

**DAIRY VALUE ADITION THROUGH SMALL SCALE DAIRY  
PROCESSING TECHNOLOGY: A CASE OF UWASO GROUP IN SOKON 1  
WARD ARUSHA - TANZANIA**

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**A DISSERTATION SUBMITTED IN PARTIAL FULLFILLMENT OF THE  
REQUIREMENTS FOR THE DEGREE OF MASTERS IN COMMUNITY  
ECONOMIC DEVELOPMENT OF THE OPEN UNIVERSITY OF  
TANZANIA**

**2013**

**CERTIFICATION**

The undersigned certify that I have read this dissertation and I am satisfied that it can be submitted to the Open University of Tanzania for the dissertation titled, *“Dairy Value Addition Through Small Scale Dairy Processing Technology: A Case of Uwaso Group in Sokon I Ward Arusha – Tanzania”* in partial fulfillment of the requirement for the award of the Master of Community Economic Development (MCED) of The Open University of Tanzania.

.....  
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.....  
Date

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## **DECLARATION**

I, Shayo Adeline Ignas, declare that, this dissertation is my own original work and that it has not been submitted for a similar degree in any other University.

.....  
Shayo Adeline Ignas

.....  
Date

**DEDICATION**

This work is dedicated to my family, especially my husband Albert P. Mushi and to my beloved childrens Pillar, Neema, Pevil and Careen for their support and humility during the entire period of my studies. I also dedicated to my parents who laid academic foundation and encouraged me to value education.

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## **ABSTRACT**

Umoja wa Wafugaji Sokon 1 dairy group are local community based organization CBO in Sokon 1, Arusha city. UWASO CBO was established 2009 with 93 members. This report describes a community need assessment process for establishing the project of dairy value addition through small scale dairy processing technologies to improve household income. This is precisely because of the following advantages in Dairy production. It helps to increase long life of milk and it improves the quality of milk by producing products of high quality and long-life products such as butter, cheese, yoghurt and ghee. This can support small holder farmers both in terms of subsistence and income generation without requiring large capital injection. There is potential that production of milk has been little dissemination of information and empowerment with regard to Dairy value addition through small scale dairy technology. However, it is important to add value on milk production through small scale dairy technologies as much as it would attract more people to engage in their dairy production and marketing as much as there is potential demand for their Dairy production. This project is being implemented by a group of UWASO CBO members. The group will receive training focused on Dairy value addition small scale dairy technologies, entrepreneurship and business skills, savings and credits and marketing skills. In addressing the limiting factors named above I will use the locally available resources to achieve the set of objectives direct beneficiaries are the members of UWASO CBO and the community at large through sharing knowledge acquired. The project implementation has employed community Economic development (CED) approach where by communities join together for development initiatives within their own community.

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**LIST OF ABBREVIATIONS**

ASARECA	-	Association for Strengthening Agricultural Research in Eastern and Central Africa
CBO	-	Community Base Organization
CED	-	Community Economic Development
CNA	-	Community Need Assessment
GDP	-	Growth Domestic Product
MIS	-	Management Information Systems
PNA	-	Participatory Need Assessment
TDB	-	Tanzania Dairy Board
UWASO	-	Umoja wa Wafugaji Sokon 1



## **CHAPTER ONE**

### **1.0 PARTICIPATORY NEED ASSESSMENT**

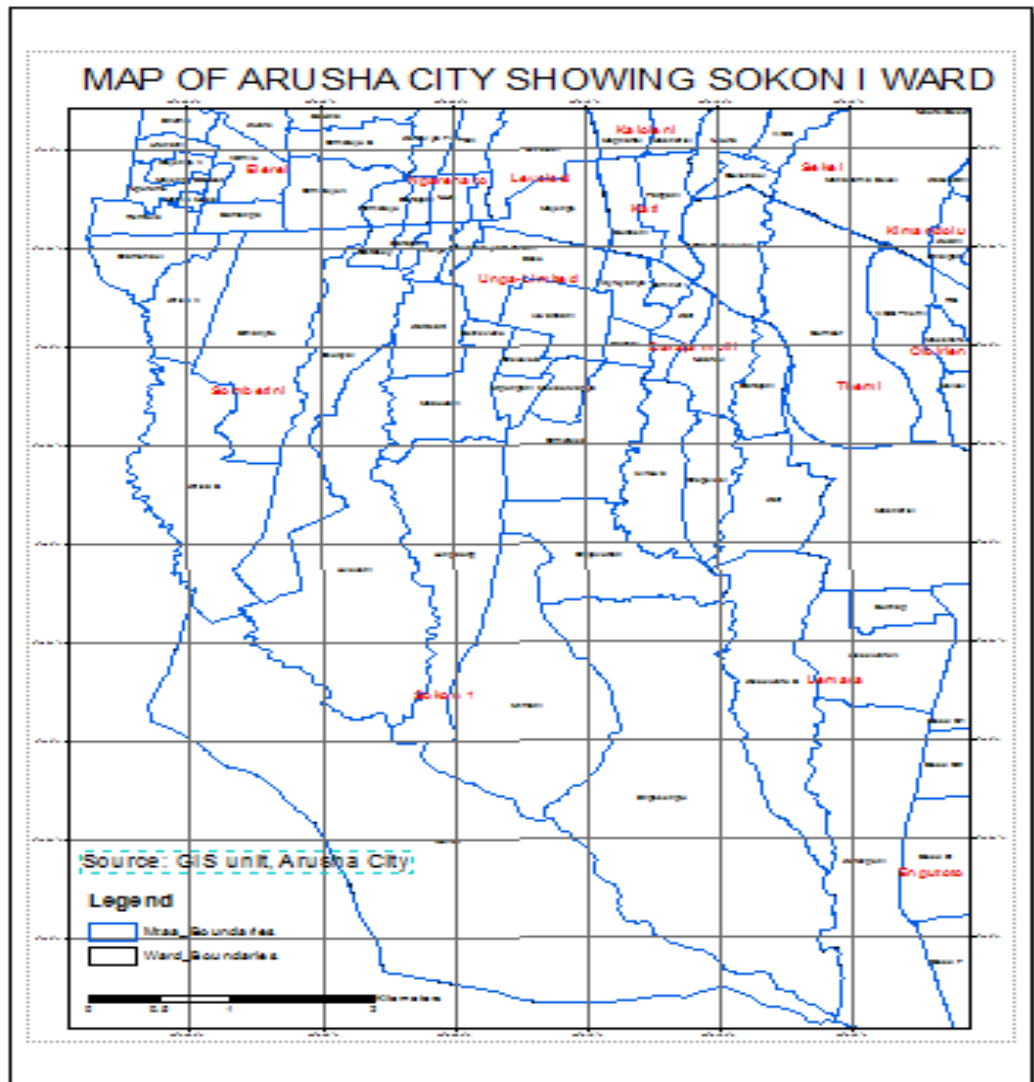
#### **1.1 Background Information**

Participatory Need Assessment (PNA) is the assessment of people in a participatory way. It is a first step of the project cycle during development or designing of a viable project. It is a point of entry between a facilitator and project beneficiary. PNA is important as it enables the target group to participate fully in identifying, designing, appraising, implementation and evaluation of the project activities. This makes people to have a sense of ownership towards implementation of the desired project activities (Kaufman, 1992).

The aim of conducting participatory needs assessment for the present study was to collect information about the milk industry situation in Sokon 1 ward that would assist in identifying the problems that the community is facing and formulate a project to address the main problem based on their ranking. The milk industry plays a major role in sustaining the livelihood of the majority of community members within the study area of (Sokon 1 ward) as such it was important for current study to have particular focus on this aspect.

#### **1.2 Sokon 1 Community Profile**

This section will try to examine the community profile in which I am carrying out the project. The community hosting the project is Sokon 1 ward.



**Figure 1: Map of Sokon 1 Ward**

**Source: G.I.S. unit Arusha City**

### **1.2.1 Geographical Location**

Sokon1 is one of among 19 wards of Arusha city council. It lies between longitude (34.5-38 °) east and latitude (2-6°) south. The ward lies 10 km south west from France corner along Unga ltd road. The ward is situated in Elerai division at Arusha district in Arusha region bordered by Lemara in the eastern and Terrat in the southern part, in the western part bordered with Sombetini and the northern part by Unga limited.

### **1.2.2 Climate**

Sokon 1 is located in the tropical type of climate. However it enjoys two rainfall, maximum due to mount meru. It covers aerographic type of rainfall which falls heavily during February, March and April and moderate in October, November and December.

### **1.2.3 Population Profile**

According to 2012 census, Sokon 1 ward had a total of 73,331 people out of 416,442 dwellers of Arusha City and 18,336 households, making it the most populated ward in the city. Out of the Sokon I figure, males were 35,534 and females were 37,797 (2002 population census).

### **1.2.4 Administration**

Sokon 1 ward have 13 streets namely: - Lolovono Madukani, Longdong, Migungani, Makao mapya, Sinevuno, Muriet, Onjavutian, Engosengiu, Olovolos, Olmokea Mlimani and Kanisani.

### **1.2.5 Economic Activities**

The main economic activities of the residents of Sokon1 ward includes Agriculture, livestock keeping and business activities.

#### **1.2.5.1 Agriculture**

Individual small scale farmer cultivate an average 1-5 acres per year. Food crops grown include Cassava, maize, banana, sweet potato and beans. Coffee is a major cash crop. Food crop production to a large extent is geared toward domestic

consumption. In the recent years production of both food and cash crops has been declining due to unreliable rainfall.

#### **1.2.5.2 Livestock Keeping**

Small scale livestock keepers are keeping more than one dairy cattle. Problem facing livestock sector includes poor livestock husbandry, frequent diseases, high cost of veterinary drugs and low price of livestock products and shortage of reliable markets. They keep 1570 cattle, Donkey 31, pig 353, poultry 3456, goat 1443, sheep 1327 fowl 235, and Rabbits 129 (1984 Livestock census).

#### **1.2.6 Social Services**

The Sokon 1 ward has 4 government primary schools and 10 private primary schools, 1 government secondary school and 1 private secondary school, 4 garages, no dispensaries, 9 Christian churches, and 3 Muslim mosques and the water service is available tap water and irrigation services.

#### **1.2.7 Vegetation**

The main vegetations are tall trees and shrubs, coffee trees and banana plantation and in lowlands are covered by grass.

### **1.3 Community Need Assessment**

This section focuses on the community need assessment which was carried out in Sokon 1 ward in Arusha city council at Arusha region in June 2012. Community need assessment is an approach and method used to identify and assess problems and

needs of the community. The identified problems can be further scrutinized and investigated down deep to get information about the causative, effects and the scope of the problem or nature of the identified need. Conducting a Community Need Assessment is essential activity to the success of any new services or program in a given locality; conducting community need assessment sets of the stage for overall service goals and objectives. Needs assessment includes the process of identifying and discovering the need of a target community and it is a critical start to planning (Burrough, 2000).

A community needs assessment is a combination of information gathering, community engagement and focused action with the goal of community improvement. A community needs assessment identifies the strengths and weaknesses (needs) within a community. Community leaders, local government, advocacy groups or a combination of these then address these identified needs through policy change or development. (Kaufman, 1993).

A community needs assessment can be broadly categorized into three types based on their respective starting points: First, needs assessments which aim to discover weaknesses within the community and create a solution (Community Needs Assessment I). Second, needs assessments which are structured around and seek to address an already known problem or potential problem facing the community (Community Needs Assessment II). Third, needs assessments of an organization which serves the community (domestic violence centers, community health clinics (Community Needs Assessment III).

The concepts of CAN connotes a process by which an assessments of the currently situation in the community is undertaken, value-based judgment regarding the situation are reached and some determination of the priority status of local people need is made. It can refine and improve a product such as training or service a client receives. It can be an effective tool to clarify problems and identify appropriate solutions. By clearly identifying the problem finite resources can be directed towards developing and implementing a feasible and applicable solution. Gathering appropriate and sufficient data informs the process of developing an effective product that will address the group's needs and wants.

The CAN was carried out in order to collect information about the milk industry situation in the area that assist in identifying the problems the community facing and formulate a project to address the main problem based on their ranking. The CAN adopt a participatory approach in which survey method and group discussion were used.

### **1.3.1 Main Objective of The Study**

The main goal of the study is the assessment of the dairy value addition through small scale dairy processing technologies.

#### **1.3.1.1 Specific Objectives**

1. To assess the dairy value addition through small scale processing technology
2. To identify problems facing community members involved in milk industry within the area.

3. To assess the dairy marketing channels in order to acquire a reliable market.

### **1.3.2 Research / CNA Questions**

The study was guided by the following research questions:

- (i) What are the problems facing community members involved in the milk industry within the area?
- (ii) What is the most pressing problems within the milk industry in the community.
- (iii) What is the problem facing dairy value addition through small scale processing technologies within the community.

### **1.3.3 Research Methodology**

Research methodology is described by Kothari (1990) as a systematically way of solving the research problem. It may be understood as a science of studying how research is done scientifically methodology used in data collection included, semi-structured interviews, interviews and survey methods. Statistical Package for Social Science (SPSS) 16.0 window program was used to code and analyze data obtained from the survey.

During community need assessment, data collection was based on social science research using scientific inquiry methods as it based on assumptions as it was used to indicating and evaluating the research. Both qualitative and quantitative methods were used. People's responses on various questions were counted in order to arrive to a conclusion, which is a quantitative data collection and qualitative method of collecting data. Thus responses of question in terms" yes or no" were counted and

conclusion made based on the outcome. The quantitative methodology was used to get the data from various stake holders involve in UWASO group community based organization and development such as community department officers and agriculture and livestock field officers. The intension was to complement the data obtained from during assessment. However, Hosea, (2006) has been written that the two methods do complement and supplementing each other meaning that no way one can separate these two methodologies in a research process.

A Qualitative method of collecting data was used during formal and informal discussions with member's attitudes opinions and behaviors'. Again a qualitative method of collecting data was used during formal and informal discussion with members where by focus group discussions, semi-structured interview, and survey and in depth interviews were used. Likewise personal experience and observations assisted in arriving to a conclusion.

#### **1.3.3.1 Research Design**

The research design shows the type of the research and strategies to be used. It has three common elements. These include the research area, the research population, and the sampling techniques to be applied after you have shown the type of research and strategies of research to be followed. The research design is the general plan on how you will go about answering research questions (Saunders *et al*, 2009).

Under this type of community need assessment explanatory or descriptive research design was used in order to understand what is not working well in Sokon 1



community organization. Therefore the general characteristics of members were obtained. This research design selected laid great stress on a detailed study of the characteristics of the problem and this has been justified by Rwegoshora, (2006) who explain that the main objectives of research design is to acquire knowledge about the problem. On the other hand exploratory research design was also used to get the secondary data from UWASO community based organization and the ward office.

The research design selected was intended to avoid common errors that could be obtained through observation, generalization, reasoning and re-evaluating. Observation error was divided by not choosing to look only at things that are in line with ones preferences. Over generalization of issues was also avoided by not conducting without enough evidence which is called reasoning error was also avoided. Flexibility was used to change previous conclusion in light of new discovery, therefore re-evaluating of errors. The survey used a cross sectional design in which simple randomly and purposive samplings were used to select a representative sample. The process of conducting community assessment involved two method survey methods and focused method.

### **1.3.3.2 Sample and Sampling Techniques**

Sampling techniques are techniques engaged in identifying a representative study area and study population. There are various techniques of sampling which engage some mathematical calculations. These include simple random sampling, cluster, sampling purposive and systematic and stratified (Masomo and Ngaruko, 2010). The study employed a simple random sampling design to pick the sample. A sample is a small part of something intended as a representative of the whole. Is a set of

individuals within an organization assessed to provide information on the preferences, opinions, attitudes and practices of the group they present. The sample population used during community assessment was 93 and sample size was 32. They were selected randomly and purposively.

The purposive sampling was used specifically to the officials from livestock department, livestock ward extension officers and village executive officers the sample size was fairly enough hand suitable models, for analysis purpose, while descriptive statistics expressed in percentage. The sample was selected randomly from the population of the UWASO group in Sokon 1. The study focus on finding the information on high pressing needs in the group and come out with priorities based on the existing problems.

#### **1.3.3.3 Data Collection Methods**

Data collection is an important aspect of any type of research study. Data collection methods was used to acquire information from different levels being primary and secondary information. Primary data was collected from the community through various data collection tools such as focus group discussion, interview, observation questionnaire (Masomo and Ngaruko, 2010). Quantitative data collection begins after a research problem has been identified and a research design / plan have been devised. It refers to the gathering of information aimed at proving or refuting some fact.

