SOUTHERN NEW HAMPSHIRE UNIVERSITY
AND
THE OPEN UNIVERSITY OF TANZANIA

MASTER OF SCIENCE IN COMMUNITY ECONOMIC DEVELOPMENT (2007)

A STUDY ON THE MATERNAL MORTALITY "A CASE OF TUMBATU ISLAND IN ZANZIBAR"

SUBMITTED IN PARTIAL FULFILMENT OF REQUIREMENTS FOR THE MASTER OF SCIENCE IN COMMUNITY ECONOMIC DEVELOPMENT

AMEIR H. SHEHA.

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AMEIR H. SHEHA

Declaration by Candidate

Signature of Student .....

Date 25/09/2007.

Signature of Supervisor .....

Date 18/10/2007

TABLE OF CONTENTS

List of tables

ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
BV	Bacterial Viginiosis
CED	Community Economic Development
DHS	Demographic Health Survey
HIV	Human Immunity Virus
HSSP	Health Sector Strategic Plan
MDG	Millennium Development Goals
MMR	Maternal Mortality Rates
M&E	Monitoring and Evaluation
NBS	National Bureaus of Statistics
NGO	Non Governmental Organizations
PSDA	Participatory Service Delivery Assessment
PRA	Participatory Rural Appraisal
RGOZ	Revolutionary Government of Zanzibar
SPSS	Statistical Package for Social Science
STDs	Sexual Transmitted Diseases
TASAF	Tanzania Social Action Funds
TDHS	Tanzania Demographic Health Survey
TRCHS	Tanzania Reproductive and Child Health Survey
URT	United Republic of Tanzania
UNFPA	United Nations Funds for Population Activities
UNICEF	United Nations Children Funds

UN	United Nations
UNDAF	United Nation Assistance Framework
VHCs	Village Health Committees
VHWs	Village Health Workers
WHO	World Health Organization
WSS	White Star Society
ZAFFIDE	Zanzibar Farmers and Fisheries Development
ZPRP	Zanzibar Poverty Reduction Plan
ZSGRP	Zanzibar strategy for Growth and Reduction of Poverty

ACKNOWLEDGEMENT

My efforts to produce this report would not have succeeded without the help of many colleagues and friends with whom I worked with, during the two years of my study and especially during the field attachment. Some of these people generously set aside time in their busy schedule to come to my call and be with me for assistance, or provision of materials, information and advice.

Very special mention must be made of Michel Adjibodou Director of CED program in Tanzania who closely supervised this work during the initial process of nurturing the proposal and deign of this project to maturity. Also Mr Slaus Mwisomba, Senior Statistician and the former UNDP Poverty Monitoring Advisor, who supervised the work during report writing, reading thoroughly and editing this manuscript.

I am particularly grateful to Mr. Ali Shauri secretary General of the white Star Society and his executive Committee for accepting me to work with their NGO and Corporation they accorded me for the whole period of study.

Although it is not possible to acknowledge all those people who in one way or another provided assistance, special thanks go to Mr. J. B Raphael the former principal secretary Ministry of Finance and Economic affair for financing my study together with my current employer A. R Juma, Principal secretary chief Minister's Office.

I would also like to take this opportunity to express my gratitude to the people of Tumbatu Island who hosted me, especially families and individuals who take part during the data collection.

Finally, special thanks are reserved for my wife Amina who spent long lonely hours in order to proffer the time I needed to write this report at home.

If there is any error and omission in this report remain solely mine and should not allied to any of the above acknowledged people and organization.

A.H. Sheha

CED Participant, (2005/2007)

Dar es Salaam.

ABSTRACT

This study on maternal mortality in Tumbatu Island was conducted in 2006 as partial fulfillment for the completion of the post graduate studies in Community Economic Development. The study reveals the need for improving maternal health facilities. The study found that 44.4% of mothers died on maternal cases in the island for the last one year. At the same time 55.6% of babies born died, with a higher proportion of baby boys than girls.

This paper is divided into six chapters. Chapter one is presenting community needs assessment which includes community profile, demographic, social cultural factors, geographical features, administrative structure; community needs assessment methodology and results.

Chapter two starts with problem identification and goes on to present the problem statement, the project goal and objectives as well as stakeholders analysis.

Chapter three is about the literature reviews where theoretical literatures, empirical literatures and policy reviews are presented. Chapter four deals with the actual project plan, implementation, products and outputs.

Chapter five is concerned with Monitoring and Evaluation plan adopted, definition, institutional arrangements and classification of both intermediate and final indicators as well as methodology for monitoring and evaluation and the results.

Chapter six attempt to draws Conclusion and Recommendations as remedies for the community problems and achieve their needs

EXECUTIVE SUMMARY

The project for improvement of maternal health is being implemented in Tumbatu Island in North 'A' District in Zanzibar. The Island is geographically isolated from Unguja by about 3 kilometers of the sea. The project consists of two main components; the construction of maternal wards and capacity building in the form of training of nurse midwifes traditional birth attendants and the community at large. This project is targeting women of the birth giving ages in Tumbatu Island.

The main problem which brings about the idea of having this project is the high rate of maternal deaths. Health services are currently provided in a small dispensary which lacks reliable maternal health services. Pregnant women are currently forced to cross the sea to attend maternal health services which is risky. Thus the high rates of maternal deaths are mainly caused by lack of reliable maternal health facilities in the island. The problem is not only affecting women of child bearing age but also the community at large since women constitute about 60% of the Island population.

The ultimate goal of this project is to improve maternal health and reduce maternal deaths, and the planned objectives are to construct a maternal ward, labor room and related service rooms and training of six nurses midwifes to provide services in the clinic. So far, the site for the construction and the building plan has been secured.

A sample of 105 households, selected from 21 Enumeration Areas in Tumbatu Island was used. Information was collected from women from these households using a questionnaire through their sibling history. Focus group discussion were also attempted to collect information from the institutions.

The study results indicate that, out of 102 households interviewed, maternal deaths due to pregnancy accounted for 44.4 percent. Among the contributing factors mentioned are long and risky distance to maternal health services across the sea, lack of skilled maternal health personnel at hand in the island, lack of health education, poor nutrition and poverty.

Upon completion of both components of the project, it is expected to provide reliable maternal health facilities and services by competent personnel. These efforts ultimately are expected to eliminate maternal health problem and contribute to build a healthy community.

1.0 CHAPTER ONE: COMMUNITY NEED ASSESSMENT

1.1 Zanzibar is the collective name for two islands of Unguja and Pemba. The capital of Zanzibar is located on the island of Unguja and is Zanzibar city. The word "Zanzibar" probably is derived from the Persian origin, *Zangi-bar* meaning "coast of the blacks". However, the name could also have been derived from the Arabic *Zayn Z'al Barr* meaning "fair is this land". Zanzibar often refers especially to Unguja Island and is sometimes referred to as the "Spice Islands." The city's old quarter, known as Stone Town, is a World heritage site. Zanzibar is part of Tanzania following the union of the former Tanganyika and Zanzibar in 1964. Zanzibar is situated about 40 miles east, off the mainland Tanzania.

The population of Zanzibar was 981,754 in the 2002 census with growth rate of 3.0%; its area is 1,651 km^2. The main industries are spices processing (which include cloves, nutmeg, cinnamon and pepper). Cloves are the primary source of income for the islands.

The Islands of Zanzibar comprises five administrative regions: Zanzibar South, Zanzibar North and Zanzibar urban west region. In Pemba there are two regions Pemba North and Pemba South. There are ten Districts in Zanzibar, two Districts in each region.

In addition to the two main islands of Unguja and that of Pemba, there are many other small islets inhabited and others are not. The most common and populated small island is Tumbatu.

Like any other developing country, Zanzibar is facing many challenges at both national levels as well as at local level in the struggle towards improving welfare for its citizens. The government has multi-pronged plans and strategies covering the broad spectrum of political, economic and social dimensions aiming at improving quality of service delivery to its citizens. The major strategy includes Zanzibar Strategy for Growth and Reduction of Poverty (ZSGRP) preceded by the Zanzibar Poverty Reduction Plan implemented for three years from 2002/03-05/06. Both in the first and second phase strategies, maternal health were among the critical issues considered.

1.2 Community Profile

Tumbatu Island is located at the north west of Unguja Island about 30 kilometers from Zanzibar town. The size of the island is about 7 miles long and 5 miles wide. The island is totally coral rag and the vegetation consist mainly bushes and thickets with a lot of baobab tree which is a sign of dry and less fertile land. The main economic activities are fishing, coral farming and livestock keeping and petty trading. All these activities are hardly supportive to the livelihood of the island community.

1.2.1 Demographic Characteristics

According to 2002 population census, Tumbatu Island had 9,443 people of whom 5449 are women who are the most affected by the prevailing problem which this research aim to address. Women in Tumbatu Island are in the majority compared to men and they are mostly involved in agricultural production. While majority of men in islands engage in shifting type of fishing which take them away from their homes up to six months, women remain the care takers of their families.

1.2.2 Socio-cultural factors

The research was conducted in an environment where the community is living in a neighborhood system and the families not only known each other but also have kinship relations. Tumbatu is a traditional village; it is among few villages currently in Zanzibar protecting traditional culture living completely or with minimum cultural interaction. The island is composed of 100% Muslims and village elders are still respected through their traditional leadership system although the Government bureaucrats exist.

Traditionally Tumbatu community is known as one among the conservative ones. The pregnant women usually don't go to health centers at early stages of pregnancy believing that if you do so you give room to witches to affect your baby. Likewise, the community believes that women should continue delivering babies up to end of their reproductive age and thus pregnancy at old age is the norm, since the community lacks both reproductive health education as well as family planning education. It is common nowadays to transfer women across the sea to regional hospital for delivery, which depicts the weaknesses of the maternal health service delivery in Tumbatu.

One of the proposed ways to address these issues is through incorporating religious leaders who are among the powerful and influential members of the community.

While traditional community organization system has collapsed in many villages in Zanzibar, the system is still intact in Tumbatu. The village has what they call a village head elected among the village elders and given powers, assisted by a young but grown up man as a secretary. This elder works with the village council which is comprised of the elders and influential persons including religious leaders in the village. The village

community organizations at household level are organized in groups where each pear group has a name and its own leader.

Generally information are passed through local announcement to the general public, however if the type of information calls for follow up and taking action, heads of pear households are held responsible.

1.3 Survey Organizational context

This survey has been managed by the researcher in close collaboration with White Star Society. White Star Society is a registered local NGO working for the development of Tumbatu Island. Its headquarters is Tumbatu Island and sub office is located at Saateni Street about 1.5 km Northeast of Zanzibar town. The NGO is not affiliated to any other organization but individual members are `also members of the Associations of NGOs in Zanzibar (ANGOZA).

1.4 The target in the Community

The target of this project are women of birth giving ages in Tumbatu Island in particular but in general the project target extends to the Tumbatu community as a whole due to the fact that, the specific target group belongs to the larger Tumbatu community.

1.5 Hypothesis

This study was guided by the following hypotheses.

1. The trend of maternal mortality in Tumbatu Island keeps on increasing annually.
2. Maternal mortality in Tumbatu Island is caused by multifaceted factors

1.6 COMMUNITY NEED ASSESSMENT - METHODOLOGY AND RESULTS

During the assessment of the needs for Tumbatu community, different methods were used to obtain useful information that were used for designing a project and implementing in order to address the real community needs, among the methods used were:

1.6.1 SURVEY: (BY THE USE OF INTERVIEW &QUESTIONNAIRES)

Usually surveys are very common form of data collection, especially when collecting information from large households, where standardization is important. Surveys can be constructed in various ways, but they always consist of two components that is, questions and responses. Some times researchers choose to keep responses '*open ended*' which allow respondents to answer in a free flowing narrative form, while most of the *'closed ended'* approach in which respondents are asked to select from a range of predetermined answer is adopted.

Although surveys are popularly referred to as paper and pencil instruments, this too is changing. Evaluators are increasingly exploring the utility of survey methods that take advantage of emerging technologies. Thus nowadays surveys may be administered through computer assisted systems, emails and web based data collection system.

To select a best method for collecting data in surveys requires to take into account a number of factors, among them are complexity of questions, resources available, the sample size selected, time allocated for surveys, technical capacity and others.

Surveys are selected when information is to be collected from a large number of people or when answers are needed to a clearly defined set of questions. Surveys are good

tools for obtaining information on a wide range of topics when in depth probing of responses is not necessary, and they are useful for both formative and summative purposes. In many cases the same survey is used at spaced intervals of time to measure progress along some dimension or change in behavior. Considering the nature of the study sampling is considered as necessary undertaking to accomplish the exercise successfully.

1.6.1.1 Sampling

Sampling is the act of selecting few people/ observations for study and discover things that apply to hundreds of million of people not studied. Total survey is costly, but sampling save time and money, thus making possible investigations that could not otherwise be carried out and that is why we have decided to conduct a sample survey in Tumbatu Island. However, sampling may experience problems that may lead to incorrect presentation of the results. Sampling problems were forecasted and categorized into the areas of:

- Those that affect the definition of population. Here the important problem is to decide the group about which you wish to generalize your findings.
- Those that affect the sample size. Consideration ought to be given to persistent disappearance of cases in a breakdown analysis.
- Those that affect representative ness of the sample of the sample. This is the most intricate problem. The necessary requirement of any sample is that it is representative as possible of the population or universe from which it is taken.

Both sampling problems were taken care of during the sampling exercise for this research.

1.6.1.2 Methodology used for sampling

This study utilized the advantage of the existence of established enumeration areas as proposed and used by the national master sampling. There are twenty one enumeration areas in Tumbatu Island.

The sampled house holds were selected randomly within these areas.

Sampling Households = No of Enumeration Areas X 5 house holds

The total number of enumeration areas in Tumbatu Island is 21

Therefore the Household sample is 21 X 5 = 105 Households

1.6.1.3 Sampling types and size

Determining types and size of the sample for studying certain phenomena needs to consider a number of factors. Among the critical factors to be considered includes resources (time, funds and human resources), type of research and size of population under study.

