IMPROVING INCOME OF AKINAMAMA TUJIENDELEZE GROUP THROUGH MUSHROOM FARMING AT VIWANJA SITINI WARD IN IFAKARA TOWNSHIP

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A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF REQUIREMENTS FOR THE DEGREE OF MASTERS IN COMMUNITY ECONOMIC DEVELOPMENT (MCED)

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CERTIFICATION

The undersigned certifies that he has read and hereby recommends for acceptance by The Open University of Tanzania, a dissertation titled, **"Improving Income of Akinamama Tujiendeleze Group through Mushroom Farming at Viwanja Sitini Ward in Ifakara Township"**, in partial fulfillment of the requirements for the award of Degree of Masters in Community Economic Development (MCED).

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Dr. Albert Memba

(Supervisor)

.....

Date

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DECLARATION

I, **Christian Mwilenga,** declare that the work presented in this dissertation is original. It has never been presented to any other University or Institution. Where other people's works have been used, references have been provided. It is in this regard that I declare this work as originally mine. It is hereby presented in partial fulfillment of the requirements for the Degree of Masters in Community Economic Development (MCED) of The Open University of Tanzania.

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Signature

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Date

DEDICATION

This work is dedicated to my lovely Mama, Juliana Njombo, and Father, Flowin Mwilenga. Similarly to my brothers, Severine Bageita, Lusako Mwangungulu, Mantson Salewa, Sebastian Salewa, and Said Kiguru, and Sisters Ndeshimun Nkya and Solome Salewa, for their love and support they showed me during the period of my studies.

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I am very grateful to Almighty God for providing me with grace and protection during the whole time I undertook this study.

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This work would not be completed without the commitment of the target community, the Akinamama Tujiendeleze group from Viwanja Sitini ward in Ifakara town. Also other stakeholders who were tremendous source of motivation and encouragement. They all accepted to participate in this research project.

I extend my special thanks to family members and friends, and students of Masters in Community Economic Development (MCED) for their moral and material support during my studies. I also acknowledge the support of individuals and organizations, and everyone who made this project a tool to improve income for poor women.

ABSTRACT

This project was a result of the Community Needs Assessment (CNA) conducted at Viwanja Sitini Ward in Ifakara Township. The target community was an economic group of Akinamama Tujiendeleze. The CNA was a participatory process conducted to identify the needs, opportunities, and assets of a community. It also helped to determine a suitable project that would address the identified needs. The CNA had general objective of determining the challenges and opportunities of the Kinamama Tujiendeleze group at Viwanja Sitini ward in Ifakara Township. Specific objectives were to identify challenges facing the community; to identify income generating activities done by community; and to identify needs and develop interventions to tackle the identified needs. The CNA findings concluded that, the community was facing low-income situation and the project of growing mushroom was a viable intervention to improve community income. The intervention project started in June 2022 with specific objectives of training 10 group members on Mushroom farming skills by June 2022; mobilizing required resources for mushroom farming by July 2022; producing at least 60kg of mushrooms per month by August 2022; and selling mushroom products of TZS 500,000 per month by August 2022. Through process of project monitoring and evaluations, it was established that project implementation was successful. The completion of project activities at time of evaluation exceeded 95% of the expected outcome. It was further established that the project was sustainable economic activity with long-term impact of improving livelihoods of project participants.

Keywords: *Mushroom, Women, Income, Livelihood.*

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LIST OF ABBREVIATIONS AND ACRONYMS

CDO	Community Development Officer
CED	Community Economic Development
CNA	Community Needs Assessment
DCDO	District Community Development Officer
EUDP	European Union Development Programs
FAO	Food and Agricultural Organization
FFF	Farm for the Future
FGD	Focus Group Discussion
ICEP	Integrated Community Empowerment Project
IGA	Income Generating Activities
MNRT	Ministry of Natural Resources and Tourism
NBKP	National Mushroom production Program
NBP	National Mushroom production Policy
NGOs	Non-Governmental Organizations
O&OD	Opportunities and Obstacles for Development
OUT	Open University of Tanzania
PNA	Participatory Needs Assessment
SILC	Saving and Internal Lending Communities
SUA	Sokoine University of Agriculture
TAZARA	Tanzania – Zambia Railway Authority
TBL	Triple Bottom Line
UNDP	United Nations Development Programs

URT	United Republic of Tanzania
USAID	United States Agency for International Development
USD	United States Dollar
UWAWANYUI	Umoja wa Wanawake Wafuga Nyuki Ifakara
VEO	Village Executive Officer
VGA	Village General Assembly
VICOBA	Village Community Banks
WCDO	Ward Community Development Officer
WDC	Ward Development Council

CHAPTER ONE

PARTICIPATORY NEEDS ASSESSMENT

1.1 Background Information

The Participatory Needs Assessment for this study conducted at Viwanja Sitini Ward in Ifakara Town intended to accomplish two goals: to identify the important needs of the community and rank their problems. According to Sandru (2014), the Participatory Needs Assessment (PNA) is a research method whereby the community members are actively involved in identifying the most important needs or problems of their community. It is hoped, therefore, results from the conducted PNA would guide the future actions to be undertaken in the community.

PNA is a systematic method of setting organization priorities in which trained evaluators and program stakeholders share responsibility for all substantive and procedural decisions. Needs assessment is a key stage in the evaluation life cycle of programs; where is conducted either by practitioners without involvement of trained evaluators or by external trained evaluators.

PNA is a research method based on the principle of participative democracy which upholds the community members' active participation in democratic life. It encourages the dialogue between the stakeholders and advances innovating share-capital consolidation forms within local communities (Bock, 2016). PNA is effective research methodology that provides practitioners of community development with tangible and effective actions to address community problems and meet their needs. Women in Ifakara town were the target community. They formed a majority of the

population and many were unemployed and economic dependence. They worked in different economic activities to increase income and improve their livelihoods. Although a lot of efforts were taken by women engaged in micro and small enterprises, they still faced inadequate capital resulting into low income from business. Thus, the majority of group members in Viwanja Sitini fail to afford the basic needs of their household due to low income generated from meagre and inferior businesses.

The target community faced various challenges which hindered its participation in economic activities. They lacked skills and inability to access loans from financial institutions. Therefore, PNA was conducted to provide valuable opportunity for the community to identify its challenges, present needs and get best ways to address its problems. The target community worked with the researcher and other stakeholders to develop a desirable project that would improve income of women group in Viwanja Sitini ward in Ifakara Township.

1.2 Community profile

This section describes the conditions and trends of the community under study. It narrates the geographical location, demographic features, administrative structures, and socio-economic situations. This analysis is important to help the researcher to understand the general condition of the community before implementing the project.

1.2.1 Geographical Location

Ifakara is a small rural town in Kilombero district, Morogoro region which was upgraded to Township Council in 2015 through GN number 220. It is the

administrative centre for Kilombero and trade centre for Ulanga districts. The town is located near the Tanzania-Zambia Railway (TAZARA) line, at the edge of Kilombero Valley, bordering Rufiji basin and Selous game reserve. Etymologically, the name Ifakara is composed of two Ndamba words: Ufa and Kara which mean "land is destructed" or "land is totally dead". The town has an area of 3,893 km² with flat topography, situated in a vast floodplain.

Ifakara experiences a modified equatorial climate. It is generally hot and humid throughout the year with an average temperature of 28°C. The hottest season is from October to March while is relatively cool between May and August with temperature around 25°C (Williams, 2017). There are two rain seasons: the short rain from November to December and long rain from March to June. The average annual rainfall is between 800mm –1000mm. Humidity is around 96% in the mornings and 67% in the afternoons. The climate is influenced by the Southwest monsoon winds from April to October and Northeast monsoon winds from November to March (Rahman, 2017).

1.2.2. Demographic features

According to population and housing Census 2012, the population of Ifakara Town was 106,424 people (52,148 Males and 54,276 females). With the population growth rate of 2.8% per year, the population was estimated at 122,600 by December 2015. The growth rate is higher than regional and national figures of 2.4 %. The indigenous people of Kilombero District are Bantu ethnic groups of Ndamba, Mbunga and Ngindo. Other minor ethnic groups include Pogoro, Hehe, and Bena. However, in

recent years, there are immigrants of Maasai, Sukuma and Barbaigs who are engaged in livestock keeping and business activities.

1.2.3 Administrative Structures

Administratively, Ifakara Town Council is subdivided into nine (9) wards, 11 villages, 33 streets and 64 Sub-villages. The Town Council is divided into urban and rural area; out of nine wards, five are urban and four are rural. The administrative structure and geographical borders are shown in Figure 1 and 2 below.