The study employed to obtain primary data through structured questionnaire, and interviewing methods. Primary data collection was conducted. However prior to

actual data collection preliminary survey was done to test validity and reliability of the questionnaire. Both primary and secondary data were collected during the survey process. Primary data were collected through questionnaire, semi-structured interviews and observations. Secondary data were obtained through various documents.

#### **1.3.3.3.1 Focused Discussion**

The focus group discussion is a rapid assessment semi structured data gathering method in which a purposively selected set of participants gather to discuss issues and concern based on a list of key themes drawn up by researcher/facilitator (Kumar, 1987). This qualitative research technique was originally developed to give marketing researcher a better understanding of the data from quantitative consumer surveys.



**Figure 2: CED Student with UWASO Members During Focus Discussion**  
**Source: Study findings in Sokon 1 (2013)**

As indispensable tool for marketing researchers (Krueger, 1988), the focus group discussion has become extremely popular because it provides a fast way to learn from the target audience (Debus, 1988); Marketing and media studies have shown that the focus group discussion has come in a cost effective techniques for eliciting views and options of prospective clients, customers and users. In agriculture focus groups have been used to obtain insights into target audience perceptions, needs, problems, beliefs and reasons for certain practice.

#### **1.3.3.3.2 Questionnaires**

A questionnaire is a primary data collection method that was used in this study. (Massimo and Ngaruko, 2010), argues that questionnaire often make use of checklist and rating scale. These devices help simply and quantify people's behavior and attitudes checklist is a list of behaviors characteristics, or other entities that the researcher is looking for. The researcher or survey participant simply checks whether each item on the list is observed, present, or true or vice versa. A rating scale is more useful when behavior need to be evaluated on a continuum.

A questionnaire consists of a number of questions printed or typed in a definite order on a form or set of forms. However, the questionnaire needs to be carefully constructed in order to obtain the required information. The questionnaire can be structured or unstructured. Structured questionnaire are those questionnaires with a definite and predetermined questions with a list of possible option/ answer. The questions are presented with exactly the same wording and in the same order to all respondents. A highly structured questionnaire' is one in which all questions and

answers are specified and comments in the respondents own words are held at minimum (Kothari, 2009).



**Figure 3: CED Student with UWASO Members During Administering Questionnaire**

**Source: Study findings in Sokon 1 ward (2013)**

#### **1.3.3.3 Interview**

The interview method of research typically involves a face-to-face meeting in which a researcher asks an individual a series of questions. Interview format vary according to continuum varying from structured, unstructured to semi-structured. In structured interviews the interviewer formulates questions ahead of time based upon a preconceived framework and definition of the problem. In unstructured interviews the interviews converses with the respondent who provides the content of the interview as well as the structure and definition of the problems. This study selected

both structured interview, unstructured interview and semi-structured interview, in order to produce balanced information on the dairy production. A semi-structured interview is a method of research used in the social sciences. While a structured interview has a formalized, limited set of question, a semi-structured interview is flexible, allowing new questions to be brought up during the interview as a result of what the interviewee says. The interviewer in a semi- structured interview generally has a framework of themes to be explored (Saunders, Lewis and Thorn hill 2009).

However, the specific topic or topics that the interviewer wants to explore during the interviews should usually be thought about well in advance (especially during interviews for research for research projects). It is generally beneficial for interviewers to have an interview guide prepared which is informal grouping of topics and questions that the interviewer can ask in different ways for different participants. Interview guides help researcher to focus an interview on the topics.

#### **1.3.3.3.4 Observation**

The Surveyor engaged at the target group and observes physically what was going on without direct doing or participating on the business. This method helped the researcher to understand the situation and context of the milk business operation (Saunders and Thorn, 2009). The researcher use observation methods to observe the local process of collecting and selling milk. The process is done by individual milk suppliers or sellers who can be divided by two categories. One being milk vendors who usually collect milk from livestock keepers and sell or supply to their customers and another category is livestock keepers or their family members where as majority

are children who go around house to house to sell milk to unpredicted customers. Observation is done purposely to determine the milk handling system, energy, time utilized and other consequences pertaining milk business.

#### **1.3.3.3.5 Documentary Source**

This was used to collecting secondary data and information such as community profile. The main sources were official textbooks, files, past records, progress reports, and financial reports CBO constitution and district profiles.

#### **1.3.3.4 Data Analysis**

Data analysis is an important stage of the research process. Quantitative analysis in a raw form convey very little mining to most people, hence data need to be processed using Quantitative analysis techniques in order to turn them into useful information. Usually data analysis is preceded by a pre-processing stage where raw data collected may be edited, coded, classified and tabulated by the program called SPSS (Statistical Package for the social science (Musoma and Ngaruko, 2010). Quantitative data analysis involves the use of scales of measurement and descriptive statistics. This section is going to analyze the collected data in quantitative form, which will be followed by an interpretative discussion.

The analysis will be based on the results of different kinds of respondents of questionnaires, during the time of the study. This analysis will look also at the objectives of the study and find out if they are attained. Finally the analysis will try to answer the basic questions the researcher had in the beginning of this research.

After coding the cross tabulation was done using SPSS 16 program. Data collected from a group of respondents is recorded in a permanent medium for analysis and future reference. Questionnaires were designed in order to obtain specific information about the condition of dairy production in UWASO at Sokon 1 Ward. The administered questionnaires have different types of question which focus on economic, social, Health and environmental, market information dairy value addition, furthermore the questionnaire aimed at gathering information on the following points:

- (i) Problems facing dairy production in the area.
- (ii) Milk processing technologies, entrepreneurship skills and marketing supply.

#### **1.3.3.5 Information of CBO**

UWASO group community based organization was started December 2009. The entire group member resides at Sokon 1 ward at Arusha city. The group started operating after being established by the department of livestock in order to have dairy networking groups so that they will have one strong voice. The group have accounts number at the microfinance bank. From the discussion with group members, various problems were mentioned that is the group member to attain there developed object. Generally the group has a determination of alleviating poverty by improving the existing income generating activities and exploring the potentials for new income generating.

#### **1.4 Community Need Assessment Finding**

In this section, description of CNA has been examined in four areas namely; community economic, health and environment were assessed. The assessment was



done in collaboration with a various stakeholders especially members of the host organization in complement with this existing literature from local government offices.

The process helped to identify the findings in terms of problems, sources, opportunities and specific problems to be addressed. Also the community, CBOs current conditions and the desired situations has been described .The community need assessment data and information has been organized based on economic community, environment and health assessment.

## **1.5 Findings**

Through the participatory assessment using various tools was conducted under community assessment, the researcher, together with the respondents comes out with the following findings as they were shared before the departure.

### **1.5.1 Community Problems**

In summary, it was noted that the Sokon 1 community had the following problems, which needed strategic interventions and they have been arrangement in terms of priority.

- (a) Lack of knowledge on dairy value addition through small scale processing technologies

Livestock keepers have no any knowledge on dairy value addition. When they get training on milk processing technologies livestock keepers will suggest to sell raw milk or to add value in order to maximize profit from milk.

(b) Lack of knowledge on dairy production which led to low production

Some of the livestock keepers have no enough knowledge on dairy production which led to low production of milk. When they get training on good husbandry production and keep improved breeds the production of milk will increase and hence economy rise up.

(c) Low price of milk which led to low profit

The price of milk is low but if they get the knowledge of dairy value addition, they will earn a high price by selling dairy value addition products which will solve the problem of price.

(d) Poor irrigation schemes as alternative to rain fed

The problem of poor irrigation affects the production of pastures which feeds dairy cattle during the dry seasons, hence low production of milk.

(e) Gender in balance

The livestock keepers especially in Sokon 1 usually neglect women, they saw them as a property means they didn't share things and plan together for their economy. Women received order from them without arguing.

(f) Existence of dairy diseases

There are dairy diseases which killed an animal within short time and cause damages loss of cattle within a short time. Livestock keepers should have knowledge of those diseases and how to prevent them.

(g) Lack of reliable market

The livestock keepers have not a place to sale their milk. They sale it to the milk vendors or to the shop or to their neighbor or house to house.

## **(ii) Source of the Problems**

**The sources of the problems mentioned by the participants were:**

- (i) Poor technical knowhow on dairy value addition
- (ii) Low level of education among leaders and members of the group
- (iii) Lack of initiatives among UWASO community leaders.

## **(iii) Community Assets**

Though it was noted that there are problems, however, there are both community assets (opportunity) existing locally which may assist in earmarked problems so that the UWASO community based organization can move forward.

- (a) UWASO leaders who can be capacitated to manage the institutions
- (b) Presence of extension officers to give them training
- (c) Presence of large population and potential outreach
- (d) Availability of cooperative officers who can provide technical advices on how best to operate the UWASO based on micro-finance best practices if they are capacitated
- (e) Availability of land for agricultural activities and livestock keeping, high population and active people who can by their products and increase productivity.
- (f) Presence of other stakeholders who can assists the CBOs
- (g) Good accessibility of road and communication network.

## **1.5.2 Community /Problems Chart**

The following problems in the table below were observed.

**Table 1: Community Problems**

S/N	Community problems	Sources of problems	Available community assets to be used to solve the problems
1.	Gender in balance	Traditions	Community awareness, religions, increased level literacy of some members
2.	Lack of education on dairy value addition technologies	Funds not available	Fund raising skills
3.	Poor irrigation schemes as alternative to rain fed	Poor mobilization techniques	Proper use of Agriculture sector development funds
4	Lack of reliable market	Poor plans of the Arusha Municipal council	Action plan should be implemented soon
5	Existence of dairy diseases	Lack of education on animal husbandry Poor veterinary services	Community awareness on Livestock development programmes and NGOS that support the sector
6	Lack of Education on Dairy husbandry	Funds not available	Proper use of Agriculture sector development funds.

**Source: From Field Survey (2013)**

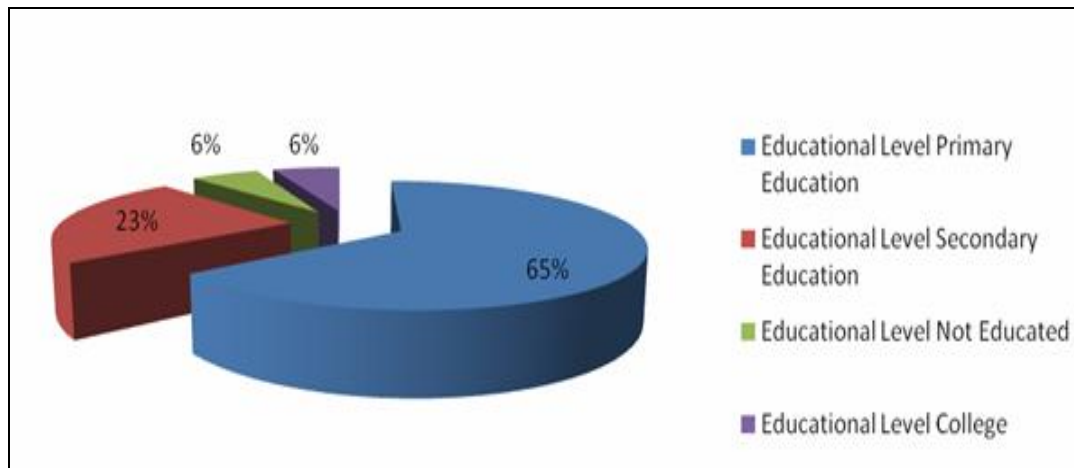
### **1.6 Community Needs Assessment Findings**

Due to the nature of this survey descriptive method was mostly used as this enabled to have data for monitoring and evaluation of the project where analysis of data from this survey has been easily compiled through the computer program that is Statistical Package for the Social Sciences (SPSS).

**Table 2: Community Problems Analysis**

Additional Economic Activities Done \* Educational Level Cross tabulation

Count		Educational Level				
		Primary Education	Secondary Education	Not Educated	College	Total
Additional Economic Activities Done	Yes	10	7	2	2	21
	No	4	3	2	2	11
Total		<b>14</b>	<b>10</b>	<b>4</b>	<b>4</b>	<b>32</b>

**Source: From field survey (2013)****Figure 4: Additional Economic Activities in Relation with Level of Education****Source: Field survey findings (2013)****1.6.1 Social Economic Findings**

A few numbers of about 7 people from the group are employed elsewhere, and who bring home some income to their families. Household's income is mainly spent on buying clothes, children books, paying schools fees and buying school stuffs. The extra food during hard times is brought from central market, Kilombero market and Mrombo in Arusha District. The months when people experience shortage of food are January to April. Most of the food in the area is animal products supplemented with some farm products. The farms are produced through irrigation along river

Them. The rain fed crops such as maize and beans are planted in the lower lands. Irrigation is very possible but community members are not doing because of the poor water conveyance. Those areas which get water for irrigation their people have developed and improved their living standards for example bought bicycles, motorcycles, built modern houses and even furnish their houses. Access to financial capital is not possible for all members in the UWASO group. Some are doing other business, livestock keeping and others depend on crop production only.

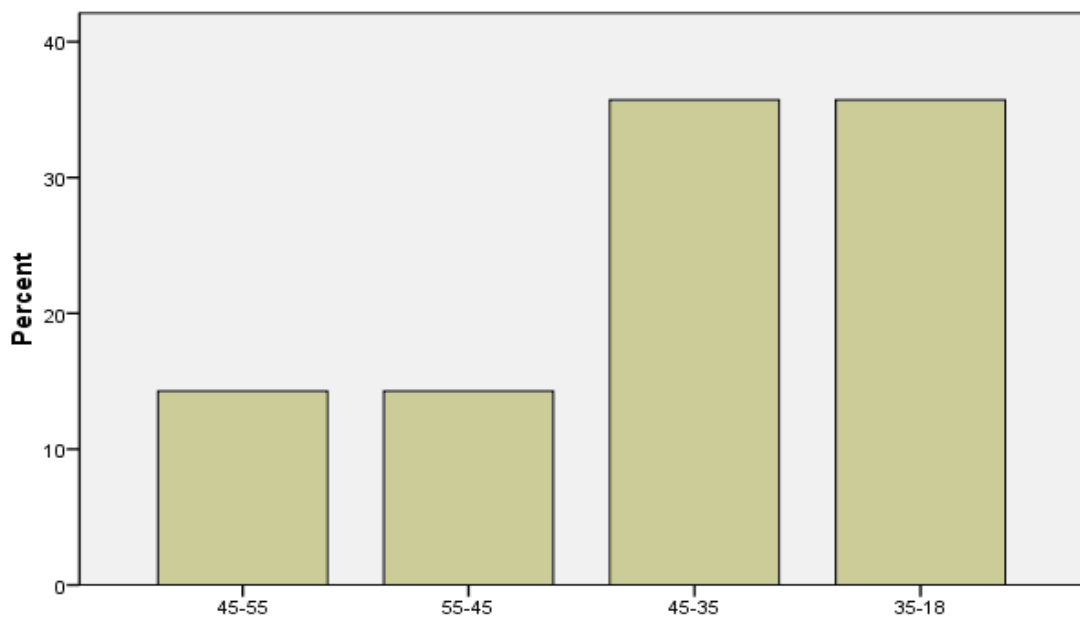
Member group who involved in business have no sufficient skill to proceed. Majority of the members are getting health services from Government health service providers followed by nongovernmental service providers.

### **1.6.2 The Age of Respondents**

About 38% of the respondents are aged between 45-35 and 35-18 of which according to adoption theory the younger the respondents the higher according to adoption theory the younger the respondents the higher the adoption rate (Ashimogo *et al*,1996).

This imply that,the age of respondents which its average range at 35 years,among other things this age is in position of adopting new inovation if any.At the same time only 15% of the whole population had the age of bween 45-35 this also has implication at group level means that young people are to be called upon to join the group.The population trend shows the big population in this group falls on 45 years old that means in the mean time they will get old and not able to hold/attend manual work mostly required at the dairy industry.So the critical recommendation is hereby

encouraging the group to promote and create a conducive environment for young people to join the group for sustainability.



