In this area it is possible to say there is no home visit conducted at all by any bodies that are responsible for this, from the expert interview and document review conducted during the study period either the CHWs or the health office have not done the home visit to check

households ITN utilization of course the health office has conduct once just to check which households use and which did not otherwise their mission was not meant to check their proper utilization and on that visit even they witnessed that from the total 168 households visited 155 used the ITNs and the rest 13 households did not use the ITNs they received rather they kept it as it is packed this shows that had been there a home visit there is a chance for them to track and correct the problems with utilization was high and this in return can bring the implementation of the program to its expected level.

Lack of supportive supervision: This is also a problem observed on follow-up of CHWs and schools about their capacity, their work, any problem they faced and any other assistance they need from the health office.

Recording and documentation: This problem is critically observed at all levels during the study period in all kebeles there is no proper filing, recording and documenting system the reason for this is that all the kebeles believe that this work is not directly their responsibility and they believe they should be supported either by the health office or/and by FIDO as they get the ITN from the health office they also expect to get all kinds of support especially stationeries from them otherwise they said they do not have budget for it. Here the NGO called FIDO they can provide them at least registration book and file folders so that they can keep their document properly but what is observed during the study period is worst and needs to be improved. This problem is not only kebeles but it is also the same at the health office level too.

Information gap: Here there is big gap observed about where to get the mosquito net, most of the respondants they do not know and even they never heard that mosquito net is distributed at their respective kebeles office for free and even they do not know whom to ask this information gap also has impact on the program implementation therefore; the health office and kebeles has to work on this area too.

EXTERNAL PROBLEMS

Delaines and untimely distribution of ITNs, Miss communication between Oromiya heath bureau and the zone there is information gap because the oromiya health bureau distribute the replacement ITNs by themselves to districts and the zone health department have no information about that.

Table 20: Measuring and judging the general ITNs program Agaro, Ethiopia December 2011

Indicators	Expected value	Observed value	%	Judgment criteria	Judgment
FOR AVAILABILITY	76	57.81	76.0	(85 – 100)% Excellent implementation	83.9% VERY GOOD IMPLEMENTATION LEVEL
FOR ACCESSABILITY	30	30	100	(75 - 84.9)% Very good implementation	
FOR ACCEPTABILITY	60	39.21	65.35	(50 - 74.9)% Fair implementation	
FOR LEVEL OF KNOWLEDGE	44	40.79	92.7	(1-49.9)% Critical implementation	
TOTAL FOR ITNs PROGRAM	166	167.81	83.9		

Although the above judgment of the program shows 83.9% it does not mean that the program has no problem, from the above table most of the problems lies at the availability and acceptability dimensions and much is expected from Agaro health office and the stakeholders to alleviate the problems identified for the better achievement of the program in the future.

CHAPTER 6: DISCUSSION

The main aim of this evaluative study was to evaluate the degree of implementation of insecticide treated net program in terms of distribution and utilization in Agaro, southwestern Ethiopia. It aimed to assess and determine the knowledge and practice of the community towards malaria cause, transmission, prevention and ITNs use and usage, and also about the availability, accessibility and acceptability of ITNs.

6.1 Respondents level of knowledge

The study finding highlighted 94.0% of the study respondents has accepted that malaria is their community problem and this acceptance has its own role in the implementation of the program if the community perceived it as a problem this finding is also seen in other studies conducted in Ethiopia at different regions. About the knowledge of malaria transmission this study shows 81.0% respondents mentioned mosquito bite is the main cause for malaria, a study conducted in Wonago district of SNNPR in June and July, 2006, in Assossa zone, 2006, and the base line survey conducted at different parts of Ethiopia from January to February (1999) shows 42.3%, 47.5%, and 41.2% ^[22,23,24] respectively are very low and a study conducted in Eastern province of Zambia (2007) at three districts shows 76.0% in intervention district and 59.0% in comparison district^[25] also show very low the difference for the present study result from the others is the strong and well organized information dissemination system in the area. Other studies conducted in Kifta-Humera district Tigray (2005) shows 94.2% in rural and 94.4% urban area ^[26] and the base line survey conducted at the major parts of Ethiopia in (1999) shows 93.0% in both study areas the awareness level was high . The observed level of respondents heard about mosquito net 99.0% is found higher from the above mentioned study in Zambia three district 52.0% in intervention district and 14.0% in comparison district and from the study conducted in Afghanistan at Taliban regime in (2010) 75.0% ^[27] because of the strong information system dissemination about malaria cause, transmission and prevention and ITNs use and usage through different alternatives in the present study area and is similar with the study done at Gilgel Gibe hydroelectric power dam area in Jimma zone (2010) which is 99.0% ^[28].

6.2 Availability of ITNs

The observed mosquito net possession 63.4% very low when compared to the study conducted at Oromiya and Amhara regional states in (2009) where 91.0% of the households possess at least one ITNs^[29] the difference with this study is that the study design of the previous was multi stage stratified by degree of urbanization and also the study was conducted during malaria season, the observed result of this study is also very low from the study conducted at Kissii district of Kenya in (2010) where 95.0% of the households possess at least one ITNs^[30] the difference with this study is also due to study design and study unit, the previous study was conducted at health center in ANC service where ITNs is distributed at ANC units for the clients , and in Kenya 2000 71.1%^[31], 95% in Nyanza province, Kenya 2010^[32], 98.0% in Raki province of Uganda 2009^[33] , on the contrary it is found better than the study mentioned above in Assossa zone 43.7%, the base line survey conducted at the major parts of Ethiopia 12.9%, and in Zambia 14.0% in the intervention district and 1% in the comparison district the observed difference may be happened due to the time effect and the awareness of the people is higher besides the good ITNs distribution system . In Mozambique no province has achieved the 70% coverage target^[34], A study conducted in Nigeria show that overall household ownership of any net was 23.9% (95% CI, 022.8%–25.1%) and 10.1% for ITNs (95% CI, 9.2%–10.9%). A significantly ($p < 0.0001$) larger percentage of rural dwellers (22.8%) owned any nets compared to urban dwellers (18.3%), and were more likely ($p < 0.0001$) to own more than one net (11%) than urban dwellers (0.6%)^[35].

The observed average number of any type of bed nets and insecticide- treated nets per household 0.92 is found very less with the study conducted at Gilgel Gibe hydroelectric power dam area in Jimma zone 2009 which is 1.67 any types of bed nets and 1.53 insecticide- treated nets^[36] because of the study design and the leakage of ITNs in the present study area , and is better with the other randomized study done at Gilgel Gibe hydroelectric power dam area in Jimma zone 2010 where ITNs was distributed as an intervention and the possession is expected to be high^[37].

6.3 Acceptability of ITNs

The observed mosquito net utilization 83.68% in this study is better when compared to the studies conducted in Tanzania (2010) where 80.0% of the households uses ITNs ^[38] where the subjects of the study were households who already possess ITNs and, in Simanjiro district Tanzania 5.0% ^[39], Wonago district 66.0% and in Oromiya and Amhara regional states 65.0% ^[40,41] what makes this studies result different from the others is not only the observed result but utilization in this evaluation study was measured not only by possession but also the condition of ITNs (intact), mounted, and perception of the people who believe ITNs can prevent from mosquito bite is taken in to consideration and mostly utilization as measured during the non-malarious season.