The households were selected using probability sample. The sample selection procedures were adopted and the size was measured to make sure that they are representative enough to give the generalized result. The probability sampling method is preference option due to the nature of the problem (maternal mortality)

Probability sampling involves the selection of a 'random sample' from the population that you are interested in studying, in our interest is mainly women of birth giving ages.

For this kind of research, the appropriate research design which was applied is cross –section that allow investigating the piece of population through their sample representatives. This is purposively selected for observations of the study and discovers status of maternal mortality rate that apply to the rest of the members of Tumbatu community.

Thus the study involved interviewing a random sample of 102 out of 105 households planned.

It was very difficult to interview all households and asking about women of birth giving ages how may of them have died together with their children, them alone or children alone. You can not find such a number of these women and children. The number which can be obtained can be taken from the hospital based information.

However, to justify the representative of the sample size, the number of women at a birth giving age who were interviewed was obtained from the households out of the total women in the sample. Thus, sample population was taken as a base for determining the mortality rates using key informants drawn from the sample households.

1.6.1.4 Data collection, analysis and presentation

The study applied primary data collected through interview with aid of structured questionnaire through individual respondents and focus group discussion conducted by using participatory techniques. The questionnaire was administered using the drop and pick method. Most of the questions in the questionnaires were close-ended while a few were open-ended. The data collected were coded into a data matrix and

analyzed by the use of factor analysis so as to uncover the underlying factors contributing to maternal mortality in the island. Frequency tables, percentages and averages were used in data analysis. The research also applied the SPSS computer software package and the results of the analysis were presented in tables and charts to show the relationships.

The study employed a participatory/consultative methodology approach that includes fieldwork and documentary review. Fieldwork was comprised of interviews with various NGO officials, men, women households and other key stakeholders whereas documentary review involved important documents such as health centre reports, UNICEF reports, reproductive health programme reports, the reviews of the Zanzibar Poverty Reduction Plan, Zanzibar health Policy, Tanzania Demographic Health Survey (DHS) and other relevant literatures available through web sites. The whole process of data collection was enhanced by the compliance, accessibility and convenience of stakeholders in Tumbatu Island and NGO officials to meet with the researcher for interviews.

The study opted for a descriptive study design, this gave us a room to benefit and explore much more information on maternal mortality through longitudinal design, that allow to have information over the past years to measure the magnitude of the problem. It is acknowledged that some organizations have conducted social studies as noted during data collection, which depicted among others a problem of maternal mortality in the area of study. The study attempted to look at the results of such previous information that gives a clue on the magnitude of the problem and tracing the factors fueling maternal mortality over the time. Though maternal mortality rate is difficult to change but at local level it can be observed in number of deaths over

the years which can be further examined based on the given population and extrapolated to estimate maternal mortality at the local level.

1.6.1.5 Data analysis

As a professional investigation the study has its own analytical tools which are part and parcel of the professional writing. The techniques analyzed the regularity in the data and provided the rules for correct application of techniques and correct interpretation of data according to its nature and assumptions on the whole Tumbatu island population.

Most of the statistical analysis of this project was done by using the Statistical Package for Social Science (SPSS). The first step in working with SPSS was to enter the data and create an SPSS data file.

1.6.1.6 Assessment of data quality and reliability

Quality of data

To estimate adult mortality in Tumbatu Island, this research includes a sibling history in the women questionnaire. A series of questions was asked about the respondent biological brothers and sisters and their survival status. These data allow direct estimation of overall adult mortality (by age and sex) and maternal mortality.

Survival of sibling (i.e. biological brothers and sisters) is a useful method for collecting information on adult mortality. In this method, maternal mortality estimation requires accurate reporting of the number of siblings the respondent ever had, the number who died and the number of sisters who have died of maternal

causes (for maternal mortality). There are no definitive procedures for establishing the completeness of retrospective data on sibling survivorship

Each female respondent was asked to list all children born to her biological mother's including herself. These included all siblings who where still alive and those who died. For brothers and sisters who were alive, only the age at the last birthday was asked. For brothers who have died, only the number of years since death and age at death were asked. For sisters who had died at age 12 years or older, three questions were then asked to determine whether the death was maternity related, by asking whether the death was during childbirth and, if the answer was negative, then a question "Did she die within two months after the end of pregnancy or childbirth?" followed. The information was intended to give estimate of both material risk as well as complete profile of exposure to the risk of mortality in the island.

1.6.1.7 Reliability and accuracy instrument and statistics

The reliability and accuracy of the instruments and the statistics given in this study was measured and expressed in terms of level of confidence that fall within a specified interval from the parameter. In this research paper, the total population under study was provided and hence, accuracy of the sample size and confidence level was derived.

1.6.1.8 Characteristics of survey

This Study has applied three main survey instruments, they are

- Self administered questionnaires

- In-person interviews and focus group discussion
- Record reviews

There are a number of reasons as to why choose these instruments. Taking into the consideration of the time factor to undertake this study, the chosen instruments are the most appropriate to shorten time for data collection. Like wise the administration of all these instruments are quite easily since they are implemented in the presence or close supervision of the researcher.

The data were collected on the spot and directly taken for analysis without passing through a number of agents. Also these instruments were the most participatory and educative methods to the NGO which I was working with, so that they become conversant on the use of the instruments for other similar type of surveys.

1.6.1.9 Survey questions

This whole survey was guided by two main questions which investigated maternal mortality in the aspects of its trend and the contributing factors. The questions are,

1. Does the number of maternal deaths decreases or increases over the years?
2. What are the factors contributes to high mortality rate in Tumbatu Islands.

In designing the questionnaire each question was tested to show "what pertinent information will the answer provide?" to pass this test the questions were formulated in such a way that the intended purpose of Research is kept in mind. The questions were carefully worded to avoid leading responses.

Questions were simple, not stated in ambiguous manner and they were limited to relevant issues only. We also considered critically the issues of brevity during the construction of questionnaires.

The questions were more of descriptive in nature, since this Research on maternal mortality is designed primarily to describe what is going on or what is in existence on the ground.

The content of questions bare most of the characteristics of good Questionnaires as it explain Research purpose, whoever fills in a questionnaire was informed to know the purpose behind this Research on the maternal mortality. This information was provided verbally when beginning to administer the questionnaire and it was used as an introductory part of the interviews. It was equally important to explain how to fill a questionnaire. For the case of anonymity in this study, a Researcher did not want to mention any name of the respondents since it was not necessary and this was not a kind of a tracer study that needs to link data collected at different levels.

Questionnaires used in this study were short, kept on focus and modest. Long questionnaires waste time of the Researcher as well as that of respondents in the form of administering it, more time spent coding it, entering and analyzing data. There is a strong inverse relationship between the length of the questionnaire and the quality of data that is collected. Similarly, the more data is collected, the longer it takes to edit, input, analyze, and write up thus adding further to Research cost.

The vital information were given priority and requested at the beginning of a questionnaire. This is because the quality of data collected normally declines after a certain point of interview or discussion. Only relevant questions were asked, this is because of the fact that not every question is relevant everywhere. For example, some of the questions which were directed to the health attendants at his health

center were not applicable to the focus group discussions while others were only relevant to NGOs.

Open- ended questions were minimized due to the fact that it is not a place to ask many open ended questions. Respondents were given a chance to ask some questions and explain the answers, but generally questions were pre coded with "other" (specify...) category if one is not accommodated within the range of responses which was provided.

1.6.2.0 Survey psychometric characteristics

The selection of sample and its size were at the acceptable level and it was based on the National Statistical Master Sample of Tanzania.

Reliability

It happen just recently as a matter of justifying reliability of this Research that the Participatory Rural Appraisal conducted by TASAF in the same village and found that maternal mortality was the major concern in the area and they requested for construction of maternity clinic. The UNICEF study in 2002 came with the same problem

Validity

The Research findings give a valid picture about these phenomena. The causal relationship between maternal mortality rate and the factors fueling maternal mortality were very clear.

The best example explaining the validity of this Research is that as we learn from the literature, the factors fueling maternal mortality are almost the same; also in the

country with low rate of maternal mortality those factors must have been improved. Meaning that the Research result/ findings bear quality of both internal and external validity and hence the results of this study can be generalized in Tumbatu island and applied else where in developing countries although not necessarily all factors applied equally.

Administration

The administration of Research including interview was done by the Researcher from the initial stage of proposal development and designing of the questionnaire. Testing of questionnaire was done through the members of the NGO who also belong to the community under the study.

During the interview, questionnaires were administered by a Researcher in collaboration with the leaders of the NGO. This was possible after a short term training conducted to the members of the NGO on the filling in of the questionnaires and it started with pre-testing.

1.7.1 SURVEY FINDINGS / RESULTS

Maternal mortality was found as the major problem in Tumbatu Island. The problem is fueled by a number of factors including lack of reliable maternal health facilities. The problem has therefore raised the needs for having reliable maternal health services in the island. From this survey conducted it was noticed that, out of 102 women interviewed from households 4 had experienced maternal mortality problem. This reflects an average of 44.4 percent of total mortality in the Island.

1.7.1.1 Response rate

A total response rate for the interview of this survey was 97.1 which are very high. Out of it, 39.0 percent were respondents aged between 35 to 44 years old, 37.1 percent of respondents aged between 25 to 34 years, 8.6 percent were 45 to 54 years and 7.6 percent of respondents were aged between 15 to 24 years old. There were also 4.8 percent of all respondent who were above 55 years old.

Table 1 Response rate by age group

Age Group	Number of respondents	Percentage of respondents
15 – 24	08	7.6
25 – 34	39	37.1
35 – 44	41	39.0
45 – 54	09	8.6
55 +	05	4.8
	102	97.1

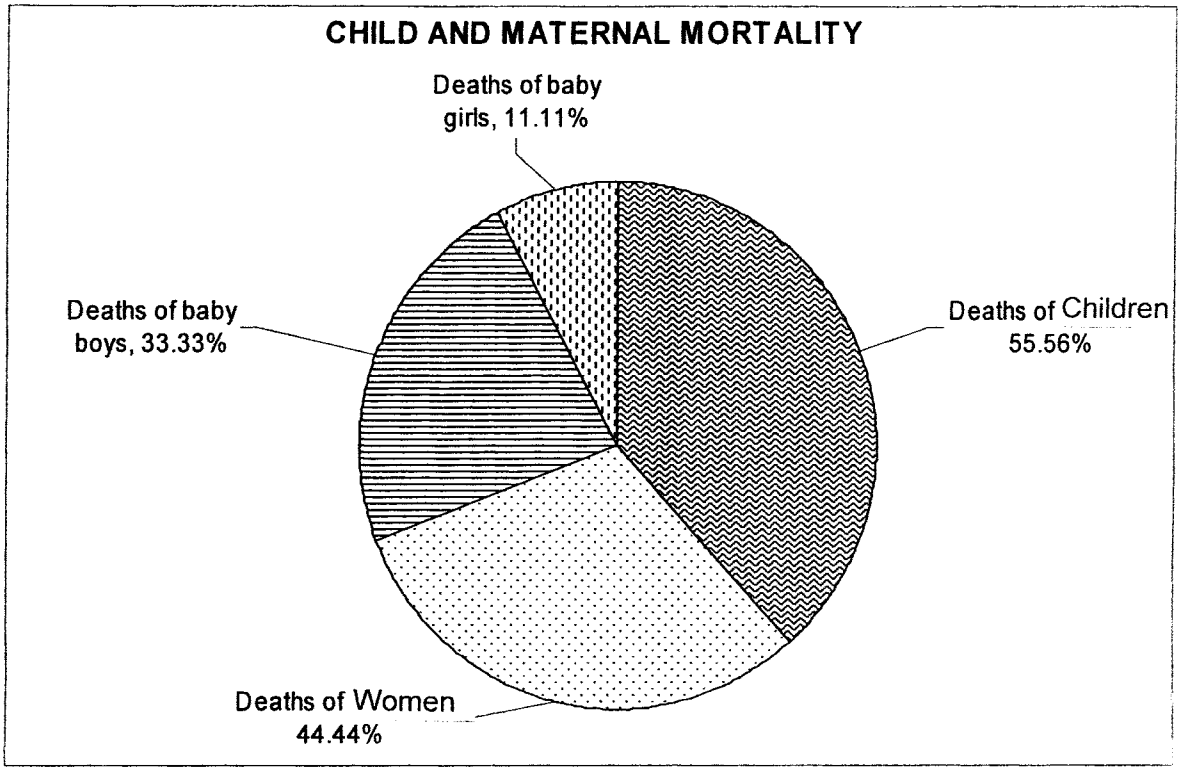
Source: Research findings (2006)

1.7.1.2 Trend of Maternal Mortality in Tumbatu Island

Data collected from survey /interviews by the aid of women questionnaire. The questionnaires were constructed in such a way that it collects the information on child and maternal mortality. Hence the Research finding as proved under this hypothesis gives information on both child and maternal mortality.