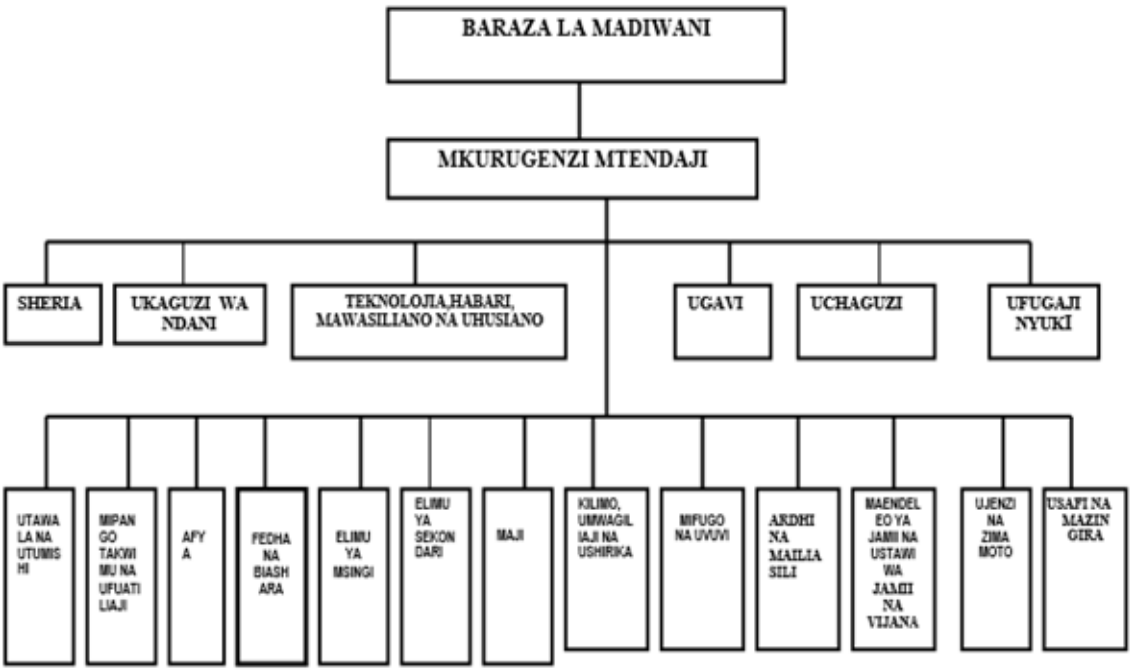

Figure 1.1: Town council administrative structure

Source: Ifakara Township Office, 2021

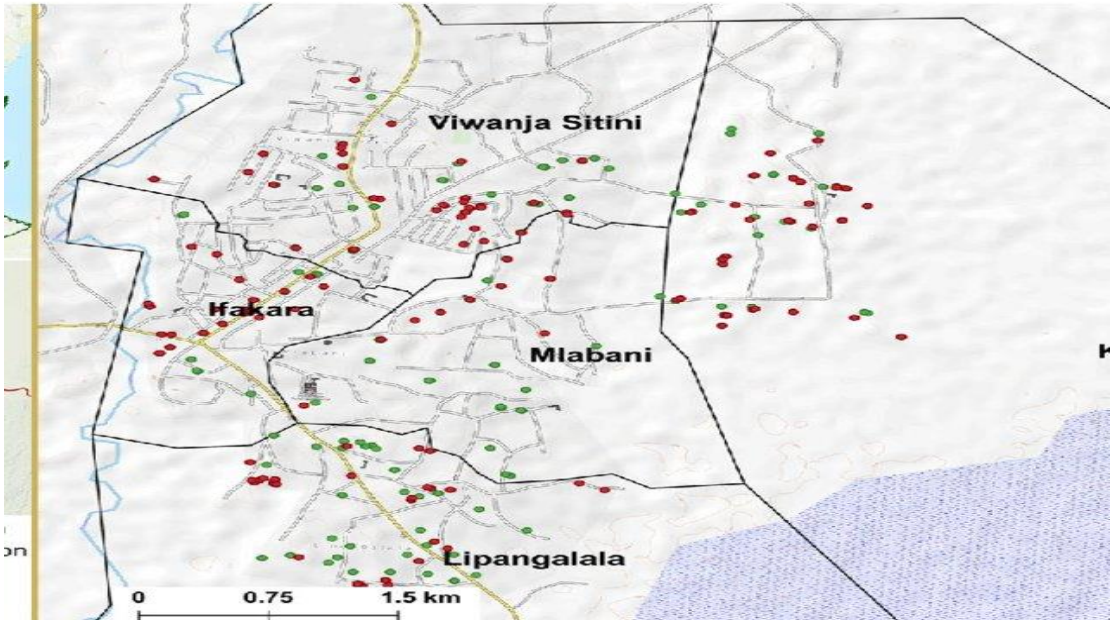

Figure 1.2: Administrative Setup Map

Source: Google Map (2021)

1.2.4. Social activities

Ifakara is home to six major institutions in the Tanzanian health and water sectors. They include. Ifakara Health Institute is recognized internationally for its research on malaria and other tropical diseases. St. Francis University College of Health and Allied Sciences (SFUCHAS), a constituent college of St. Augustine University of Tanzania. St. Francis Designated Referral Hospital. Maji Safi Kwa Afya Bora Ifakara (MSABI). And Ifakara School of Nursing. There are both private and public education providers, notably Kilombero and Ifakara secondary schools, St Mary's primary school and Billingnus Seconday School. The area is accessible by unpaved road from Kidatu. There are all mobile phone network providing voice and data services. There famous football clubs of Shupavu FC, Mlabani rangers, Techfort academy, Kilombero soccernet, the wailers, kibaoni boys and others.

1.2.5. Economic Activities

The main source of income depends on sectors of agriculture, livestock, fisheries, industry and trade. Fishing is performed along the Kilombero River which provides different fish species. Paddy cultivation is the main activity for food production; also sugarcane, maize, millet and wheat are essentially grown for food and trade purpose. Some residents are engaged in Mushroom farming at low scale.

There are few banks and other community based financial system based on Village Community Banks, and a rotating savings and credit association in which individuals' form of combined peer-to-peer saving and lending activities. There are relative investment in processing and packing of rice to serve internal and external markets. Other small-scale factory/processing units like pottery industries have been established. The main tourism attractions includes Kilombero river flood plain, Attractive natural vegetation, Udzungwa mountains, Traditional canoeing along Kilombero river, Natural pond at Lumemo water source, Historical sites.

1.3 Community Needs Assessment

Community needs assessment (CNA) is an assessment approach used by researchers and community development practitioners in an attempt to identify community needs and set the priorities for planning actions to be undertaken for addressing the community challenges. The process of community needs assessment was conducted by the researcher in the assistance of the village chairperson, VEO and the Ward Community Development Officer of Viwanja Sitini Ward.

The purpose of conducting the CNA was to identify the community's needs and perceived priorities. The CNA identifies the strengths and resources available in the community to meet the needs of children, youth, and families. The assessment focuses on the capabilities of the community, including its citizens, agencies, and organizations (CDC, 2013).

The CNA was conducted by the researcher in collaboration with the community at Viwanja Sitini Ward. The community needs assessment was assigned to community's opinions, needs, challenges, and assets used to determine which project will meet the needs of community members in relation to available resources/assets and opportunities which could be explored to address the sources of stresses.

Albin et al, (2014), defined an assessment as a specific way to identify problems, needs, and strengths in a community to make decisions, set priorities, and objectives, and explore ways to take action. CNAs give people an opportunity to prioritize their needs, which results in the initiation of the development of project. The findings of CNA help the community and other Stakeholders to develop projects that cater for their needs.

1.3.1 Community Needs Assessment Objectives

1.3.1.1. Main Objective

The main objective was to determine the challenges and opportunities of Kinamama Tujiendeleze group at Viwanja Sitini ward in Ifakara Township and develop economic projects to improve their incomes.

1.3.1.2 Specific Objectives

i. To identify challenges facing Akinamama Tujiendeleze group in Viwanja Sitini ward,
ii. To identify income-generating activities of Akinamama Tujiendeleze group in Viwanja Sitini ward,
iii. To identify needs and develop interventions to tackle the identified needs.

1.3.2 Research Questions

i. What are the challenges facing Akinamama Tujiendeleze group in Viwanja Sitini ward?
ii. What are the income generation activities of the Akinamama Tujiendeleze group in Viwanja Sitini ward?
iii. What are the needs and possible intervention projects to address identified needs?

1.3.3 Community Needs Assessment Methodology

Community needs assessment methodology indicates how the research was conducted. This research was conducted in a systematic survey to analyze the community's socio-economic situation which helped in collecting information that were used to understand the situation and suggest alternative interventions to address the community's needs and priorities.

The community needs assessment is one strategy to help community groups learn more about their community, local issues and assets, and potential directions before

planning projects and activities. It is the process of learning more about the social, economic, and physical aspects of a community as well as the interrelationships among these elements (Moreki, 2011). Each community is unique with its own set of goals, preferences, assets, issues, resources, history, and potential for the future, (Tyler, 2011). This specific assessment was conducted to help group members to make decisions based on their situation.

1.3.3.1 Research Design

Research design is a comprehensive plan for data collection in which a researcher uses to answer specific research questions (Bhattacherjee, 2012). In this CNA, the researcher used a cross–sectional design; involving more than one group of people and systematic data collection. It looked at numerous things at once like age, gender, education and income. It did not involve manipulating variables as it provided a quick snapshot of what is going on with variables of interest of the research problem. The researcher managed to collect information by picking few respondents who helped to find more women of the same characteristics.

1.3.3.2 Sampling Techniques

The research population was obtained from Viwanja Sitini ward community. The researcher identified the groups of respondents which included heads of households, village officials, community influential people, youth groups and people with disabilities. After the social groups were identified, simple random sampling was used to make a sample from each group. This method gave an equal probability to every member of the community to be selected as respondent of the study.

A sample size of 30 respondents was used to represent members of the community; since random sampling gives every item of the universe an equal chance of inclusion in the sample (Kothari, 2014). Mix of purposive and simple random sampling may be applied during the analysis. A purposive sample is a non-probability sample that is selected based on characteristics of a population and the objective of the study, (Kothari, 2014). Data were collected from different 30 female headed households with heterogeneous characteristic.

1.3.3.3 Data Collection Methods

The community needs assessment used different methods in order to get data. Both primary and secondary data were collected basing on the objectives of the study. The study collected both qualitative and quantitative data. To ensure reliability and validity of the data, the researcher used multiple ways and tools for data collection.

Primary data were collected directly from the sample using structured questionnaires supplemented by interviews, and observations. Secondary data were collected from published and unpublished documents from library, institutions, government offices on the internet, and project reports from national and international organizations.

1.3.3.3.1 Questionnaire Survey

A questionnaire is a research instrument consisting of a series of questions for the purpose of gathering information from respondents (Saul, 2018). Semi-structured questionnaires were used to obtain information from the field. They were designed and translated in Swahili since most of the respondent were not familiar with English language. Both structured and unstructured Questionnaire were distributed to all

respondents to increase the level of details and reliability of information**.** From the data collected the researcher was able to get different characteristics of the group.

1.3.3.3.2 Interview

The researcher conducted interview to 10 people from group members in each group to represent the sampled population. The group of respondents included village chairman, committee members and few respondents. Face to face interviews were conducted with the village officials and influential people who in for this case can also be regarded as key informants. These helped the researchers to have more access to information that could have not obtained by using the questionnaires.

During the interview process, the researcher got the advantage to probe on some leading issues that emerged and to clarify questions for respondents. Interviews were helpful as they allow the researcher to establish good relationship, explain the purpose of the study and clarify issues and lastly, allows for possible triangulation or the application of other validity enhancing instruments (Rome, 2013).

1.3.3.3.3 Observations

This is a qualitative data collection method that requires direct observation of activity behavior, relationship, phenomena network or process in the field, (Saul 2018). The process of observation was done to validate data obtained from other methods.