The observed proportion of under five children and pregnant women who sleep under mosquito net 25.0% and 50.0% respectively is found very low from the study conducted in northern Ethiopia (2008) where 57.6% under five children and 58.4% of pregnant women slept under mosquito net ^[42] the main difference for the result is due to study design, study subjects and also the study period deference where the design of this evaluation study was community based cross-sectional survey and the subjects were households and the study period was only two weeks. Another study in Kenya (2009) shows 52.2% ^[43] under five children slept under ITNs the night before the survey again the difference of the two studies is their design and study subjects the design conducted in Kenya was multi stage and the subjects were caregivers of children aged five years and below. Another study in Democratic Republic of Congo (2010) shows more than 90.0% ^[44] children slept under ITNs the night before the survey the difference of the result is on the age category the Congo study age category include children from (5 - 15) years where as the age category of this evaluation study is 5 years and below.

The study in Kilifi district, Kenya (2009) 70.5% ^[45] pregnant women slept under ITNs the difference of the results is due to the design of the studies, the study subjects, and the study period the Kenya study uses health center based cross-sectional survey and the subjects were pregnant women attending ANC service and the study period was

conducted for three months. A study in Eritrea (2004) also shows the proportion of children slept under ITNs were 58.0% ^[46] but this study was done for three years. The proportion of children who uses ITNs in Wonago, Kifta-Humera, and Kenya is relatively higher than this study because data collection was done in non malarious season which can affect the utilization; another study conducted Simanjiro district of Tanzania 2009 shows less utilization of ITNs by pregnant women 45.0% ^[47]

In conclusion, the result of this study when compared with other studies conducted in Ethiopia and abroad shows differences the possible justification for that is mainly due to study design, study units study period and time. The data collection time of this evaluation study was only two week and the season was not malarious, while the other studies data collection time was from one to three months and all of them were done at malaria season and on the other hand the level of awareness on malaria cause, transmission, and prevention is not uniform and this understanding may bring the difference from the other studies. A study conducted in USA has concluded that "*Local factors determining the response of mosquitoes to ITNs could have a major influence on the level of effectiveness of net distribution program. What these programs achieve could vary considerably from one location to another*"^[48]. As the result of this study calls to do more on intensive ITNs availability, continuous follow up (check-up) ITNs proper utilization, and for targeted and continuous awareness creation activity to be done.

CHAPTER 7: CONCLUSION AND RECOMMENDATION

7.1 Conclusion

7.1.1 Level of knowledge

The result shows that the majority 94.0% respondents has accepted that malaria is their community major health problem, 4.0% do not accept malaria and 2.0% said they don't know, about respondents knowledge on malaria transmission most of the respondents 81.0% have good knowledge and mentioned that mosquito bite is the cause for malaria, 10.0% respondents mentioned bad and collected water is the cause and there is also some misconception about the cause of malaria of the total participants 5.0% mentioned eating raw sugar cane, 2.0% mentioned whether change is the cause for malaria transmission, on the other hand about 9.0% of the study participants they do not know the cause for malaria. Concerning the duration of time of mosquito bite 72.0% said during the night time, 26.0% said during the day and night time, and 2.0% said they do not know. Regarding the knowledge to which group of people is malaria more serious, about six answers were given by the respondents, of which 54.0% mentioned for everyone, 22.0% mentioned for children only, 21.0% mentioned for children and pregnant women, 3.0% mentioned for pregnant women only, and 2 of them mentioned malaria is more serious to elders. With regard to who should get priority in the household if there is shortage of ITNs in that house, of the total respondents the majority 92.0% give priority to pregnant women and children, 6.0% said they give priority to children only, and 9(2.0%) said they give priority to pregnant women.

Concerning the study participants knowledge on malaria prevention, 96.0% of the respondents agreed that malaria is preventable disease and 99.0% of the respondents have heard about mosquito net and 97% of the respondents believes that mosquito net can prevent malaria by protecting from mosquito bite; regarding to respondents malaria preventive measures they know 256 respondents mentioned using ITNs, 148 mentioned to spray the house with DDT, 138 mentioned smoking the house with (leaves/ cow dung), 134 mentioned drain mosquito breeding site around the house, 54 mentioned eat garlic. On the other hand 89.0% households do not know for how long to use mosquito net with

in a month time, 21.0% of the respondents responds properly that malaria is more serious to pregnant women and children. The majority 99.0% respondents mentioned that they have heard about mosquito net and about the use of mosquito net 49.0% mentioned the use of mosquito net is to prevent malaria, 41.0% mentioned to kill mosquitoes, 8.0% mentioned to kill mosquitoes and other insects, and 2 participants mentioned that they do not know. With regard to the source of getting ITNs of the total study participants the majority 49.0% mentioned from Agaro town health office, 42.0% mentioned from kebeles office, 3.0% mentioned from shop, 1.0% mentioned from both the health office and kebeles office, 1.0% mentioned from the health office, kebeles office and shop, and 4.0% mentioned that they do not have information from where to get the ITNs. Regarding to for how long to use mosquito net in a month time 86.0% respondents do not know and only 11.0% respondents correctly mentioned that the mosquito net should be used for the whole 30 days. About the knowledge when to use ITNs, 81.0% mentioned during the night time, 19.0% mentioned ITN should be used every time i.e. day and night, and only one (1) respondent mentioned during the day time.

7.1.2 Availability

Concerning mosquito net possession 63.4% households possess any mosquito net of which 89.6% possess program ITNs and 10.4% possess non-program ITNs. A total of 389 ITNs were found of which 61.0% households possess *one* ITNs, 33.5% households possess *two* ITNs, and 5.5% households possess *three* ITNs generally 63.4% households possess at least one ITNs and 36.6% households do not have any mosquito net at all. The average ITNs per household is 0.92 from the total study households and 1.45 from the households who only have ITNs. About the condition 93.0% are new and 7.0% ITNs are old 93.0% are intact and the rest 7.0% are not intact. Regarding the home visit for checking the proper utilization by the people 16.0% of the households were visited by the town health office once and the majority 84.0% were not visited at all.

7.1.3 Accessibility

Regarding the accessibility issue ITNs is distributed at the town health office, health center at ANC and FP and EPI units, and at kebeles offices level they create good alternatives for the people to get ITNs easily the people traveled maximum distance of 10 minutes travel to get ITNs from their respective kebeles offices.

7.1.5 Acceptability

Utilization of ITNs by households

Regarding utilization 75.3% ITNs were mounted and from the total 424 respondents 60.0% of them slept under ITNs the night prior to the survey.

Utilization of ITNs by pregnant women and under five children

194 under five children and 12 pregnant women were found during the survey and only 49/194 of under five children and 6/12 of pregnant women found slept under ITNs.

Utilization of ITNs by respondents family members

From the total 2009 family members counted during the survey 67% slept under ITNs. In one hundred eight households 100% of the family members slept under ITNs and in 35% households a total of 990 family members slept under ITNs.