The study found that 44.4 per cent of women died on maternal cases; (during pregnancy on delivery or after child births) all these cases occurred in the island for

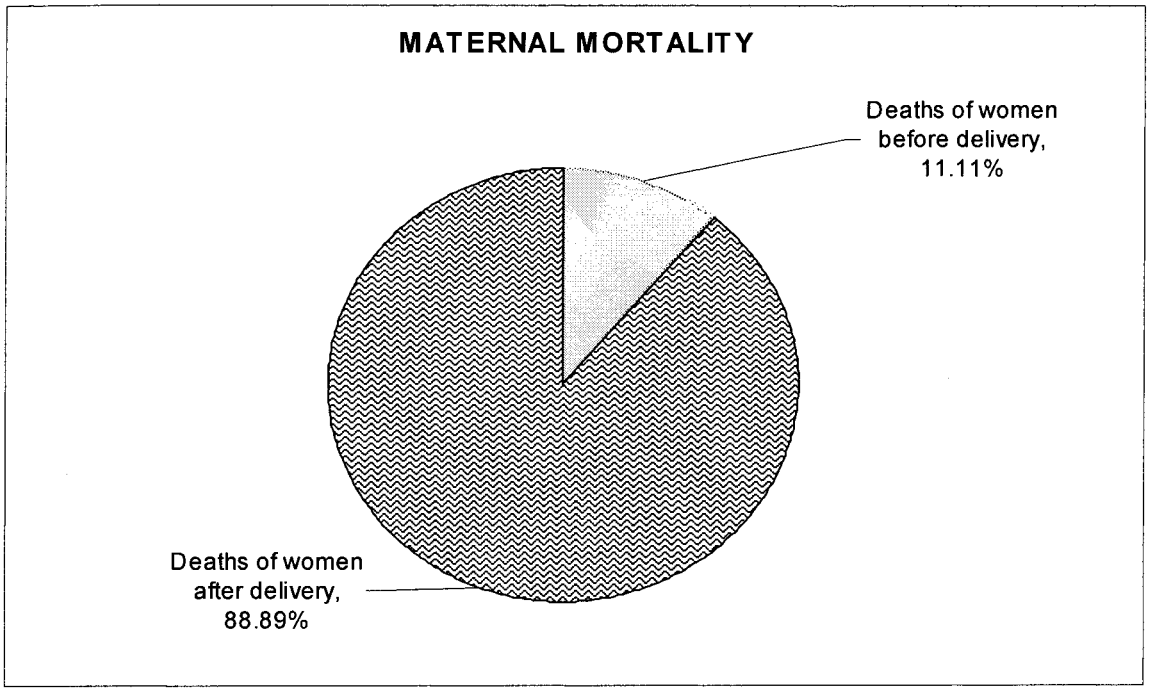
Chart 1 Child and maternal mortality in Tumbatu Island



Source: Research findings (2006)

Information on either the deaths were occurred before or after delivery were available were obtained during interview using women questionnaires. The status of maternal mortality was revealed as it can be seen in the chart below:

Chart 2 Maternal mortality in Tumbatu Island



Source: Research findings (2006)

Maternal mortality is reported to happen both before and after delivery. However about 88.9 percent of deaths occurred after delivery, and 11.11% of maternal deaths occurred before delivery.

It was further realized that most of the babies born and their mothers died had a very little chance of survival.

1.8 REVIEW OF DOCUMENTS

In assessing the community needs we also spend long time to review relevant documents on the subject matter especially those available in Tumbatu Island and within institution which have experience on Tumbatu island environment. The areas where such documents reviewed are the head office of the White star Society,

UNICEF and health centre available in Tumbatu Island. The documents include mortality reports, activities reports and researches.

1.8.1 Results

1.8.1.1 Maternal Mortality in Tumbatu Island

The hospital based / health centre information and the information collected from various reports were compiled and analyzed. The result shows an increasing nature of the maternal mortality problem in the island and this proved the hypothesis number one set before survey was conducted as indicated in the table below.

Table 2 Maternal mortality in Tumbatu Island 1999 - 2003

YEAR	NO. OF BIRTH	NO. OF DEATH	% OF DEATH
1999	213	3	1.41
2000	258	4	1.55
2001	269	6	2.23
2002	376	7	1.86
2003	126	5	3.96
Total	1242	25	2.01

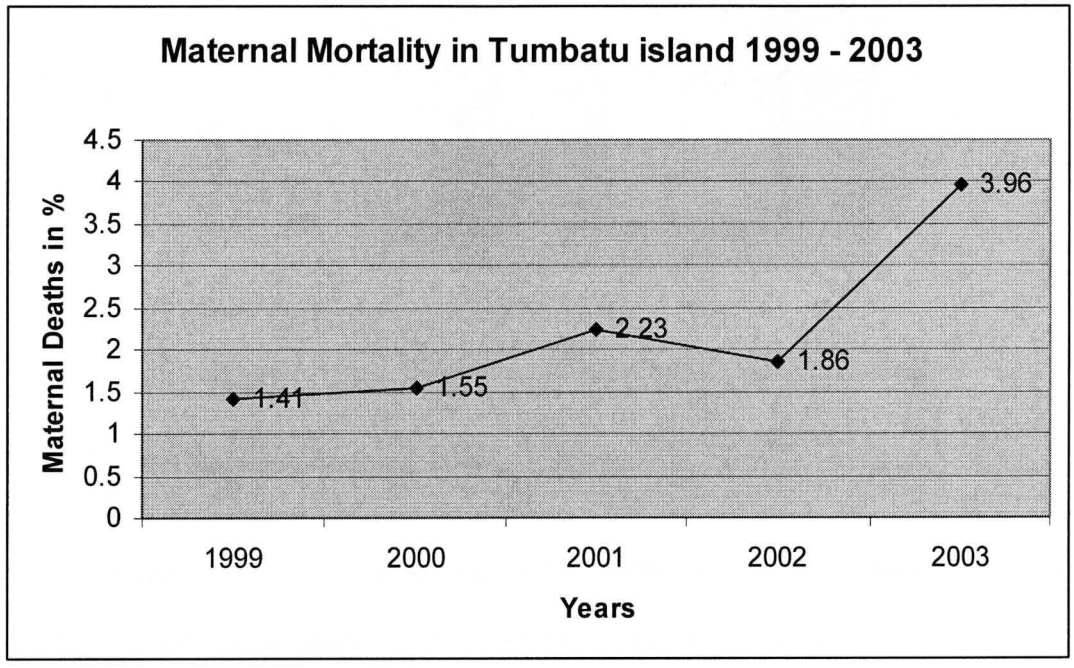
Source: Research findings (2006)

The figure in the table above, indicate that there is an average of 2.01 percentage of maternal death in Tumbatu Island for the last five years. However, in 2003 alone, maternal mortality rate was 3.96 percent. There is an incremental trend of maternal deaths for the years 1999, 2000, 2001, 2002, and 2003 respectively.

The information collected from the NGO records and hospital based information was analyzed and prove the typical trend of maternal mortality in Tumbatu Island. This information was collected for the five years period from 1999 to year 2003.

The trend shows and increasing nature up the year 2003, except in the year 2002 where it was stated that the information from one sub village was not obtained. Obviously if all information were collected the graph could show its state of increasing as it does for all others years.

Graph 1: Trend of Maternal mortality in Tumbatu Island 1999 - 2003

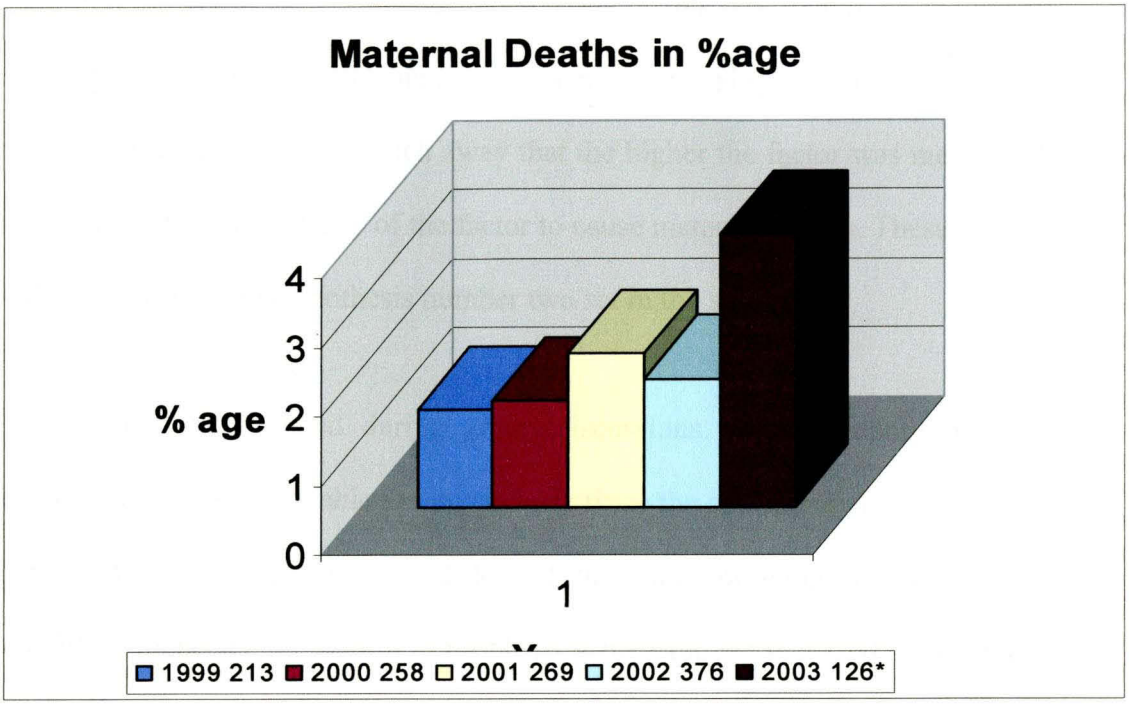


Source: Research Findings (2006)

The trend of maternal mortality showed that, there has been an increasing in the rate of maternal deaths from 1.41 percent in 1999 to 3.96 percent in 2003.

This indicates that the magnitude of the problem has gone to higher proportions and it is still increasing.

Chart 3 Percentage of Maternal deaths in Tumbatu Island



Source: Research findings, 2006

The biggest bar represents the highest percentage of deaths occurred in the year 2003. Although the number of deaths might be small as compared to 2001 and 2002, but with the proportion of the number of deaths the percentage is very high and that why trend of maternal mortality keeps on increasing. (See bar charts above)

1.9 DISCUSSION

Discussion was also used as the method to explore the community needs. Discussion was conducted in two categories. First, the focus group discussions conducted with the members of the NGOs by dividing them in a group of male and female members. Second, discussion was done with individual members of the

community with particular responsibility including the community leaders, traditional birth attendants and health workers at the health center.

The information given by these categories of respondents was mainly on the list of needs and their priority and causes of maternal mortality in the island. The information were arranged in a such away that the higher the factor was mentioned depicted the fact of the severity of the factor to cause maternal deaths. These factors provide evidence of the Hypothesis number two set in the survey.

PRA technique was applied during group discussions. Despite identifying the needs, the groups were also able to rank and prioritize the community needs.

Members of the group were asked to list the most pressing needs in their community. The needs in the form of problems were arranged in a kind of shopping list. Pair wise ranking (PRA techniques) was then used to present the list of the community problems matching and ranking them according to priority accorded by the community members themselves.

1.9.1 Results

The results of the group discussion were given in two main pieces. First, list of community needs were presented and placed in the order of the priority. Second, major courses of maternal mortality in Tumbatu Island were identified and ranked to know the leading cause of the maternal deaths in the island.

1.9.1.1 List of community needs

Four major needs were identified and later place in the priority. The highest score and the first priority need placed by the community was maternal clinic under the

health sector, followed by primary school, fisheries and agriculture was the least in this order. See table below:-

Table3 list of Community Needs by priority (pair wise ranking)

COMM. NEEDS/ PROBLEMS	Fisheries	Agriculture	Health/M. Clinic	Primary School	Score	Rank/ Priority
Fisheries		Fisheries	Health/Maternal clinic	Primary School	1	3
Agriculture/			Health/Maternal clinic	Primary School	0	4
Health/ M. Clinic				Health/Maternal clinic	3	1
Primary School					2	2

Source: Research findings (2006)

This means that the most pressing need / problem of Tumbatu are maternal clinic. Based on the problem identified during the PRA sessions, the community proposed the construction of a maternal ward since the major problem identified was maternal deaths.

Also the results of the group discussion disclosed that maternal deaths were associated with number of factors. Thus the analysis went further to determine percentage as to each of the identified causes attributed to the escalation of the maternal mortality problem in Tumbatu Island. The major causes identified are:-

1.9.1.2 Factors contributing to Maternal Mortality in Tumbatu Island

i. Long distance to maternal facility

Long distance to maternal facility is the major factor contributing to high maternal mortality accounting for 60.8% of all interviewed respondents. It was

revealed that the health center available in the island does not provide maternal health services. The nearest center with maternal health services is about seven kilometers across the sea which is normally long time travel using a canoe which is a risky journey.

ii. Lack of skilled health personnel

The health center is being operated by a nurse and auxiliary nurses, while midwife services are normally not available especially during emergencies as she is living across the end of the village about three kilometers to the health center.

iii. Lack of health education

There is no health education program in the village, bearing in mind that most of the women in Tumbatu have very low education and many are illiterate. They lack maternal health skills and proper treatment of pregnancy which might end up in complication before, during of even after delivery.

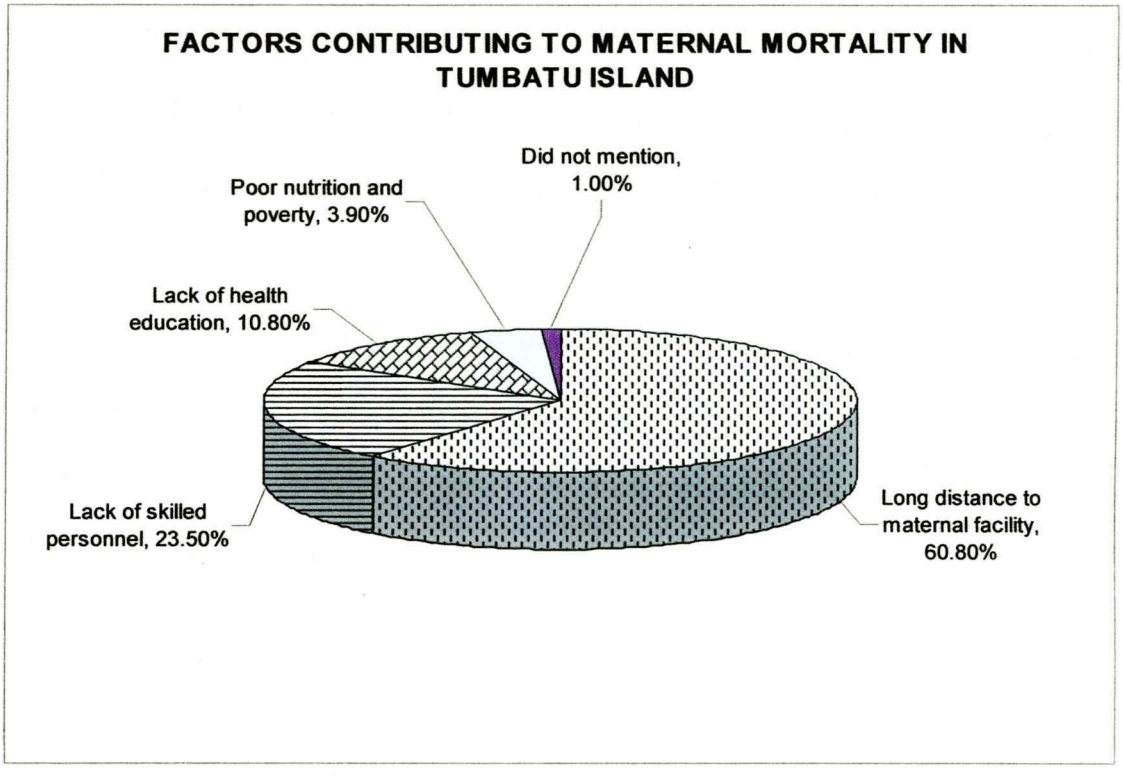
iv. Poor nutrition and poverty

Tumbatu island community is considered among the poorest villages in Zanzibar. Again poverty level is manifested by among others, low income, coral land that are futile cultivation and poor fishing, resulting in low fish catches due to primitive fishing gears.