1.3.3.3.4 Focus Group Discussion

Focus group is a technique for gathering qualitative information from members of

one segment of the community or from diverse members of the community (Peace Corps 2002). The researcher used small informal groups with heterogeneous characteristic that discussed issues pertaining to income generating especially on mushroom farming in Viwanja Sitini ward aiming at learning more with regard to the participatory assessment. FGD was done by two different groups, where each group comprised 5 women plus 1 officer from Viwanja Sitini. The officers were obtained by requesting those with good relation with women and then got others through snowball technique to make 10 people attended the FGD.

The discussions focused mainly on getting the views on the strengths, concerns and values of their community about socio-economic activities in Mushroom farming, major problems and needs existing in the community, and opportunities that could respond to intervention projects. During the discussion, the respondents, aided by the researcher, managed to prioritize the major issues prevailing in the community.

1.3.3.4 Data Analysis Methods

According to Kothari (2014), data analysis is the process of organization, manipulation and consideration of the meaning of data collected. In order to bring order, structure and interpretation of the collected data, the researcher systematically organizes the data by coding it into categories and constructing matrixes. Qualitative data obtained from interviews, questionnaires and focus group discussion were summarized, coded and analyzed through thematic content analysis. The data were presented, interpreted and organized based on the conceptual description of ideas that were expressed by respondents during data collection. On the other hand, Statistical

Package for Social Sciences (SPSS) was used to analyze quantitative data obtained from the field. This included percentages, frequencies and statistical means that were determined through descriptive statistics.

1.4 Community Needs Assessment Findings

The exercise of community needs assessment was conducted by using different methods and techniques such as interviews, questionnaires and Focus Group Discussion. The researcher was able to reach to all targeted respondents to collect data and using analysis tools the results were obtained and presented as indicated in subsections below.

1.4.1 Age of Respondent

The age of respondents was studied to relate how different age structures understand community needs, opportunities and challenges. For convenience, age was set in groups as indicated in Table 1 below, whereas the majority of respondents (43%) belonged to the age group of 35 – 44 years, followed by age of between 45 - 54 years (30%) and 25- 34 years (26.7%). The results implied that, most of the respondents were active and can be involved in economic activities to generate income if were provided with technical support and supply of resources.

Table 1.1: Age of Respondents

Age of respondents	Frequencies	Percentages	Valid percentage	Cumulative Percentage
Between 25 - 34	8	26.7	26.7	26.7
Between 35 - 44	13	43.3	43.3	70.0
Between 45 - 54	9	30.0	30.0	100.0
Total	**30**	**100.0**	**100.0**	

Source: Field Data (2022)

1.4.2 Dependent Age

The researcher wanted to know the degree of dependence for stakeholders of the project, this was very important due to the economic burden respondents might have which have an implication to economic performance of the group. The dependence ratio was shown in Table 2, indicating that respondents with age of 25-34 have (26.7%) of dependence with the age of 1-5. Respondent with age of 35-44 have (43.3%) dependence. Respondents age 45 - 54 have (30%) dependence.

Table 1.2: Dependents Age

Age of respondents	Frequencies	Percentages	Valid percentage	Cumulative Percentage
Between 25 - 34	8	26.7	26.7	26.7
Between 35 - 44	13	43.3	43.3	70.0
Between 45 - 54	9	30.0	30.0	100.0
Total	**30**	**100.0**	**100.0**	

Source: Field Data (2022)

1.4.3 Education Level

The study assessed the educational level of the respondents in relation to its impacts

on economic improvement and households' income in the Viwanja Sitini ward community. The results are shown in Table 3 indicating that 13.3% of the respondents have vocational skills, 26.6% had attained a primary level education, while 6.7% had attained a secondary school education, and only 10% had gone for post-secondary education. The results imply that, primary and secondary levels of education were the priority levels recast of education in the studied area.

Table 1.3: Respondents Level of Education

Education level of respondents	**Frequencies**	**Percentages**	**Valid percentage**	**Cumulative Percentage**
Secondary education	2	6.7	6.7	6.7
Drop out	16	53.3	53.3	60.0
Primary education	8	26.7	26.7	86.7
Vocational training	4	13.3	13.3	100.0
Total	**30**	**100.0**	**100.0**	

Source: Field Data (2022)

1.4.4 Sex of respondents

Results in Table 4 show respondents' distribution by sex. From research findings, the total sample comprised 33.3% of males and 66.7% of females. The number of males participated in the study was much lower compared to female due men being more involved in other socio-economic activities, while women were more active in agricultural activities mostly working as casual laborers in the farms.

Table 1.4: Sex of respondents

Sex of respondents	Frequencies	Percentages	Valid percentage	Cumulative Percentage
Female	20	66.7	66.7	66.7
Male	10	33.3	33.3	100.0
Total	**30**	**100.0**	**100.0**	

Source: Field Data (2022)

1.4.5 Marital Status

The results presented in Table 5 show marital statuses of respondents who participated in this study. Majorities (66.7%) of respondents were single and 33.3% were married. The findings indicated that majority of respondents were single and could have less family commitment and more time in project activities.

Table 1.5: Marital Status of respondents

Marital status of respondents	Frequencies	Percentages	Valid percentage	Cumulative Percentage
Single	20	66.7	66.7	66.7
Married	10	33.3	33.3	100.0
Total	**30**	**100.0**	**100.0**	

Source: Field Data (2022)

1.4.6 Respondents occupation

The researcher was interested to know the respondent's occupation and during interview respondents were able to express themselves on what they do to earn income. The occupations of the respondents were identified during the data collection activity. Results in Table 6 below shows that majority of the respondents

(70%) depend on mushroom farming as their main source of income. Other respondents were small scale shops (10%) and poultry (16%) and animal keepers (3%). This indicated that the economic intervention to be undertaken should put into consideration of the occupations carrying out by more people in the village which are agriculture and poultry and animal keeping because these are the usual and common activities. Having a project that is more linked to the traditional livelihoods of the targeted group will make the project implementation easy as it can be carried out together with their traditional livelihoods.

Table 1.6: Respondents occupation

Occupation of respondents	**Frequencies**	**Percentages**	**Valid percentage**	**Cumulative Percentage**
Mushroom farming	21	70.0	70.0	70.0
Poultry keeping	5	16.7	16.7	86.7
Animal husbandry	1	3.3	3.3	90.0
Petty traders	3	10.0	10.0	100.0
Total	**30**	**100.0**	**100.0**	

Source: Field Data (2022)

1.4.7 Average monthly household income of respondents

Household income is generally defined as the combined gross income of all members of a household above a specified age. For some usages of the term, individuals do not have to be related to be considered members of same household. Household income is important risk measure used by lenders to underwrite loans and is useful economic indicator of standard of living.

The monthly average income was categorized into five groups with specific class

interval. According to the results in Table 7, the respondents that earned of Tshs 30,000-160,000 were 26.7%. The respondents earning Tshs 160,000-390,000 were 43%%. The respondents earning Tshs 390,000-530,000 were 30%. The results revealed a problem in income earning as it indicated only 34% of the sampled households could earn average of monthly income of Tshs 100,000 or more.

The people in the village have plenty of land for farming, unfortunately, because of their low-income situations, they fail to afford the agricultural inputs as a result, and they opt to lend the farms to people coming out of their community and ask for working for them. According to the results, a clear picture was seen from here that there was a need to plan for an intervention that would help in raising the household income and plan an activity as income generating.

Table 1.7: Average monthly household income of respondents (TZS)

Average monthly household income	Frequencies	Percentages	Valid percentage	Cumulative Percentage
30,000 – 160,000	8	26.7	26.7	26.7
161,000 – 390,000	13	43.3	43.3	70.0
391,000 – 530,000	9	30.0	30.0	100.0
Total	**30**	**100.0**	**100.0**	

Source: Field Data (2022)

1.4.8 Respondents major economic activity

The respondents major economic activities were assessed as indicated in Table 8 below. About 70% of respondents perceived mushroom farming as the major economic activities in the selected community; 16.7% perceived poultry farming as

major economic activities; 3.3% of perceived livestock as major economic activity; and 10% perceived small shops as major economic activities. Unfortunately, the kind of agriculture practiced in the area was subsistence production, very little amount was produced for selling. The challenge seemed to be the financial ability to afford better agricultural inputs including best seed, fertilizers and pesticides. Most of the households had enough land for cultivation but still had low agricultural production.

Table 1.8: Respondents major economic activity

Occupation of respondents	Frequencies	Percentages	Valid percentage	Cumulative Percentage
Mushroom farming	21	70.0	70.0	70.0
Poultry keeping	5	16.7	16.7	86.7
Animal husbandry	1	3.3	3.3	89.0
Petty traders	3	10.0	10.0	100.0
Total	**30**	**100.0**	**100.0**	

Source: Field Data (2022)

1.4.9 Challenges affecting Mushroom farming in Ifakara community

The study explored issues and challenges facing the mushroom farming in Ifakara community. Though the ward has all the requisites of low-cost labor, favorable climatic conditions, plentiful cheap supply of raw substrates, spawns and other inputs to become a leading mushroom producer. The Ifakara Mushroom farming still face challenges as indicated in Table 9 below. They include unstable farms by 40%, poor scientific research by 20%, and poor quality of mushrooms seeds by 20%. Others were high price of raw materials by 13.3%, and diseases and pests attack by 6.7%.

Table 1.9: Challenges affecting Mushroom farming in Ifakara community

Challenges affecting Mushroom farming	Frequencies	Percentages	Valid percentage	Cumulative Percentage
Poor scientific research	6	20.0	20.0	20.0
Unstable farms	12	40.0	40.0	60.0
High cost of inputs	4	13.3	13.3	73.3
Poor quality of mushroom	6	20.0	20.0	93.3
Disease and pest attack	2	6.7	6.7	100.0
Total	**30**	**100.0**	**100.0**	

Source: Field Data (2022)

1.4.10 Economic opportunities available at Viwanja Sitini ward

The researcher examined the economic opportunities available in the village. Basically, these are the available economic resources in the village that could be used to improve the household income and the community economy. The opportunities indicated in Table 10 include training by 40%, research by 20%, good policies by 20%, and availability of market by 6.7%. Other opportunities mentioned by participants were favorable climatic conditions, cheap supply of raw substrates. However, the Ifakara Mushroom farming was in the state of infancy.