The result of this evaluation study indicates that the possession of mosquito net is 63.4% which is fair implementation level very far from what is expected from the national target which is 100% coverage and the ITNs utilization rate of the program is 83.68% which is very good implementation level and is almost meeting the national target of utilization rate 85.0%, the accessibility dimension is 100% judged as excellent implementation level , the level of knowledge even if there is no previous base line data used to compare the difference the survey result shows 92.7% judged as excellent implementation level and this study result can be used as a base line data for future study on knowledge, the implementation level of the program is 83.9% judged as very good implementation level. Though the utilization rate and the ITNs program implementation level seem good the survey which was conducted by Agaro health office in 2009 during rainy season to assess the status of ITNs utilization shows the program achievement was 92% and the survey was covered only these households who possess the program ITNs only distributed by

the health office and the result of this study program achievement 83.9% shows there is a decrease in achievement by 8.1% calls for urgent response to the following problems ITNs shortage, Information gap, coordination problem, recording and documentation problem, follow-up (check up of proper utilization), supportive supervision and ITNs leakage.

7.2 RECOMMENDATIONS

For Oromiya regional health bureau

- 1.** To distribute ITNs for Jimma zone as soon as possible with exact amount as per the demand of Agaro town health office giving priority and should follow-up its implementation.
- 2.** To conduct supportive supervision in Jimma zone by giving priority to Agaro town and should assess the general implementation of the ITNs program

For Jimma zone

- 1.** To supply ITNs for the health office as per their demand and on time and should do supportive supervision to assist them in technical aspects and should follow the proper distribution.

For the town health office

- 1.** To reorganize their documentation system

All the necessary information must be recorded on the registration book and report form and the information should be kept in a file folder as per their issues and files should be organized and kept accordingly.

- 2.** To conduct home visit and check-up the proper utilization of mosquito net by the people doing this on the other hand will help them to collect current and reliable information about their ITNs coverage, utilization, and also to know their exact ITNs demand which of course help them to prepare SMART plan.

- 3.** They should strengthen the awareness creation system for this they need to work in collaboration with FIDO, kebeles, idirs, religious organizations, and schools and arrange a regular meeting with them, follow their work, and give them technical assistance.

- 4.** To provide kebeles (CHWs) a standard reporting form and registration book labeling the following information on it.

S/ N	HH name	Hou. No	Family size			No <5 chi	No of P W	No of	Type of the		D/M/ Y issued	sign ature	Name and signature
			M	F	T				C	R			

5. To protect leakage of ITNs, the distribution should be done formally it should be in and out to their store by legal using the legal models (19, 21).

For kebeles and CHWs

1. The assigned CHWs have to work the ITNs program regularly and should do the home visit to check the proper utilization and give education about ITN not only distributing ITNs for this the kebele officials and the CHWs should discuss together and arrange a program.

2. To organize their documentation system

All the necessary information must be recorded on the registration book and report form and the information should be kept in a file folder as per their issues and files should be organized and kept accordingly.

3. To register all the information properly on the registration book

4. To conduct a door to door visit and gather recent information about ITNs possession, usage, and condition. This will help them and the town health office to have current and updated information about the program and even to prepare feasible and reliable plan on it.

For FIDO (Fayyaa Integrated Development Organization)

1. To organize the awareness creation work more by working together with CHWs and HEWs and assess the level of knowledge and practice at least once per year

2. If it is possible they have to engage in ITNs distribution to solve the shortage and

CHAPTER 8: META- EVALUATION

Meta-evaluation is defined as the evaluation of an evaluation. As Nilsson and Hogben (1983) correctly point out, "*meta-evaluation refers not only to the evaluation of particular studies but also to evaluation of the very function and practice of evaluation itself*" The purpose of meta-evaluation is to help evaluation live up to its potential [49 50]. In this evaluative study the set of thirty standards of the joint committee's standard for program evaluation is used and these standards are determined by looking at its utility, feasibility, propriety, and accuracy. The utility standards are intended to ensure that an evaluation will serve the information needs of its intended users. The feasibility standards are intended to ensure that an evaluation will be realistic, prudent, diplomatic, and frugal. The propriety standards are intended to ensure that an evaluation will be conducted legally, ethically, and with due regard for the welfare of those involved in the evaluation as well as those affected by its results. The accuracy standards are intended to ensure that an evaluation will reveal and convey technically adequate information about the features that determine worth or merit of the program being evaluated [49,50]. Based on the standards this evaluative study is self-evaluated by the principal investigator itself.

8.1 Utility standard

Before this study is conducted stake holder's identification was done, all the information scopes and selection was clearly stated, criteria's for judging the activities and the program in general was set together with stakeholders, how the report is going to be prepared for whom and when to disseminate is also clearly identified, the stake holders were participated on the evaluation during the evaluation period, interim report is given about the progress of the evaluation to correct some of the problems observed during the evaluation time, program strength and weakness is identified so that the stakeholders will work on it after the approval of final report by JU dissemination work shop for the stakeholders will be done at Agaro.

8.2 Feasibility standard

The design of the evaluation was community based cross sectional survey and the instruments used were able to answer the evaluation questions properly. The evaluation process was participatory and all the stakeholders participated from planning, implementation, criteria's setting, by showing the selected respondent's house and protecting the data collectors, supervisors and the evaluation process in general.

8.3 Propriety standards

Ethical approval and clearance was obtained from Jimma university college of public and medical sciences ethical clearance committee before data collection and formal letter to Jimma zone, Agaro town health offices and municipality from Jimma university is delivered by the principal investigator, Informed written consent is delivered to Agaro town kebeles from Agaro health office and they are also informed about the evaluation by the principal investigator, Informed verbal consent and with respondents prior data collection is done and they are also informed not to participate in the study if they don't want , if they participate not to answer any questionings delivered by the data collectors if they are not convenient with that they are also informed that they can resign from the study in the middle if they feel not comfortable or not interested they are also informed that whatever information they give is just between them and the data collectors and no other person or organization is informed about that and their safety is secured and not to afraid in the future something will happen to them just because of the information the give , consciences was reached with Agaro town health office to whom to inform(report) if unusual or unexpected things happens.

8.4 Accuracy standards

Pre-tested tools were used, training is given for data collector and supervisor, pre-test is done at Jimma town to check the tools and data collection process, routine follow up (supervision) is done, discussion was done with data collector and supervisor about the daily progress and any expected or unexpected problems they faced, re-interview and observation is done on 5% randomly selected respondents by the principal investigator to cross check the questionnaires filled by data collectors for their consistency.