**Figure 5 Age of the Respondent**

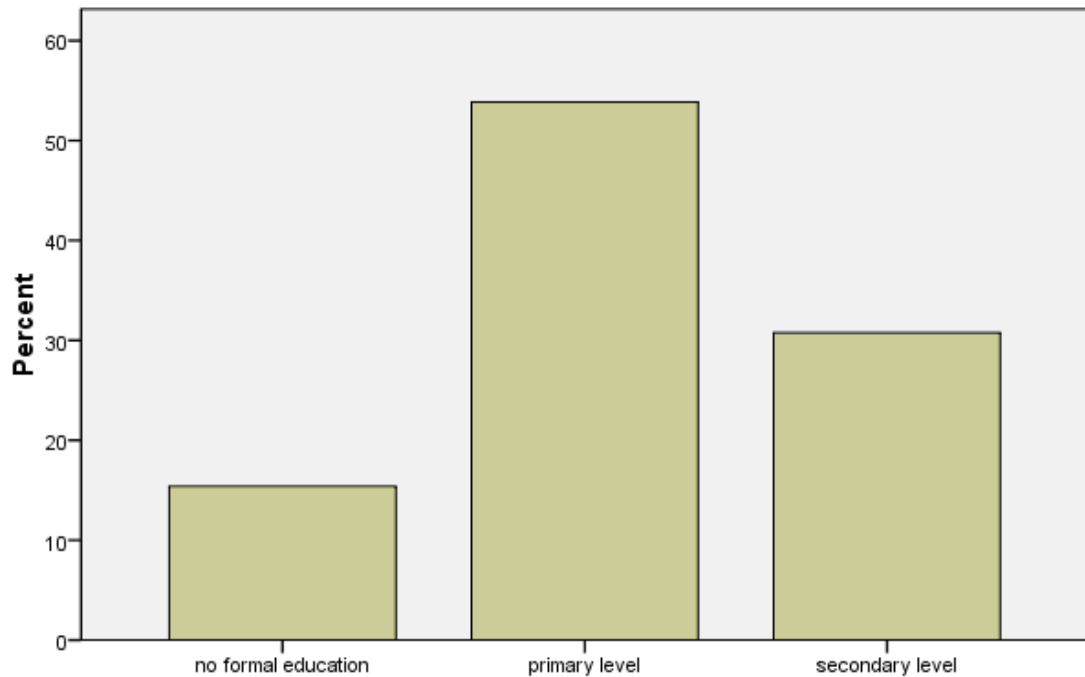
**Source: Field survey findings (2013)**

### **1.6.3 Level of Education of the Respondent**

About 55% of the respondents are primary education and 35 secondary levels which is basic education. These imply that with their level of education they can lead a small enterprise such as dairy sub sector.

The level of education it has implication on decision making and project management. Only 15% has no formal education. These education levels of respondents create some doubt that how this group can address technical problem related to dairy project. Primary level education in most cases has no technical education as well as secondary education during the study none of the respondents

had technical education this is the fact which force the researcher to advice the government to ensure that the group is under the department of livestock and also cooperative department to ensure that there is technical advice.



**Figure 6: Level of Education**

**Source: Field survey findings (2013)**

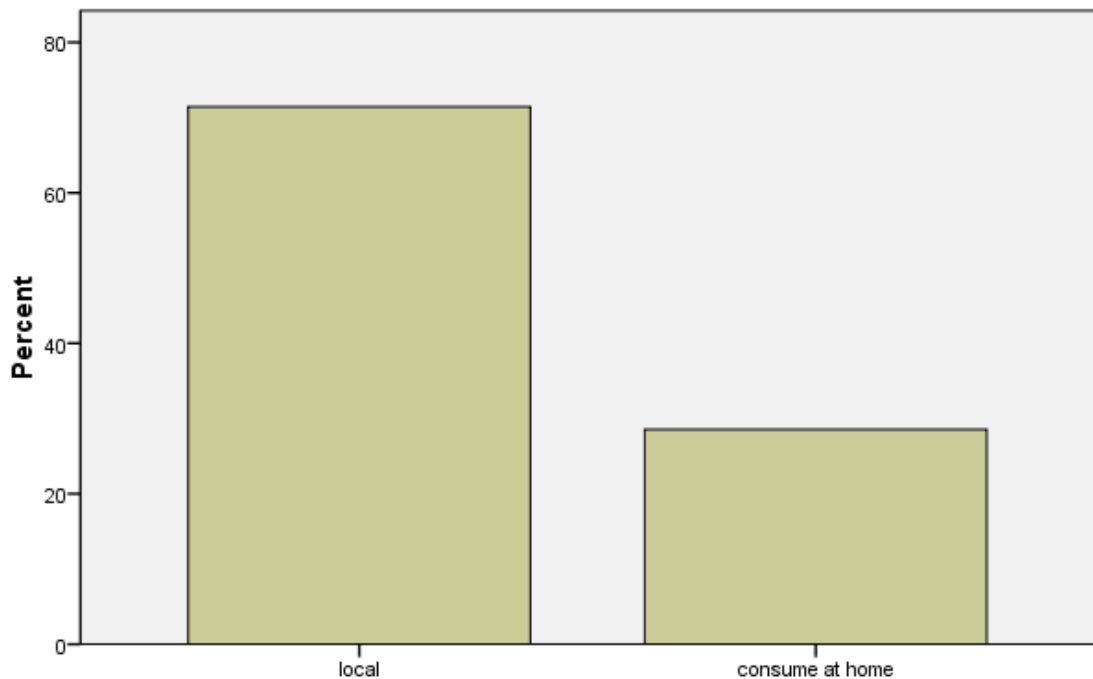
#### **1.6.4 Distribution of Commodity at the Market, 2013**

The market of dairy produce is not equally distributed or even defined systematically. The above graph show the nature of consumers at the market of which 65% of produce is consumed at local market defined by group as (consumed at restaurant, schools, collage, bus stand).

According to respondents the trend of dairy sales per year is evenly not distributed for them only 25 % is consumed at home that means they also encourage group



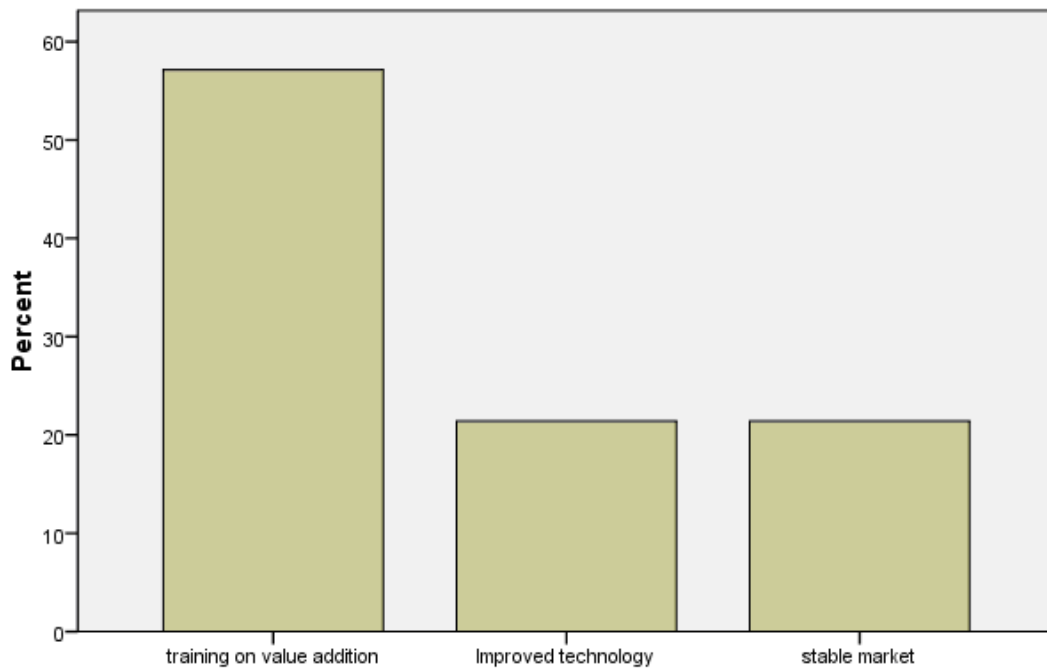
members to buy their products bring back to home for their family. It is well defined market for them this is one of the stable clients whom assume responsible by noting that they have to take milk from the group as their source of market.



**Figure 7: Market for Dairy Products Distribution**

**Source: Field survey findings (2013)**

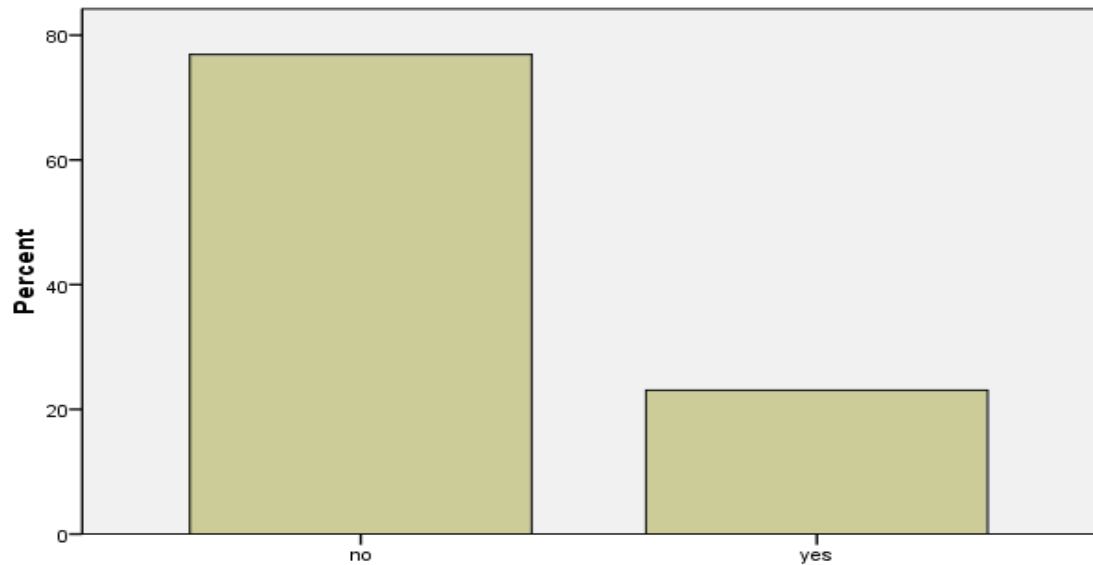
The sad news is that no even a point of dairy products from the group taken as an export product despite the fact that the group has been their for sometime now. The key reasons resulted from lack of external market is poor packaging, lack of skills on dairy product processing, poor knowledge of marketing and poor technology. It has therefore comes to the understanding of the researcher that to ensure that the group is growing and able to accommodate external market demands need to solve the above mentioned challenges of which the researcher has selected to train group on dairy value addition while calling for other support on the remaining challenges.



**Figure 8: Shows Support Needed for Dairy Processing Sub-Sector**

**Source: Field survey findings (2013)**

The above graph depicts the critical demand of the group, as shown above about 59% of the respondents requested for training on value addition as their key challenges toward the development of the dairy sub sector. It was noted that with poor knowledge on dairy value addition it was not easy for the group to deliver a standard product to catch the market. It is also noted that (in the study) with knowledge on value addition the group will be able to produce the products out of milk which will create alternative means of income out of depending only on milk produce. Improved technology is also the key need of the group and the findings show that about 20% of the respondents claim on poor technology as their blocking stone toward their success it is therefore recommended that with training which the researcher intend to train the mentioned group there must also be the window of supporting the group on improved technology as looking for the stable market for their produce.



**Figure 9: Knowledge of Understanding on Dairy Value Addition**

**Source Field survey findings (2013)**

The need of conducting an intensive training on dairy value addition resulted from the fact that almost 88% of the respondents argued that they are not aware on the concept of value addition. With this concern it is obvious that even if we will support the group with improved technology yet they will not be able to deliver the intended products as they lack knowledge on value addition. This fact is forcing the researcher to conduct a serious training on value addition and this is the key problem the researcher intends to address. Capacity building on the value addition as the main concern of the group.

### **1.7 Community Needs Prioritization/ Leveling of the Needs**

**Table 3: Needs Prioritization by UWASO Group**

S/N	Identified need	Score	Rank
1	Lack of reliable market	10	2
2	In adequate education on dairy husbandry	6	3
3	In adequate education on Entrepreneurship skills	4	4
4	Lack of education on dairy value addition technologies	12	1

**Source: Field Data (2013)**

### **1.7.1 Identified Problems**

Participatory results on community need assessment with a particular focus on the problems identification revealed seven common major problems below namely:

Lack of knowledge on dairy value addition through small scale processing technologies, lack of knowledge on dairy production which led to low production, low price of milk which led to low profit, poor irrigation schemes as alternative to rain fed gender in balance, existence of dairy diseases and lack of reliable market. Of the seven identified, lack of knowledge and skills on dairy addition value through small scale processing technologies and marketing was ranked first as the major problem by 12 number of respondents. The remaining identified problems were not perceived by community members as a major problem in their involvement in the milk business with each receiving less votes as for as prioritization is concerned. The current observation of Narayan (1997) that the most important constraints to milk producers are milk dairy addition value through small holder processing technology, milking handling and quality as well.

### **1.7.2 Area of Focus**

The economic assessment was my area of focus and with regard to CED strategies, the project was concern with impacting knowledge on dairy value addition through small scale processing technology and marketing to sustain community economic development. The specific problem identified by UWASO group CBO members was inadequate knowledge on dairy value addition, lack of entrepreneurship and business development skills among the members, low price of milk which cause the group to get low profit, lack of knowledge on dairy production which led to low productions,

lack of loan accessible facilities among the members, high interest of loan and low level of education among the members. Therefore, the task of the CED student in collaboration with target beneficiaries was to train members on skills on dairy value addition through small scale processing technologies. For reliable and sustainable marketing, dairy production skills, train them on business and entrepreneurship skills development among them, mobilization and capital base increase techniques, train them on sustained interest rate conducting mobilization and awareness creation of the community and to link them with various stakeholders.

### **1.7.3 Validity and Reliability of the Findings**

The data and information collected from the field and respondent followed legal procedures and formalities, so they are justified to the extent that the findings portray the real picture of what is in the field. The information and data were reliable as it happened that some of them are not correct due to lack of understanding of the questionnaires. Also the data is suitable and fit to be reliable on as the sample size selected was obtained through sampling where by every member was given equal chance to be selected.

### **1.7.4 Limits on Internal and External Validity**

To assure reliability and validity of data, the questionnaires focused on the objective to be achieved. Emphasis was put to ensure that the questions were arranged in a systematic way and logical sequence. Time was also another limitation detailed survey. However to overcome this, sound measurement was taken. The questionnaire covered enough information to ensure content validity.

## 1.8 Chapter Conclusion

Community need assessment was conducted in order to identify stresses/problems, sources and assets of the UWASO group CBOs. In general so that the negatives situation can be improved by using the potential available resources. Thus was done in the following in the following aspect community, economical, environmental and health. The major problems identified under community need assessment which need strategic interventions were lack of knowledge on dairy value addition.

**Table 4: Qualitative Findings through Focus Group Discussion**

<b>Findings through Focus Group Discussion</b>	<b>Comments</b>
Purpose of the study	All agreed that the study is significant to their place because they have no any reliable market for their milk.
Research Objectives	All the members in focus group accept the objectives of research after discussion
Methodology to be used	I used quantitative methods – Questionnaires to obtain different opinions.
The group Composition	Each group was composed of 8 members as follows;- Ward executive officer, Livestock field officer, Agriculture field officer, community field officer, chairman, secretary and treasurer of UWASO group.
Recommendation of the focus group	The project is beneficial to the community and agreed for implementation

**Source Field survey findings (2013)**

Following these finding it is therefore concluded that dairy sub sector is the one emerging small scale enterprise which can be done by small scale producer both in

rural and urban centers. Creation of conducive environment for dairy producer and processes will create an employment among groups and hence reduce the number of unemployed population in the study area. Government and non-government organization, individuals need to ensure that they technically create a link with farmers' producer groups both in rural and urban centers so they can survive and deliver the intended products as planned. Training on value addition, supporting dairy group (selected group) on improved technology and creating a conducive environment for stable market.

## **CHAPTER TWO**

### **2.0 PROBLEM IDENTIFICATION**

#### **2.1 Background to Research Problem**

The goal of this chapter is to define specific area for targeted change as well as focusing and providing the direction of the project to be planned and implemented by the host organization in collaboration with CED student as facilitator. Based on findings of community need assessment (CNA) results, the major identified problems were lack of knowledge on dairy value addition through small scale processing technologies, lack of entrepreneurship and business development skills. It was planned that the identified problem could be solved by conducting trainings for the purposes of Sokon 1 community to acquire skills on dairy value addition, educating UWASO group on the importance of having entrepreneurship and business development skills as well as building capacity at the level of leaders and members so that they can take their full responsibility of running the CBOs and increasing key variable of CBOs development and growth.