Table 1.10: Economic opportunities available at Viwanja Sitini ward

Available Economic opportunities	Frequencies	Percentages	Valid percentage	Cumulative Percentage
Scientific research	6	20.0	20.0	20.0
Training from SUA	12	40.0	40.0	60.0
Mushroom prices	4	13.3	13.3	73.3
Government policy	6	20.0	20.0	93.3
Market for mushroom	2	6.7	6.7	100.0
Total	**30**	**100.0**	**100.0**	

Source: Field Data (2022)

1.4.11 Suitable Project for Ifakara Community

The findings shown in Table 11 indicates that the group members have decided and suggested to improve household income to be the area of concentration when making intervention for community development. About 73.3% of the respondents suggested mushroom farming to be a project for income improvement. Other suggestions were livestock keeping (10%), poultry keeping (6.7%), and small scale shops (6.7%)

Table 1.11: Suitable Project for Ifakara Community

Proposed project for community	Frequencies	Percentages	Valid percentage	Cumulative Percentage
Scientific research	1	3.3	3.3	3.3
Mushroom farming	22	73.3	73.3	76.7
Poultry keeping	2	6.7	6.7	83.3
Animal husbandry	3	10.0	10.0	93.3
Petty Business	2	6.7	6.7	100.0
Total	**30**	**100.0**	**100.0**	

Source: Field Data (2022)

1.5. Prioritization of community needs

The researcher used pairwise ranking technique to prioritize community needs. Whereby a number of needs were listed by group members and ranked to obtain the most pressing need. The results indicated in Table 12 shows that, lack of reliable source of income was ranked the most important need for immediate intervention.

Table 1.12: Prioritization of community needs

Needs	Lack of access to nutritious food	Lack of reliable income source	Lack of capital to start IGA	Lack of supply of agricultural inputs	Score	Rank
Lack of access to nutritious food		Lack of reliable income source	Lack of access to nutritious food	Lack of access to nutritious food	2	2
Lack of reliable income source	Lack of reliable income source		Lack of reliable income source	Lack of reliable income source	3	1
Lack of capital to start IGA	Lack of access to nutritious food	Lack of reliable income source		Lack of capital to start IGA	1	3
Lack of supply of agricultural inputs	Lack of access to nutritious food	Lack of reliable income source	Lack of capital to start IGA		0	4

Source: Field Data (2022)

1.6. Selection of Intervention Project

Results indicated in Table 13 shows that group members using FGD agreed to undertake Mushroom farming as main income generating activity. The score was obtained through pairwise ranking technique which was good participatory method for all group members to make decisions. The MCED student and group members agreed to obtain the trainer from Ifakara Institute of Agriculture who trained project participants.

Table 1.13: Pairwise Ranking of Intervention Projects

Activities	**Extension services**	**Access to financial social groups**	**Access to safe and clean water**	**Mushroom farming skills**	**Score**	**Rank**
Extension services		Access to financial social groups	Access to safe and clean water	Mushroom farming skills	0	4
Access financial social groups			Access to financial social groups	Mushroom farming skills	2	2
safe and clean water Access to	Access to safe and clean water	Access to financial social groups		Mushroom farming skills	1	3
Mushroom farming skills	Mushroom farming skills	Mushroom farming skills	Mushroom farming skills		3	1

Source: Field Data (2022)

1.5 Conclusion

This community managed to express and discussed different ways of addressing poverty in the selected area of the study. Some of the challenges associated with other mentioned income generation intervention were unreliable rainfall for both crops production.

The main challenges include inadequate scientific research on mushrooms; lack of adoption of improved technology, insufficient investment; unstable farm-gate prices and profit margins, poor supply and the increasing price of raw material e.g., rice straw; the poor quality of mushroom spawn, and the threat of diseases and pests attack. This analysis has provided opportunity for other stakeholders to use other

intervention listed to support larger community hence community economic development.

The activity identified low household income as the community challenge in the village and subsequently the objective to be achieved by the proposed community project. The researcher used Participatory Needs Assessment in identifying and prioritizing community needs of which Mushroom farming was selected as the project to help the group generate income and reduce income poverty.

CHAPTER TWO

PROBLEM IDENTIFICATION

2.1 Background to Research Problem

The Community Needs Assessment (CNA) was conducted with Akinamama Tujiendeleze group at Viwanja Sitini ward in Ifakara town. The aim was to identify challenges and opportunities facing the community group under study. The CNA exercise was carried out by analyzing the community situation using participatory methodologies. Various research methods and tools were used to collect required data which enabled the researcher to obtain reliable results. Important data were collected through questionnaires, interviews, observation, and focus group discussion. The researcher guided the participants to identify and prioritize their needs, from which the most pressing need was selected by using pairwise ranking techniques.

Through CNA, project participants were able to mention a number of challenges which they face and limit their progress. Generally, challenges included lack of access to nutritious feed, lack of reliable income source, inadequate capital to start income generation activities, and lack of reliable supply of agricultural inputs. By identifying these challenges, group members were able to rank the most challenging need, whereby lack of reliable income source was mostly prioritized.

The group participants chose to establish a Community Economic Development (CED) project to address the identified major need. It is anticipated that by addressing the challenge of lacking a reliable source of income would reduce the

impact of other needs identified by the group. Therefore, undertaking a mushroom farming project will improve the income of Akinamama Tujiendeleze group at Viwanja sitini in Ifakara town.

It was indicated that the community under study was experiencing low household income due to a lack of off-farm income-generating projects. Inadequacy of sustainable Income Generating Activities (IGAs) plays an important role that leads to low household income. Relevantly, higher investments in agricultural activities, failure to afford agricultural inputs, and much spending on household health care and food purchase reduce household savings and impacts on livelihoods. In most cases, side activities, together with traditional agricultural production have helped to support many families to move from the perils of income poverty.

2.2 Statement of the Problem

The Viwanja Sitini women communities needed to generate enough income from their established businesses in order to meet daily expenditures and help their families. Due to lack of sustainable income generation activities, some fail to make timely loan repayments. This challenge has persisted for a long time without adequate solution to the community. Although few residents of Ifakara town have been engaged in Mushroom farming, but have not scaled it up into reliable commercial production.

Norris et al (2015) argued that the causes of low income in household structure and nature of its functioning relate to its ability to generate much income to cover living expenses and to save for future uncertainties. Various stakeholders, including the government and non-governmental organizations have made efforts to minimize the

impact of low income among households. Different projects to improve income levels in local communities have been introduced; including poultry keeping and animal husbandry. Other projects in the area under study are Women and Girls Empowerment Initiatives (WGEI) that aim at supporting female headed households to improve income and reduce domestic violence.

Some projects initiated to improve economic situation for women and girls take long time to produce intended results. Some requires relatively large investment or occupies certain levels of skills to be implemented, while others aren't environmentally sustainable. The project of mushroom farming intends to bridge the income gaps among participants, to promoting local technology, while conserving environment.

2.3 Project description

The project to improving income of Akinamama Tujienedeleze group through mushroom farming at Viwanja Sitini ward in Ifakara town started in June 2022. The researcher carried out Participatory Needs Assessment (PNA) by deploying Community Needs Assessment (CNA) approach. The participatory methods helped researcher to work with stakeholders in the area to identify needs and decide of useful intervention. Project participants were able to identify project which they can implement basing on their skills, available resources and potential market to sell their products.

By using pairwise ranking technique, participants agreed to address their priority

community need by establishing mushroom farming activity. By improving income of project participants, will be able to address other socioeconomic problems. Implementing this project, not only income will be improved, but also promoting local technology and conserving natural environment.

For project to take place various stakeholders were involved. At first the researcher identified Ifakara town council to be the host organization, which will support the project implementation to ensuring its sustainability after researcher leaves. Other stakeholders included research institutions, and individual trainers and financers. Generally, the readiness and commitment of project participants and CED student were key factors to success by ensuring all project objectives are implemented. To that end, participants committed their time, provided their ample land for farms, and collected mushroom farming inputs and other materials.

2.3.1 Target Community

The targeted community was Akinamama Tujiendeleze group at Viwanja Sitini ward in Ifakara town. The primary beneficiaries were females heading families and widows. The initial project participants were 10 women with a future plan to extend number of beneficiaries. The participants were drawn from the village community by considering who were willing to be involved in the project. The group has undergone training to acquire necessary skills for mushroom farming.

2.3.2 Stakeholders

Stakeholders are individuals, groups and institutions with the interest in the project

and who can either affect or be affected by the project. They include investors, customers, suppliers, and employees, communities, government, NGOs or associations. Stakeholders can either be internal or external depending on whose interests in a project comes through a direct relationship with the project operations such as ownership and investment. The main stakeholders to the project and their roles are as in Table 14 below.

Table 2.1: Stakeholder Analysis

SN	Name of stakeholder	Roles of stakeholder	Expectations
1.	Akinamama Tujiendeleze group	- Primary implementers of the project activities - Primary beneficiaries of the project outcomes	Improved household income and livelihood after active participation in the project
2.	NGOs	- Organize and conduct trainings to the project. - Conduct time to time monitoring of the project - Work with the government to look for market for the Mushroom farming products	- Continued capacity building and community empowerment programs. - Ensured effective implementation of the project - Ensured market and marketing strategy
3.	Farm for the Future Compony Ltd	- Conduct capacity building trainings to the project group. - Provide technical support to the project group - Donate Mushroom farming for the project take off.	- Ensured effective implementation of the project. - Ensured availability of facilities and trainers
4.	Viwanje sitini Ward office	- Host organization - Ensuring project sustainability	- Pilot project grows to a big project and reach out to more beneficiaries in the community
6.	Forestry conservation officer	- Responsible for regular visit to the project site. - Provide technical advice to the project group for effective performance of the project.	- New Mushroom farming methods are adopted by the project group
7.	Researcher (MCED student)	- Provide technical advice basing on data collected during Community Needs Assessment.	- Contribute to improved household income in the community

Source: Researcher Analysis, 2021

2.3.3 Project Goals in CED terms

The main goal of the project is to improve household income of project participants through Mushroom farming. The project intended to use the available resources in

the community so that to help the community address the long existing challenge of low income that hindered households from attaining different basic needs.