REFERENCES

1. WHO (2008); World Malaria Report ISBN: 978 92 4 156369 7. (WHO/HTM /GMP /2008.1)
2. WHO (2010). African malaria report, World Malaria Day, Posted at 29/4/ (10)
3. [http:// www.cartercenter.org/news](http://www.cartercenter.org/news) accessed at 11:30, on.2010.11.23
4. [http:// www.malariajournal.com/content/8/1/76](http://www.malariajournal.com/content/8/1/76) accessed at 12:00, on.2010.11.2
5. [http:// www.who.int.ctd/html/mal](http://www.who.int.ctd/html/mal) accessed at 11:30, on.2010.10.20
6. Oromiya Health Bureau (2002).Oromiya health bureau 2002 annual report, Addis Ababa Ethiopia
7. Jimma zone Health Department (2002). Jimma zone health department 2002 annual Report, Jimma. Ethiopia
8. Agaro town administration health office (2002) Agaro town administration health office annual report. Agaro, Ethiopia
9. Fedral Ministry of Health (2003).Guideline for malaria vector control in Ethiopia, Addi Ababa. Ethiopia
10. WHO (2009) Procedure for treating mosquito nets and curtains UNICEF, Malaria in Ethiopia: (<http://www.aingabire@unicef.org>) accessed at 11:30, on.2010.11.23
11. [http:// www.en.Wikipedia.org/wiki/mosquito_net](http://www.en.Wikipedia.org/wiki/mosquito_net) accessed at 8:30, on 2011.12. 15
12. Oromiya Health Bureau (2011).Oromiya health bureau 2002 annual report, Addis Ababa Ethiopia
13. Jimma zone Health Department (2011). Jimma zone health department 2002 annual Report, Jimma. Ethiopia
14. Agaro town administration health office (2011) Agaro town administration health office annual report. Agaro, Ethiopia
15. Roy Panchesiky,(1981).The concept of Access Definition and Relationship to consumer satisfaction, *Medical Care Section of American Public Health Association*, 19(2):127 – 140
16. Henry, G., [2002], Choosing Criteria to Judge Program Success: a Values Inquiry: *Evaluation*; Vol 8(2): pp182–204

17. Patton, (1987). How to use qualitative methods in evaluation, SAGE, London New Delhi. New Delhi.
18. Wholey JS, Hatry HP, Newcomer KE (2004). "Hand book of practical program evaluation", Jossey-bass, USA
19. WHO (2009). Procedure for treating mosquito nets and curtains UNICEF, Malaria in Ethiopia: (<http://www.aingabire@unicef.org>) accessed at 11:30, on.2010.11.23
20. Osero JS, Otieno MF, Orago AS (2006) .Role of child health clinics in promoting use of insecticide-treated nets among children under five years in Nyamira district, Kenya. *East Afr Med J.*; 83(8):450-4.
- 21 Ndjinga JK, Minakawa N. (2010) The importance of education to increase the use of bed nets in villages outside of Kinshasa, Democratic Republic of the Congo. *Malar J.* 12; 9:279
22. Degene G, Deressa W (2003). Knowledge and utilization of insecticide treated mosquito nets among freely supplied households in Wonage District, Southern Ethiopia". *Ethiop J Health Dev*: 17(2):100-103
23. Legesse Y et al. (2007). Knowledge, Attitude and Practice about Malaria Transmission and Its Preventive Measures among Households in Urban Areas of Assosa Zone, Western Ethiopia". *Ethiop J Health Dev* 19(1):16-23
24. Jimma D et.al (2005). Baseline survey for the implementation of insecticide treated mosquito nets in Malaria control in Ethiopia, *Ethiop J Health Dev*, 19(1) 16-23
25. Sohail A, Ronan VR, Guy S (2007). The impact of a hybrid social marketing intervention on equities in access, ownerships and use of ITNs in Zambia . *Malar J* 6:13
26. Haileselassie B and Ali A (2008). Assessment of Insecticide Treated Nets Coverage for Malaria Control in Kafta-Humera District, Tigray: Possession versus Use by High-risk Groups. *Ethiopia .J. Health Dev.* 22(3)259-267

27. Howard et al, (2010) Malaria control under the Taliban regime: Insecticide-treated net purchasing, coverage, and usage among men and women in Eastern Afghanistan. *Malaria Journal* 9:7 doi: 10.1186/1475-2875-9-7
28. Yewhalaw D et.al. (2010) The influence of the Gilgel-Gibe hydroelectric dam in Ethiopia on caregivers' knowledge perceptions and health seeking behavior towards childhood malaria. *Malaria J* 9:47
29. Carol AB, Reithinger R, Woldehanna S(2009). Factors associated with use and non-use of mosquito nets owned in Oromiya and Amhara regional states, Ethiopia. *Malaria J* 8:264
30. Githinji S, et al(2010). Mosquito net in rural area of western Kenya: Ownership, use and quality. *Malaria J* 2; 9:250
31. Howard SC, Omumbo J, Nevill C, Some ES, Donnelly CA, et al (2000). Evidence for a mass community effect of insecticide-treated bed nets on the incidence of malaria on the Kenya coast *Trans R Soc Trop Med Hyg* 94:357-360
32. Bayoh et al, (2010) *Anopheles gambiae*: historical population decline associated with regional distribution of insecticide-treated bed nets in Western Nyanza province, Kenya *Mal. Journal* 9:62
33. Cohee L et. al, (2009) High retention and appropriate use of insecticide-treated nets distribution to HIV-affected households in Rakai, Uganda *Malaria Journal* 8:76
34. IEA (2010). An assessment of Lot Quality Assurance Sampling to evaluate malaria outcome indicators: extending malaria indicator surveys, Mozambique. *International Journal of Epidemiology* 2010 39(1):72-79; doi:10.1093/ije/dyp363
35. Nwankow BO and Okafor J (2009). Effectiveness of Insecticide-treated bed nets (ITNs) in malaria prevention among children age 6 months to 5 years in rural community in Imo state, Nigeria *Trop Med Int Health* 4:41-49
36. Yewhalaw D et al., (2009). Malaria and water resource development: the case of Gilgel-Gibe hydroelectric dam in Ethiopia. *Malaria J* 8:21

37. Deribew A et al (2010). Effect of training on the use of long lasting insecticide treated bed nets on the burden of malaria among vulnerable groups, south-west Ethiopia: base line results of a cluster randomized trial. *Malaria Journal* 9:121doi10.1186/1475.2875-9-121
38. Tsuang A, Lines J, Hanson K (2010). Which family members use the best net? An analysis of the condition of mosquito nets and their distribution within households in Tanzania. *Malaria J* 22; 9: 211
39. Malisia AL, Ndukai M (2009). Knowledge and practice on malaria and its control among pastoralists in Simanjiro district, Northern Tanzania. *Tanzania Journal of Health Research* Vol.11, No 4
40. Baume CA (2009). Factors associated with use and non-use of mosquito nets owned in Oromiya and Amhara regional states. Ethiopia. *Malaria Journal* 8:264
41. Jimma D et al,(2010). Malaria Indicator survey 2007, Ethiopia: Coverage and use of major malaria prevention and control intervention. *Ethiop. Mal. J* 9:58
42. Belay M, Deressa W(2008). Use of insecticide treated nets by pregnant women and associated factors in a pre-dominantly rural population of northern Ethiopia. *Trop Med Int Health* 13(10): 1303-13
43. Malusha JM et.al (2009), Use of insecticide treated nets among caregivers of children under five years in Makueni district, Kenya. *East Afr Med J* 86(7): 308-13
44. Ndjinga JK, Minakawa N (2010). The importance of education to increase the use of bed nets in villages outside of Kinshasa, Democratic Republic of the Congo. *Malaria J* 12; 9:279
45. Hawely WA, Phillips-Howard PA, Kuile FO, Terlouw DJ, Vulule JM, et al, (2000).Community wide effect of permethrin treated bednets on child mortality and malaria morbidity in western Kenya. *Am J Trop Med Hyg* 68:121-127
46. Peter MN, et. al (2006) A steep decline of malaria morbidity and mortality trends in Eriteria 2000-2004: The effect of combination of control methods. *Malaria j* 5:3
47. Frey C et al. (2006). Compliance of young children with ITN protection in rural Burkina Faso Nuuna, Burkina Faso *Malaria Journal* 5:70 doi:10.1186/1475-2875-5-

- 48.** Jody L.fitzpatrick, James R.sanders, Blaine R.worthen (2004) Program evaluation alternative approaches and practical guideline ,Person. USA
- 49.** Mark MM, Hery GT, Julnes G, (2000) Evaluation an integrated framework for understanding, guiding, and improving policies and programs. Sanfrancisco. USA
- 50.** Rossi, Lipsey and Freeman (2004); Evaluation: A systematic Approach; 7th Ed., SAGE Publications: International Education and Professional Publisher, Thousand Oaks.