But also Tumbatu is a fishing community and most fishermen are used to shifting type of fishing going along the coast of Tanzania mainland. Women

remain at home taking care of their families. Very unfortunately these women do not have reliable source of income to feed them and their families as a result they suffered to poor nutrition which have consequences on the maternal health. All these four are prominent courses of maternal mortality in Tumbatu, but the magnitude varies from one factor to another. The extent to how much each factor contributes to the maternal mortality is shown in the pie chart below:

Chart 4: Factors contributing to maternal mortality in Tumbatu Island



Source: Research Findings (2006)

Long distance to maternal facility is the major factor contributing to high maternal mortality accounting to 61% of all respondents, followed by Lack of skilled personnel 24 %, lack of health education, and poor nutrition and poverty respectively.

1.10 OBSERVATION

This tool was used during the field visit done in the project area. It included on site observation to the existing health centre, particularly facilities available, and other necessary facilities needed by the community as mentioned in the list of community needs.

Results

At the health center, there are no maternal facilities, if the maternal cases happen; mothers are treated in the same room used by other patients. There is one resting room which is also used by pregnant mothers when they need close check up by the doctors. The center has only one trained nurse who handles all maternal cases. The health post lacks necessary tools and even the space is not adequate.

Observation was also done at the transport site and the means used to transfer pregnant mothers in case of any complication. In fact it's dangerous, even a stronger man who is not a fisherman or used to the area, can not be comfortable to travel with that small sailing canoe.

2.0 CHAPTER TWO: PROBLEM IDENTIFICATION

Typically all communities have more than one problem they are dealing with in their lives. Problems are not only extremely complex but are also inter-related. One problem may be caused by another and be the cause for a third one. They all affect each other. The key to recognize and identify the multitude of problems they face is to find the principal problem that if solved, will help identify the other problems. .

During the problem identification stage the Researcher assisted Tumbatu community in identifying a set of problems that are key to all the other problems. The community may not be able to truly recognize what the key problem is and so throughout the problem identification process the Researcher was trying to get the participants see the blind spots that make it difficult to see the real problems.

In addition to identifying the problem or problems, the Researcher encouraged the community to express feelings and thoughts about their problems. In the first step it was important that the community identify the problem. The Researcher's role was to assist in clarifying and identifying areas for further probing and discussion. Listening and summarizing skills are the key to the Researcher's success in accomplishing this assignment. The Researcher needed to be aware of responses that work and discard the ones that seem not to work. Important skills are attending, following and reflecting or paraphrasing what has been said. Besides learning to listen, the Researcher needed to use summarizing skills to help clarify and identify the problem as it is finally stated. If the problem is not clearly identified, it is likely that a solution won't be found and worked upon.

When the Researcher was satisfied that the problem has been clearly identified, he spent some time to restate the problem by summarizing or paraphrasing. Then, the Researcher suggested moving forward looking for alternatives that would be adopted in the project planning and implementation.

2.1 The problem Statement

Before the assessment that was undertaken and even at the time that UNICEF highlighted the maternal death problem, Tumbatu community was totally dependent on using the maternal services of traditional birth attendants which was provided at home. The lack of trained birth attendants resulted in a number of pregnant women losing their lives, and at times the lives of their babies as well. To our knowledge, there is no study undertaken which can gives information on the status and rate of maternal mortality in the island.

Maternal mortality in Tumbatu Island is rampant and it is affecting the effort of women toward their economic development. There is a need to increase efforts to solve the problem otherwise the vulnerability of women shall remain high and impoverishing the island since women are the majority in the island.

This study therefore provides important information on the maternal mortality rate in the island and its associated factors to add more information in the data bank and inform policy makers on the extent of the problem in Tumbatu Island.

The study will contribute to a more informed policy debate in this era of implementation of the Zanzibar Strategy for Growth and Reduction of Poverty (ZSGRP) where we have the task of halting the escalation of maternal mortality and that policy reforms and strategies can be directed to the island.

Based on the information collected from the health center records, maternal deaths has been increasing from 1.4 % in 1999 to 3.9 % in 2003 (read chapter 4 on Research findings). Giving the increasing rate of the problem and if immediate action is not taken it is likely to be loosing more young women every year.

White Star Society is an activist NGO involved in the development of the island and act as a major stakeholder in this project. The Ministry of Health plays a major role in the implementation of the project, service delivery and sustainability.

2.2 Project Goal and objectives

The ultimate goal of this project is to reduce maternal deaths and improve the health status of the community especially the women in Tumbatu Island.

Objectives

The following objectives were planned in order to achieve the desired project goal:

- **i.** To construct maternal ward, labor room and related services rooms.
- **ii.** To train six nurses midwifes to provide services in the clinic.
- **iii.** To introduce reproductive health education program at the clinic and the village neighborhoods.
- **iv.** To organize and conduct three trainings for traditional birth attendants (and equip them) and religious leaders by 2008.

2.3 The Project Strategic Context

The proposed project will address major obstacles to implementing and scaling-up appropriate maternal health care program. It will also contribute to Government's efforts to addressing the human health resources crisis starting with the lowest unit at Tumbatu. Furthermore, the project will contribute towards Government's efforts to attain MDG number 4 and 5 i.e. reduction of child mortality and improve maternal health, and the 2005 NSGRP targets related to maternal and child health. The project conforms to the goals of Cluster II of NSGRP which seek to improve survival, health and wellbeing of all children and women who are in the vulnerable groups.

The project also conforms to the Zanzibar Strategy for Growth and Reduction of Poverty which is similar to NSGRP as well as those of the Women and Gender Development Policy (2000) on the Mainland and the Policy on the Protection and Development of Women (2001) in Zanzibar, both of which stress the empowerment of women and their access to improved health care services.

2.4 Project beneficiaries

The major beneficiaries of the project will be predominantly poor communities utilizing maternal health services in the isolated island of Tumbatu. Primarily women of birth giving ages in the island are the immediate beneficiaries although later the benefits of the project shall be extend to the entire community.

Training of nurse midwifes under this project will enable deployment of full-time, qualified staff for handling maternal health services in the island. Also with the maternal ward constructed it will help ensure that communities have access to maternal services at all times, especially during emergencies.

Participatory approaches to community engagement will improve knowledge of reproductive health, facilitate advance planning for birth preparedness and increase acceptability of facility based deliveries.

2.5 Project Stakeholders

According to the project for improvement of maternal health services in Tumbatu Island, the project stakeholders are defined as any person, group or institution that has interest in the project activities. This definition includes intended beneficiaries and intermediaries, winners and losers, and those involved or excluded from decision-making processes.

The project stakeholders are thus divided into two very broad groups:

- Primary stakeholders: those who are ultimately affected favorably or be adversely affected by the project intervention;
- Secondary stakeholders: those with some intermediary role. In our project these might include local Government, pharmacies and health service providers.

Participation of primary stakeholders is essential in these projects which are expected to have a direct positive impact on defined groups of people.

Stakeholder participation is a process whereby stakeholders – those with rights (and therefore responsibilities) and/or interests - play an active role in decision-making and in the consequent activities which affect them.

2.6 Stakeholders Analysis

Stakeholder Analysis is a vital tool for identifying those people, groups and organizations that have significant and legitimate interests in specific project issues. Clear understanding of the potential roles and contributions of the many different stakeholders is a fundamental prerequisite for a successful participatory project planning and implementation. To ensure a balanced representation, the analysis should examine and identify stakeholders across a number of different dimensions. For example, the analysis should separately identify relevant groups and interests within the public sector, within the private sector, and within social and community organizations.

In addition, the analysis can seek out potential stakeholders to ensure proper representation in relation to gender, ethnicity, poverty, or other locally relevant criterion. Cutting across these categories, the analysis can also look at stakeholders in terms of their information, expertise and resources applicable to the issue. However, stakeholder analysis by itself only identifies potentially relevant stakeholders - it does not ensure that they will become active and meaningful participants. Other measures to generate interest and sustain commitment will therefore be necessary as well.

Why do we conduct stakeholder's analysis?

Stakeholder analysis aims at:

- Identifying and defining the characteristics of key project stakeholders;
- Assessing the manner in which they might affect or be affected by the program/project outcome;

- Understanding the relations between the project stakeholders, including an assessment of the real or potential conflicts of interest and expectation between stakeholders; and
- Assessing the capacity of different stakeholders to participate

Primary and Secondary Stakeholders in White Star Society

White Star Society is one of the largest NGOs in Tumbatu Island. Its objectives are:

i) structural poverty alleviation;

ii) improvement in women's status;

iii) increasing people's participation in development activities,

iv) Increasing people's capacity to gain and exercise democratic and human rights and improvement in education.

These objectives are to be achieved through a broad range of programmes in education and training leading to income and employment generation, health education, building of health and education infrastructure.

White Star Society's Primary Stakeholders are poor people in the island who are already members or potential members. People vary in the level and type of their poverty. White Star Society's members are drawn from the ranks of marginal peasant households and urban slum dwellers, as well as from landless households. In all these categories, women's poverty is greater. White Star Society addresses this heterogeneity (and therefore possible conflicts of interest) among the primary stakeholders by establishing separate groups, based on gender, occupation and economic status.

White Star Society's Secondary Stakeholders include its donors, government and the local and national organizations, such as other NGOs and Cobs affected by White Star Society's approach to development.

White Star Society's internal management style is open and stresses collective decision making. Decision making is less centralized than that of other NGOs in Zanzibar.

Two major institutional challenges that White Star Society is faced with and is reflected in different stakeholders' concerns:

i) The NGO has to retain its approach to social and economic development through empowerment while instilling the NGO discipline, necessary to run its development program, a discipline which donors see as necessary for their further support.

ii) White Star Society has to strengthen its gender and development goals. Men and women members of White Star Society are unequal sets of primary stakeholders because there are more men than women's - and the women are under-represented in the higher-level positions.

Assessing the 'influence and importance of Stakeholders

Key stakeholders of this project are those who can significantly influence, or are important to the success of the project for improvement of the health services in Tumbatu Island. Influence refers to how powerful these stakeholders are and importance refers to those stakeholders whose problems, needs and interests are the priority of White Star project intervention. If these 'important'; stakeholders are not assisted effectively then the project cannot be deemed a 'success'.

By combining influence and importance, we classified our project stakeholders into different groups, which will help identify assumptions and the risks which need to be

managed through project design. This analysis has contributed to the process of deciding how the key stakeholders were included in the project

Below is the matrix for classification of stakeholders identified according to their relative influence and important.

Table 4 the Project Stakeholders Analysis

STAKEHOLDER	PARTICIPATION	EVALUATION/INFLUENCE	IMACT OF PARTICIPATION	RATE/ IMPOR	PLAN
NGO leaders	Participate in problem design, planning for monitoring and evaluation	High	Positive impact led to writing problem statement		Plan to involve them actively through out the project period
Local Government officers	Participate in mobilizing people in the community	Medium	Positive impact, community people were highly encouraged and they are willing to participate in the project.	2	Share responsibilities with Ngo leaders to mobilize and raise awareness of the community.
NGO members	Participate in Need assessment and defining the community problem. Participate in planning of the project.	High	Positive impact, Identify list of needs and prioritize major problem for action	1	Encourage to provide self help and support the project.
Community members	Assist in the identification of need and information about major problems. Also participating in the contraction of the facilities.	Medium	Positive impact	2	To involve them at all stages of project
Central Government	Collaborating partner in the management of the maternal ward	Medium	Positive	2	To involve in the authorization and official approval Participate

Local Government	Bureaucratic coordinating agency to the Government	Medium	Positive	2	To link with NGO and central Government provide support Conduct awareness training.
The women	Despite being major beneficiaries, participate in training	High	Positive	1	Arrange a special training on maternal health
Traditional birth attendants	Participate in training. Change agent to the community	Low	Negative	3	Training on better health delivery
Contractor	Building of the proposed maternal ward	Medium	Positive	2	Enhance collaboration
Collaborating NGOs	Assist in mobilizing community in the island.	Low		3	Contract with them to take part in mobilizing community.
Health workers	Participate in service provision.	High	Positive	1	Training for better service delivery.

Note: 1 = High
2 = Medium
3 = Low.

3.0 CHAPTER THREE: LITERATURE REVIEW

This study was looking at the problem of maternal mortality which exists in Tumbatu Island. Else where, the same problem persists at a different magnitude both global, regional and country level and even at sub national level. The interest was to observe the rate of maternal mortality, causes, its relevancy to the proposed Research and efforts taken by different players to reduce the rate of maternal deaths.

The Maternal Mortality Ratio is a measure of the risk of death once a woman has become pregnant. A more dramatic assessment of risk that takes into account both the probability of becoming pregnant and the probability of dying as a result of that pregnancy cumulated across a woman's reproductive years is the lifetime risk of maternal death.