This chapter will discuss the problem within Sokon 1 community. The chapter will narrate the situation which needs to be changed, effects of the problem, its causes and magnitude of the problem. The effect of the problem if nothing will be done is highlighted. Analysis of stakeholder's contribution, goal and objectives of the project undertaken by researcher are among of these things that will be addressed in this chapter. The main problem or need to this community is the lack of the reliable market of their milk which makes them to sell at low price to milk vendors and lead



them to generating low income hence increasing poverty to them instead of poverty reduction.

Milk production by the smallholder farmers in Tanzania is increasing. However, only a minor portion of the locally produced milk enters the commercial sector owing to the marketing constraints and lack of processing techniques suitable for smallholder dairying. In order to sustain milk production to satisfy the demand, efforts to increase milk production should go hand in hand with efforts and knowledge to dispose milk surpluses above local requirement in the milk producing villages. The manufacture of stable marketable products including butter, ghee, low moisture cheese and fermented milks will provide smallholder producers with additional source of cash, facilitate reinvestment in the enterprises, yield by products for home consumption and enable the conservation of milk solids for future sale or consumption.

The marketing of fresh milk present is considered as a problems in the remote rural areas in Tanzania, thus small holder farmers consume some milk and sell some to milk vendors and the surplus is processed into some dairy products such as butter, ghee, sour milk and some cheese which have better keeping quality than the fresh milk.

Several studies on milk marketing system for milk products (SHDDP1997a and 1997b; Mdoe& Wiggins, 1996; Kurwijila and Henriksen, 1995; Mdoe et.al.2000) have already been carried out in Tanzania. A summary of the majority of these studies which present the dairy sub-sector of Tanzania is given in the Rapid Appraisal (MoAC-SUA-ILRI, 1998). In Tanzania, the commercial milk sector is

very small such that only a minor portion of the locally produced milk is sold (Ryoba and Kurwijila, 1995). Milk is produced mainly traditionally by small producers in rural areas. The demand for marketed milk is greater in urban areas where average incomes and the population growth rate are higher than in rural areas.

Annual milk production for 1997 was estimated at around 188 million litres. One third of this was marketed and was consumed by the family (44 million litres) and calves. Two thirds of the milk produced were marketed and sold mainly through informal channels. The bulk of milk marketed annually in Tanzania (126 millions litres) passes through direct milk sales from farm to consumers (40%). (i) Milk collected by dairy associations which is then sold directly to consumer or private marketing agents. (ii) Milk collected by private marketing agents, including vendors and kiosk/ bars and then directly sold to consumers or retailers (MoAC-SUA-ILRI1998). Sales from the first channels are made by the farmers directly to neighbors' or relatives. In urban centers, farmers sell their milk directly to bars or restaurants.

Tanzania has an annual installed milk processing capacity of 353100 liters per day, in 2009 the milk processed was 88,440,/ per day or 32.28 million litres per annum, that the installed capacity of can absorbed 7.75% of domestically produced milk. In 2008 dairy plants operated at about 255 of their capacity, this is 1.94% of the total milk produced in Tanzania (NIRAS, 2010).

In recent years there has emerged a strong argument advocating the use of decentralized rural based milk processing as an appropriate system of milk marketing

in a situation where smallholder milk production is thinly scattered and situated far away from urban markets (Bachmann 1979; 1983; Schulthess, 1987; Kurwijila, 1984, 1986, 1987, 1990).

## **2.2 Problem of Statement**

The problem facing the UWASO group is lack of reliable marketing. There is a need to change the present situation of lack of knowledge on dairy value addition and members who do not have adequate entrepreneurship knowledge and business skills to run and manage viable income generating activities and consequently develop their CBOs and the community at large. Processing of milk into less perishable products such as butter, powdered and condensed milk, is likely to create a pulling effect to fresh milk demand, emerging of fast food restaurants serving milked tea, ice cream, cheese burgers and other milk products may also enhance the demand for milk and increased market. Since liberalization yoghurt and ice cream parlors have increased significantly.

At present only a small fraction of the milk produced by smallholders in Tanzania enter the commercial market owing to the lack of milk collecting centers in rural areas, low producer prices for milk and scarcity of small scale processing techniques. Yet making this milk available to consumers would improve both the economic status of the smallholders and the nutritional status of the population.

According to the survey done by MDB (1993), majority of milk producers dispose their milk in the open market due to attractive price. Most vendors assemble and

conduct their business near residential area such as corporate housing estates, densely populated areas of a town or village, peddlers or hawkers who deliver milk to customer's residence. This involves an informal contract where a farmer delivers milk to a customer on daily basis and payments are normally done at the end of the month. Such arrangements are common where a producer and the customer reside in a neighborhood. Therefore there is no study done on dairy value addition through small scale processing technology hence the need of this study.

### **2.2.1 Future Without the Project (Effect if Nothing is Done)**

If the problems is not solved it will negatively affect the income of the members and it will increase poverty level hence poor and afflicted people will increase and ultimately the following will happen:

- (i) The community will never sell their milk to any recognized market like super market instead it remains for the outside country. This is because the community sale their milk by using local materials and their milk is not processed.
- (ii) There will be higher drop out of milk production from farmers. This is because other livestock keepers stop keeping dairy cattle due to low price of milk, which led to milk dropout.
- (iii) There will be a higher number of children involved in child labor from community (children will run out of schools to mining and urban centers). This will occur due to low income of the community.
- (iv) There will be higher rates of HIV/AIDS infections. Some people think prostitution is the way of getting money and at the end they realized to be HIV/AIDS carrier.

- (v) There will be more jobless people in the future. This is because this sector employed a lot of people.
- (vi) Illiteracy rate among the community will increase. This will happen due to lack of money from the selling of milk at low price fail to pay school fees.
- (vii) Ignorance and absolute poverty in the future will be realized due to lack of reliable market.
- (viii) Dependency syndrome by community to donors and Government will increase, due to poverty in the community.

### **2.3 Project Description**

The project will take place at Sokon 1 and the host organization is UWASO dairy group community based organization. Members will be trained on various skills on dairy value addition through smallholder processing technologies. Also will be equipped with the knowledge of entrepreneurship, marketing skills and saving and credit.

#### **2.3.1 The Target Community**

The target community comes from the area where the CBOs are producing their products and services provision as it is a major group which is served by the project. These includes community surroundings such as Terrat, Daraja mbili, Ungalimited, Sombetini Lemara Arusha city, hotels, supermarkets, government and non-governmental workers, ward workers groups, local leaders who are influential such as religious leaders and individuals.

In order to reach a desired condition, the owner of the project will highly participate in the activities of the project during planning and implementation will be on provision of the available assets identified during assessment stage. The project certainly will assure the role of CBOs sustaining by empowering members to get knowledge on dairy value addition through small scale processing technologies, access to the market so that to increase capital base as well as improve the policies and procedures used by the CBOs.

### **2.3.2 Stakeholders of the Project**

The purposes of the stakeholders analysis is to identify stakeholder's interests in the importance of roles, concerns, expectations and influence over the project implementation. Also identify local institutions and processes upon which to build and provide a foundations and strategy for participation, As far as this project is concerned, the following are the major stakeholders who have a stake in this project.

#### **2.3.2.1 Detailed Analysis of Stakeholders**

For effective and efficiency implementation of the project various major players, groups and institutions that may have a stake in this project were identified. The roles, concern and expectation of these players, individual, groups and Institutions will be described. Similarly the assumptions of each stakeholders and determination of the relative priority and importance to be given in meetings these interests of stakeholders have been established.

**Table 5: Stakeholders of the Project**

<b>S/no</b>	<b>Name of stakeholders</b>	<b>Operating area</b>	<b>Sectors /Issues involved</b>	<b>Roles and concerns</b>	<b>Expectation</b>
1	Faith based organization	Whole district	Multi sectoral	-Preaching the word of God -supporting community development initiatives.	-to see community CBOs for improving the life
2	Arusha city councils	The whole district	All sectors	-Providing social services to the community -Coordinating various development players in the city	Effective and efficient leadership of CBOs -Extended sensitization for establishment of strong and sustainable CBOs
3	Ward village executive officers and agriculture extension officers	Ward and village levels	Facilitating community development and ensuring peace and security and providing extension services	Supervising and coordinating ward and village developments activities	To see all development players, collaborate with the office for community betterment and life improvement
4	District office	The whole area	The whole area	-Maintaining peace and security -Influencing community economic developments in the district	To have mutual support in community development initiatives
5	LITA-Tengeru	To the CBOs only	Facilitating CBOs with knowledge	Facilitating CBOs by training them on dairy value addition	To impact knowledge

**Source: Field survey findings (2013)**

### **2.3.2.2 Arusha City Council**

Arusha city council is a local government of Arusha which is established under the local governments act. 1985. The council justification covers the area of over 208 square kilometer comprising 19 wards. Arusha city council is among six districts forming Arusha region. The council has developed a strategic plan comprising a long term vision for the city supported by a number of strategic goals. Council vision is a simple statement which is forwarded looking achievable and communicates council image for the city future. It provides the focus for council strategic goals which are statements of broad direction or intent for council's principal objectives.

The main responsibility is to providing social services to the community within Arusha city council. The commitment of this service is based on the income from the government and internally generated services. It operates within the framework of the following instrument namely local government finance act no 9 of 1982 (revised 2000). Local Authority Finance memorandum 1997, Public finance act no 6 of 2001(revised 2004) and public procurement act no 21 of 2004. In an effort to accomplish the activities, the municipal council has been divided by departments being supervised by city executive director who is appointed by the president of the United Republic of Tanzania.

Administratively, Arusha city has three divisions namely, Elerai, Themis and Suye which is subdivided into 19 wards. Furthermore there are one hundred and thirty seven (137) streets within the city. Like all other urban centers in Tanzania, Arusha city faces social economic problems arising from rapid growth of urban population



attributed by natural growth and rural –urban migration. The vision of Arusha city council; Arusha city with a growing and sustainable economy.

**(i) Mission Statement**

Create conducive environment for economic development, social services and sustainable environmental management. The main objective of the council is to decentralize power in order to improve, services provision to the local population. The Arusha city will improve services provision to the residents by the involvement of the other stakeholder such as community based organization, nongovernmental organization (NGOs) and private sector. Notwithstanding the council will strive to build, capacity at lower levels of local government (villages hamlets, sub wards and ward) so as to improve performance in implementation of decision activities, and service delivery. It is expectation of the Arusha city council to have sustainable CBOs which can provide services and products to the members and customers so that they improve their living standard and consequently bring trickledown effect to the whole community. Therefore, Arusha city council will be involved in providing funds which will be used during project implementation of the activities. Since Arusha city council is a major player in this project and all CBOs are legally accountable to the livestock development department. Therefore there is a pressing need to involve it right from the beginning of intervention.

**(ii) LITA- Tengeru**

This is another stakeholder in this project as it was used as a consultant. These are the ones participate on the training on dairy value addition through small scale processing technologies.

#### **2.3.2.4 Ward Village Executive Officers and Agriculture and Livestock Officers**

These are employed governmental workers positioned at ward and village level just responsible for maintaining peace and security, inflecting involving and supervising community development initiatives in participatory manner. They also support various community based organizations within their jurisdiction interims of delivery the intended massage to the beneficiaries. Their expectation is to see ay community development initiative undertaken is supported morally and materially to ensure the objectives are met thus improve the living standard of the community. The assumption put forward by these stakeholders from the ward and village level is that if the community is involved right from the beginning it has a capacity of changing its negative life to positive one. For the success of the project, these will be involved during project implementation, monitoring and consequently evaluation if need be.

#### **2.3.3 Project Goals**

The goal of the project is towards income poverty reduction status and livelihood improvement at household level and by conducting training on dairy value addition through small scale processing technology. The project purpose is to contribute to the national policy of eradicating poverty and it compromise with millennium development goals.

#### **2.3.4 Project Objectives**

To add value on dairy production through small scale processing technologies so that to improve the households income and hence improves their living standard by year 2013.

#### **2.3.4.1 Specific Objectives**

- (i) To ensure that by March-April 2013 group members shall have acquired knowledge on dairy value addition through small scale processing technology.
- (ii) To ensure that by March-April 2013 members should have acquired entrepreneurship, production and marketing and consider farming as a” business.”
- (iii) To ensure that for the period of may 2013 access training on how to get a reliable and sustainable market for their dairy products.

#### **2.4 Host Profile / CBOs Profile**

The host organization of the project was UWASO community based located in Arusha city and operating their activities at Sokon 1 ward. The institution assessment conducted in every organization was intended to help to identify the gaps and capacities and these were finally integrated in the project design. Various factors which affect the institutions development have been described such as forces in the external environment, institutional factors, inter-institution linkages, the role and responsibilities of the CED student during implementation of the project.

##### **2.4.1 Vision**

The vision statement of the group is to achieve sustainable economic development among the members by 2015.

##### **2.4.2 Mission Statements**

UWASO dairy group Cos aims at improving the living standard of their group members by engaging themselves in various income generating projects by using

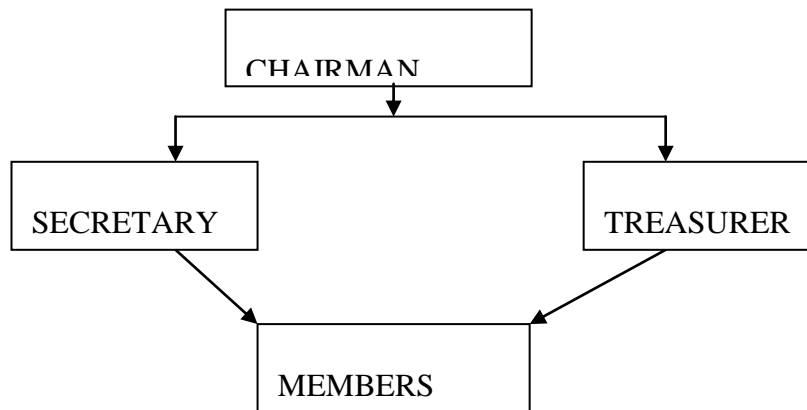
available local resources wisely and sustainable through training and sharing knowledge.

#### 2.4.3 Projects and Activities of the Group /CBOs

Currently UWASO group has keeping dairy cattle and cropping crops. The activities are keeping livestock and agricultural activities.

#### 2.4.4 Organizational Structure

The organization structure of the UWASO group is as follow:



**Figure 10: Organization Structure**

#### 2.4.5 SWOT Analysis of UWASO Group

##### Weakness of UWASO Group

1. The group has cash balance of 450,000
2. CBO own assets like cattle /milk production
3. Leaders are well organized and committed
4. The CBO is registered and has constituent

##### Opportunity of UWASO Group

1. The CBO is situated near Arusha city
2. The CBO can be access technical assistance from other stakeholders

3. The UWASO group is situated near passage road
4. The CBO is situated in the tourist city

### **Threats**

Business completion of milk market from nearby country

### **2.4.6 Responsibilities/Roles of CED Student in the Project**

- (i) To advice the chairman of the group on various issues regarding management of the project.
- (ii) To assist the CBO in maintaining in monitoring and evaluation of the project.
- (iii) To organize capacity building training sessions to group leaders and members on dairy value addition through small scale processing technology.
- (iv) To provide technical skills to group members on the formation and coordination of micro-finance institutions.
- (v) To seek expert who will provide training to specific area on dairy value addition.
- (vi) To facilitate the group in linking and marketing of their product.
- (vii) To facilitated the group to have knowledge of record keeping and entrepreneur skills.

### **2.4.7 The Role of the CBO to the Project**

The role of the CBO to the project is to find the training place and make sure they attend to the training. UWASO group community organization was the principle host of this project with a technical support from Arusha city councils. My role is to make sure the project is implemented, supervision, monitoring and evaluation.