APPENDICES

Household Questionnaire for ITNs Distribution and Utilization Study in Agaro town of Jimma zone, December 2010G.C

[Note: Only the head of household, or his/her spouse should be interviewed]

My name is _____, and I am studying at Jimma University. I to evaluate households' knowledge, concerns, behaviors and practice related to ITNs utilization. I do not plan to talk to all residents in this area, but have selected several to ask to represent views of all residents in this area. You are one of those selected to give your views, if you are willing for my research. The answers I get from you and several others will be analyzed to get the general residents' knowledge and opinions concerning the main problems households face and what can be done to address these

. **Do you wish to participate?** Yes [] No []

If "Yes," proceed with survey. If "No," thank the respondent and go on to the next household.

Name of household head:[_____]

Interviewer's code: [K0_/_ _ _]

Date of interview: [date ,month ,year]

Household No: [____], M[____], F[____]

Time started[_____] Time finished[_____]

Section1: Socio-demographic characteristics of the respondents

No.	Questions	Codes of possible responses	Skip to
1	Sex of the respondent:	Male 1 Female 2	
2	The household is headed by:	Male 1 Female 2	
3	Status of the respondent in the household:	Head of the household (Husband) 1 Spouse (wife) 2 Son or daughter 3 Other (specify) _____ 4	
4	What is your age in years?	Year [_____]	
5	What is your religion?	Orthodox Christian 1 Protestant Christian 2 Catholic Christian 3 Islam 4 Other (specify) _____ 5	
6	What is your ethnic group?	Oromo 1 Amhara 2 Gurage 3 Other (specify) _____ 4	
7	What is your current marital status?	Married 1 Never married (single) 2 Divorced 3 Widowed 4 Separated 5	
8	Can you currently read and write?	Yes 1 No 2	
9	What is your current main work/occupation? • <i>Circle only one answer</i>	Housewife 1 Farmer 2 Daily laborer 3 Government/NGO employee 4 Trader 5 Other (specify) _____ 6	
10	What is your spouse's current main work/occupation? • <i>Chose only one response</i>	Housewife 1 Farmer 2 Daily laborer 3 Government/NGO employee 4 Trader 5 Currently has no spouse 6 Other (specify) _____ 7	

11	<p>How many people generally live in this household, including you?</p> <ul style="list-style-type: none"> <i>If there is no <5 years or pregnant woman in the household, please fill “0” in the space provided.</i> 	<p>Total No. [____]</p> <p>No. of children below 5 years [____]</p> <p>No. of pregnant women [____]</p>	
12	<p>How many member of this household slept in this house in the previous night?</p> <ul style="list-style-type: none"> <i>If there is no <5 years or pregnant woman in the household, please fill “0” in the space provided.</i> 	<p>Total No. [____]</p> <p>No. of children below 5 years [____]</p> <p>No. of pregnant women [____]</p>	
13	<p>What is the average family annual or monthly <u>income</u> of this household?</p>	<p>[_____] Birr /month</p> <p>[_____] Birr/year</p>	

Section2: Knowledge and perceptions about malaria transmission

No.	Questions	Codes of possible responses	Skip to																																																						
14	Do you consider malaria a major health problem in this community?	Yes 1 No 2 Don't know 3																																																							
15	In your opinion, what causes malaria? • Multiple responses possible and circle all responses that apply • Probe for possible answers (Anything else?)	Mosquito bites 1 Eating immature sugarcane 2 Eating maize stalk 3 Hunger (empty stomach) 4 Exposure to cold or changing weather 5 Drinking dirty water 6 Witchcraft 7 Exposure to dirty swampy areas 8 Sleeping with malaria patient 9 Don't know 10 Other (specify) _____ 11																																																							
16	During which part of the day mosquitoes usually bite a person?	Day time 1 Dawn 2 Dusk 3 Night 4 Any time 5 Don't know 6																																																							
17	What are the main signs and symptoms of malaria? • Multiple responses possible and circle all responses that apply • Probe for possible answers (Anything else?)	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;"><u>Yes</u></th> <th style="text-align: center;"><u>No</u></th> </tr> </thead> <tbody> <tr><td>Fever</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td></tr> <tr><td>Feeling cold</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td></tr> <tr><td>Chills or shivering</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td></tr> <tr><td>Sweating</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td></tr> <tr><td>Headache</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td></tr> <tr><td>Nausea</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td></tr> <tr><td>Vomiting</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td></tr> <tr><td>Loss of appetite</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td></tr> <tr><td>Bitterness in the mouth</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td></tr> <tr><td>Body weakness/tiredness</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td></tr> <tr><td>Body ache/joint pain</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td></tr> <tr><td>Seizure/convulsion</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td></tr> <tr><td>Unconsciousness</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td></tr> <tr><td>Thirsty</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td></tr> <tr><td>Diarrhea</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td></tr> <tr><td>Don't know</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td></tr> <tr><td>Other (specify) _____</td><td></td><td></td></tr> </tbody> </table>		<u>Yes</u>	<u>No</u>	Fever	1	2	Feeling cold	1	2	Chills or shivering	1	2	Sweating	1	2	Headache	1	2	Nausea	1	2	Vomiting	1	2	Loss of appetite	1	2	Bitterness in the mouth	1	2	Body weakness/tiredness	1	2	Body ache/joint pain	1	2	Seizure/convulsion	1	2	Unconsciousness	1	2	Thirsty	1	2	Diarrhea	1	2	Don't know	1	2	Other (specify) _____			
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Other (specify) _____																																																									
18	To which group of the population is malaria more serious? • Multiple responses possible and	Adults 1 Children 2 Pregnant women 3																																																							

	<i>circle all responses that apply</i>	Children 4 Elderly 5 Equally serious for all 6 Don't know or not sure 7	
19	Do you agree that bed net can prevent malaria?	Agree 1 Disagree 2 Neutral 3	
20	Whom do you think get priority in shortage of ITN in the household?	Children 1 Pregnant women 2 Lactating mothers 3 Husband 4 Others(specify)_____ 5 Don't know 6	