Reduction of maternal mortality is one of the major goals of several recent international conferences and has been included in the Millennium Development Goals (MDGs). However, because measuring maternal mortality is difficult and complex, reliable estimates of the dimensions of the problem are not generally available and assessing progress towards the goal is difficult. In recent years, new ways of measuring maternal mortality have been developed, with the needs and constraints of developing countries in particular in mind. As a result, there is considerably more information available today than was the case a few years ago. Nonetheless, problems of underreporting and misclassification are endemic to all methods and estimates that are based on household research because they are subject to wide margins of uncertainty due to sample size issues. For all these reasons, it is difficult to compare the data obtained from different sources and to assess the overall magnitude of the problem.

In response to these challenges and in order to improve the information base, WHO, UNICEF and UNFPA have developed an approach applied in estimating maternal mortality that seeks both to generate estimates for countries with no data and to correct available data for underreporting and misclassification. A dual strategy is used which involves adjusting available country data and developing a simple model to generate estimates for countries without reliable information. The approach, with some variations, was used to develop estimates for maternal mortality in 1990 and 1995 and has been used again for generating estimates for the year 2000.

3.1 Theoretical Literature

Maternal deaths are defined as deaths that occurred during pregnancy, childbirth, or within two months after the birth or termination of a pregnancy. The estimations of maternal mortality are therefore based solely on the timing of death in relationship to pregnancy.

This time-dependent definition includes all death occurred during pregnancy and two months after pregnancy, even if the death was due to nonmaterial cause. However, this definition is unlikely to results in over reporting of maternal deaths because most deaths to women during the two months period are due to maternal causes, and maternal deaths are more likely to be underreported than over reported.

The Maternal Mortality Ratio is a measure of the risk of death once a woman has become pregnant. A more dramatic assessment of risk that takes into account both the probability of becoming pregnant and the probability of dying as a result of that pregnancy cumulated across a woman's reproductive years is the lifetime risk of maternal death. (WHO 2003)

To estimates maternal mortality two Research methods are generally used in developing countries, the sisterhood method (Graham at al., 1989) and a direct variant of the sisterhood method (Rotenberg and Sullivan, 1991).

Age – specific mortality rates are calculated by dividing the number of maternal deaths by women interviewed in the Research.

The estimates of age specific mortality rate normally display a reasonable pattern, being generally higher during the peak childbearing ages than at the younger and older age households although some times there might be a slight fluctuation at the old ages especially for the rural community where child bearing ages are extended. Thus, the age specific pattern should be interpreted with caution.

Maternal mortality is a problem in developing countries especially Sub Saharan Africa. A woman dies from complications during childbirth every minute – about 529,000 each year, the vast majority of them in developing countries. A woman in sub-Saharan Africa has a 1 in 16 chance of dying in pregnancy or childbirth, compared to a 1 in 4,000 risk in a developing country – the largest difference between poor and rich countries of any health indicator. (WHO, UNICEF and UNFPA 2001)

The direct causes of maternal deaths are hemorrhage, infection, obstructed labor, hypertension disorders in pregnancy, and complications of unsafe abortion. There are birth-related disabilities that affect many more women and go untreated like injuries to the pelvic muscles, organs or the spinal cord. At least 20% of the burden of disease in children below the age of 5 is related to poor maternal health and nutrition, as well as quality of care at delivery and during the newborn period. And yearly 8 million babies die before or during delivery or in the first week of life. Further, many children are

tragically left motherless each year. These children are 10 times more likely to die within two years of their mothers' death. (WHO, UNICEF and UNFPA 2001)

Malaria is mentioned by UNICEF to be another risk to expectant women, which can lead to anemia and so increase the risk for maternal and infant mortality and developmental problems for babies. Nutritional deficiencies contribute to low birth weight and birth defects as well.

HIV infection is an increasing threat. Mother-to-child transmission of HIV in low-resource settings, especially in those countries where infection in adults is continuing to grow or has stabilized at very high levels, continues to be a major problem, with up to 45 per cent of HIV-infected mothers transmitting infection to their children. Further, HIV is becoming a major cause of maternal mortality in highly affected countries in Southern Africa. (WHO, UNICEF and UNFPA 2001)

Also WHO, UNICEF and UNFPA, in Maternal Mortality report in 2004 says that poor pre- natal and ante- natal care in developing countries are among the sources of high maternal mortality. Out of 100 women aged 15-40, on the average 30 do not have antenatal care – but regional disparities range from 46 in South Asia to 34 in sub-Saharan Africa. The results of this deficiency include untreated hypertensive disorders leading to death and disability, or unmarked mal- or sub-nutrition. Iron deficiency anemia among pregnant women is associated with some 111,000 maternal deaths each year. Some 17 per cent of infants in developing countries had low birth weight in 2003, and these babies are 20 times more likely to die in infancy. Malaria, tetanus, a bacterial disease that's a result of unhygienic and unsafe childbirth delivery practices, killed 200,000 newborns and 30,000 mothers in 2001 alone.

.Majority of these deaths and disabilities are preventable, but they occur because there is insufficient care during pregnancy and delivery. About 15 per cent of pregnancies and childbirths need emergency obstetric care because of complications that are difficult to predict.

On the basis of the present exercise, the estimated number of maternal deaths in 2000 for the world was 529,000 (Table 3). These deaths were almost equally divided between Africa (251,000) and Asia (253,000), with about 4 per cent (22,000) occurring in Latin America and the Caribbean, and less than one per cent (2,500) in the more developed regions of the world. In terms of the Maternal Mortality Ratio (MMR), the world figure is estimated to be 400 per 100,000 live births. By region, the MMR was highest in Africa (830), followed by Asia (330), Oceania (240), Latin America and the Caribbean (190), and the developed countries (20). The country with the highest estimated number of maternal deaths is India (136,000), followed by Nigeria (37,000), Pakistan (26,000), Democratic Republic of Congo and Ethiopia (24,000 each), the United Republic of Tanzania (21,000), Afghanistan (20,000), Tumbatu Island (16,000), Angola, China, Kenya (11,000 each), Indonesia and Uganda (10,000 each). These 13 countries account for 67 per cent of all maternal deaths. However, the number of maternal deaths is the product of the total number of births and obstetric risk per birth, described by the MMR. On a risk per birth basis, the list looks rather different. With the sole exception of Afghanistan, the countries with the highest MMRs are in Africa. The highest MMRs of 1,000 or greater, are, in rank order, Sierra Leone (2,000), Afghanistan (1,900), Malawi (1,800), Angola (1,700), Niger (1,600), the United Republic of Tanzania (1,500), Rwanda (1,400), Mali (1,200), Somalia, Zimbabwe, Chad, Central

African Republic, Guinea Bissau (1,100 each), Kenya, Mozambique, Burkina Faso, Burundi, and Mauritania (1,000 each).

Table 5 Maternal mortality estimates by United Nations MDG regions (2000)

REGION	MATERNAL MORTALITY RATIO (MATERNAL DEATHS PER 100,000 LIVE BIRTHS)	NUMBER OF MATERNAL DEATHS	LIFETIME RISK OF MATERNAL DEATH,1 IN:
WORLD TOTAL	400	529,000	74
DEVELOPED REGIONS	20	2,500	2,800
Europe	24	1,700	2,400
DEVELOPING REGIONS	440	527,000	61
Africa	830	251,000	20
Northern Africa	130	4,600	210
Sub-Saharan Africa	920	247,000	16
Asia	330	253,000	94
Eastern Asia	55	11,000	840
South-Central Asia	520	207,000	46
South-Eastern Asia	210	25,000	140
Western Asia	190	9,800	120
Latin America & the Caribbean	190	22,000	160
Oceania	240	530	83

Source: World Health Organization (WHO) 2003

The margins of uncertainty associated with the estimated MMRs are very large and the estimates should not, therefore, be used to monitor trends in the short term. In addition, cross-country comparisons should be treated with considerable circumspection because

different strategies are used to derive the estimates for different countries rendering comparisons fraught with difficulty.

Regional experience maternal mortality demonstrates that almost half of births in developing countries take place without a skilled birth attendant. That ratio has risen to 65 per cent in South Asia. (Tanzania Socioeconomic Database, 2004.)

Access to skilled care during pregnancy, childbirth and the first month after delivery is the key to saving these women's lives and those of their children. Data on skilled attendants at delivery is available for only 74 per cent of live births in the developing world. The evidence we do have shows that, apart from Sub-Saharan Africa, delivery care has improved significantly in all regions, though not all countries have shared equally in improvements. Only 17 per cent of countries are on track to meet their Goals. In developing countries as a whole, the per cent of births attended by a skilled health professional has increased by more than a quarter - that is, from 42 per cent to 53 per cent over the decade. From 1990 to 2000, the percentage of births attended by a medical professional in Asia rose 35 per cent. Unfortunately, in Sub-Saharan Africa where maternal mortality is highest, the levels have improved only by 5 per cent. (WHO, UNICEF and UNFPA, 2001)

Access to antenatal care and quality essential obstetric care must be made available to all women. (Tanzania Socioeconomic Database, 2004)

However, complications during pregnancy and childbirth are the leading cause of death and disability among women of reproductive age in developing countries, causing death to an estimated 515,000 women each year. For every woman who dies, approximately

30 more endure injuries, infection and disabilities in pregnancy or childbirth. This means that at least 15 million women a year suffer this type of damage.

Maternal death is one among the factors contributing towards high mortality rate in developing countries. As the analysis of the problem shows, the causative ingredients include poor nutrition, poor health services, and poverty, lack/poor access to health facilities and low knowledge and education of mothers. (WHO 2003)

Education for girls is believed to be one of the most important measures to address maternal mortality problems. Educating girls for six years or more drastically and consistently improves their prenatal care, postnatal care and childbirth survival rates. Educating mothers also greatly cuts the death rate of children under five. Educated girls have higher self-esteem, are more likely to avoid HIV infection, violence and exploitation, and to spread good health and sanitation practices to their families and throughout their communities. And an educated mother is more likely to send her children to school. (UNICEF, 2001)

An adolescent girl's access to adequate family planning and maternal health services would have significant positive impacts on the overall maternal and morbidity rates as early and repeated pregnancies compromise women's health. Adolescent girls continue to be at particular risk because they often face hostile services when they do venture out for assistance. (UN system in Tanzania March, 2006)

There is a close relationship between poverty and level of education with mortality rate. For example in the case of Tanzania, the highly educated regions and the well-off ones are experienced low mortality rate and vice versa. Kilimanjaro region which is considered to be advanced in terms of education and well being of its people, infant

mortality rate is 45%, where as Lindi and Mtwara regions with low education status, infant mortality rate is 131, the highest than any other region in Tanzania (Tanzania Socioeconomic Database 2004).

Among the major objectives of Reproductive health program in Zanzibar is to improve health service delivery and reproductive health education to all. Through this program, it is expected that the availability of reproductive health to both man, women and youths will have an effect on reduction of maternal mortality. (Ministry of Health Zanzibar, reproductive health Document 2000)

3.2 Empirical literature

UNICEF had set a goal **to** reduce Maternal Mortality Rate (MMR) by half between 1990 and the year 2000. When the assessment was done in the year 2001, the result revealed the facts that skilled care at delivery has increased across all developing regions. However, in some countries, especially in sub-Saharan Africa as a whole, where Maternal Mortality is highest, delivery care has not improved significantly. (UNICEF 2001)

In the assessment done for the United Nation Development Assistance Framework (UNDAF) on achievement under the MDGs declared that, income poverty remain significantly high particularly in rural Tanzania, livelihood opportunities for young peoples are seriously constrained '*there is no indication of improvements of maternal mortality over the last decade* and enrolment in secondary education remains one of the lowest in sub Sahara Africa. (UN system in Tanzania March, 2006)

Research shows the single most important intervention for safe motherhood is to make sure that a trained provider with midwifery skills is present at every birth that transport

UNICEF works with the United Nations Population Fund (UNFPA), the World Health Organization (WHO) and other partners in countries with high maternal mortality in a well-defined supporting role as part of an emerging global partnership for maternal, newborn and child health. (WHO, UNICEF, UNFPA 2001)

Also AMMP surveillance Research was conducted in a low-income and in a middle-income section of the city of Dar es Salaam, which is part of a region ranked by the Tanzanian government among the 50% most deprived in Tanzania (i.e., Morogoro Rural District in Morogoro Region), and in part of a region ranked as one of the 15% least deprived (i.e., Hai District in Kilimanjaro Region) to asses this problem. These areas were selected to compare urban with rural conditions and high-income with low-income conditions. Population denominators were determined by semi-annual census rounds in Dar es Salaam and annual census rounds in Morogoro Rural and Hai. Mortality monitoring was conducted by trained volunteers who reported deaths to a team of supervisors. Supervisors then conducted "verbal autopsy" interviews with the decedents' relatives and caretakers to determine the cause of death. Family and caretakers were used as sources to determine cause of death because up to 80% of deaths occur outside health facilities and most deaths are not medically certified.

The interviews usually occurred within a month of a supervisor's receipt of the death report.

The high mortality reported from these three areas highlights the need to establish adult health services as a priority in Tanzania. For many of the important causes of death, and

inexpensive preventive or treatment measures are available, including condoms, insecticide-treated bed nets, oral dehydration therapy for acute diarrhea, treatment for hypertension, directly observed therapy for TB, improved nutrition, and access to clean water. MOH has used these data to design a National Essential Health Package, a minimum standard of care that all districts in Tanzania were expected to provide by 2010. (Poverty and welfare monitoring indicators 1999)

As per Adult Morbidity and Mortality Research, 1997, in 1995 the study of Maternal Mortality in East Africa: Magnitude, Causes, Risk Factors, and preventability were conducted. The main purpose of this study was to prevent maternal deaths by adding to the knowledge and visibility of reproductive and women's health issues in East Africa; assisting aid agencies to determine the need for resources for reproductive health programs; and guiding programs for reproductive health in these countries. This study was conducted in all three countries with various urban to rural settings. Findings indicate that maternal mortality overall was very high (1600-2200 per 100,000 live births)–one of the highest in the world. In addition, the highest ever recorded risks of maternal mortality were found in most remote rural site. Access to appropriate health care was very difficult and most maternal deaths (80%) were determined to be preventable.