The project will allow sustainable economic development of mushroom farmers, so time and energy consumed will be utilized to other economic activities. The project will start by serving few women and only those will be trained. The number will be increased as they attend the training and after the expansion of the project.

2.3.4. Project Objectives

2.3.4.1. Project General Objectives

The project general objective was to improve income of Akinamama Tujiendeleze group through mushroom farming at Viwanja Sitini ward in Ifakara Township by December 2022.

2.3.4.2. Specific Objectives of the project

i. To train 10 group members on Mushroom farming skills by June, 2022.
ii. To mobilize equipment and tools for mushroom farming by July 2022
iii. To produce at least 60kg of mushrooms per month by August 2022
iv. To sell mushrooms of TZS 500,000 per month by August 2022

2.4 Host Organization Profile

The Viwanja Sitini Ward Office is the host organization of the project. The office shall support the project through its ongoing initiative called Integrated Community Empowerment Project (ICEP).

2.4.1 Vision

Improved social welfare and economic wellbeing of community with access to better services and infrastructures that is sustainable.

2.4.2 Mission

The Mission of Ifakara Town Council is to further the social and economic development of the community through democratic participation of all stakeholders in development process.

2.4.3 Organizational values

The host organization believes that to achieve its mission, there are important beliefs that bind its community together and its commitment towards serving the targeted communities. These beliefs are the values and they include transparency, integrity, respect, cooperation, responsibility and commitment.

2.4.4 Organizational implemented activities

The host organization is divided into five departments of which are formed by small sections. Each department supervises a certain project of which is related to that respective department and has its respectful activities. Below are the organizational departments with their specific activities.

a) Women and Empowerment Department

Provides education and work opportunities to youth and women to strengthen social, economic and political opportunities to obtain gender equality in the community.

Implements three major projects; Communication for Change, Community Empowerment Project and the Single young mothers' program.

b) Sustainability, Volunteers and Fundraising Department

Establishes a competent management and obtain necessary fundraising to complete the host organization strategies. Has established the projects like Volunteers, Avocado project, Block machine project, shopping center, tree nurseries, Vehicle's project, Cattle and Chicken keeping and Agriculture projects. The department is responsible for raising money to enhance Host Organization Sustainability.

c) Most Vulnerable Children Department

Responsible department for all projects directed to supporting most vulnerable children in the community. Has four major projects, the sponsor program (mother of Host Organization programs) which has sponsored to sponsor students. Improves the organizational capability and invest in high-quality educational services to the students/stakeholders to enable them to lead transformations in the community. The department supervises the four organizational schools.

d) Administration and Finance Department

The organizational management department with administration power of organizational operational decisions. The department is responsible for overseeing the organizational operations.

2.4.4.1 Organizational Structure

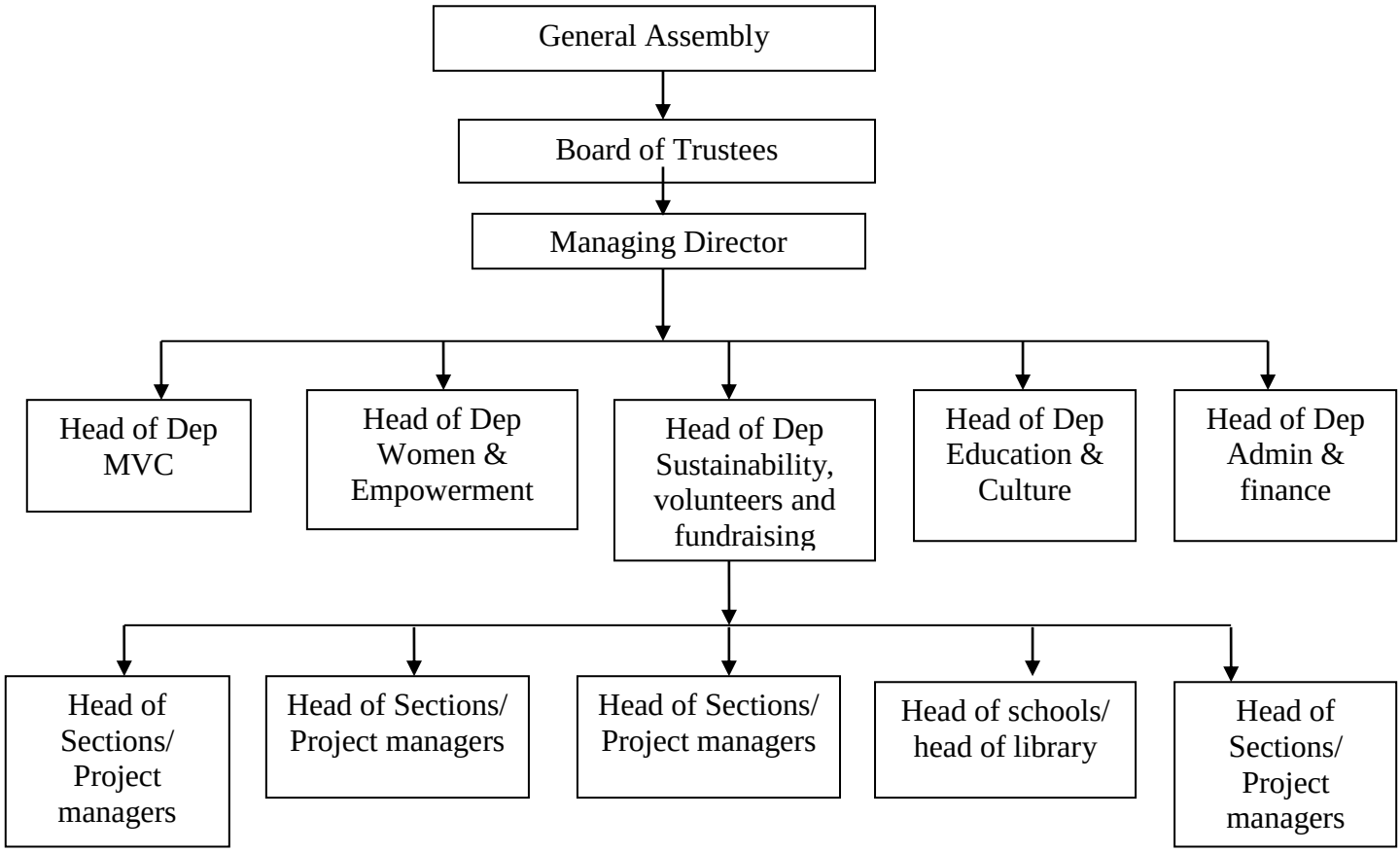

Figure 2.1: Organization structure

Source: Host Organization Human Resources Office (2021)

2.4.5 Organizational role in the project

Host Organization provides space for the researcher to have an opportunity to conduct a CNA and be able to work with the community of Ifakara in developing the project. The organization provided all the necessary support for the researcher during the whole period of the activity. Technical and human resources were very helpful for the success of the project.

The organization also agreed to support the project through its Integrated Community

Empowerment Project (ICEP) by providing capacity building trainings to the project group and other beneficiaries. Also, the organization will use its national and international network in ensuring markets for the Mushroom farming products.

2.4.6 SWOT Analysis for Wamama Tujiendeleze Group

SWOT, Analysis is a technique to analyze the Strengths, Weaknesses, Opportunities and Threats of a decision, problem and place (FAO, (2018). In community development and urban planning, SWOT is often used at community meetings to structure conversations about quality of life in a neighborhood or a controversial project (FAO, 2018). Carrying out this analysis often illuminates what needs to be done and put problems into perspective. The detailed SWOC/T analysis is shown in Table 15 below.

Table 2.2: SWOC/T Analysis for Kinamama Tujiendeleze group

	Strength	**Weakness**	**Opportunities**	**Challenges/ Threat**
1	Quick returns on investments	Cost on hiring land for mushroom forming	The tool for poverty alleviation	Unreliable markets
2	Availability of free labour	Lack of skills in Mushroom farming business	Recommended Nutritious food	High cost of inputs
3	Small initial investment cost	Lack of financial skills	Employment creation	Change of weather

Source: Designed by researcher (2021)

2.4.7 The Roles of CED Student in the Project

The role of CED student is to make sure that plans and activities are implemented as they are planned.

i. Assist communities to plan, construct, operate and maintain their own farming facilities,
ii. Provide focused hygiene education to help them take advantage of the Mushroom farming supply facilities to improve their health,
iii. Ensure as far as possible that communities get the type of facilities that best respond to their needs and are within their physical and financial ability to operate and maintain,
iv. Train communities to monitor implementation progress,
v. To seek material and non-material support from other stakeholders and development partners
vi. To mobilize and create awareness to community members on Mushroom farming project.

2.4.8 Roles of Project Beneficiaries/ Group

Facilitate participate in the exercise community mobilization and awareness creation about the project.

i. To market the Mushroom farming product
ii. To seek material and non-material support from other stakeholders and development partners
iii. To purchase equipment's required for project take off
iv. To keep records and submit reports to responsible parties

CHAPTER THREE

LITERATURE REVIEW

3.1 Overview

This chapter presents an in-depth review of various literatures including previous studies, project reports, policies and strategies on the implementation of projects intending to improve the household income and community livelihoods. Literature reviews give an opportunity for researcher to get important information and statistics on various researches and projects intended to address the same problem. The literatures were gathered from different policies, strategies, reports, journals, articles, studies and publications made available for interested users.

Literature review was divided into three major parts including theoretical literature, empirical literature and the policy review. All these literatures were used to gather concrete information and statistics and relevant points of reference so that to draw a foundation for the sustainability of the project.

3.2 Definition of Key Terms

3.2.1 Mushroom

A mushroom is the reproductive structure produced by some fungi. It is somewhat like the fruit of a plant, except that the "seeds" it produces are in fact millions of microscopic spores that form in the gills or pores underneath the mushroom's cap. The spores blow away into the wind, or are spread by other means, such as animal feeding. If they land on a suitable substrate (such as wood or soil) spores will germinate to form a network of microscopic rooting threads (mycelium) which

penetrate into their new food source. Unlike the mushroom, which pops up then passes away quickly, the mycelium persists, often for many years, extracting nutrients and sending up its annual crop of mushrooms.