Section3: Knowledge and practices about malaria prevention

No.	Questions	Codes of possible responses	Skip to
21	Is malaria a preventable disease?	Yes 1 No 2 Don't know 3	
22	<p>What are the different malaria preventive measures that you know?</p> <ul style="list-style-type: none"> <i>Do not read responses</i> <i>Multiple responses possible and circle all responses that apply</i> <i>Probe for possible answers (Anything else?)</i> 	To sleep under a mosquito net/ITNs 1 To use mosquito coils 2 To spray house with insecticide (DDT) 3 To spray house with aerosols 4 Smoking (burn leaves/cow dung)nearby the house 5 Apply ointment on the skin 6 Drain mosquito breeding sites around the house 7 Window screening 8 Eat garlic 9 Drink alcohol 10 Other (specify)_____ 11 Don't know 12	
23	Is malaria a treatable disease?	Yes 1 No 2 Don't know or not sure 3	
24	Where can mosquitoes are found?	In stagnant water/irrigation ditches 1 Irrigation canals 2 farmland/near cattle 3 In the forest 4 In the house 5 In vegetation around the house 6 Other _____ 7 I don't know 8	

Section 4: Mosquito net knowledge, possession and utilization

No.	Questions	Codes of possible responses	Skip to
25	Have you heard about “ <i>mosquito net</i> ”?	Yes 1 No 2	→30
26	What is/are the use of the mosquito net? <ul style="list-style-type: none"> • <i>Multiple responses possible and circle all responses that apply</i> • <i>Probe for possible answers (Anything else?)</i> 	To kill mosquitoes 1 protect from insects bite of 2 To protect from malaria 3 Used as a curtain 4 Used as a mattress 5 Other (specify) _____ 6	
27	In your opinion, where can someone get a “ <i>mosquito net</i> ”? <ul style="list-style-type: none"> • <i>Multiple responses possible and circle all responses that apply</i> • <i>Probe for possible answers (Anything else?)</i> 	Health post /HEW 1 Health center 2 District Health Office 3 Private health care facility 4 Pharmacy/drug store 5 Shop/Market 6 Kebele office 7 Other (specify) _____ 8 Don't know 9	
28	On average, for how long could a mosquito net be used in months? <ul style="list-style-type: none"> • <i>Convert all replies into months</i> 	Months [_____] _____ Don't know 99	
29	When should someone use ITN?	Day time 1 Night 2 Evening 3 Any time 4	
30	Does your household currently have any mosquito nets that can be used while sleeping?	Yes 1 No 2	→36
31	Did you sleep under a mosquito net during the previous night?	Yes 1 No 2	
32	Did any member of your household sleep under mosquito net last night?	Yes 1 No 2	→36
33	How many of the people who slept in this household in the previous night slept under a net, including you?	[_____] _____	
34	How many of the under five children who slept in this household in the previous night slept under a net? (Refer to Q12). <i>Skip if no under-5 years children by circling 99</i>	[_____] _____ <i>No under five child 99</i>	
35	How many of the pregnant women who slept in		

	this household in the previous night slept under a net? (Refer to Q12). <i>Skip if no pregnant woman by circling 99</i>	[____] <i>No pregnant women 99</i>	
36	If any one of the household members did not sleep under ITN the previous night, what is the main reason?	Sleeping under an ITN is not convenient 1 ITN was not clean 2 ITN was not hanged 3 Forgotten to sleep under an ITN 4 No malaria during this time of the year 5 No mosquitoes during this time of the year 6 Other (specify) _____ 7 Don't know 8	
37	How long ago did your household obtain the most recent mosquito net?	Year [____] , [____]month	
38	Does sleeping under an ITN have any problem?	Yes 1 No 2	→42
39	If YES to Q38, what are the main problems associated with sleeping under an ITN?	It gives too warm to sleep under it 1 Mosquitoes still bite you through it 2 Inconvenient to easily get up during night 3 Tucking the net every night is boring 4 It gives you skin irritation 5 Other (specify) _____ 6 Don't know 7	
40	What shape of the net do you most prefer?	Rectangular 1 Conical 2 Rectangular/conical 3 Any shape 4 Don't know 5	
41	What colour of the net do you most prefer?	White 1 Green 2 Blue 3 Green and blue 4 Any colour 5 Other (specify) _____ 6	
42	Where did you get the ITN you have now?	Health post /HEW 1 Health center 2 District Health Office 3 Private health care facility 4 Pharmacy/drug store 5 Shop/Market 6 Kebeles office 7 Other (specify) _____ 8 Don't know 9	
76			

Questions 43 to 60 should be filled through observation

43	How many mosquito nets do you currently have [both used and unused]?	[_____]	
44	How many of the nets the household has are currently used by household members while sleeping?	[_____]	
45	How many of the nets the household have are currently new and unused (still in package)?	[_____]	
46	How many of the nets the household have are hanged over the bed/mat/platform during the interview?	[_____]	
47	Did any one of the household member found sleeping under an ITN?	Yes 1 No 2	
48	Did any one of under five children found sleeping under an ITN?	Yes 1 No 2	
49	How many of the nets the household have are rectangular ?	[_____]	
50	How many of the nets the household have are conical ?	[_____]	
51	How many of the nets the household have are white ?	[_____]	
52	How many of the nets the household have are green ?	[_____]	
53	How many of the nets the household have are blue ?	[_____]	
54	How many of the nets the household have are in a good condition (no tear or hole)?	[_____]	
55	How many of the nets the household have are with at least one tear or hole that allow mosquito entrance?	[_____]	
56	How many of the nets the household have are currently non-functional ?	[_____]	
57	How many sleeping area(s) does the household have?	[_____]	
58	Has your home visited for proper use of mosquito nets?	Yes 1 No 2	
59	If yes for Q58 by whom your house has been visited	CHW 1 HEW 2 District health office 3 Others(specify)_____ 4	
60	How many bed rooms do you have?	total No[_____]	

Yunivarsitii Jimmati, Kollejii Fayya Ummataa fi Saayionsii Medikaalaa, Dipaartimantii Karooraa fi Manajimantii Kenninsa Fayyaa fi garee qorannoofi Hordofii fayyaati Qorannoo ittifayadama Saaphana sireerati saddassa 15 hanga 30/11 naano oromiya , godina Jimma , Magallaa Agaroo

Unka walii galtee

Akkam oltan/bultan, maqaan koo _____ jedhama. Ani namoota waa'ee itti fayyadama saaphana sire ilaaludhaan fooya'insa sagantichaaf deggersa kennaan keessa isaa tokko dha. Odeeffannoon fananame kunis sagantaa ittisa busaatiffi saphana siree naanno kanaa guddissuf kan ooludha.

qorannoo kana irratti himaannaan kessan fedhi irratti kan hundaa'e yemmu ta'u deebii fi Odeeffannoon nuf kannittan iccittidhaan kan eegamee dha . Gaaffileen qorannoo kanaaf isin gafadhu saganticha guddisuuf barbaachisaa waan ta'eef deebi kannudhan akka nu gargaanttan abdiin qaba gaaffiin Koo daqqiqa 30-40 irra hin caalu

Itti fufu dandeenya ?