Also in 2001, an Assessment of Reproductive Health Issues among DRC, Burundi and Rwanda Refugees Living in Tanzania was done. Five hundred forty-nine women of reproductive age were interviewed from three refugee camps Kigoma in 2001. The findings from this Research are intended to inform health managers who are making reproductive health program decisions. The Research covered the unmet need for

family planning; knowledge, attitudes, and practices regarding HIV/AIDS; and estimated of the prevalence and magnitude of physical and sexual violence. The preliminary findings from this study indicated that 13% of refugee women have an unmet need for family planning; 87% of the women had knowledge of HIV/AIDS; and 30% of them have experienced violence 20% domestic violence and 10% violence by another perpetrator. (Outlook for survivors of childhood in sub-Saharan Africa, 2003)

CDC and Relief International, Azerbaijan conducted a study among the refugee population in 2001 to document the association between abortion and subsequent pelvic inflammatory disease; estimate the proportion of women who receive abortions with no prior pregnancy testing; estimate the proportion of women with unintended pregnancy; estimate the proportion of women with bacterial and viral sexually-transmitted diseases (STDs); evaluate the current syndromes management approach, rapid and standard lab tests for STDs among women; evaluate the acceptability of pregnancy testing; and recommend measures for improving reproductive health. More than 700 interviews were conducted and preliminary results were presented at the first ever reproductive health conference in Baku, Azerbaijan on October 10, 1999. Findings suggest that the proportion of women with bacterial vaginosis (BV) and trichomoniasis is high (88.2% and 27.5% respectively). Thirty-six percent of the women thought that they could get AIDS from a public bathroom, indicating an urgent need for HIV education. Abortion is common in Azerbaijan, with more than 67% of women aged 15–44 reporting at least one. (Azerbaijan Reproductive Health Study, 2001)

An Evaluation of Poor Pregnancy Outcomes among Burundian Refugees in Tanzania of 1997-98 revealed that Poor pregnancy outcomes are common in refugee and IDP

mortality rates. This study is one of the first reports that describes pregnancy outcomes among refugee women and documents the contribution of reproductive health-related mortality to overall mortality in a refugee camp. Neonatal and maternal deaths accounted for 16% of all deaths during the period studied.

In the assessment done for the United Nation Development Assistance Framework (UNDAF) on achievement under the MDGs declared that, income poverty remain significantly high particularly in rural Tanzania, livelihood opportunities for young peoples are seriously constrained 'there is no indication of improvements of maternal mortality over the last decade and enrolment in secondary education remains one of the lowest in sub Saharan Africa. (UN system in Tanzania March, 2006)

Greater policy attention needs to place on 'Goal number 5' improving maternal health. Promoting maternal health and reducing maternal mortality seems to be the MDG most resistant to change as Tanzania has one of the highest mortality rates in the world.

Recent demographic health Research (DHS) data puts country maternal mortality ratio at 578 per 100,000 live births a nominal increase over the rate registered in 1996 and a long way to MDG target of a three quarter reduced rate by 2015. Current trend indicate that in contrast. MDG 5 will not be achieved until year 2150. (UN System in Tanzania March 2006)

Participatory Rural Appraisal Research report conducted by TASAF in June 2006 provided a resourceful literature that revealed the fact on the status of the maternal

mortality as the leading problem in the village. It indicates that the problem is the concern of majority of the village population since over 70 percent of the villagers who are 18 years of age and over attended the exercise and raised that particular problem. The Research revealed that the major causes of maternal mortality is distance to the maternal health facilities, this was mentioned during the analysis of the factors fueling maternal mortality in the village (TASAF 2006 PRA Report)

The evidence we do have shows that, apart from Sub-Saharan Africa, delivery care has improved significantly in all regions, though not all countries have shared equally in improvements. Only 17 per cent of countries are on track to meet their Goals. In developing countries as a whole, the per cent of births attended by a skilled health professional has increased by more than a quarter - that is, from 42 per cent to 53 per cent over the decade. From 1990 to 2000, the percentage of births attended by a medical professional in Asia rose 35 per cent. Unfortunately, in Sub-Saharan Africa where maternal mortality is highest, the levels have improved only 5 per cent. (WHO, UNICEF and UNFPA Report 2001) is close relationship between poverty and level of education with mortality rate? For example in the case of Tanzania, the highly educated region and the well-off are experienced low mortality rate and vice versa. Kilimanjaro region which is considered to be advanced in terms of education and well being of their people, infant mortality rate is 45%. Where as Lindi and Mtwara region with low education status infant mortality rate is 131, the highest than any other region in Tanzania (Tanzania Socioeconomic Database 2004).

Maternal mortality in Zanzibar is high. The available data show that maternal mortality in 1998 was 377 per 100,000 live births. The proportion of births attended by skilled personnel increased from 37 percent in 1996 to 51 percent in 2004/2005. This is an

indication of the potential for reducing maternal mortality (RGOZ 2007, Zanzibar Strategy for Growth and Reduction of Poverty) See table below:

Table 6 Infant, Child and maternal mortality

	Zanzibar		Tanzania Mainland	
	1996	2004/2005	1996	2004/2005
Infant mortality (per 1000)	75.3	61	95.7	83
Child mortality (per 1,000)	34.8	42	56.6	42
Under 5 Mortality (1,000)	107.5 (114.3)	101	146	133
Maternal Mortality (100,000)	377	Not available	529	578
Percentage of births attended by health personnel	37	51	36	46

Source: Census 2002, National Bureau of Statistics (NBS), TDHS (20004/2005), TRCHS (1999), UNICEF Study (1998)

Mainland Tanzania has in recent years, experienced some significant improvements in the provision of health care services. It has for example, achieved a high coverage of antenatal care and immunization rate which is 94% (2004) and over 80% (2004) respectively. Infant mortality declined from 95 per 1,000 live births in 1996 to 63 per 1,000 live births in 2005, while the under- five mortality rate decreased from 146 per 1,000 live births in 1996 to 133 per 1,000 live births in 2005. Notwithstanding these notable gains, about 90% of child deaths are due to preventable diseases such as malaria, pneumonia, diarrhea, malnutrition and complications of low birth weight. Furthermore, HIV/AIDS, increasing incidence of drug resistant strains of malaria and high maternal mortality have combined to undermine the health status of a considerable proportion of the Tanzanian population.

Although there has been some significant improvement on most health indicators over the last five years, maternal mortality ratio (MMR) has remained stagnant at 578/100,000 live births (2004). Nearly 9,000 women in Tanzania die annually due to pregnancy related causes (HSSP2003). The leading causes of maternal mortality in both Mainland and Zanzibar are hemorrhage (ante-partum and post-partum), anemia and eclampsia, mainly due to poor access to emergency obstetric services. Further, the poor quality of care, exemplified by shortage of qualified staff, low staff morale, lack of quality control and patient management, is contributing to the low rate of deliveries at health facilities, resulting in high MMR (HSSP2003).

Recent data from the Demographic and Health Research demonstrate that the rate of caesarean sections in the country is also low indicating that Tanzanian mothers have insufficient access to essential maternal health services and facilities specifically services for complicated deliveries (DHS 2005).

3.3 Policy Reviews.

With regard to the international commitments, regional policies, national policies and programs, reduction of maternal mortality is concomitant with the global commitments. This glaring disparity is reflected in a number of global declarations and resolutions. In September 2001, 147 heads of states collectively endorsed Millennium Development Goals. Goal number 4 and 5: To reduce child mortality rate by 2/3 and maternal mortality ratio by 3/4 between 1990 and 2015. Strongly linked to these is Goal 6: To halt or begin to reverse the spread of HIV/AIDS, malaria and other diseases. The

specific targets details under these two goals includes, reduce by two-thirds, between 1990 and 2015, the under-five mortality rate, access for all individuals of appropriate age to required reproductive health services and reduce by three-quarters, between 1990 and 2015, the maternal mortality ratio and increased proportion of births attended by skilled health personnel **(www.mdg.org).**

Greater policy attention needs to be placed on 'Goal number 5' improving maternal health. Promoting maternal health and reducing maternal mortality seems to be the MDG most resistant to change as Tanzania has one of the highest mortality rates in the world. (Tanzania Demographic Health Research 2005)

The health sector policy issued by the Ministry of Health and Social Welfare in Zanzibar provided priority to deal with the diseases that causes majority of deaths among the children of below the age of five years and pregnant women. The policy further directed to initiate special program with activities focusing on the child and maternal mortality, (Ministry of Health and Social welfare Zanzibar, Health Sector Policy, 2000.)

Among the major policy objectives is to improve health service delivery and reproductive health education to all. Through reproductive health program it is expected that the availability of reproductive health services to both man, women and youths shall have an impacts on reduction of maternal mortality

The vision of the Health Policy (2003) is to improve the health and well being of all Tanzanians with a focus on those most at risk, and encourage the health system to be more responsive to the needs of the people. The Health Sector Strategic Plan (HSSP) for Mainland Tanzania (2003/08) is a broad strategic plan intended to provide an

enabling environment for implementing the national health policy. It focuses on the provision of quality health services by devolving direct day-to-day management control to the district and regional authorities.

The Mainland HSSP places more emphasis on district health services where most of the essential services are provided close to the communities.

The Zanzibar Health Sector Reforms Strategic Plan (2002/3-2006/7) aims at improving the health and well-being of the people of Zanzibar with particular attention to women, children and vulnerable groups. The Strategic Plan is designed to ensure provision of preventive, curative and rehabilitative services, with a focus on the reduction of morbidity and mortality from all major causes of ill-health and the disparities therein (URT 2006, Support to maternal mortality reduction project).

Maternal mortality is a problem exacerbating in developing countries especially sub Sahara Africa. Many Researches and reports explained the magnitude of the problem and its causes, in different ways, this Research also looked into them and the result of this Research featured the matching results.

All literatures reviewed at the regional and national levels shows that the parameter for maternal mortality is a problem and the magnitude of the problem is huge in sub Sahara Africa, in Tanzania according to the literatures southern regions of Mtwara and Lindi are the culprits of the problem. Down into the island the poorest areas seem to suffer very much despite the fact that parameters are only established by the sample Researches in these areas the maternal rate might be even worse than the national average.

More and more literatures revealed the facts that maternal mortality is a problem in many developing countries. In Tanzania the problem is even worse and according to the recent Demographic and health Research it is *unlikely to meet the millennium development goal on maternal morality.* This situation justifies the importance of having significant programs to fight against maternal mortality. The problem was also revealed in many literatures, talking about the situation in Zanzibar. In a small of Tumbatu where the study is being undertaken, its physical location and structures are obstruction toward achieving better maternal health and as such it locate the population more at risk of maternal deaths.

But a Researcher really felt that most of literatures and measurements on the frequencies and the rate of maternal deaths are taken at the national level this in fact leaves the marginalized population in the villages suffer with this problem but remain concealed since they are not able to attend to the hospitals.

4.0 CHAPTER FOUR: PROJECT IMPLEMENTATION

This chapter explains the practical part on the implementation of this project aimed at improving maternal health in Tumbatu Island

Project Implementation is sometimes called deployment. There is no single way to implement a project. It depends on the type, characteristics of a project and the solutions proposed for the identified community problems. Project implementation is one of the critical stages of the project cycle. It is the stage where physical activities are undertaken and most of the project resources are injected.

When we think about implementation, we always start by understanding the complexity involved in the project implementation. If the implementation is relatively straightforward, the process might be simple and elaborative, but most projects are complex which also needs clear strategies and activities to accomplish the desired objectives. In order to facilitate implementation of our project we were needed to consider some important issues including:

Plan early: Many of the best practices around project management have to do with early planning. In fact, if we spend so much time in planning, we can point out that one planning consideration is identifying the complexities of implementation. If the implementation were large or complex enough, we would have actually started by creating an Implementation Strategy in the Analysis Phase. These strategies would describe the overall approach to implementation, the scope, assumptions, risks, etc.

Thus we have made some fundamental decisions here in terms of how the project implementation will take place.

The Implementation Plan was used to set the overall timeframe for implementation, identify who will be doing the work, list of the organizations involved, and estimate the effort and duration parameters. If the implementation involves new processes, you'll need to account for how you will train the users and who will do it.
It's important to note that the Implementation Plan provides detailed information that can be shared with your stakeholders and project team.

Build the implementation work plan: After we have completed an Implementation Strategy (during analysis) and an Implementation Plan (during design). We still have to actually build the work plan activities for deployment. This was done during the Construct Phase. At this point, we have worked on our way from high level to low level, so the remained work was to actually define the activities, dependencies, timing and responsible persons.

4.1 Project implementation phases

The implementation of this project is designed into two phases which display project components, they are,

i. Construction phase and

ii. Capacity building phase.

The time planned for both phases are three years, however, the time for construction is designed to take six months from the date of commencement of construction, and several capacity building activities were done for about two years.

4.2 The project outputs

It is expected by the end of the project period maternal ward will constructed and capacity of health worker, traditional birth attendants, child bearing age mothers and the community at large will be enhanced through capacity building program.