## **CHAPTER THREE**

### **3.0 LITERATURE REVIEW**

#### **3.1 Introduction**

This chapter discusses theoretical, empirical, and policy review. According to Ngaiza et al (2003), literature review is a procedure that guides writers to access both published and unpublished source of information in respect to study. Theoretical literature refers to citations of other from the books, professional journals and reports. Empirical literature described how similar projects (in local, National and International) are doing and how others have approached to embark on the similar projects. Narrative information, which provides empirical literature, were found and cited in books, articles, websites and reports. Policy literature refers region national and International policies designed to provide a framework to the entire project. This is the area which study and review how the current policies provide clear guidelines or promote community economic development initiatives n the area of project intervention. This chapter will provide theoretical, empirical literature review and policy review on dairy project as income generating activities as well as problems facing dairy production in rural areas.

#### **3.2 Theoretical Literature Review**

Value added agriculture enterprises allow producers to earn a greater portion of consumer expenditures of consumer expenditures by processing packaging and or marketing livestock. As defined by the Tennessee Extension Priority Team (2006) for value added livestock increasing consumer demand for variety, quality, and convenience.

### **3.2.1 Value Chains in Livestock Development**

The value chain concept has been applied in livestock sector as an approach for assessing potential interventions from a development perspective (Rich and Perry, 2010).

- (i) Value added: is simply any product or action that helps you raise the value of your products or business or something you can add to a product that enables you to increase your profit margin.
- (ii) Value addition can be defined as process of increasing economic value and economic appeal of a commodity, value is added by changing a commodity form, colour, taste, and other such methods to increase the shelf life of perishables values for a product can also be added by capturing the market at the right time transporting the product to places where it can earn more income or storing it and selling when there is high demand. Value addition minimizes wastage and improves quality of a commodity which realize better price. Keedere, 2006, government of Kenya, 2004, latham1997).

Value additions on milk can therefore increasing purchasing power of small holder thus improving their standard of living. Technology plays a central role in value addition process however most micro-enterprises use low level technologies that hinder their product from competing effectively with large scale manufactures. Further, small scale processor finds it difficult getting the right equipment for their business. They often do not have access to information on types; capacities and prices of equipment (Thapa, 2000: Dugdill, 2000).

This situation is worse for UWASO-own micro-enterprises which are poorly equipped technologically compared with those run by outsiders making similar products (Everts 1998). Value addition through use of appropriate technology can therefore, be seen as an opportunity to improved UWASO micro-enterprises leading to improved quality of their products such improvement could lead to a greater autonomy for UWASO community.

In Tanzania milk production is mainly from cattle. Of the 18.8 million cattle found in the country about 560,000 are dairy cattle which consist of Friesian, Jersey, Ayrshire breeds and their crosses to the East African Zebu. The rest are indigenous cattle raised as dual purpose animals that is for milk and meat production Dairy goats are also gaining popularity as a source of milk particularly to the poor and their milk is normally consumed at household level.

About 70% of the annually produced milk comes from traditional sector (indigenous cows), whereas the commercial sector (dairy cows) produce about 30%. As already stated total annual milk production has increased from 585 million liters in 1995/96 to 1.426 billion liters' in 2006/07. The increase in milk production from both indigenous and improved dairy cattle is mainly due to increase in herd size rather than in productivity per head (milking cow).

Currently, only a small proportion (10%) of marketable surplus of milk produced annually is filtering through, into the urban markets and processing plants. Remoteness and poor infrastructure constitute the largest bottlenecks to collection



and marketing of milk. Thus the milk produced is mostly consumed locally and quite often a significant amount is left for the calves. However, some producers who depend on milk for their cash income are willing to exploit the available opportunity in marketing their produce, for example, Maasai herders who transport milk by bicycles over long distances, for sale at collection centres located along the Dar es Salaam – Chalinze – Segera and Dar es Salaam – Chalinze – Morogoro – Dodoma highways.

Development of the dairy industry is limited by inadequate nutrition, support services and insufficient supply of dairy stocks. Other factors include inadequate financial credit and processing facilities, poorly organized marketing system, low consumption of milk and animal diseases. Specific shortcomings to dairy goats' development are their unavailability and inadequate knowledge on their husbandry.

The policy direction is to exploit available resources for market oriented dairying and further raise per capita consumption of milk from the present 40 litres to at least 80 litres. Potential for increased milk supply from rural areas still exists. To exploit it requires improved infrastructures such as milk collection centers, power supply, and roads network and transport facilities.

Endeavour's to increase milk production in the country have included research work in breeding including selection and crossbreeding leading to development of the Mpwapwa breed and animal nutrition. Development interventions have included direct importation of exotic dairy breeds for stocking large scale farms,

Crossbreeding of Zebu cattle with *Bos taurus* European dairy breeds by Using both natural service and Artificial Insemination, necessitating establishment of the National Artificial Insemination Centre at Usa River Arusha. Exploiting market opportunities for value-added dairy and meat products in the Eastern and Central Africa region argued (Omore, (2009).

This project is a resumption (following a two-year freeze) and expansion of an earlier one – Exploiting markets for dairy and meat products’ quality and safety – funded by the Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA) and implemented in 2006-07 in Ethiopia, Kenya and Tanzania.

This new extended project goes beyond the initial one that mainly involved consumer demand analysis and takes a value chain approach starting from smallholder dairy and meat production and marketing, value addition and processing and demands in the three countries, and extends geographical coverage to Rwanda, Sudan and Uganda. Within each country the project collaborates with various stakeholder organizations, both public and private, to meet the objectives of the project.

The goal is enhanced sustainable productivity, value added and competitiveness of the sub-regional livestock system. Enhanced utilization of value addition innovations in the dairy and meat sub-sectors in eastern and central Africa. The expected outcome of the project is to improved productivity and access the markets for value

added dairy and meat products which will result in improved incomes and livelihoods of the target farmers and other value chain role players. Public-Private Partnership and Value Addition: A Two-Pronged Approach for Sustainable Dairy Supply Chain Management.

With the highest livestock population in the world, India has emerged as the largest milk producing country constituting about 16% of the world milk production. This successful growth in the dairy sector over the years can primarily be ascribed to the ‘operation flood’ program, establishment of well-developed market linkages and marketing infrastructure. However, currently, dairy industries are facing high input costs for milk production, lack of infrastructure for handling, transport, processing and marketing. A sustainable dairy industry is possible only when the remunerative prices to the farmer, value to the consumer, reasonable returns to the industry and stakeholders are ensured. An efficient supply chain and value addition through product diversification are the key approaches that can make dairying business sustainable. The present study focuses on the rationale and critical issues for efficient supply chain management in dairy industry, various strategies for value addition of milk and scope of public-private-partnerships for sustainable dairy supply chain management.

### **3.2.2 Empirical Literature Review**

Tennessee extension priority team (2006) rightly observed that value added agricultural enterprises allow producers to earn a greater portion of consumer expenditures by processing, packaging and or marketing crops, livestock or other

farm resources. Still on value addition, this team highlighted that value added agriculture or enterprise should translate to increased consumer demand for variety, quality and convenience where the following variables are in existence:

Increased variety of produce offered at a retail, increased number of branded products offered at retail, increased sales of processed products, increased sales of produce by whole sellers to food service channel, consolidation and streamlining of supply chain, increasing a number of farmers and sales through direct marketing. The other advantage of value addition to an enterprise is the increase of the numbers farmers markets and these is seen in the increase in number of markets available for farmers in a given period. Direct marketing of milk, support for local producers and the willingness of some consumers to pay premiums for environmentally friendly and locally produced products and some consumer seeking on- farm experiences. In view of the above experienced facts, value addition packaging cannot however be treated in isolation with other variables associated with it Cannor and Schick (1997) asset that value-added, enterprises add another dimension to management. Fellows (1993) argued that food packaging is essential issue in value addition. As such they called for the upgrading of traditional packaging technologies.

Techno Serve is an NGO that focuses on the provision of management services and training for community based enterprises. An office was opened in Arusha, Tanzania in May 1991 and activities in small scale milk processing have been located in Arusha, Kilimanjaro and Tanga Regions (Geoffrey, 1991). Techno Serve's work is normally restricted to assisting groups rather than individuals. They have worked

with several groups of farmers either in informal groups or cooperatives who have developed small milk collection and marketing enterprises. In most cases this involves the collection and marketing of raw milk but has also included two small scale processing enterprises producing cultured milk. Small scale cultured (mala) milk enterprises have been introduced to Nronga Women's Cooperative in Kilimanjaro Region and to Tanga Dairy Cooperative Union. The observations presented below are based on our experiences in Tanzania and inevitably there are and will be exceptions to the generalizations that are presented.

Understanding of the market and the marketing process and function in Tanzania is generally poor. With the exception of a few examples such as Coke and Pepsi marketing is neglected and not actively pursued. This situation applies particularly to the milk industry. Small scale producers have tended to regard the distributor as profiteering middlemen rather than partners in the marketing process. Tanzanian consumers are relatively poor and the relative price of milk compared to incomes and purchasing power is low. Consumers therefore tend to place greater weight on price considerations than on quality and most are not prepared (or able) to pay extra for higher quality or more healthy milk. The market for processed milk is therefore relatively small in the context of national consumption catering for the small proportion of the population that is prepared to pay extra for quality.

However the regulations governing milk marketing are not generally enforced and as a result a very high proportion of milk is marketed raw with no attempt at preservation or consideration for health concerns. Much of it is adulterated. While

the majority of milk in the country appears to be sold to neighbours there comes a point when a local surplus of milk develops and this suppresses prices and farmers have difficulties in disposing of milk. This is the only reason for starting processing the objective is to be able to take the milk (and milk products) from the surplus areas to market in deficit areas where the price is sufficiently high that it can cover transport costs. This may only be a collection and transportation operation such as has happened in Tanga where the sale of raw milk in Dar es Salaam has resulted in significantly higher prices for farmers in the Region. The situation developing, for instance, in Kilimanjaro Region where there are indications that a local surplus is suppressing prices and making marketing more difficult for small holders. If a surplus can be shown to exist the solution may be to process the surplus so that it can be marketed in Dar es Salaam.

A simple small scale processing operation that packages milk and distributes it can be expected to roughly double the value of the milk. Packaging provides an assurance that the milk has not been adulterated. European type of milk products such as cheese and yoghurt are not traditionally eaten in Tanzania. As a source of protein cheese costs roughly three times the price of an alternative piece of meat. The market is therefore small and generally confined to the expatriate community and the tourist trade. Quality has to be of consistently high which is difficult to achieve in small scale operations. Traditional milk type products such as cultured milk enjoy a much larger market and tend to be far less complex to manufacture.

Milk marketing tends to depend on the aggregation (or bulking) of milk from a number of farmers to create a quantity that is economical to transport and process.

Often this function is carried out by farmers groups or cooperatives. Some sort of legal registration of these groups becomes necessary to handle financial and administrative matters. Contrary to many perceptions we have found that cooperatives can be successful in Tanzania. The situation has improved with the new Cooperative Act of 1991. If new cooperatives, or indeed any farmer's organization, are to succeed and be sustainable we have found that in most cases long term business and management training is essential and must be coupled with strong and committed leadership and participant cohesion. Training needs to first focus on basic financial management and controls. The cooperatives department is not well equipped to provide this input. A culture needs to be engendered where the cooperative is seen primarily as a private sector business entity and not as a service organization catering for social and community needs as has been the tendency in the past. The formation and operation of a cooperative has to be based on business and financial criteria if it is going to succeed and be sustained.

In general cooperatives have been more successful at operating milk collection systems and providing some services to farmers while they have proved less successful at the distribution and marketing function. We have found that distribution is generally better handled by individual wholesalers and middlemen. Too often we have seen milk marketing and processing efforts have been initiated because there is a local surplus of milk and then come to a halt because the market has not been considered. A nearby town that already has an adequate and competitively priced supply of milk is not necessarily a suitable market just by virtue of having a large population. The identification of a market has to be one of the first considerations

when developing milk marketing enterprises. Formal processing and marketing operations will only succeed where they are used to move milk from a surplus area to a deficit area where prices are significantly higher. This is because the market for processed milk is relatively small and on the local level the processor is competing with informal operators with normally much lower overheads and cost structures. We have found it is important that small scale processors learn the basics of the business first before attempting complex technologies and systems. A sequence of development might be to start with the collection and transport of fresh and naturally soured milk. This can then be followed with the installation of a cooler or simple processing of cultured milk. Pasteurization of fresh milk should come later because of the higher capital costs in maintaining a cold chain and then finally the preparation of more complex and higher value products such as cheeses.

The effect and reaction to price changes can be more complex than is often anticipated. The short term response to a processor raising prices in the expectation that more milk will be diverted from the informal market can be very small because the processor or formal market very often merely acts as the "price setter" and the informal market with cheap overheads then only adjusts or raise prices to the same relative levels. By the same token if the processor is able to raise prices the impact is felt by all farmers in the area. Information about the milk price in Dar es Salaam is not readily available in upcountry areas and it would be helpful if it were published regularly in the press.

We would like to encourage, for instance, the reintroduction of water bath coolers where milk is kept in cans in a water bath with an ice bank. Such equipment was



common 40 years ago. With a sufficiently large ice bank prolonged power cuts can be withstood. This eliminating the need for backup generators and limits losses due to bad milk samples to the can in which they are contained. We think this consideration would compensate for the reduced cooling efficiency. Robust and simple cooling equipment that is easily maintained in Tanzania should be selected.

In spite of a rapid increase in the number of small scale milk producers and expanding demand for milk in Tanzania, marketing functions of the dairy industry seems to be lagging behind. Unlike the beef marketing system where cattle markets, holding grounds, slaughtering houses/slabs and butcheries are found in most urban and rural areas, marketing system for milk is less organized. It examines marketing functions of milk by small scale producers with the ultimate objective of identifying priority areas of improving the efficiency of the marketing systems.

It evaluates the performance of dairy industry in Tanzania and the impact of changing socio-economic environment in milk demand. The socio-economic changes considered are liberalization of markets, rapid urbanization, urban agriculture including livestock keeping and changes in demographics such as human population age distribution. The project also reviews milk marketing systems in Tanzania with special attention to milk marketing channels (agencies), inter-regional comparison of milk price (spatial analysis) and seasonality and trends of milk price (temporal analysis).

Mdoe & Nyange (1994) argue that inspire of a rapid increase in the number of small scale milk producers and expanding demand for milk in Tanzania, marketing

functions of the dairy industry seems to be lagging behind and marketing system for milk is less organized. The project examines marketing functions of milk by small scale producers with the ultimate objective of identifying priority areas of improving the efficiency of the marketing systems.

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Most of the local milk processors lack appropriate technologies and adequate facilities to produce quality dairy products for export and local consumption. According to the Tanzania Dairy Board report Tanzania's milk processing capacity currently stands at 110,000 liters per day as compared to over 500,000 liters in Uganda and over 1.2 million liters in Kenya. And there are nearly 30 milk processors in the country, but only seven of them are considered to be major players. (TDB, 2009).

Despite the fact that Tanzania- milk industry has shown improvement in the recent past, the sector might take long before catching up with the other East Africa

Community partner states (Gregory, 2008) There is a need to build capacity of the local industries to enable them produce desirable quality and volumes for export, otherwise the country will remain the market for imported dairy products (Gregory, 2008). There is a need of focusing on a dairy production model that meets international benchmark without denying the local primary producer of their livelihoods by driving them out of business due to perceived inability to meet stringent world standards (Alnoor, 2009). Poor technology, lack of market information and inadequate capital are the key problems facing dairy producer groups.

Prime Time Dairy is a milk and milk product, processing plant. Its objective are

- (i) To use the local available raw material, milk from (Farmers)
- (ii) To create market for the milk, through value addition.
- (iii) To create employment at the local level.
- (iv) Improve living standard.
- (v) Create wealth to the community.

Prime Time Dairy is an alternative source for farmers who for many years have relied on sugar cane, farming, and as a results, it has increased the level of poverty in this region because of price and duration it take to harvest sugar cane. I intent to reverse this by creating market for the milk, thus most farmers will venture into dairy farming. Hand in hand with other stakeholder, I will facilitate training of farmers with other stakeholders. With the highest livestock population in the world, India has emerged as the largest milk producing country constituting about 16% of

the world milk production. This successful growth in the dairy sector over the years can primarily be ascribed to the ‘operation flood’ program, establishment of well-developed market linkages and marketing infrastructure. However, currently, dairy industries are facing high input costs for milk production, lack of infrastructure for handling, transport, processing and marketing. A sustainable dairy industry is possible only when the remunerative prices to the farmer, value to the consumer, reasonable returns to the industry and stakeholders are ensured. An efficient supply chain and value addition through product diversification are the key approaches that can make dairying business sustainable. The present study focuses on the rationale and critical issues for efficient supply chain management in dairy industry, various strategies for value addition of milk and scope of public-private-partnerships for sustainable dairy supply chain management.