Eeyyee ni dandeenya → Itti fufi

Hin dandeenya → dhaabi

Aannaa _____ ganda _____ lakk mana _____

Guyyaa odeeffannoo ____/____/____ maqaa odeeffataa _____

KUTAA 1: ODEEFFANNOO ENYUMMAA

No.	Gaffi fi Codii
1	Saala 1= dhiira 2= Dhalaa
2	Abbaa warra mana 1= dhiira 2= Dhalaa
3	Gahee maatii keessattii? 1= Bulchaa 2= Haadha mana 3= Kan biraa
4	Umrii meqaa? (wagaa) [_____]
5	Amantaa kee malli? 1= ortoodoksi 2= protestaanti 3= Christian 4= muslima 5= kani biraa ____
6	Sabni kessan malli? 1= Oromoo 2= Aamaara 3= Guraagee 4= Kan biraa /ibsi __
7	Uaalaa fudhaa/ eeruma 1= Kan fudhe 2= Kophaa kan jiraatu 3= Kan hikamette 4= Kan kadhimamte
8	Dubisufi katabu dandensa? 1= eeyyee 2=lakki
9	Hojjii deebii kannaa 1=Haadha mana 2= Qotee bulaa 3= hojjataa humnaa 4=hojjataa motumaa 5= Daldalaa 6= kan biraa (ibsi)_____
10	Hojjii deebii kannaa haadha mana malli ? 1=Haadha mana 2= Qotee bulaa 3= hojjataa humnaa 4=hojjataa motumaa 5= Daldalaa 6= hnitti inqabu 7= kan biraa (ibsi)/_
11	Baa'ina jiraataa manaa 1= lakka bayinna[____] 2= Baa'ina dhaimma waggaa shani gadii[____] 3= Baa'ina dubartti ulfaa [____]
12	How many member of this household slept in this house in the previous night? 1= lakka bayinna [____] 2= Baa'ina dhaimma waggaa shani gadii [____] 3= Baa'ina dubartti ulfaa [____]
13	waggaan qarshii meeqqaa argatan? [_____]Birr /ji'an[_____] Birr/waggaan
KUTAA 2 : ODEEFFANNOO WALIGALA BUSAA	
14	Busaan rakkoo ijoo hawaasa keessaniiti? 1= eeyyee 2=lakki 3=hin beeku
15	Akka yaada keeti, busaan akkamitti daddarba ? 1= cinninaa bookee 2= shankoraa inqaqabnee nyaatu 3= agadan bokkooloo nyaytu 4= bellaa 5= Qileensa qabbanaawa /rooba/ 6= bishaan badaa dhuguu 7= bishaan badaa /kufamee/ 8=nama dhukuba busaa qabu wajjin rafuu 9= hin beeku 10= kan biraa _____
16	Bookeen bussan yo'oma cinninti? 1= guyyaa 2= galgala 3= yeroo hunduma 4= hin beeku
17	Mallato bussan malli? 1=Fever 2= Namaqanata 3= Nama dafqaa 4= Mattaa dhukuba 5= Lilissaa 6= Nama didiqsa 7= Natuu nama jibisisa 8=Affaan inhadahaa 9= Dhdabsaa 10=Naffaa chachabsa 11= Offan beeku 12= Bishan eebossa 13=Albattin 14= Hin beeku 15= Kan birra_____
18	Gossa naammaa bussani bayee rakkoo katau eynuffii? 1= Ijoollee 2= daimman 3= kan ulffan 4= jarsoollee 5= nama hundumaf 6= hin beeku
19	Saphani siree busaa ni ittisa? 1= ittin waliigala 2= ittin waliin galuu 3=yaada hin qabu
20	Akka yaada keeti, eenuutu saphana siree jala dura rafn qaba? 1= Daa'imman 2= Dubara ulfaa 3= Dubara ulfaa fi daa'imman 4=Dubartii hodsistu 5= Bulchaa manaa 6= Abbaa ti haadhoo 7= kan birra ____ 8=hin beeku

KUTAA3 : BEEKUMSAA FI ILAALCHA WAA'E SAPHANA SIREE

No.	Gaffi fi Codii	Skip to
21	Busaa ittisuun ni danda'amaa? 1= Eeyyee 2= hin danda'amu 3= hin beeku	
22	Tooftaa ittissa busaa kamiin fayyadamaa jirta? 1= Saphana siree fayyadamu 2= Biffaa DDT 3= Baalaafi muka aarsu 4= Iddoo hormaata bookee xiqqeesu 5= Qulubii adii naytuu 6= Alcoolii dhugu 7= kan birra _____ 8= hin beeku	
23	Akka yaada keeti, busaan dhukuba fayyudha? 1= eeyyee 2= hin danda'amu 3= hin beeku	
24	Bookeen bussan esaa argamman? 1= Bakaa bishan quffamee 2= Baka jalisii 3= Baka qonnaa 4=Bossanaa 5= Manna namaa 6= Other /kan birra _____ 7= hin beeku	

KUTAA 4: BEEKUMSAA SAPHANA SIREE QABACHUFIITTI FAYYADAMU

No.	Gaffi fi Codii	Skip to
25	Waa'ee saphana siree dhageessee ni beektu? 1=Eeyyee 2= hin dhaenye	→30
26	Fayidaan saphana siree maali ? 1= Bokee ajeesuu 2= Ciniisa lisiisoote biraatirra 3=Dhukuba bussa ittisu 4= Kan birra _	
27	Akka yaada keeti namni tokko saaphana siree eessaa argattu? 1= HEF 2= Bufata fayya 3= Birro fayyaa magalla Agaroo 4=Pharmacy/drug store 5=Suqii 6=Biroo gandaa 7=Kan birra_____ 8=Hin beeku	
28	Saaphana siree ji'a tokko keessatti yerroo meqaa fayyadamta? ji'aa [_____] 99 hin beeku	
29	Namni tokko saaphana siree yoom itti fayadama? 1= Guyyaa guyyaa 2=Galgala 3=Yeroo hunduma	
30	Yeroo amma mana keessan keessa yeroo cistan saphani siree ittifayyadamtan jiraa? 1= Eeyyee 2= Lakki 3= Hin dhaenye	→36
31	Keeleesa galgala saaphan siree jala bultee? 1=Eeyyee 2=Lakki	
32	Keeleessa galgala mana keessan keessa namni saaphana siree jala bulee jiraa? 1=Eeyyee 2=Lakki	→36
33	Keeleessa galgala mana keessan keessa sidabalatee nama meeqaatu saaphana siree jala bulee? [_____]	
3	Ijoollee waggaa shani gadi mana kana keessa bulan keessaa ijoollee meeqaatu keeleessa galgala saaphana siree jala bulee? [_____] 99= Ijoolleen waggaa shani gadii hinjiran	
35	Haadholee ulfaa ta'an mana kana keessa bulan keessaa haadholee meeqaatu saaphana siree jala bulee? [_____] 99=Haadholeen ulfaa hinjiran	
36	Namoota mana kana keessa jiran keessaa kaleessa galgala yoo namni tokko yoo saaphana siree jala hinbulle sababni isaa maali? 1= Saaphan siree jala bulun namatti hintolu 2=Saaphani siree qulqullu mitii 3=Saaphani siree hinfannifamne 4=Saaphana siree jala bulu nanhiraanfadh 5=Yeroo ammaa kana busaan hinjirtu 6=Yeroo ammaa kana bookeen hinjirtu 7=Kan biro (ibsii)_____ 8=Hin beeku	
37	Manni keessan saaphana siree xumuraa yoom argatee? Bara [_____] , [_____] ji'a	
38	Saaphana siree jala bulun rakko qabaa? 1= Eeyyee 2=Lakki	→42
39	Deebin 38 eeyyee yoo ta'e, rakkoleen cimoo saaphana siree jala bulu waliin walqabatan maali?	