The project will start with phase one which is the construction phase. This phase shall include initial preparation that is site clearing and preparation then laying foundation, brick work, linter roofing, fitting of doors and windows, electricity and water. The finishing works will the last in the series of construction phase which includes flooring, plastering and painting. Procurement and cleaning of the site for construction have been already accomplished

For detailed implementation plan with series of activities see the planning table below:

4.3 Project activities

The activities performed under this project have been categorized into phases based on the nature of the project. At the beginning the activities are mainly concerned with the construction works

Table 7 Project activity plan table

No	ACTIVITY	TIMEFRAME	RESPONSIBLE	RESOURCES
	Activity planning meeting	20th June t2006	WSS	Human resource
1.	Site clearing	1st to 7th July 2006	WSS	Human/material Resource
2.	Laying foundation.	8th to 14th July 2006	WSS /Community	Human/Material resources
3.	Brick works and linters.	15th July to 30th Sept 2006	Contractor /WSS	Human resources Material & Funds
4.	Training of Nurses midwifery	15th July 2006 to 15th June 2007	Contractor/WSS	Human resources Material & Funds
5.	Roofing,	1st to 14th Oct, 2006	Contractor /WSS	Human resources Material& Funds
6.	Flooring, plastering and painting	15th Oct to 20th Nov 2006	Contractor /WSS	Human resources Material& Funds
7.	Ceiling	21st Nov to 20th Dec 2006	Contractor /WSS	Human resources Material& Funds
8.	Fixing of doors and windows.	21st Dec 06 to 14th Jan 2007	Contractor /WSS	Human resources Material& Funds
9.	Electricity fitting	15th Jan to 7th Feb 2007	Contractor WSS	Human resources Material& Funds
10	Latrines/closet& Water fitting.	8th Feb to 7th March 2007		Human resources Material& Funds
11	Aprons	8th to 31st March 2007	Contractor /WSS	Human resources Material& Funds
12	Furniture installation	1st to 7th April 2007	MOHSW /WSS/Contractor	Human resources Material& Funds
13	Training of traditional birth attendants	8th April to 7th may and 21st June to 6th July 2007	WSS/ MOHSW	Human resources Material& Funds
14	Community health Training program	2nd May to 14th June and 8th March to 21st March 2007	WSS/ MOHSW	Human resources Material& Funds
	End of project evaluation	31st to 14 April 2007	WSS/ MOHSW/ All stakeholders	Human resources Material& Funds

4.4 Project Planning and implementation plan

Planning of this project was considered as part of project management, which relates to the use of schedule such as Gantt chart to plan and subsequently report progress within the project environment.

Initially, the project scope was defined and the appropriate methods for completing the project are determined. Following this step, the durations for the various tasks necessary to complete the work are listed and grouped into a work breakdown structure.

The logical dependencies between tasks are defined using an activity network table that enables identification of the critical path. Floats or slack time in the schedule can be calculated using project management. Then the necessary resources were estimated and costs for each activity allocated to each resource in the project budget, giving the total project cost. At this stage, the project plan was optimized to achieve the appropriate balance between resource usage and project duration to comply with the project objectives covering both construction and capacity building phases.

A Gantt chart was used as a popular type of bar charts that illustrates a project schedule. Gantt charts illustrate the start and finish dates of the whole project terminal elements and summary elements of a project that all comprised of the work breakdown structure of this project. This Gantt charts also show the dependency (i.e., precedence network) relationships between activities.

A Gantt chart below provides a graphical representation of Tumbatu Maternal health project schedule.

4.5 Project staffing pattern

This section provides guidance to help project interpret and operationalize the activities using staffing standards.

The project staffing requirements for the improvement of health services project in Tumbatu Island is designed to:

- Ensure that every individual participating in a project implementation is dedicated and competent staff;
- Allow flexibility in developing a staffing plan, as long as the staffing is adequate and appropriate to deliver the services and meet the objectives of the project in time, and
- Assure that White Star Society staffs have the specific competencies to deliver in project management.

- The staffing standards provide an opportunity to create an affordable staffing pattern that maximizes the benefits of paraprofessional skills and peer experiences.

There is no simple way to determine the number of staff a project should have. There are, however, two conditions that have been considered in this project. The first is that the staffing pattern must ensure a safe environment for all individuals providing and receiving services in this project. The second is that the staffing plan must provide an adequate number and mix of staff to deliver the services that recipients need in order to achieve their recovery goals.

There are varieties of approaches to developing a staffing plan that will meet the two basic conditions. Some project may wish to start with their current staffing pattern and

modify it to meet the regulatory requirements. Others may wish to build an "ideal" staffing plan based on the various factors previously outlined, and then analyze the extent to which current staffing meets the identified needs, and this the approaches used to plan for staffing in our project.

4.6 Staffing Requirements and development

For the purpose of implementing this project, six core staffs are needed on full time basis for the whole project implementation period. They include,

- Project Manager.
- Project administrator and
- Four nurse midwifes

Other staffs especially those who shall work at the construction phase, shall be employed by the contractor on short term contract. Other staff of the White Star Society shall be available to work with the project voluntarily. Their working schedule shall be arranged by a project Manager.

After the initial training associated with opening a project, it is expected that the nurse midwifes will receive ongoing training to maintain and enhance their skills. This training will address the identified performance improvement goals in such areas as health service delivery and community health.

4.7 The project budget

Budgets are cost projections. They are also showing the stakeholders how the project will be implemented and managed. Good budgets reflect carefully planned projects. This project is estimated to cost about Tshs. 57,006,510/- of which construction phase will cost 42,526,510 and 14,480,000 Tanzanian Shillings will be for capacity building expenditure. The summary of the budget is presented in cluster of activities as follows:-

Table 8 Tentative Budget Summary for Tumbatu Maternal Health Project

No	**BUDGET ITEM**	**COSTS**
1	Site Clearing	250,500
2	Foundation	6,985,200
3	Wall / break work	4,591,000
4	Linter	2,760,000
5	Roofing	4,760,000
6	Ceiling	5,486,000
7	Doors and fittings	3,863,000
8	Windows and fittings	1,565,000
9	Tiles and fittings	3,851,000
10	Flooring and plastering	2,953,000
11	Toilets and fittings	1,916,000
12	Water and fittings	1,672,900
13	Apron	975,000
14	Training of Nurse midwifery	8,980,000
15	Training of Traditional Birth attendants	3,700,000
16	Community health education	1,800,000
	SUB TOTAL	**51,824,100**
17	Transport & Labor costs 10%	5,182,410
	GRAND TOTAL	**57,006,510**

Source: White Star Society –Project report 2006

4.8 Project implementation report

The implementation report of this project shall be provided on timely basis as indicated in the monitoring and evaluation plan. The report shall be a part of the output of the monitoring and evaluation of the project which according to the plan shall be available on quarterly basis. There will be also annual implementation report and completion report which will be produced by the time the project has come to an end.

Reporting Plan

This will include a schedule of activities planned for implementation of the project. In this schedule the implementation status of each activity shall be reported and the remarks explained as to reasons or challenges for success or failure of implementation of a given activity in the plan. A simple reporting format shall include major achievement, which includes progress made during the reporting period, major challenges and constraints realized as well as the way forward.

5.0. CHAPTER FIVE: MONITORING, EVALUATION AND SUSTAINABILTY

Monitoring can be defined as a continuing function that uses systematic collection of data on specified indicators to provide management and the main stakeholders of an ongoing development intervention with indications of the extent of progress and achievement of objectives and progress in the use of allocated funds. Monitoring is the measurement through time that indicates the movement toward the objective or away from it. Monitoring will provide information about the status and trends of resources or projects, but it should not be used to determine cause and effect.

Monitoring is a type of evaluation performed while a project is being implemented, with the aim of improving the project design and functioning while in action. Thus monitoring embodies the regular tracking of inputs, activities, outputs, outcomes and impacts of development activities at the project, program, sector and national levels.

Monitoring and evaluation are synergistic. Monitoring information is a necessary but not sufficient input to the conduct of rigorous evaluations. While monitoring information can be collected and used for ongoing management purposes, reliance on such information on its own can introduce distortions because it typically covers only certain dimensions of a project or program activities, and careful use of this information is needed to avoid unintended behavioral incentives. In contrast, evaluation has the potential to provide a more balanced interpretation of performance. But evaluation is a more detailed and time-consuming activity, and because of its greater cost it needs to be conducted more sparingly. One approach is to rely on monitoring information to identify potential

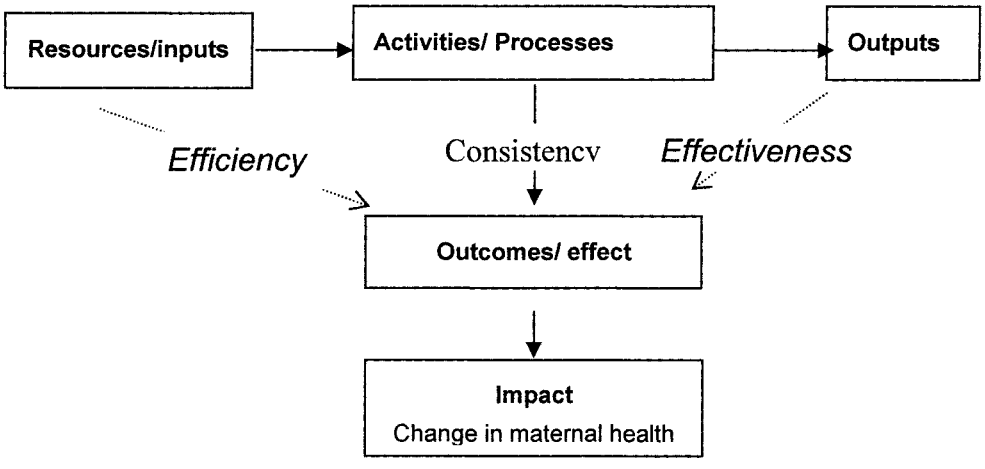
problem issues requiring more detailed investigation. M&E can be conducted using a wide array of tools, methods and approaches. These include, for example: performance monitoring indicators; the logical framework; theory-based evaluation; formal Researches such as service delivery Researches, citizen report cards, living standards measurement Researches (LSMS) and core welfare indicators questionnaires (CWIQ); rapid appraisal methods such as key informant interviews, participatory methods such as participatory M&E; public expenditure tracking Researches; rigorous impact evaluation; and cost-benefit and cost-effectiveness analysis.

5.1 Project Monitoring

The project for improvement of the maternal health in Tumbatu island, since this is a community project, all major steps involved from the identification stage; implementation and also monitoring and evaluation were done in a *'participatory way'*. Thus the project is planning to employ participatory monitoring and evaluation methodologies to track the project result or impact chain.

The general project" *intervention logic*" or 'impact chain" that the project planned to adopt is presented schematically as follows:

Figure No 1. The Project M&E chain



The logic is that project *inputs/resources* are monitored through a particular *transformation process (comprising a set of activities)* to generate *outputs*, which yield certain *outcomes* and/or *effects*, which in turn generate certain *impacts* consistent with/in addition to, or even contrary to the objectives or design expectations set out for the particular intervention or project.

5.2 The monitoring system

We emphasized the essential role of monitoring at all stages of the project implementation from analysis of the current situation of new project. This monitoring system is still in its early stages of development. Efforts have been made to coordinate the various systems of data collection, analysis and dissemination. These efforts include the creation of monitoring portfolio with the NGO responsible for networking and bring together the various data producers and users to discuss how the current system could be improved to better meet the project and users' needs. Efforts also include the development of indicator databases designed to track wide variety of project monitoring input of result.

In general terms, it has been observed that our good project monitoring system depends on and reinforces the following key principles:

- *Community ownership.* The participatory process for defining and designing the monitoring system should be led and owned by community stakeholders. This ensures that the monitoring system is appropriate for the community project's individual needs, and will enhance its impact on policy decisions and advocacy.

- *Accountability.* A strong monitoring system enhances stakeholder accountability by providing evidence that can be used to evaluate project and guide debate for measuring the success of the project.
- *Coherence and efficiency.* Different stakeholders of the project implement various projects/ activities in different areas of the island/ village and they develop their own monitoring system formal or informal system of monitoring. A good monitoring system that can be used (and trusted) by all reduces wasteful duplication of efforts and enhances the coherence and scope of data, and link with national efforts. Hence this monitoring system is designed to link with poverty monitoring system through the Ministry of Finance and economic affairs under community project while it is at the construction stage and later, operation and management of this project shall fall directly under responsibilities of the Ministry of Health and Social Welfare.
- *Prioritization* Our inclusive monitoring system allows stakeholders the opportunity to define common priorities and allocate project efforts and resources accordingly.

How ever, it should be noted that monitoring and evaluation system of this project emphasize on immediate result. An increased focus on intermediate indicators, as opposed to final indicators, can help broaden the analysis and understanding of problem area, as they allow us to track the effectiveness of policies and programs as they unfold. In monitoring the project at various stages, the linkages between inputs, outputs, outcomes and impacts become clearer, and we can identify with more ease whether policy change and resource become clearer, and resource reallocation are in order. For example, if after an increase in number of nurse midwifes and expenditure and no progress on maternal mortality were recorded, to effectively reconsider policy we would need to understand what progress has been made at various stages between inputs and

outcomes. To wait for final indicators may be to wait too long, so these intermediate indicators should be used.

In many projects like the one we are implementing the exact causal links between policies and outcomes are subject to debate. It is often difficult to identify and monitor the most appropriate indicators at the different stages of the project and even when the "correct" intermediate and final indicators can be identified, they may prove expensive or difficult to measure.

5.3 Institutional arrangements for the project monitoring

Institutional arrangements for monitoring of this project have been carefully planned in order to ensure the proper flow of information. It is not a kind of blueprint solutions but designed in full consideration of our unique environmental characteristics, including the power relations and conflicting priorities among associated actors. But a universal underlying truth is that this monitoring is treated as a strictly 'technical' process if it is to be affective. The participation of a wide range of stakeholders is considered as important, even other civil society organizations available in Tumbatu including the faith based organizations which bare strong support is essential.

5.4 Definition and classification of Indicators

Indicators are instruments that show the status and of a given phenomenon. By focusing on certain aspects of the issue in question, indicators simplify a complex panorama into a much clearer picture. This simplification makes indicators as vital tools for monitoring and information exchange.

The spectrum of indicators available is very broad, and there are a number of ways to classification them. For this project we describe three major classifications below. Fist, we discuss the different between intermediate and final indicators; them we consider the two types of intermediate indicators (input and output), as opposed the two types of final indicators (outcome and impact), while also making clear that the categories are not exclusive as indicator may belong to one category in one analysis, and another in a second. Finally, we draw the distinction between quantity and quantities indicators.

5.5 Intermediate and final Indicators

When an indicator measures a factor that determines an outcome or contributes to the process leading to an outcome, it is called intermediate. The most useful are those capable of capturing the key determinants of the outcomes under examination across areas and groups, over time. For example, in our project, the indication describing the number of people using better maternal facilities may be related to the outcome of a reduction in the prevalence maternal mortality.