3.2.2. Income

Income refers to the revenue a business or project earns from selling its goods and services. It can also be defined as the money an individual receives in compensation for his/her labor, services, or investments.

3.2.3. Livelihood

As defined by Kugonza (2013) livelihood are ways of keeping oneself meaningfully occupied by using one's endowments (human and material) to generate adequate resources to meet the requirements of the household in a sustainable manner. Household members use their capabilities and their assets to carry out activities through which they gain their livelihoods. Livelihood opportunities can be enhanced or limited by factors in the external environment and these factors determine the vulnerability context in which households to operate.

3.2.4 Poverty

Poverty is about not having enough money to meet basic needs including food, clothing and shelter. However, poverty is more, much more than just not having enough money. The World Bank describes poverty in this way: "Poverty is hunger.

Poverty can have diverse social, economic, and political causes and effects. When evaluating poverty in statistics or economics there are two main measures: absolute

poverty compares income against the amount needed to meet basic personal needs, such as food, clothing, and shelter, relative poverty measures when a person cannot meet a minimum level of living standards, compared to others in the same time and place. The definition of relative poverty varies from one country to another, or from one society to another.

3.3. Theoretical Literature

This section discusses the theoretical framework that underpins the factors for increase income through Mushroom Farming. The focus will be on elaboration of functions of mushroom and their classification.

3.3.1. Functions of Mushroom

3.3.1.1 Recyclers

Some mushrooms are capable of digesting wood, breaking it down into the primary components of forest soils. They also decay other dead plant and animal matter. A forest in which nothing rotted would soon be choked with accumulating dead leaves and woody material and starved for essential minerals and other nutrients bound up in the undecomposed debris.

3.3.1.2 Tree-Helpers

Many mushrooms form partnerships with roots of living trees, and the resulting fungus-root is called a mycorrhiza. The mushroom's mycelium weaves itself around the root and actually alters the shape of the root. The mushroom absorbs water and minerals for the tree, but in return the tree gives the mushroom nutrients, too. Since

both partners benefit from each other, their alliance is considered a symbiotic relationship.

3.3.1.3 Food

British Columbia forests support a multi-million-dollar industry based on the commercial picking of edible wild mushrooms, many of which are exported to Japan and Europe. In some of our forests the mushroom crops are more valuable than the tree crops. The most common mushrooms picked for profit in the fall are the pine mushrooms (Tricholoma magnivelare), and chanterelles (Cantharellus cibarius); in the spring, the morels (Morchella species) are picked. Many animals also rely on mushrooms for food, especially squirrels and other rodents. Slugs also dine on mushrooms, and certain types of flies spend their whole lives on, and in, mushrooms.

3.3.1.4 Some Mushrooms Cause Root Disease

Mushrooms are not always beneficial to trees. The most damaging root disease of conifers in B.C. is caused by a species of "mushroom products mushroom" called Armillaria ostoyae. An estimated 4.5% of our annual allowable cut from 1988 to 1992 was lost due to Armillaria root disease.

3.3.1.5 Nutrition

Raw brown mushrooms are 92% water, 4% carbohydrates, 2% protein and less than 1% fat. In a 100-gram (3.5 ounce) amount, raw mushrooms provide 22 calories and are a rich source (20% or more of the Daily Value, DV) of B vitamins, such as riboflavin, niacin and pantothenic acid, selenium (37% DV) and copper (25% DV),

and a moderate source (10-19% DV) of phosphorus, zinc and potassium (table). They have minimal or no vitamin C and sodium content.

3.3.1.6 Vitamin D

The vitamin D content of a mushroom depends on postharvest handling, in particular the unintended exposure to sunlight. The US Department of Agriculture provided evidence that UV-exposed mushrooms contain substantial amounts of vitamin D. When exposed to ultraviolet (UV) light, even after harvesting, ergosterol in mushrooms is converted to vitamin D2, a process now used intentionally to supply fresh vitamin D mushrooms for the functional food grocery market.

In a comprehensive safety assessment of producing vitamin D in fresh mushrooms, researchers showed that artificial UV light technologies were equally effective for vitamin D production as in mushrooms exposed to natural sunlight, and that UV light has a long record of safe use for production of vitamin D in food.

3.3.1.7 Poisonous Mushrooms

Of course, some mushrooms can also have nasty effects on uninformed humans. Every year mushroom poisonings are reported in British Columbia. Fortunately, most are not fatal. However, all could have Mushroom n prevented. There is no other way, apart from accurate species identification, to safely tell an edible mushroom from a poisonous one. Fruiting bodies of some mushrooms occur in arcs or rings called fairy rings.

The mycelium starts from a spore falling in a favourable spot and producing strands

(hyphae) that grow out in all directions, eventually forming a circular mat of underground hyphal threads. Fruiting bodies, produced near the edge of this mat, may widen the ring for hundreds of years.

A few mushrooms belong to the order Boletales, which bear pores in an easily detachable layer on the underside of the cap. The agarics and boletes include most of the forms known as mushrooms. Other groups of fungi, however, are considered to be mushrooms, at least by laymen.

Among these are the hydnums or hedgehog mushrooms, which have teeth, spines, or warts on the undersurface of the cap (e.g., *Dentinum repandum*, *Hydnum imbricatum*) or at the ends of branches (e.g., *H. coralloides*, *Hericium caput-ursi*). The polypores, shelf fungi, or bracket fungi (order Polyporales) have tubes under the cap as in the boletes, but they are not in an easily separable layer. Polypores usually grow on living or dead trees, sometimes as destructive pests. Many of them renew growth each year and thus produce annual growth layers by which their age can be estimated.

Examples include the dryad's saddle (*Polyporus squamosus*), the Mushroom fsteak fungus (*Fistulina hepatica*), the sulfur fungus (*P. sulphureus*), the artist's fungus (*Ganoderma applanatum*, or *Fomes applanatus*), and species of the genus *Trametes*. The clavarias, or club fungi (e.g., *Clavaria*, *Ramaria*), are shrublike, clublike, or coral-like in growth habit. One club fungus, the cauliflower

fungus (*Sparassis crispa*), has flattened clustered branches that lie close together, giving the appearance of the vegetable cauliflower.

The cantharelloid fungi (*Cantharellus* and its relatives) are club-, cone-, or trumpet-shaped mushroomlike forms with an expanded top bearing coarsely folded ridges along the underside and descending along the stalk. Examples include the highly prized edible chanterelle (*C. cibarius*) and the horn-of-plenty mushroom (*Craterellus cornucopioides*).

Puffballs (family Lycoperdaceae), stinkhorns, earthstars (a kind of puffball), and bird's nest fungi are usually treated with the mushrooms.
The morels (*Morchella*, *Verpa*) and false morels or lorchels (*Gyromitra*, *Helvella*) of the phylum Ascomycota are popularly included with the true mushrooms because of their shape and fleshy structure; they resemble a deeply folded or pitted conelike sponge at the top of a hollow stem. Some are among the most highly prized edible fungi (e.g., *Morchella esculenta*). Another group of ascomycetes includes the cup fungi, with a cuplike or dishlike fruiting structure, sometimes highly coloured.
Other unusual forms, not closely related to the true mushrooms but often included with them, are the jelly fungi (*Tremella* species), the ear fungus or Jew's ear (*Auricularia auriculara-judae*), and the edible truffle.

Mushrooms are free of cholesterol and contain small amounts of essential amino acids and B vitamins. However, their chief worth is as a specialty food of delicate, subtle flavour and agreeable texture. By fresh weight, the common commercially

grown mushroom is more than 90 percent water, less than 3 percent protein, less than 5 percent carbohydrate, less than 1 percent fat, and about 1 percent mineral salts and vitamins. Poisoning by wild mushrooms is common and may be fatal or produce merely mild gastrointestinal disturbance or slight allergic reaction. It is important that every mushroom intended for eating be accurately identified.

3.3.2. Classification of Mushroom

A mushroom (probably Russula brevipes) parasitized by Hypomyces lactifluorum resulting in a "lobster mushroom" Typical mushrooms are the fruit bodies of members of the order Agaricales, whose type genus is Agaricus and type species is the field mushroom, Agaricus campestris. However, in modern molecularly defined classifications, not all members of the order Agaricales produce mushroom fruit bodies, and many other gilled fungi, collectively called mushrooms, occur in other orders of the class Agaricomycetes.

For example, chanterelles are in the Cantharellales, false chanterelles such as Gomphus are in the Gomphales, milk-cap mushrooms (Lactarius, Lactifluus) and russulas (Russula), as well as Lentinellus, are in the Russulales, while the tough, leathery genera Lentinus and Panus are among the Polyporales, but Neolentinus is in the Gloeophyllales, and the little pin-mushroom genus, Rickenella, along with similar genera, are in the Hymenochaetales.

Within the main body of mushrooms, in the Agaricales, are common fungi like the common fairy-ring mushroom, shiitake, enoki, oyster mushrooms, fly agarics and

other Amanitas, magic mushrooms like species of Psilocybin, paddy straw mushrooms and shaggy manes. An atypical mushroom is the lobster mushroom, which is a deformed, cooked-lobster-colored parasitized fruitbody of a Russula or Lactarius, colored and deformed by the mycoparasitic Ascomycete Hypomyces lactifluorum.

Other mushrooms are not gilled, so the term "mushroom" is loosely used, and giving a full account of their classifications is difficult. Some have pores underneath (and are usually called boletes), others have spines, such as the hedgehog mushroom and other tooth fungi, and so on. "Mushroom" has Mushroom n used for polypores, puffballs, jelly fungi, coral fungi, bracket fungi, stinkhorns, and cup fungi. Thus, the term is more one of common application to macroscopic fungal fruiting bodies than one having precise taxonomic meaning. Approximately 14,000 species of mushrooms are described.

3.3.2.1 Psychoactive mushrooms

Mushrooms with psychoactive properties have long played a role in various native medicine traditions in cultures all around the world. They have Mushroom n used as sacraments in rituals aimed at mental and physical healing, and to facilitate visionary states. One such ritual is the velada ceremony. A practitioner of traditional mushroom use is the shaman or curandera (priest-healer).

Psilocybin mushrooms, also referred to as psychedelic mushrooms, possess psychedelic properties. Commonly known as "magic mushrooms" or "'shrooms",

they are openly available in smart shops in many parts of the world, or on the black market in those countries that have outlawed their sale. Psilocybin mushrooms have Mushroom n reported as facilitating profound and life-changing insights often described as mystical experiences.