	1=Baayyee namatti oowa 2=Bookkeen isa keessaan si cininti 3= Galgala ka'uf namatti hintolu 4= Yeroo hundaa galgala galgala saaphana siree busuni sireessun nama nufisisa 5= Googa nama nyaata 6=Kan biroo(ibsii 7=Hinbeeku
40	Saaphana siree akkamii filatta? 1= Rectangular 2= Conical 3= Rectangular/conical 4=Any shape 5= Hin beeku
41	Qalama saaphan siree akkamii filatta? 1=Adii 2=Magarisa 3=Blue 4= Green and blue 5=Qalama kamiyyu 6= Kan biroo ibsii
42	Saaphana siree amma qabdu eessaa argatte? 1= Kellaa fayyaa/HEF 2= Buufata fayyaa 3= Eegumsa fayyaa Aanaa 4= Dhaabbata fayyaa dhunfaa 5=Faarmaasii 6=Dukaana/gabaa 7=Waajjira gandaa 8= Kan biroo(ibsii)_____ 9= Hinbeeku
<i>Gaaffileen 43 hanga 60 ilaaludhaan guutamu qaban</i>	
43	Yeroo ammaa saaphana siree meeqa abda?(kan ittifayyadamtti fi ittihin fayyadamne) [____]
44	Yeroo ammaa miseensoonni mana keessan saaphana siree jala yeroo ciisan saaphana siree meeqaan fayyadamu? [_____]
45	Saaphan siree mana keessa amma jiran keessaa meeqa isaatu haraa fi ittihin fayyadamne? [_____]
46	Yeroo gaaffi kana gaaffattu saaphan siree qaatuu mana keessa siree gubaatti fannitamee? [_____]
47	Miseensoota mana keessaa namni saaphana siree jala ciisee jira turee? 1=Eeyyee 2= Lakki
48	Daa'imtti waggaa shani gadi saaphana siree jala ciisee jira turee? 1= Eeyyee 2=Lakki
49	Saaphana siree meeqaatu _____ dha? [_____]
50	Saaphana siree meeqaatu _____ dha? [_____]
51	Saaphana siree meeqaatu adii dha? [_____]
52	Saaphana siree meeqaatu magaresa? [_____]
53	Saaphana siree meeqaatuu _____ dha? [_____]
54	Saaphana siree meeqaatu haala gaarii irra jira?(hintarsaasnee [_____]
55	Saaphana siree meeqaatuu tarsi'aa iddoo tokko bookkee seensisuu qaba? [_____]
56	Saaphana siree meeqaatuu yeroo ammaa hinhojjanne? [_____]
57	Manni iddoo ciisichaa meeqa qaba? [_____]
58	Mani keessan ittifayyadama saaphana siree if ilaalameeraa? 1=Eeyyee 2=Lakki
59	Deebiin 58 eeyyee yoo ta'e eenyuun ilaalamee? 1=CHW 1 2=HEF 3= Eegumsa fayyaa Agaroo 4= Kan birra (ibssa)_____
60	Mana siree meeqa qabda? Lakka bayina [_____]
<i>Gaaffilee 61-62 manneen saaphana siree hinqabnee gaaffachuun guutama</i>	
61	Manni keessan amma saaphana siree yoo hinqabaanee, kanaan dura qabda turtee? 1= Eeyyee 2=Lakki
62	Manni keessan yoo saaphana siree hinqabaanne, sababni isaa maali? 1= Yeroo ciisan saaphani siree namatti hintolu 2= Faayyidaa isaa hinbeeku 3= Eessaa akka argadhu hinbeeku 4= Saaphani siree hinjiru 5= Saaphanii siree midhaa qaba 6= Saaphanii siree busaa hinittisuu 7= Saaphanii siree mofaa'e ykn badee 8= Saaphana siree fannisuuf iddoon gahaa hinjiru 9= Kan biroo 10= Hinbeeku

Gaaffileen koo xumuramaniru. Yeroo fudhatee gaaffilee koo deebisuu keetif baayyeen galatefadha. Waan natti himtuu qabdaa?

EXPERT INTERVIEW GUIDE

PLAN Vs ACHIEVEMENT

No.	Questions	Codes of possible responses	
1	Is there documented plan? Observe it!	Yes 1 No 2	No
2	if yes, is the plan prepared Observe it!	Monthly 1 Quarterly 2 Annually 3	Yes
3	Is the plan monitored?	Yes 1 No 2	No
4	How is the degree of implementation?	Very good 1 Good 2 Moderate 2 Bad 3	Moderate
5	Do you have work plan?	Yes 1 No 2	No
6	Do you work according to the work plan?	Yes 1 No 2	No

RECORDING AND DOCUMENTATION

No.	Questions	Codes of possible responses	
1	Do you have registration book?	Yes 1 No 2	No
2	Is it standard registration book?	Yes 1 No 2	No
2	Do you have reporting formats?	Yes 1 No 2	Yes
3	Are records kept properly?	Yes 1 No 2	Yes
4	Is reports sent on time?	Yes 1 No 2	Yes
5	Is there malaria monitoring chart?	Yes 1 No 2	No
6	if yes, do they use it?	Yes 1 No 2	-

SUPPORTIVE SUPERVISION

No.	Questions	Codes of possible responses	Skip to
1	Have you been supervised?	Yes 1 No 2	No
2	If yes, by whom? for how many times	-	-
3	Is there any feedback given by the supervisors?	Yes 1 No 2	-
4	Is there supervision registration book?	Yes 1 No 2	No
5	Are you informed beforehand about the supervision schedule?	Yes 1 No 2	No
6	How do you find/ fell about the supervision?	-	-

CAPACITY BUILDING

No.	Questions	Codes of possible responses	Skip to
1	Have you taken /get/any training on ITNs use and utilization? yes [___], No[___] if yes, Topic_____ Duration(days)_____ By whom_____		
2	How do you get the training? _____		
3	Do you have guideline of malaria control program? yes[___] No[___]		
4	Do you know the national strategies of ITNs? yes[___] No[___]		

COMMENT GIVEN

No.	Comment
1	
2	
3	
4	

FGD guideline

1. What do you think the cause of malaria transmission?
2. Are there any other reasons why people get malaria?
3. What do you think the use or advantage of mosquito net?
4. What do you think who should get priority to use mosquito net? Why?
5. How do you see the ITNs distribution system and the program in general?

Document review guide

1. Is there standard registration book? Yes_____ No_____

If no, why? And how do they record and report? _____

If yes, does the registration book include the following points?

s/ n	HH full name	House number	Family size			# of <5 children	# of P W	# ITNs issued	Type of ITNs issued	D/M/Y issued	HH signature	Name and signature of issuant
			M	F	Total							

2. Do they fill/ register the information properly?
3. Do they use the registration book only for ITNs purpose?
4. Do they have standard report form?
5. Is the report form containing the important points?
6. Is the information on the registration book and report form consistent?
7. Is there any HH registered repeatedly?
8. Do they have documented criteria for ITNs distribution?
9. Are they distributed the ITNs as per the criteria?