### **3.3 Policy Review**

Policy review is about the regional and national policies that have been designed to provide a framework of the topic in question. So the focus is to review the past and current policies and assess how they provide clear guidelines in fostering or rather promoting Community Economic Development. Initiatives of women’s roles in agriculture activities.

#### **3.3.1 Policy Statements**

##### **3.3.1.1 Agricultural and Livestock Policy 1997**

The Agriculture and livestock research policy of Tanzania has one general goal that improvement of the well being of the people whose principal occupation and way of life is based on agriculture. Most of these are smallholder and livestock keepers, who

don't produce surplus. A number of objectives follow this goal; One includes improving the standard of living in the rural areas through increased income generation from agricultural and livestock production, processing and marketing. The following are some of the important policy statements regarding dairy production and management.

- (i) To enhance dairy production, the government will give high priorities to the strengthening of research extension.
- (ii) The government will assist the private sector to organized domestic and as well as export market for dairy products. Government responsibility will be in the areas quality control advocating for acquisition by private sector of capital for storage packaging and transport facilities, transportation network and providing market information service.
- (iii) The government will continue to streamline export procedures in order to encourage private sector to export greater quantity of varieties to overseas market.

According to Agricultural and Livestock Policy 1997, in the short and long term goal agriculture will continue to play a major role in the national economy. The policy deploys the need of review and analyses its sector performance with the view to identifying and removing constrain that prevent from making maximum contribution. The policy shows the key economics areas which are highly contributed by agriculture, this include country growth domestic product (GDP), export earning and employments in which the agriculture sector accounts for 60% and 84% respectively.

### **3.3.1.2 The Tanzania Development Vision 2025**

The vision come to being after the realization that, the country need to develop itself in all areas in order to be active participants as the nation in a global development world characterized with advance technology, high productivity, modern and efficient transportation and communication infrastructure.

The Development vision objectives include achieving quality and good life for all; good governance and the rule of law; and building a strong and resilient economy that can effectively withstand global competition. The national development vision deploys the intent of being people centered. It consider the national development as fact in which wealth are created and distributed freely from inequalities and all forms of social and political relations which inhibits empowerment and effective democratic and popular participation of all social groups in society. The government committed to create the situation so as to foster economic transformation from a low productivity agricultural economy to a semi-industrialized one and highly productive agricultural activities which are affectively integrated and buttressed by supportive industrial and service activities in the urban and rural areas.

By year 2025 there should a participatory livestock sector, operating productive commercially run, practicing sustainable livestock farming, with improved livestock providing better employment, enhancing standard of living, supplying raw material for industries, mainstreaming gender increasing contribution to national income while protecting the environment. Furthermore livestock policy (2006) has been formulated to address and articulate the needs of revitalizing the sub-sector by

pursuing macro and macro-economic policy reforms which are taking place in country. The policy aims at modernizing livestock Industry. Milk production increases from 555 million to 1.38 billion litres 1955-2005.

Between 2006 to 2007 there was only modest increase in milk production from 1.41 billion to 1.42 litres from paper it is evident that the livestock industries is essential for livelihood of the people. Potential for increasing production of livestock and livestock products exist increased investment in the sub-sector will have a profound effect in the development of the industry and the economy as whole.

Despite increase in production trends of livestock and livestock products in the country performance of sub-sector has continued to remain in low, as the industry continues to be faced with challenges. As indicated in the livestock developments vision the best optimum in modernizing of the industry leading into its commercialization. Addressing important issues along the livestock commodities value chain will help to stimulate increased growth. (Njombe and Msanga, 2007).

### **3.3.2.3 Summary of Literature Review**

The literature review above examined three types of literature reviews namely theoretical, empirical and policy review. The objective was to gather relevant information by wide reading books and journals about the topic in order to clarify the problem statement. The study intend to cover the knowledge gap of dairy value addition through small scale processing technologies as there is many research done on marketing of milk very little has been done in terms of dairy value addition through small scale processing technologies. Also another gap is to increase the

number of livestock keeper's market channels. Due to the value addition done in the dairy production I expect the number of dairy producers were tremendously increase according to the market demand.

Due to the supportive policy on the agriculture and livestock, the UWASO members and the whole community of Sokon 1 are in the position to assess and utilize the opportunity for poverty alleviation, through the implementation of income generating activities in Agriculture and livestock. Unless there are ways of introducing appropriate technology and good livestock policy, the situation may worsen in that future for UWASO community for poverty alleviation.

The dairy value addition through small scale processing technologies will be helpful to UWASO members in raising their household income. As income rise and economic condition improve, demand for more varied foodstuff increases. In this regard milk and milk products lend themselves extremely well to being presented in diverse forms. Via processing, value is added to the raw materials; milk even itself, can be presented in a wide number of ways, many of which are associated with adding value. Each year a large number of new products are being brought in the market.



## **CHAPTER FOUR**

### **4.0 PROJECT IMPLEMENTATION**

#### **4.1 Introduction**

Implementation is the execution or practice of a plan, carrying out a method, or any design for doing something. The purpose of the project is to improve quality of life of Sokon 1 community members. The overall objective of the project is to provide knowledge and skills on Dairy value addition through small scale processing. By the end of May 2013 project implementation was participatory in nature involving target group stakeholders as well as researcher. The implementation of the project begun in May, 2013. The project planning involved CNA and situational analysis of the CBO (UWASO group) to identify capacity building gaps hence prepare an implementation plan to address the gaps which were identified. Therefore this chapter describes what was supposed to be done according to the plan, what have been done and report what was accomplished. The chapter describes in detail the project which was to be implemented, it shows planning schedule and activities that had to be implemented. It itemizes expected and actual products and outputs and staffing pattern.

#### **4.2 Products and Outputs**

During the preparation of the implementation plan a list of output indicators describing project activities were also developed according to specific objectives. Such list of indicators was important in the process of measuring the desired success.

##### **4.2.1 Project Output**

It was expected that the following outputs could be realized upon implementation of activities.

- Supply of high quality milk
- Extended milk shelf life.
- Improved profit margin
- Ensure sustainability of the project

#### **4.2.2 Project Product**

The major product is livelihood improvement of the UWASO group CBOs members and Sokon 1 community at large. This is expected to be reached after realization of income from dairy products and other income generating activities. It is expected that UWASO group CBOs and others who will spillover effects of the project will have improved shelter, good clothing, good house hold furniture , increased purchasing power, good meals and savings to cater for other expenses like health, school fees and recreation.

### **4.3 Project Planning**

This section shows project implementation plan, inputs needed to accomplish activities, the staffing pattern of the CBO and project budget which will enable the project to be implemented.

#### **4.3.1 Implementation Plan**

The following is the project action plan which shows summary of objectives and activities to be carried out, resources needed for each activity responsible person and time frame.

- (i) To educate 93 milk producers on how to prepare cultured milk by May, 2013.

- (ii) To train 93 milk producers, consumers, processors and marketers on hygienic handling of milk by May, 2013.
- (iii) To train 93 milk producers, consumers, processors and market on the importance of cold storage facilities in handling milk by May, 2013.

**Table 6: Project Implementation**

Objective	Activities	Resource/Input	Time frame	Responsible persons
To educate 93 milk producers on cultured milk as one of dairy value addition through small scale milk processing technologies.	To conduct training on Milking processing technology starting with cultured milk -Personal hygiene -Milking processing -Milk hygiene -	-Transport -Funds -Stationeries -Training material -consultancy cost	April-May 2013	CED students consultants, LITA TENERU
To train 93 milk producers, processors and marketers on dairy value addition by May 2013	To conduct training on Dairy value addition Milk acceptance& rejection criteria Transportation conditions Milk quality testing procedure	Transport Funds Stationeries Training materials Consultancy cost	April-May 2013	CED students, consultants, LITA TENERU
To train 93 milk producers, processors and marketers on the importance of cold storage facilities in handling milk by May 2013	To conduct training on; Storage equipment and pre-cooling requirements. Processing aspects Marketing environment	Transport Funds Stationeries Training material Consultancy cost	April-May 2013	CED students consultants, LITA TENERU

**Source: Survey, (2013)**

**Table 7: Logical Framework Matrix**

<b>Summary of objectives and Activities</b>	<b>Objectives Verifiable Indicators (OVI)</b>	<b>Means/Sources of Verification (MOVI)</b>	<b>Assumptions</b>
Goal: To train target group on dairy value addition through small scale Processing technology.	Products with value addition was produced	CBO reports observations	Successful implementation of the project activities.
Specific objectives:  -To educate 93 milk producers on hygienic milk May 2013	93 people trained. The low rate of milk perishability Cleanliness of the milking environment Hygiene of the cow Personal hygiene of the milker	Observation Interview	Consultants available Fund available Target group attended training. Active participation of target group.
-To train 93 milk producers, consumers, processors and marketers on hygienic handling of milk by May 2013	93 people trained Skills on milk handling Lack of adulteration The low rate of milk perishability Skills on milk quality testing	Survey/observations CBO reports	Consultants available. Fund available. Target group attended training. Active participation of target group.
-To train 93 milk producers, consumers, processors and marketers on the importance of cold storage facilities in handling milk by May 2013	Number of people trained The low rate of milk perishability Low rate of milk spoilage	CBO reports Observations Interview	Consultants available. Fund available. Target group attended Cooler machine available
Expected outputs Effective use of best practice for milk processing and quality control. Hygiene and genuine milk. Increased quality of selling Innovative, initiative attitudes.	Low rate of milk perishability. High quality of milk supplied to customers. Increased sales turnover. Customer care improved	Interview with group members. Interview with customer. CBO financial report. Observation and interview with customers.	Training objectives achieved Qualified staff employed Cold storage facilities purchased.

<b>Activities</b> To train the target group of milk value addition. To train the target group on milk hygiene To train target group on better ways of milk collection and preservations. To train the target group on methods of improved way of milking. To conduct on marketing concepts- 4 P 's (Product, Price, Promotion and Place) in relation to milk marketing. To train target group on the basic principles and practice of entrepreneurship.	<b>Inputs</b> Training venue Consultants Transport Stationery Food and refreshment Training materials Accommodations Training manual Funds Consultant cost	Cash sales receipts. Receipt voucher. Delivery note.	Sufficient financial resources to hire consultants. Active participation in training of target group. Sufficient resources to meet training costs.
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**Source: Survey, (2013)**

The project desired to implement a number of activities. These activities were geared towards accomplishing a number of project objectives previously set. The details on activities, inputs (resources) and out puts are described in the project logical framework.

#### **4.2.2 Inputs Required for Accomplishing Project Objectives**

The inputs required for accomplishing the above planed objectives and activities are shown in table below

**Table 8: Project Inputs**

<b>Inputs</b>	<b>Cost (Tshs)</b>
Consultancy cost	100,000
Training costs	20,000
Training venue	-
Training materials/ manual	50,000
Transport for moving from one place to another	10,000
Total inputs (costs)	180,000

**Source: Survey, (2013)**

### 4.3.3 Staffing Pattern

The Manager and Book Keeper need training on business and financial management while Milk collectors and Milk sellers need training on milk preservation. The table outlines staffing plan and training needs of the project staff and the job description of each staff had been prepared as indicated in Table 9.

**Table 9: Staffing Plan and Training Needs**

No	Position	Supervisory role	Training needs
1	Chairman	Top executive officer of the project. Overall supervisor of the project activities.	Leadership and management of the project. Financial management Business management Project planning and management Monitoring and Evaluation
2	Accountant	Keeps the book of accounts of the CBO. Prepare and present financial reports to the CBO general meetings.	Bookkeeping. Financial management Business management
3	Milk collectors	Hygienic milk collection and handling	Hygienic milk collection and storage
4	Milk sellers	Hygienic Milk handling and selling	Proper milk handling and storage
5	Quality controller	Oversee milk quality	Quality control and assurance

**Source: From survey findings**

### 4.3.4 Project Budget

The budgeted fund for project implementations was realized from different sources. The internal source (the CBO) contribute 10% of the total project budgeted fund and through fund mobilization, the facilitator (CED student) contributed 90% which came from the following sources; Agriculture department contribute 50%. And the rest by CED student.

**Table 10: Project Budget**

<b>Activity</b>	<b>Budgets (Tshs)</b>
Identification of training needs	50,000.00
Preparation of training materials/manual	50,000
Identification of training resources (Human and financial resources)	50,000.00
Acquiring required training resources	50,000.00
Meeting with target group leaders to compromise and confirm training schedule.	50,000.00
Consultancy costs	500,000.00
Conducting training on milk processing and quality control	300,000.00
Conducting training on better ways of milk collection and preservations	300,000.00
Conducting training on methods of improved way of milking (hygienic milking)	300,000.00
Conducting training on the concept of marketing and entrepreneurship.	300,000.00
Conducting training on simple of book keeping	300,000.00
Total budget	2,200,00

**Source: Survey, 2013**

#### **4.4 Project Implementation Report**

Implementation process of the project was mainly based on planned activities. The process started with identifying the target group so as to train the right persons. Then training materials were prepared. This process was done in order to enable the target group to get the right training. This process was followed by preparing training manual make ready for training which is done by consultant, thereafter training venues were prepared. This was followed by conducting training to the target group. Training sessions were held for CBO members, who are milk producers. The accomplished tasks in respect of the implementation plan were:

1. Training on dairy value addition
2. Training on pre-milking preparations,
3. Training on cow hygiene
4. Training on milk environment
5. Training on storage equipments & pre-cooling requirements
6. Training on milk quality testing procedure
7. Training on milk acceptance & rejection criteria
8. Training on milking processing aspects
9. Training on milk packaging requirements
10. Training on marketing environments

Then CBO was enlightened on plan of operation. The CBO learn to prepare annual implementation plan. Trainings were conducted by the one consultant (livestock officer) from LITA-Tengeru. Training of this kind insisted to be conducted to the CBO members regularly, until they manage to handle milk business operations without external back stopping. So far, the CBO members participated effectively for implemented and executed project at all stages of planning implementation, monitoring and evaluation. This was possible because of:

- (i) Presence of the sense of project ownership. The members made decision and exercised their power on CBO affairs through general meetings, which are convened monthly. This scenery attributes the sense of ownership to be high.
- (ii) Transparency was another factor where members at any time have rights to ask and get financial affairs of the project. Also members have right to summon special general meetings when they feel that things are not going well for the



project. This situation leads the management to operate the project in open bases.

- (iii) Presence of members whom empowered by knowledge of participation self confidence, co-operation, responsibility and commitment.
- (iv) Also the CED student will be available because the CBO community is within her working area.

#### **4.4.1 Project Implementation Gantt Chart**

A Gantt chart is graphical representation of the duration of tasks against the progression of time. A Gantt chart is a useful tool for planning and scheduling projects. A Gantt chart is helpful when monitoring projects progress. A Gantt chart is a type of bar chart that illustrates a project schedule. Gantt charts illustrate the start and finish dates of the terminal elements and summary elements of a project. Terminal elements and summary elements comprise the work breakdown structure of the project. Some Gantt charts also show the dependency relationship between activities.

**Table 11: Project Implementation Gantt Chart**

Activities	Implementation period												Resources needed	Responsible person	
	2012						2013								
	J	A	S	O	N	D	J	F	M	A	M				
Identification of the community														Stationery	CED students
Writing a letter requesting to conduct CNA														Stationery	CED students
Conducting CNA														Funds Stationery Fuel	CED students Community Members
Identification of problem														Funds Stationery	CED students Community Members
Project formulation														Stationery	CED students Community Members
Writing CNA report														Stationery, funds	CED students
Identification of training needs														Funds Stationery	CED student and Target group
Identification of training resources														Funds Stationery	Facilitator CBO leaders
Mobilization of financial resources														Funds stationery	CED students CBO leaders
Preparation of training materials/ manual														Funds, stationery	CED students &Consultant
Identification of training venue														Stationery, funds	CED students & CBO leaders
Acquiring required training resources														Funds	CED student Trainers
Meeting with CBO leaders to compromise and confirm training schedule														Funds Stationery	CED student CBO leaders
Conducting training on milk processing technology														Funds Training materials	CED student Trainers CBO leaders
Conducting training on dairy value addition through small														Funds Training materials	CED student Trainers





**Figure 12: CBO Members Practicing on How to Measure and Inspect Milk During Training**



**Figure 13: CBO Members Discussing After the Training**

## **CHAPTER FIVE**

### **5.0 PROJECT PARTICIPATORY MONITORING, EVALUATION AND SUSTAINABILITY**

#### **5.1 Introduction**

This chapter describes in detail the importance of monitoring and evaluation and how monitoring and evaluation is achieved. It also indicates methods and tools, which were used in monitoring and evaluation process and the indicators used. On top of that, this chapter discussed in details the sustainability of the project and shows the strategies that project could be sustainability.