Final indicator, in contrast, measure the effect of an intervention on individuals, well being. The literacy/ lack of education and maternal mortality rates are examples.

Of course, there is more than one type of both intermediate and final indicator. And what is considered in one context a final indicator might be considered an intermediate indicator in another context.

5.6 Input and Output, Outcome and Impact of the project

There are two types of intermediate indicators: **input** and **output** indicators measure the financial and physical resources used in a process (e.g. money spent on construction of new maternity wards) as well as human resources dedicated to a process (e.g. number of nurses and midwifery's). Output indicators are planned to measure the goods and services produced by the input (e.g. number of new maternity wards available).

Below is a table of indicators to be used in the monitoring of the project for the provision of maternal facilities in Tumbatu Island.

Table 9 Project intermediate and final indicators

Intermediate Indicators		**Final Indicators**	
Input	**Output**	**Outcome**	**Impact**
Financial, physical Resource injected into the project	Number of wards constructed No of room facilities available Number of midwifery's trained	Access to use of and satisfaction of facilities available Access to use of and satisfaction with maternal services provided.	Effect on drop in the maternal mortality Improvement of well-being

Both intermediate (including input and output) and final (including outcome and impact) indicators are used to measure the status of the project and expressed in either numeric or descriptive form. And again, indicators' classification as one or the other of the four categories is dependent on the context of the analysis.

5.7 MONITORING METHODOLOGY AND RESULTS

Monitoring at all level were done with fully participation of all potential stakeholders as identified in the stakeholders' analysis, reflecting the performance made in the project implementation and the changes happening in the cases of maternal death in Tumbatu. This project for improvement of maternal health in Tumbatu is proposed for the duration of three years, this monitoring system is planned to measure and asses intermediate indicators up to the level of outputs.

Effective Monitoring and Evaluation system needs correct data. These data are collected by using various tools. There are several ways to collect information for monitoring and evaluation. For the purpose of this project, we have selected appropriate tools that suit the objectives of monitoring an evaluation, project goals as well as the situation of community. These tools are:

5.7.1 Observation:

This entail visits to the project area to observe what have been accomplished and what not taking into the consideration of the resources injected into the project. Initial observation was done as part of the monitoring of this project, observed the site which has been procured and cleared for the construction of maternity ward.

It was observed that, enough land was procured for the construction to take place. However, by then, the NGO management was in the process of securing title deed. Some of the construction materials (stones) were already at the site; this was part of the community contribution toward construction of maternity ward.

5.7.2 Weekly meeting

Monitoring is a continuous activity, how ever for the purpose of the consistency in the monitoring process and reporting of this project, weekly monitoring meeting shall be held to track implementation of this project. Weekly implementation reports shall be presented and discussed in the meeting. The meeting shall include supervising NGO, representative of the community and contractor. The result and agreement of the meeting were used to reshape project implementation for the next weekly plan.

The NGO is responsible for conducting weekly meeting as it was planned in the schedule. Only two meeting were held after the initial and procurement of the land. The meeting shall resume when construction is on.

5.7.3 Participatory Expenditure Tracking

This method was also used to monitor the financial resources injected in the project. This tool shall be used on annual basis to monitor and evaluate all expenditures in the implementation of the project annually. It involves tracking of all project expenditures in one year period.

The purpose for introducing this method is to make sure that funds injected in the project are disbursed in time, spent for the right planned activities and ensure the real value for money for all expenditures.

At the initial stage, funds donated by the members of the NGO for purchasing land for the construction of the maternity wards were spent effectively. However, delaying in disbursement of disbursement of the donor funds was realized.

5.8 PROJECT EVALUATION

Evaluation can be defined as "the process of determining the worth or significance of a development project, activity, policy or program to determine the relevance of objectives, the efficacy of design and implementation, the efficiency or resource use, and the sustainability of results. An evaluation should (enable) the incorporation of lessons learned into the decision-making process of both partner and donor". An evaluation studies the outcome of a project with the aim of informing the design of future projects. Evaluation studies can assess the extent to which the project produced the intended impacts

5.8.1 Evaluation: methodology and results

This project evaluation has objectively designed to assess the impact of the project on the reduction of maternal mortality in Tumbatu Island.

This evaluation of this project was conducted to improve project design and planning, and can set the stage for evaluation activities throughout the project cycle. It begins by reviewing the steps to ensure that the project is addressing the relevant development problem and that it has a clearly defined purpose, as these two attributes are important for enhancing project performance and facilitating our project evaluation activities. It is emphasized that, during the project design stage, some of the more vital aspects that was considered are:

- Establishing a clear understanding of the development problem;
- Building into the project design lessons from previous similar operations; and

- Setting the stage within the project design for effective evaluation both during the monitoring and ex-post stages.

The project shall conduct quarterly, annual evaluation and at the end of the project implementation. Since this evaluation is done to an individual project designed to achieve specific objectives within specified resources, in an adopted time span and following established plan of action. The basis of this evaluation is built into the project document counting both formative and summative evaluation.

Evaluation shall also be conducted on the perspective of Participatory methods, it makes sense to postulate that the above levels of monitoring, undertaken routinely, *simultaneously serve an evaluation functions.*

The data for effective Monitoring and Evaluation are collected by using various tools. Among the tools used for the purpose of this project include:

5.8.2 Focus group discussion

Group discussion was used as an evaluation tool. Selected communities members were selected to give their views on the implementation of the project include the technicians and the NGO supervising the project implementation.

Focus group discussion was organized to include representation of all kinds of project stakeholders to capture wide views of the community on the implementation of their project.

5.8.3 Document and records review.

At the initial stage of project implementation our project document was the most important document reviewed. The purpose was to make sure that the project is in line with its goal. The project action plan was used to track the implementation based on time line and the schedule of activities.

Document review are also important tools that are included in the plan; this will take a major part in project revenue and expenditures through ledgers, receipts and income and expenditures statement that shall be produced annually.

5.8.4 Participatory Service Delivery Assessment (PSDA): Final indicators of this project both at the outcome and impact level shall be assessed and measured in the final evaluation through the linkage of the national monitoring and evaluation system of the Zanzibar Strategy for Growth and Reduction of Poverty, particularly using Participatory Service Delivery Assessment tool (PSDA) designed to capture the voice of the poor on the services provided and the impact of the same to the poor community including Tumbatu.

Through the reviews of various documents it was found that PSDA evaluation tool shall be implemented by the contracting NGO by the Poverty Monitoring system and thus using the linkages proposed in this evaluation system, the assessment of the maternal mortality services provided in Tumbatu Island will be captured.

Health sector has been selected for this assessment under the poverty monitoring system and maternal health services are one of the areas concerned.

5.8.5 Maternal mortality Survey

This will be done through surveillance system that shall be conducted as ex-ante project evaluation to measure the impact of the project especially at goal level. This survey shall identify deaths on maternal cases and associated risk factors. Records of deaths at the health center shall aid an important tool to facilitate this kind of survey.

Yet after introduction of this project at list we found that the deaths registration book has been established at the health center. It is good indication that now number of deaths will be known and possible causes of the deaths shall be recorded.

5.9 PROJECT SUSTAINABILITY

Sustainability refers to the continuing ability of a project to meet the needs of its community and embraces the concept of doing this beyond the time of donor agency involvement.

The important implications for the sustainability of community health services falls within four main areas:

- The vital role of the VHC and community leaders in assuming ownership of community health services.
- The need for regular teaching and other follow-up support of VHWs and VHCs by referral centre staff.
- A sound philosophy of community self-reliance on the part of project leadership.
- The real possibility of continuing need for sector support for overall project administration.

To ensure sustainability of the project, there are project component that were involved in training of nurse midwifery from the village so that they were available in the Island any time. The traditional birth attendants will be involved in the series of training and be used in the out reach reproductive health program as the influential persons in the village.

Also financially, arrangement has been made with the Government to assist to run the clinic, employing workers and provide with necessary medical kits. Staffs who shall be employed in the maternity ward shall be paid by the Government. The Government also shall pay necessary costs for necessary cost for maintaining the ward and paying for medical expenses

Administrative arrangement of this project is designed to bear full political support of the local and national Government authorities. Shehia which is the lowest administrative unit through its committee for health shall have responsibilities to monitor the implementation of the project and also the running of the project after construction. It is the responsibility of the Shehia health committee to report the progress of the project at the Shehia general meeting.

6.0 CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS

6.1 CONCLUSSION

Having critically observed and found out the reality on the problem of maternal mortality in Tumbatu Island, the Researcher concludes that the problem exist and to a very high alarming rate.

To give out the true picture, just think of the national estimate of maternal mortality, it is calculated based on 100,000 live births where about 377 in Zanzibar died. In this case therefore the number of maternal deaths in Tumbatu as revealed by this Research was 5 out of 102 live births reported in siblings, that is 4.9 percent. Maternal mortality was definitely above the national average. If the number of sibling extrapolated to 100,000 which is the standard number used as the bases to estimate maternal mortality the rate could be definitely increased. This means that the national estimate underrate the real picture in the periphery of the country especially in the villages like Tumbatu and possibly many other marginalized areas in Tanzania.

This Research therefore added knowledge on the real out look of maternal mortality rate in remote areas, although they are represented in the national average but they mostly remained with the highest rates which are not seen.

The Research also poses a challenge for further investigation of maternal mortality rate in remote and impoverished villages in Tanzania. This knowledge might be of significant importance for prioritization and strategic intervention toward improvement of maternal health for attainment of Millennium Development Goals and poverty Reduction.

A number of programs and policies are in place at global, regional and country level to address the problem of maternal mortality. Providing emergency obstetric care is the single most effective way to reduce maternal deaths. Governments and their partners therefore, have to ensure that health facilities, within functioning health systems, are able to provide emergency obstetric care services. Providing emergency obstetric care entails activities that build on existing structures. These include upgrading and renovating health facilities, improving logistical systems within the facility, training staff for preparedness, newborn emergency care and efficient management, effective monitoring and evaluation, and team building. UNICEF and its key partners work with governments and policy makers to ensure that emergency obstetric care is a priority in national health plans.

We make certain that this is a maternal care priority and assist governments with training and logistics. UNICEF also forges partnerships among policymakers, political leaders and health personnel at the facility level and with women at the community level, to ensure that policies and programmes respond to women's needs. UNICEF also helps governments to document good practices and lessons learned. Once emergency obstetric care services are in place or are being put in place, UNICEF encourages and supports governments to adopt other measures such as strengthening referral systems to help make sure that women have access and transportation to a hospital. Other important measures include strengthening antenatal care, including providing information to women and their families on signs of pregnancy complications; promoting family planning; improving the nutritional status of pregnant women to prevent low birth weight; promoting elements such as anti-

malarial therapy, voluntary and confidential counseling and testing for HIV/AIDS, tetanus toxic immunization and micronutrient supplements; and helping the community organize health financing, transport and communications. All these facilities should be extended to lowest level possible and especially to the marginalized and isolated areas like Tumbatu Island.

Considering the isolated nature of Tumbatu Island this project has proved its imperative to the community, its end result is expected to reduce incidence of maternal deaths especially those related to emergencies when mothers are hardly looking for maternal facilities which are not available in the Island. By reducing maternal deaths and improving maternal health will definitely improve mothers' health and hence they will be able to participate effectively in economic activities and contribute in the household economy and national at large.

Construction of maternal clinic and capacity building for health workers and the community shall contribute to a large extent provision of better health and maternal services, but also this will need to go in hand with availability of modern tool to be used in the clinic. As the current status, despite of little knowledge of the health worker they are also constrained with shortage of working utensils. In a newly constructed maternal clinic this problem should be avoided.

I conclude to emphasis provision of better maternal health by quoting the word of the UNICEF Executive Director Carol Bellamy that, "The focus must be on the right of women to have these basic maternal health services. Governments and communities

must see this not as an 'extra,' but as a fundamental component of women's health, child health and family health''.

6.2 RECOMMENDATIONS

In marginalized and isolated villages like Tumbatu, poor provision of maternal health facilities seem to be a long term problem as a result there is increasing maternal mortality. Special efforts need to be devoted to solve this particular problem, other wise the Government efforts on poverty reduction and the MDGs targets might not be realized. To address this problem, it is recommended to directly tackle the factors mentioned as the causal agents of the maternal mortality in the island.

Therefore, the Researcher recommends the following:

- ***Provision of necessary maternal health facilities within the village setting.***

Specifically to build a well equipped maternal clinic to avoid people traveling long distances crossing the sea to look for maternal health facilities.

- ***Training of health workers especially midwifery.***

Since the village experienced shortage of skilled workers and midwifery, it is recommended to train midwifery especially from the community members who will work and live in the island. This will facilitate his / her availability at any time especially during the emergencies.

▪ *Provision of reliable transport for emergence cases.*

The normal transport connecting the island and the mainland where maternal health facilities are available is through motorcar after crossing the sea by canoe. This sea transport is slow and risky; it takes long time to reach to the facilities. To reduce the risk of loosing life, the Researcher proposes to have a special outboard engine boat ready during the emergency.

▪ ***Promote Community health education.***

This is proposed to be done by the staff in the health center in the village. Some maternity complications that resulted into maternal deaths reported were caused by ignorance due to lack of health education and according to the Researcher it contributes to significant percent of maternal deaths in the village. It is expected that if the proper maternal health education delivered to the community it will contributes significantly to the reduction of the maternal mortality.

• ***Promote income of the people and reduce the level of poverty.***

Significant efforts need to be addressed toward reduction of poverty in Tumbatu Island, despite provision of necessary maternal health facilities and services, income generating activities need to be introduced and enhanced. This recommendation is based on the fact that, women in Tumbatu island spend most of their times to take care of their families while their spouses are away and they don't have feasible sources of income. They therefore mostly suffer from the malnutrition resulting in ill health before, during and after giving births.

All recommendations proposed can be possible implemented in close collaboration with sectors and other stakeholders from Government and non state actors. For successful implementation of this project good collaboration between relevant stakeholders especially the Ministry of health who will play a big role to facilitate sustainability of the project and the local Government authorities especially at Shehia level is essential. The implementation of this project is the immediate solution to combat maternal mortality problem existing in Tumbatu Island.

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