Recent scientific work has supported these claims, as well as the long-lasting effects of such induced spiritual experiences**.** There are over 100 psychoactive mushroom species of genus Psilocybe native to regions all around the world. Psilocybin, a naturally occurring chemical in certain psychedelic mushrooms such as Psilocybe cubensis, is being studied for its ability to help people suffering from psychological disorders, such as obsessive–compulsive disorder. Minute amounts have Mushroom n reported to stop cluster and migraine headaches**.**

A double-blind study, done by the Johns Hopkins Hospital, showed psychedelic mushrooms could provide people an experience with substantial personal meaning and spiritual significance. In the study, one third of the subjects reported ingestion of psychedelic mushrooms was the single most spiritually significant event of their lives. Over two-thirds reported it among their five most meaningful and spiritually significant events.

On the other hand, one-third of the subjects reported extreme anxiety. However, the anxiety went away after a short period of time. Psilocybin mushrooms have also shown to be successful in treating addiction, specifically with alcohol and cigarettes.

Folk medicine. Some mushrooms are used in folk medicine. In a few countries,

extracts, such as polysaccharide-K, schizophyllan, polysaccharide peptide, or lentinan, are government-registered adjuvant cancer therapies, but clinical evidence for efficacy and safety of these extracts in humans has not Mushroom n confirmed. Although some mushroom species or their extracts may be consumed for therapeutic effects, some regulatory agencies, such as the US Food and Drug Administration, regard such use as a dietary supplement, which does not have government approval or common clinical use as a prescription drug.

Mushrooms can be used for dyeing wool and other natural fibers. The chromophores of mushroom dyes are organic compounds and produce strong and vivid colors, and all colors of the spectrum can be achieved with mushroom dyes. Before the invention of synthetic dyes, mushrooms were the source of many textile dyes. Some fungi, types of polypores loosely called mushrooms, have Mushroom used as fire starters (known as tinder fungi). Mushrooms and other fungi play a role in the development of new biological remediation techniques (e.g., using mycorrhizae to spur plant growth) and filtration technologies (e.g. using fungi to lower bacterial levels in contaminated water) Mushrooms are used extensively in cooking, in many cuisines (notably Chinese, Korean, European, and Japanese).

Most mushrooms sold in supermarkets have Mushroom n commercially grown on mushroom farms. The most popular of these, Agaricus bisporus, is considered safe for most people to eat because it is grown in controlled, sterilized environments. Several varieties of A. bisporus are grown commercially, including whites, crimini, and portobello. Other cultivated species available at many grocers include Hericium

erinaceus, shiitake, maitake (hen-of-the-woods), Pleurotus, and enoki. In recent years, increasing affluence in developing countries has led to a considerable growth in interest in mushroom cultivation, which is now seen as a potentially important economic activity for small farmers.

China is a major edible mushroom producer. The country produces about half of all cultivated mushrooms, and around 2.7 kilograms (6.0 lb) of mushrooms are consumed per person per year by 1.4 billion people. In 2014, Poland was the world's largest mushroom exporter, reporting an estimated 194,000 tonnes (191,000 long tons; 214,000 short tons) annually.

3.4 Empirical literature review

3.4.1 Mushroom project in Tanzania

The edibility of mushrooms has been known to humans since time immemorial but the intentional cultivation of mushrooms has its beginning in China, around 600A.D (Chang S.T, 2004). In Tanzania, mushroom cultivation was first introduced in 1993 by the Ministry of Agriculture and Cooperatives under the sponsorship of the International Fund for Agricultural Development (Kivaisi A.K, 2007). The first strains to be cultivated in Tanzania were obtained from Belgium and later from Kawanda institute in Uganda. The focus was on the cultivation of oyster mushroom (*Pleurotus spp*). Researches, on mushroom sciences, were started by the Applied microbiology unit of the University of Dar es salaam under the sponsorship of the Netherlands Organization for International Cooperation (NUFFIC) in 1993–1998 and Swedish International Development Agency (SIDA/SAREC) in 1998–2003 (Kivaisi

A.K, 2007).

After its introduction in Tanzania, mushroom cultivation was promoted by the sponsorship of International Fund for Agricultural Development (IFAD) through training the first growers in Dar es salaam (1994), Arusha (1995) and in Mbeya (1996), where Spawn laboratory was established at Uyole Agriculture Research Institute (Kivaisi A.K, 2007). From zero grower in 1993, the Tanzania Mushroom Grower Association estimates the current the growers at 4000 (Kivaisi A.K, 2007) producing over 960 tons (Kivaisi A.K, 2007) of oyster mushrooms per year.

3.4.2 Mushroom Species Cultivated in Tanzania

People from many tribes in Tanzania eat wild mushrooms. Mushrooms are rich in proteins and vitamins. This makes them potentially valuable and relatively cheap source of proteins, particularly for the low-income section of the population. However, their seasonal availability makes wild mushrooms an unreliable source of proteins. To ensure and improve on their availability, mushroom cultivation needs to be developed. Various species of mushrooms have been identified and intentionally cultivated for either food or medicinal purposes.

In Tanzania, the Oyster mushrooms **(*Pleurotus spp*)** are the only successfully cultivated in the country (Kivaisi A.K, 2007). However, trials to cultivate other mushroom species such as *Ganoderma spp* (tree mushrooms) and *Agaricus spp* (the button mushroom) have been reported.

Among others, the Oyster mushroom species which are currently mostly cultivated in

Tanzania includes; *Pleurotus florida* obtained from Mauritius, *Pleurotus sp*.HK37 obtained from South Africa, *Pleurotus flabellate* obtained in Tanzania (a local mushroom), *Pleurotus sp* WC537 and *Pleurotus sp* WC 814 both obtained from Uganda and *Pleurotus sajor-caju* imported from India (Kavaisi A.K, 2007).

Almost all the cultivated Oyster mushroom species in Tanzania have been imported**.** Identification and classification of edible Tanzanian wild mushrooms have also been done by the Applied Microbiology Unit of the University of Dar es salaam. Two Tanzanian wild mushrooms namely; *Oudemansiella tanzanica* and *Pleurotus flabellatus* has been identified (Kavaisi A.K, 1999; FAO, 2002). Also two *Termitomyces spp* namely; *T. clypeatus* and *T. umkowanii* were identified (Kivaisi A.K, 2007).

Globally, about 7000 species possess a varying degree of edibility and more than 3000 species may be considered prime edible species of which only 200 species have been experimentally grown, 100 species economically cultivated, approximately 60 species commercially cultivated and 10 species cultivated on an industrial scale. Additionally, 2000 species have been suggested to possess medicinal properties (Chang S.T, 2004).

3.4.3 Places Where Mushrooms Are Cultivated In Tanzania

After its introduction in Tanzania (1993), mushroom cultivation was promoted through training of the first growers in Dar es Salaam, Mbeya, and Arusha. Currently, approximately more than 4000 (Kivaisi A.K, 2007) individuals grow

mushrooms in different regions and places countrywide. The leading regions among others in mushroom cultivation are Kilimanjaro, Arusha, Dar es Salaam, Kagera, Mbeya and Pwani (Kivaisi A.K, 2007).

In Hai, Kilimanjaro, for example; a project initiated in May 2005, led by the Horticultural Research Institute, Tengeru and supported by FARM-Africa's ***Maendeleo*** Agricultural Technology Fund, has resulted in almost 300 Hai farmers adopting Oyster mushroom cultivation in their homes (FAO, 2009).

Globally, mushroom production has been a multi-billion-dollar industry and the demand is sharply increasing due to modern consumers who seek health-related benefits to their food. Being mainly an agricultural country, Tanzania has big potential to become one among the commercial producers of cultivated mushrooms. Thus, it's expected that mushroom cultivation is still undergoing a further extension to many other regions of Tanzania.

3.4.4 Annual Yields of Cultivated Mushrooms in Tanzania

Based on the report representing findings of the survey conducted by the Applied Microbiology Unity of the University of Dar es salaam, primarily in five regions of Tanzania, famous for growing mushroom between October 2006 and March 2007, there are about 4000 smallholder mushroom farmers in 10 regions estimated to produce a total of 960 tons of fresh Oyster mushrooms annually (Kavaisi A.K, 2007). The report presented findings of a survey that gathered information by directly talking to growers at their farms and administering a questionnaire and taking

photographs. This estimated amount of mushrooms produced per year has an estimated value of Tsh3840 million.

Mushrooms not only provide nutritious, protein-rich food, but some species also produce medicinally effective products.

Cultivated mushrooms are now an important agricultural product worldwide**.** In 1997, the total world production of edible and medicinal mushrooms was estimated to exceed 6 million metric tons, with a value of about U.S. $26 to 30 billion (Chang S.T, 2004). In developed countries, the bioconversion of plant dry matter (lignocellulosic biomass**)** by the mushroom industry to food and useful products is already a significant contribution to the management of agricultural and industrial wastes at regional and national levels. Predictions are that this contribution will continue to increase and will generate a non-green revolution.

However**,** because there is no known test by which to tell if a mushroom is edible or not**,** a mushroom should never be eaten unless it has been accurately identified and the edibility of the species is known**.** Even though poisonous mushrooms represent less than 1% (Chang S.T, 2004) of the world's known mushrooms, we cannot ignore the existence of the relatively few dangerous and sometimes fatal species. Mushrooms must be identified by a competent mycological authority. Therefore, if one is not absolutely sure whether a given mushroom is edible or otherwise, it should not be tasted, and the unidentified mushroom should be left alone. The toxins contained in various species are very different in chemical composition, and thus the effects of poisoning differ considerably according to the species involved. In any case,

suspected mushroom poisoning should never be regarded lightly and medical assistance should be sought at once.

3.5 Policy Reviews

Mushroom farming is one of the recently recognized socio-economic sectors in Tanzania. Being a source of food, raw materials for industries, traditional medicine and great source of income for Mushroom farmers has even made the sector more important. The sector is said to employ. Being such an important sector, a number of its improvement strategies have Mushroom n in place to make sure that it improves.