#### **5.2 Participatory Monitoring**

Monitoring involves the whole process of routine data gathering on project implementation. It is executed continuously throughout the project implementation life. The project management gets feedback on the performance through weekly and monthly project monitoring reports, review of production and service delivery and Management Information Systems (MIS). Monitoring information is vital at all stages of project planning as they show the trend and measure the progress of project implementation.

##### **5.2.1 Monitoring Information Systems**

The UWASO group members are the primary beneficiaries of the project. They know what they wanted to achieve through this project. The CED student, livestock officers, LITA-Tengeru facilitated the group on activities to be carried out in Dairy value addition through small scale processing technology. They were assisted to

identify indicators for showing achievement of set of objectives and also for seeing if the activities planned were conducted. It was also agreed on who will be gathering the information and how often should that information be shared with others thus giving feedback. In addition, the monitoring process was developed which include identification of successes and challenges emanating from their business.

### **5.2.2 Participatory Monitoring Methods**

Methods used for data collection in monitoring were; interview, questionnaire, direct observations and review of secondary data.

#### **5.2.2.1 Interview**

Interview method facilitated the collection of data on project performance during monitoring. The facilitator collected data from 32 respondents who were the key players of the project. The members of the CBO within the area of study were the key players who participated fully in this exercise. Monitoring schedule was used as guide in the monitoring.

#### **5.2.2.2 Observations**

Data collection by the interview method was complemented by observation method. The researcher was engaged in the physically observation of what was going on without direct participation in the business. This method helped the researcher to understand the situation of project performance. So through this method, responses of respondents in some cases were observed and verified physically by the researcher in the course of monitoring.



### 5.2.2.3 Review of Documents (Secondary Data)

Normally to get relevance of information the study reviews various documentary sources related on milk marketing within and outside of the CBO. A number of documentary sources used to accomplish monitoring process, which include; generally meeting minutes, the books of accounts of the project, milk value addition of the project, milk quality standards and financial report of the project.

**Table 12: Review of Documents (Secondary Data)**

Work plan activities	Monitoring objective	Objective verifiable indicators	Importance of monitoring	Responsible person	How gathering monitoring information	Planned delivery time
Identification of training needs	To know training needs of the target group	Conducted trainings Target groups attended trainings	To know the gap and train what is real needed by the target group	CED student CBO members	Training needs assessment report	April 2013
Identification of human resources (human and financial resources)	To know and get right trainers and funds for training	Acquired resources.	To have valuable resources for implementation of the project.	CED students CBO members CBO leaders	Human finance resource report	April 2013
Preparation of training materials/training manual.	To get training manual for guide training.	Developed training manual.	Having a tool of training	CED student Consultancy LITA Tengeru.	Training report and manual	April 2013
Identification of training venue	To have venue for training	Acquire venue for training	To avoid inconveniences	CED students CBO members CBO leaders	Visiting training venue	April 2013
Acquiring required training resources	To acquire training materials	Acquired training materials	To be well organized before starting trainings	CED student	Training resources report	April 2013

Meeting with target group leaders to compromise and confirm training schedule	Acquitting group leaders and members the intention of trainings	Conducting group leaders meeting	To make training move smoothly and as planned.	CED students trainers	visiting the CBO leaders CBO leaders meeting minutes	April 2013
Conducting training on dairy value addition through small scale processing	To provide knowledge and skills to the target group	Number of participants attended trainings	Target group acquire knowledge and skills	CED student Trainers consultant	Training report Relevance of training materials	April 2013
Conducting training on better ways on proper way on how to run milk Industry	to provide knowledge and skills to the target group	Number of participants attended trainings	Target group acquire knowledge and skills	CED student Trainers consultant	Training report Relevance of training materials	April 2013
Conducting training on methods of improved way of milk handling and quality control	To provide knowledge and skills to the target group	Number of participant attended trainings	Target group acquire knowledge and skills	CED student Trainers consultant	Training report Relevance of training materials	April 2013
Conducting training on the concept of marketing and entrepreneurship.	To provide knowledge and skills to the target group	Number of participant attended trainings	Target group acquire knowledge and skills	CED student Trainers consultant	Training report Relevance of training materials	May 2013
Training on simple book keeping	To provide knowledge and skills to the target group	Number of participant attended training	target group acquire knowledge and skills	CED student Trainers Cooperative officer	Training report Relevance of training materials	May 2013

#### 5.2.2.4 Monitoring Results

According to collected data by interview, dairy value addition through small scale processing technology had been work gradually at the project. The project



established the new milk purchasing system as an entry point of addressing milk handling and quality control. For a new system, all jerry cans were cleaned by hot water a day before closed with lids and be kept at a safe place ready for purchasing milk, the following day to be consistent and systematic milk producers were asked to use insulated materials when sending milk to the CBO's collection centre.

According to the results of interview, about 85% of milk producers acknowledged and brought milk by using recommended tools and 15% were using normal tools (plastics of five and twenty litres) for selling their milk. Together with what listened from respondents, the facilitator managed to observe milk producers when were selling milk at the CBO during monitoring process.

#### **5.2.2.5 Milk Adulteration and Spoilage**

Milk adulteration is a major problem which was threatening the take off stage of the project life of the CBO. This was an interesting area and the researcher was probing the position of milk adulteration all the time during monitoring process. In the interview 72% of respondents agreed that education to the community enabled the rate of milk adulteration to decrease. The rate of decrease was increasing gradually and the trend of decrease would probably continue almost to zero. Beside that 86% of respondents appreciated the validity of the training program and acknowledge that the post milking loss due to spoilage was declining daily. Generally, the declining trend of milk adulteration and spoilage was recorded each month as shown in Table 13.

**Table 13: Milk Adulteration and Spoilage for April 2013 to June, 2013**

<b>Month</b>	<b>Decreased in quantity of adulterated milk</b>	<b>Declining of milk spoilage</b>
April	7	32
May	3	39

**Source: CBO reports, 2013**

The total amount of adulterated milk sent to the CBO in these two month of year 2013 was 82 litres, but in year 2013 during the period of project interventions adulterated milk supplied at the CBO's collection center decreased to 10 litres, which is almost 8.2 % decrease. The decrease of milk adulteration justifies the significance and validity of training provided to the community and existence of the project. The decline of milk spoilage attracts and calls for the project grown and sustainability.

#### **5.2.2.6 Community Turn up and Participation in Trainings**

Generally, implementation of training, researcher observed turn up and participation in training was good, the aggregate of 85% of the target group were attending trainings which were provided by the consultant from LITA – Tengeru Mr. Mkai .Participation in trainings was good, due to the active participation of the majority participants through asking questions, providing their opinions and their experiences. (Survey, 2013).

On the other hand, the rate of community participation on implementation of project activities was raised from 60% in January 2013 to 95% in June 2013. According to that report, community participation in project implementation was determined by

the contributions of every individual person in milk business operations as the project endeavor to facilitate growth and enhancement of that business.

#### **5.2.2.7 The member's Participation to the General Meeting**

When visited the records of the CBO, the researcher examined the attendance reports and established that, the number of CBO members who were attending the general meetings were increasing (Table 14). By the time of project intervention, six general meetings were convened for different purposes. The attendance of each meeting before and after the project interventions are presented in Table 14.

**Table 14: Member's Participation to the General Meeting**

<b>Month/year</b>	<b>Number of CBO members</b>	<b>Attended members at the meeting</b>	<b>Percentage of members attended</b>
November, 2012	93	60	50%
December, 2012	93	62	52%
January, 2013	93	80	68%
February, 2013	93	85	72%
March, 2013	93	90	76%
April, 2013	93	90	80%
May, 2013	93	91	83%
June, 2013	93	92	86%

**Source: CBO records, 2013**

The table 14 indicates the impact of the project to the CBO members before project intervention member's participation was around 50% at the last two meetings but after project intervention, members' participation raised to more than 80%. The increase of members' participation implies that the project had brought impact to the community and it is a flyway of project sustainability. On the other hand, the general meetings of the CBO become systematic and convene regularly with specific agenda even though the members were convening monthly. Arrangements of the matters of the meeting and writing of minute were not systematic. But after project intervention arrangement of matters of the meeting and minutes changed to the better.

#### **5.2.2.8 The Books of Accounts of the Project**

Apart from doing planed basic training, the project was trained on elementary book keeping. This was done in order to enable the project to keep its business transactions records properly and provide implementation report and hence reduce final accounts.

#### **5.1.2.9 Milk pricing**

Milk prices at the market were determined by the force of demand and supply and this was the prudent of pricing system which governed project operations. Under this system the researcher had to observe milk prices and its effects to the project. According to the observed results, milk prices were fluctuating between two seasons whereby during rainy season the price was a bit lower than in dry season. This is because in rain season the milk production was at optimal level, in such a way that milk supply was defeating market demand and so milk price was forced to fall down

in order to match with market demand. However, during dry season milk price had a new shape where the price was much higher since this period had shortage of milk supply. Price and demand relationship in rain seasons pick and dry seasons slack.

Availing milk price behavior also influences milk pricing to the project. So it was important to monitor carefully this area so that the influence of market price does not kill the project. Better enough market prices didn't fluctuate in such a way to affect the project operations. Milk pricing system under the force of demand and supply was determining milk price and genuinely, there were no collusion or agreement from CBO competitors on milk pricing for killing the project.

#### **5.2.2.10 Revenue and Expenditure of the Project**

The facilitator was keen enough in making follow up on what was coming in and going out to the project. The facilitator was frequently perusing the books of accounts of the project in order to see receipts and payments of the project. The books of accounts and monthly incomes and expenditures of the project were kept and recorded by the book keeper. She was responsible to produce and submit monthly report to the general meeting of the CBO. So the facilitator was responsible to monitor project documentations in such a way that monthly report has to be produced and submitted to respective authorities at the right time and comply with the condition which is legal binding. The book-keeper produced and submitted project implementation reports to the general meeting of CBO.

On the other hand, project monthly income and expenditures were doing well at the period of the project implementation. Monthly project performance figures were the

base of performance for the project process in monitoring. Table 15 below shows the project performance figures (sales and expenditures), which were collected by the researcher during project monitoring.

**Table 15: Revenues and Expenditures of the Project for January to May 2013**

Month	Sales (Tshs)	Expenditure (Tshs)	Margin (Tshs)
April	80000	67000	13000
May	85000	73000	12000

**Source: CBO reports, (2013)**

### **5.3 Participatory Evaluation**

Evaluation measures progress of project implementation against planned objectives. It reveals how the project did and learns from experience how implementation can be improved. Evaluation of the project is done periodically in the mid and at end of the financial year of the project. The internal evaluation has to be done by project staff leaders, while donor(s), consultant or any other interested parties could carry out external evaluation. However for the project, evaluation is agreed to be done at the following areas; progress of work plan, implementation of planned activities, achievements of objectives, efficiency and effectiveness and impact of the project. Therefore the project has decided to make formative evaluation in the end of April, 2013 and summative evaluation in the end of may 2013. Formative evaluation indicators provide data which lead to making of decisions on modification, adjustment and improvement of project operations while summative evaluation indicators lead to make decision to continue or close the project. The income and outcome of the project were observed through changes in the community wellbeing, multiplication of the project effects and performance of the project.

### 5.3.1 Project Performance Indicators

The following are the summary of the performance indicators against project objectives as shown in Table 16.

**Table 16: Performance Indicators**

S/No.	Objectives	Performance indicators
1.	To train 93 milk producers on April, 2013 dairy value addition through small scale processing technology	A. Number of CBO members trained. B. Good milk hygiene C. Increase of milk sales turnover
2.	To train 93 target group on hygienic handling of milk by April, 2013	A. Number of target group trained. B. Good milk hygiene C. Number of litres of milk spoiled D. Increase of milk sales turnover.
3.	To train 93 milk producers, consumers, processors and marketers on the importance of cold storage facilities in handling milk by April, 2013.	A. Number of target group trained. B. Number of litres of milk spoiled. C. Number of litres of milk perish ability. D. Increase of milk sales turnover. E. Availability of cold storage facilities.

**Source: Survey, (2013)**

### 5.3.2 Participatory Evaluation Methods

Methods used to collect data in evaluation were; focus group discussion, and secondary data. These methods were complimenting each other in evaluation process.

#### 5.3.2.1 Focus Group Discussions

Evaluation process was involving a focus group which had 10 persons those members were selected from the population in respect with specific criteria. They

were milk sellers and customers who were men and women with the age between 30-45 years old. The second criteria, all of them were supposed to have stakes to the project. However, ten questions which were appended at appendix, were used to conduct evaluation in the focus group discussion.

**Table 17: Secondary Data**

S/No	Project objectives	Performance indicators	Expected outcomes	Actual outcomes
1	To train 93 milk producers on dairy value addition through small scale milk processing by may 2013	-Number of CBO members trained -The dairy value product -Good milk hygiene -Increase of milk sales turnover -Number of litres of milk spoiled	-Increase of sales turnover. -Decrease of milk perishability -Genuine milk handling and delivering hygiene milk to customers.	-Sales turnover were increasing gradually. -Decrease of milk perishability was gradually seen at the CBO.
2	To train target group on hygienic handling of milk by may 2013	-Number of target group trained -Good milk hygiene -Number of litres of milk spoiled -Increase of milk sales turnover	-Genuine milk handling and delivering hygiene milk to customers -Increase of sales turnover -Decrease of milk perishability.	-Sales turnover were increasing gradually. -Decrease of milk perishability was gradually seen at the CBO. -Milk spoilage decreased
3	To train 93 milk producers, consumers, processors and marketers on the importance of cold storage facilities in handling milk by may 2013	-Number of target group trained -Number of litres of milk spoiled -Number of litres of milk perishability. -Increase of milk sales turnover -Availability of cold storage facilities.	-Increase of sells turnover -Decrease of milk perishability. -Genuine milk handling and delivering hygiene milk to customers -Decrease milk spoilage -Cold storage facilities available	-Sales turnover were increasing gradually -Decrease of milk perishability was gradually seen at the CBO. -Milk spoilage decreased -Small refrigerator facility is available. -Cooler will be purchased in December, 2013

**Source: Survey findings 2013**



### **5.3.2.2 Secondary Data**

The evaluation was done by examining books and files of the project thoroughly as summarized in Table 17.

### **5.3.3 Project Evaluation Summary**

#### **5.3.3.1 Changes in Community Wellbeing**

Results on assessing of community wellbeing after project implementation shows that 65% respondents out of 50 milk producers had their income increased by selling milk from the average of 4 litres per day to the average of 8 litres per day. As a result 30% of respondents were able to buy iron sheets for their houses and 15% were able to pay school fees for their children.

#### **5.3.3.2 Multiplication of the Project Effects**

This host organization of the project is CBO whose members deliver services to the community of Arusha city. During trainings, the project involved the members and non-members of the CBO such as milk customers and milk vendors who were not members of the CBO were also involved in training. So the acquired training and project business operation has influenced the replication of the activity project to the community thus multiplying its effects and by May, 2013 two more milk selling stations had been opened within Sokon I.

#### **5.3.3.3 Milk Adulteration**

It was an obvious verified fact from the majority of respondents that milk sellers were mixing water with milk before the product reaches to final consumers in town.

Some respondents went to extreme by bitter saying that, “some of milk sellers mix milk with water from ponds which is really not safe”. However, according to data all respondents (100%) acknowledged the decreasing of the adulteration after project intervention which was attributed to the conducted trainings.

#### **5.3.3.4 Relevance of Trainings**

The result of the interview revealed that, 86% of respondents were appreciative of training. They recommended that community training on milk marketing and entrepreneurship skills should be part and parcel of the project. Through the results we can conclude that, the offered trainings were motivating factors for project development and sustainability and delivered skills were friendly for community economic development. The project was advised to prepare a 3 years strategic plan, which will entail and integrate implementation of previous and new projects.

#### **5.3.3.5 Project Performance**

The performance as assessed based on comparative milk sales showed an increase in sales. This observation was based on comparison between January –March, 2013 sales which was taken as a base year and April, 2013 – May, 2013 sales the period of project intervention. Prior the intervention the actual milk sales were low but after the intervention (April to May, 2013) the actual milk sells was higher. On top of that, within the same year (2013), the project demonstrated a high discipline of expenditures and managed to get an actual profit. This situation certifies the effectiveness and efficiency of the project performance. Adulterated milk sent to the CBO during the period of project intervention were decreased. The decrease of milk

adulteration justifies the significance and validity of training provided to the community and existence of the project. The decline of milk spoilage attracts and calls for project growth and sustainability.

#### **5.4 Project Sustainability**

Project sustainability refers to the capacity of project to continue functioning and delivering intended services, by being supported with its own resources (in terms of human, material and finance) even when external sources of funds ends. However, sustainability of this project is expected to be in place since the CBO members were involved and participated effectively to identify, design and implementing the project. So provided training meets exactly the real and desired needs of the community for milk business operations in sustainable bases. Also the project will be sustainable since milk sales turnover and profit margin increases, and the rate of milk perish ability caused by poor milk handling decreases.

##### **5.4.1 Business Competition**

The project has local and outside business competitors. Local business competitors are milk vendors who sell milk direct to the community; they don't have business contact with the project. Milk vendors provide horizontal competition to the project since they sell the same project at the same market. On the other hand there were outside competitors who sell milk in Arusha city. Competitors of that kind provide vertical competition to the project, as they bring processed products, which are new products to the market. So in order to accommodate competition and challenges the project as a business entity has to organize itself and prepare strategies to harmonize

this situation. For sure this could work since CBO members, leaders and staff were empowered and trained on technical aspect and better practice of milk marketing, entrepreneurship and good governance of milk business operations and training on hygienic handling of milk and quality control. On the other hand, effective business competition could be possible only when the project maintain effective milk marketing. However to be effective and sustainable milk marketing, there should be four interdependent variables as described below.

#### **5.4.2 Skills of Milk Marketing**

Milk marketing skills enable the project to have techniques, which enable to compete with other milk marketing dealers and capture internal and external market. Also enables the project to run business in modern and improved way of operation. By having marketing skills, the project runs milk business by using economic principles and improved marketing functions. Skills enable the CBO to tape and capture available internal and external opportunities, plan and speculate the future diligently. So, this is important to be in place to the CBO.

#### **5.4.3 Entrepreneurship Skills**

Entrepreneurship skill is important as it helps the CBO to manipulate milk business and capture existing opportunities. On top of that, entrepreneurship skills help them to make speculations and take care of risks for the future development of the CBO. It however helps the CBO to be creative, aggressive, optimistic, ambitious, and innovative for the better performance and faster development.

#### **5.4.4 Capital**

Capital facilities operations of the CBO in terms of working and investment capital is not enough, but the CBO and Capital enables the CBO to get fund for purchasing involved tools and equipment for milk collection and handling. Also it enables to establish milk processing and cooling system. On the same time it provides working capital for running the business.

#### **5.4.5 Product Promotion**

Regardless to the size and level of the CBO, the market situation constantly influences the mode of operation of any business. Today for instance, the current market in Arusha city has a number of varieties of milk products which is coming inside and outside of the country. The present competitions make the product to operate at embarrassing environment so it needs to design strategies that lead milk business operations to be sustainable.

Product promotion is one of the strategies which is important to consider. Product promotion is vital; it places in mind and makes the customers to be aware of products. Also it makes the customers to know where and how to get the products. The project should not take for granted that customers automatically would buy their products. They have to design promotion strategies for milk marketing so that they can survive at the market. The market of milk is there and the project has opportunity of getting it since the project drivers have knowledge and skills of marketing and entrepreneurship.

#### **5.4.6 Financial Aspect**

Investment and working capital is important for project growth and development. If there is shortage of working capital the project won't meet operation costs and insufficient of investment capital draw back new or expansion of investment. This points shows that, this is one of the sensitive areas of project development and sustainability. To address capital of the project, the CBO members decided to establish a new project of poultry keeping.

This project will enable the CBO to raise much internal and be able to access external capital for milk business financing. Under this system the project will be sustainable in terms of working and investments capital. This approach addresses both short term and long term financing to the project. On top of that, the CBO project needs to plan and establish additional project which focus and address the project sustainability. Regardless its size milk processing is vital since it adds the value of milk product and thus why the CBO resolve to make a 3 years strategic plan.

#### **5.4.7 Strategic Plan**

Under free market economy the market is open throughout for anyone to enter or leave away where capital plays a big role for existence to the market. This combination of effectiveness, efficiency and capital could be expressed as a golden rule for survival at free market economy and this led to the project consideration of designing planning process. Through this package, the project made a strategic plan. The 3 years strategic plan was made with assistance of the researcher and it was

accomplished in May, 2013. According to the strategic plan, the project ironed out projects/activities that have to be accomplished within 3 years of its budget (Table 18).

**Table 18: Three Years (2012-2013, 2013-2014, and 2014-2015) Strategic Plan and Budget**

Strategic Objective	Activities to be implemented	Estimated budget''000''			Responsible Person
		Year 2012-2013 (Tshs)	Year2013-2014 (Tshs)	Year 2014-2015 (Tshs)	
Sustainability of milk project	Training on preparation and business plan	500	-	-	Consultant
	Training on monitoring and evaluation	800	-	-	Consultant
	Writing project proposal for funding construction of modern milk processing industry	500	-	-	Consultant
	Construction of modern milk processing industry		10,000	10,000	Contractor
	Soliciting external funds for acquiring cooling system	6,500	-	-	CBO Members International Heifer project
<b>Total</b>		<b>7,800</b>	<b>10000</b>	<b>10000</b>	

**Source: Survey, (2013)**

## **CHAPTER SIX**

### **6.0 CONCLUSION AND RECOMMENDATION**

#### **6.1 Introduction**

This chapter summaries the project work, it shows that was intended to be done, what have been done, what was happening, the shortcoming and success of the project, the overall views of the author and the recommendations on what should be done to improve the project in future. Also it is the area, which the author provides his experience to the readers in respect to the project.

#### **6.2 Conclusion**

##### **6.2.1 Community Needs Assessment and Problem Identification**

The participatory CAN was conducted and the main finding indicated that inadequate knowledge of milk handling and quality control and milk marketing is the most critical problem which led to the set up of this project. Thus this project focused on addressing issues related to dairy value addition through small scale milk processing technology quality control and milk marketing.

The achievements of the objectives were supposed to be attained through:

- (i) The increase of sales turnover. Sales turnover was increasing gradually, which is a sign of achievements where from April, 2013 to may, 2013 there is an increase of sale turnover.
- (ii) Decrease of milk perish ability and spoilage. Milk spoilage decreased from 32 litres in April, 2013 to 9 litres in may, 2013 while milk perish ability at the



CBO was decreasing systematic because milk producers were asked to use insulated materials when sending milk to the CBO's collection centre and about 85% of milk producers acknowledge and brought milk by using recommended tool.

- (iii) Improvement of business performance. Business performance improved in terms of profit margin whereby from April, 2013 to may, 2013 profit margin generated by the CBO amounting to Tshs 650,000.

For the case of capacity building of the CBO on the importance of cold storage facilities in handling milk, land and lakes NGO's were convinced to support the project on purchasing cooler which costs 15,800,000 Tshs. Therefore the two NGO's agreed to purchase cooler and handover to the CBO by December, 2013. Adulteration of milk was still found in a small rate at the CBO. This implies that, more trainings and awareness to the target group are needed. So this task was assigned to the project (CBO leaders).

The researcher had only 6 months to work with the CBO and the establish project was limited to time due to the fact that the period set by the university for project implementation was not enough but good news is that CBO is in the area where the researcher is working. Also the project had fund constraints where 90% of funds to implement the project were mobilized from the contribution of work which the main donors of the CBO.

### **6.3 Recommendations**

Based on the importance of dairy value addition through small scale processing and quality control it is therefore recommend that further training be conducted and widened to all stakeholders in various pastoralists' communities to ensure reliable market quality and extended milk shelf life.

Basing on literature review, CNA findings and problem identification, the CBO members still need more training on hygienic milking and using cooling facilities as this will reduce problem of milk perishability and increase profit to the business. The CBO members need more training in milk marketing and entrepreneurship. More awareness and mobilization is needed to milk producers on the effects of milk adulteration.

Basing on observation and implementation of this project a general it is recommended that CBO members need to be sensitized to attend monthly general meeting which has final mandate for decision making. Basing on monitoring, evaluation and sustainability, CBO need to write project proposal for finding construction of modern milk processing industry and soliciting external funds for acquiring cooling system machine.

Business management and book keeping training is also still needed so that members can effectively be exposed to how they can keep business transactions for profit realization.

The CBO members need to be innovative and initiatives in such a way that, they can solve the problem of internal capital funding through establishing savings and credit project. Savings and credit scheme could accommodate the problem of fund for purchasing required tools and equipments for milk marketing, milk handling, transportation and storage. Also shows possible internal and external sources of capital to the CBO. The following strategies are suggested to the dairy industry in Arusha city:

- (i) Arusha city council and other collaborating development partners such as NGOs, Civil Society Organizations (CSOs), and Donor agencies inside and outside the district (FIDE and DOCARS AID International) should support the project interventions.
- (ii) Also the Arusha city council is required to provide backstopping to the project by providing training and technical advice.
- (iii) Donor agencies and credit institutions should consider supporting project operations by providing grant or advancing credit to the project.
- (iv) The sense of ownership, control, and commitment is to be emphasized and trained to the project owners.
- (v) Empowering the project members on the project leadership and management is necessary to be in place as the project operations will be managed in sustainable bases.

- (vi) Business operations of the project should move with time. The project should produce the right product at the right time to the right people. By so doing the project will be sustainable at the market.
- (vii) The CBO should consider more on dairy addition value and selling more products from milk product. This could be possible by establishing milk processing industry which produces several products from milk.
- (viii) The CBO should struggle to mobilize internal and external funding to implement this project.

## REFERENCES

- All, K.O. 1990. Comparison of the keeping quality of naturally fermented sour milk and milk made by use of standard manufacturing methods. *Animal Sci. Spec. Project*, B.Sc. Agric. Sokoine University of Agriculture.
- Bachmann, M.R. 1979. Adapted techniques for collection, processing and marketing of milk in developing countries. 2: Milk collection and processing techniques. *Milchwiss*, 34 (9): 538 - 541.
- Bachmann, M.R. 1983. Milk processing in rural areas to support dairying in developing countries. *J. Dairy Sci.* 68: 2134 - 2139.
- Burchinal,lee-methods for researcher in developing countries: available in PDF and [www.srmdc.net/](http://www.srmdc.net/) last accced on October 2008
- Crewed, J.W (2008) *Research and design, Qualitative and mixed methods approaches* new delhi;sage
- Chambers, R (2005). *Revolution in development inquiry; navigation the Eclectic pluralism of development in practice* London Earth scan.
- Dawson C.( 2002), *Practical Research Methods a user friendly guide to mastering research*, Magdalen road Oxford OX1 IRE- United kingdom.
- David M. and Sutton C.D,(2004). *Social research: The basics*. Sage publications London . Pp.3-70
- Dues, V and Robert B.P (2006). *Doing development research: new Delhi sage*.
- Aparna Sharma (2000); *A brief Guide on How to Conduct a Needs Assessment*
- Gueye, E.F., (2000) *Financial Report: Implementation of Social Economical Empowerment Project*.

- FloydJ. Fowler (1986). 3<sup>rd</sup> edition, Applied social research method vol. 1Sage publications Beverly hill London New Delhi. India.
- Kaasen and MoynHam (2005) Information, its collection and use throughout the project life style. Available in Pdf.
- Kavishe F.P. Nutrition relevant action in Tanzania. *Tanzania Food and Nutrition Centre Monograph Series No.1*.Dar-es salaam: Tanzania Food Nutrition.
- Kibari J. Boki.(2000). Dairyry Industry in Tanzania with emphasis on small scale rural farmers. Rophin.
- Nyange K, (2001). Smallholder dairy production in Kenya<sup>1</sup>Kibari J. Bok(2000)i.dairy industry in Tanzania with emphasis on small scale farmers.
- Kaufman, Roger, Alicia M. Rojas, Hannah Mayer (1993). *Needs Assessment: A User's Guide*. Englewood Cliffs, New Jersey: Educational Technology Publications, Inc.. pp. 4.
- Kombo, D.K. and Tromp, D.L.A (2006). Proposal and Thesis writing. An introduction. Paulines publications Africa.
- Kothari C.R. (2004),Research methodology: Methodology and Techniques, New age International limited Publishers Pp, 1-24
- Krueger, R.A.(1988) Focus group: A practical guide for applied research. Newbury Park, Calfonia, U.S.A: Sage Publications.Inc.
- Kumar K. (1987), Conducting focus group interviews in developing countries. A.I.D. Program Design and evaluation. Methodology Report No.8.Washington, DC:U.S.Agency for International Development.
- Kumar R.(2005). Research methodology: A step by step guide for the beginners. Sage publications, India Pvt Ltd New Delhi 2005. Pp. 6-14

- Marketing Development Bureau, MDB (1993), A Review of Ruminant Livestock Industry. Ministry of Agriculture and Livestock Development, Dar es salaam, December 1993.
- Mkai, C.P.B., (1995) "*The relationship between a household budget survey and consumer price index*". Paper presented in a consumer price index workshop held in Tanga, 6th-8th February 1995.
- Mosomo S.& Ngaruko D (2010). Research methodology for Post Graduate studies , The open university of Tanzania.
- Narayan Deepa & McCracken Jennifer (1998); participatory and Social Assessment: Tools and Techniques, The World Bank Washington DC.
- Rwegoshora, Hosea (2006) a guide to social science research. TPH Tanzania
- Rwegoshora M. M. H. (2006); A Guide to Social Science Research, institute of Social work
- Saunders, Lewis, M.N.K. & Thornhill, P.A, (2009) Research Methods for business students.(5 ed) Harlow: Prentices hall – Financial times.
- Schutt, Russel (2004) Investigating the social world London.
- Shayo,H. E (2010). Beginners referencing resource. Handbook for young researchers. The Open University of Tanzania
- Stewart, P. (2003). Real Community Economic Development. *The Economic Role of Women in Agricultural and Rural Development: Promoting Income Generating Activities*; (1999).
- The World Bank Group (2003). *Empowering Rural Producer Organizations*. Women Livestock Manager in the Third World,
- UNICEF, 2000 TNZ: The Review of UNICEF-supported Women Economic Activities (WEA).

URT (1996). Community Development Policy. Ministry of Community Development, Women Affairs and Children. The United Republic of Tanzania.

URT (1997). Agriculture and Livestock Policy, Ministry of Agriculture and Cooperative, Dar es Salaam. The United Republic of Tanzania.

URT (2001). Agricultural Sector Development Strategy. The United Republic of Tanzania



## APPENDICES

### Appendix 1: Personal Interview

Respondents no .....

District \_\_\_\_\_ Village \_\_\_\_\_ Date \_\_\_\_\_

Respondent characteristics

- 1.1 Age ..... years (i) 18 to 45 years (ii) 45-65 years (iii) above
- 1.2. Sex..... M=Male F=female
- 1.3 Marital status: .....S= single M=Married W=Widow D= divorced
- 1.4: Level of Respondent education level:- .....
  - (i) primary
  - (ii) secondary
  - (iii) Informal education
- 2.0 Put the letter in the provided space;-
- 2.1. How many cows do you have? (\_\_\_\_\_)
- (a) 1
  - (b) 1-5
  - (c) More than 5
- 2.2. How many litres does your cow produce? (\_\_\_\_\_)
- (a) 1.....5 lts
  - (b) 5-----10lts
  - (c) 10-----20Lts

2.3. Where do you sell your milk (\_\_\_\_\_)

- (a) In the shop
- (b) Milk vendor
- (c) To the neighbor

3.0 What other activities you engage with other than keeping livestock.(-----

-----) Tick the correct activities;

- (i) Business
- (ii) Cropping
- (iii) None of the above

3.1 What are the major problems you are facing in keeping dairy cattle List them.....

- (i) .....
- (ii) .....
- (iii) .....

3.2 List down three dairy cattle diseases in your area.....

- (i) .....
- (ii) .....
- (iii) .....

3.3 Are there any other community services road, hospitals, and schools if yes rank it.....

- (i) Good
- (ii) Poor

(iii) Very poor

3.4 List any organization / non government which assist you.....

(i) .....

(ii) .....

(iii) .....

END