3.5.1 The Tanzania national Mushroom farming policy, 1998

The government of Tanzania through the Ministry of Natural Resources and Tourism (MNRT) developed the National Mushroom farming Policy of 1998 whose overall goal is to enhance the contribution of Mushroom farming sector to the sustainable development of Tanzania and the conservation and management of its natural resources for the benefits of its present and future generations.

The policy encourages effective participation of all stakeholders in the establishment and sustainable management *of* Mushroom reserves and apiaries, promoting Mushroom farming -based industries and products and promoting sustainable management of Mushroom farming in cross-sectoral areas for ecosystem conservation and management. In the efforts to enable effective implementation of the policy, the MNRT has introduced two instruments.

3.5.2 National Mushroom farming Programme

It is instrument designed to put into practice the NBP with emphasis on stakeholders' participation in the planning, management, ownership and sustainable utilization of Mushroom resources for poverty eradication, improved biodiversity development and environmental conservation. The program has three sub programs including Mushroom farming Development Program, Legal and Regulatory Framework Program and Institutional and Human Resources Development Program (MNTR, 2002; Mwakatobe and Mlingwa, 2017).

3.5.3 Mushroom farming regulation

The Mushroom farming Act No. 15 of 2002 was enacted by the Parliament of Tanzania in April 2002. Its main objectives are: (i) To make provisions for the orderly conduct of Mushroom farming; (ii) To improve the quality and quantity of Mushroom products; (iii) To prevent and eradicate Mushroom diseases and Mushroom and (iv); To improve revenue collection.

3.5.4 Policies related to Mushroom farming in Tanzania

3.5.4.1 The National Forestry Policy of 1998

The Natural Forestry Policy of 1998 was established to enhance the sustainable management of forestry resources. The policy provides opportunities for Mushroom farmers to practice Mushroom farming in the forests. The forestry policy integrates Mushroom farming with forestry management in a sense that Mushroom farming is the best way for environmental conservation.

3.5.4.2 The Tanzania Wildlife Policy of 1998

The Tanzania Wildlife Policy of 1998 was established to regulate the sustainable utilization and management of wildlife resources. Mushroom farming activities are encouraged to be carried out in Wildlife Management Areas (WMA) by involving local communities. With special permission from the Director of Wildlife, Mushroom farmers are allowed to carry out Mushroom farming in game reserves and game-controlled areas. Furthermore, by allowing Mushroom farming activities in WMA is also seen as a tourism attraction activity, thus Mushroom farming and wildlife are inseparable.

3.5.4.3 Village Land Act of 1999

This is one of the most important instruments that support community based natural resources management (Mpalu, 2005). It empowers the community at local level (village) recognizing it as the appropriate representative structure to implement natural resources management. In view of this, through village land use management system Mushroom farmers can be allocated land for Mushroom farming development.

The challenge affecting the Mushroom farming sector is on how to use the enabling environment created by the policy, program and legal frameworks to encourage Tanzanians both in urban and rural areas to effectively engage in Mushroom farming as a potential livelihood so that they can benefit in terms of improved income, poverty reduction and environmental conservation.

3.5.4.4 General Policy Implication

The Government of Tanzania (GoT) has committed itself to carrying out major reforms in the agricultural industry, with clearly defined ore functions, private functions and joint public and private functions. The goal/mission will involve (a) creating an enabling environment for the participation of the private sector in livestock production, marketing, processing input supply and distribution and credit; (b) development of appropriate agricultural infrastructure; and(c) provision of adequate extension services, research (including diagnostic services) and training. Following the liberalization process, Mushroom n left with a core of key functions including monitoring, planning, regulating and promoting the livestock industry. The Agricultural and Livestock Policy of 1997 was in line with the ongoing reforms and redefined the roles of public and private sectors. The key elements of the policy are:

i. To encourage forestry sector growth through private sector-based initiatives,
ii. To encourage increased exportation of forestry products to increase foreign exchange earnings.
iii. Market information and market monitoring, quality control, promotion of institutional structures

However, during implementation of this policy other reforms emerged thus necessitating review and formulation of a new policy, the National Livestock Policy (2006). Both policies seek to promote livestock production and productivity in order to ensure food security, increase export earnings, raise nutritional status, and increase standard of living.

Sustainable Industrial Development Policy (SIDP – 1996 – 2020) makes market availability for various farm produces. Forestry Products such as wax, meat, eggs, and feathers will get reliable market accessibility. Tanzania is now striving and encouraging citizens to focus their minds into industries establishment. It started developing special economic zones to accelerate economic growth. The zones are for exportation of various products. Reference is made from Tanzania Mini Tiger Plan 2020. It is all about adoption of the Asian economic Model – creating employment through attracting FDI and promoting exportation.

The Government will support and strengthen technical support services and use of appropriate technologies in forestry products. The Government will promote inventorization, characterization, evaluation and selection of the indigenous forestry breeds. In collaboration with other stakeholders the Government will promote improvement of genetic potential breeds in order to increase Mushroom product productivity (URT, 2006).

3.6. Literature Review Summary

The chapter on literature review covered researches and works of different writers based on Mushroom farming. Mushroom farming in villages as integral part of Tanzania's rural economy and plays an essential role in improving household income and nutrition. Participatory Community needs assessment revealed characteristics of the Viwanja Sitini as a target Community. The researcher received full participation since the group was eager and ready to work very hard for their livelihood and income poverty alleviation. Challenges were sorted out where needs

were discussed and finally came up with an intervention to alleviate the income improvement need. Therefore, the group members and MCED Student proposed a project to improve the income of Akinamama Tujiendeleze group through Mushroom farming for sustainable economic development.

CHAPTER FOUR

PROJECT IMPLEMENTATION

4.1 Overview

This chapter deals with putting into practice all the plans. Plans are guidelines set in advance to help as road map towards laying down required inputs to meet goals. Thus, project implementation is to bring plans into existence. It explains the implementation process of the planned project activities in a light of achieving the predetermined objectives. The process entails project timeframe with resources allocation to implementing each activity. It is the logical process of implementing project activities. The implementation plan helps the project team to implement the project activities within the allocated budget for each activity and oversee the project if it is on track to achieve the intended objectives.

In this community-based project, the community is the primary implementer and beneficiary of the project. The community was involved from project identification, planning and implementation for future prospects of the project. Other stakeholders like facilitators, local government officials, and hosting organization had the secondary role in the project. They also provided technical supports, trainings, funding, monitoring and evaluation for better implementation of the project.

4.2. Project Products and Outputs

The information detailed below in Table 16 indicates project objectives presented as SMART items. Each objective has tangible outputs with related project activities.

Table 4.1: Project Outputs and Activities (Project Activity Plan)

Project Objectives	**Project Outputs**	**Project Activities**
1. To train 10 group members on Mushroom farming skills by June, 2022.	1.1. Formed 1 group of women for mushroom farming	1.1.1. Sensitize members to form group
		1.1.2.Create group bylaws
	1.2. At least 10 group members acquired mushroom farming skills	1.2.1. Develop training materials /manuals
		1.2.2. Training group members
2. To mobilize required resources for mushroom farming by July 2022	2.1. A ¼ acre piece of land was acquired	2.1.1. Identify suitable area for farming
		2.1.2. Obtain and sign tenancy contract
	2.2. Mushroom seeds and ingredients were mobilized	2.2.1. Collect farm ingredients and materials
		2.2.2. Purchase mushroom seeds
3. To produce at least 60kg of mushrooms per month by August 2022	3.1. At least 50% of available space is used to grow mushroom	3.1.1. Sanitize farm ingredients and mushroom seeds
		3.1.2. Sow and grow mushroom seeds
	3.2. At least 2kg of quality mushroom is harvested daily	3.2.1. Attend mushroom farm regularly
		3.2.2. Timely harvest matured mushroom
4. To sell mushrooms of TZS 500,000 per month by August 2022	4.1. The mushroom products are sold to targeted market	4.1.1. Preparation of mushroom products
		4.1.2. Mushroom packaging and storage
	4.2. At least 60kg of mushroom is sold monthly	4.2.1. Perform actual sales
		4.2.2. Keep sales register
		4.2.3. Project evaluation

Source: Field data 2022

4.3. Project Planning

Project planning is part of project management relating to the use of schedules such as Gantt charts to plan and subsequently report progress within the project environment (Harold 2013). It deals with setting activities and allocating resources.

4.3.1. Project Implementation Plan

Project implementation plan is a documented schedule showing implemented time, inputs and responsible person. The plan indicated in Table 17 shows project will last within three (3) months; from June to August 2023.

Table 4.2: Project Implementation plan

Project Objectives	Project Outputs	Project Activities	Implementation months						Resources /inputs	Responsible Person
			J	J	A	S	O	N		
1. To train 10 group members on Mushroom farming skills by June, 2022.	1.1. Formed 1 group of women for mushroom farming	1.1.1. Sensitize members to form group							Personnel, Venue	CED Student, WEO,
		1.1.2.Create group bylaws							Personnel, venue stationaries,	CED student, members
	1.2. At least 10 group members acquired mushroom farming skills	1.2.1. Develop training materials /manuals							Computer, stationaries	CED student
		1.2.2. Training group members							Personnel, venue, training manual,	CED student
2. To mobilize required resources for mushroom farming by July 2022	2.1. A ¼ acre piece of land was acquired	2.1.1. Identify suitable area for farming							Transport, personnel,	CED student, Group leaders
		2.1.2. Obtain and sign tenancy contract							Personnel, funds	Group leaders
	2.2. Mushroom seeds and ingredients were mobilized	2.2.1. Collect farm ingredients and materials							Personnel, funds, storage room	Group members
		2.2.2. Purchase mushroom seeds							Funds	Group leaders
3. To produce at least 60kg of mushrooms per month by August 2022	3.1. At least 50% of available space is used to grow mushroom	3.1.1. Sanitize farm ingredients and mushroom seeds							Sanitizer, water, charcoal, barrel	Group members, CED student
		3.1.2. Sow and grow mushroom seeds							Personnel, papers mushroom seeds, sanitizer, rubber	Group members, CED student
	3.2. At least 2kg of quality mushroom	3.2.1. Attend mushroom farm regularly							Personnel,	Group members

Project Objectives	Project Outputs	Project Activities	Implementation months						Resources /inputs	Responsible Person
			J	J	A	S	O	N		
	is harvested daily	3.2.2. Timely harvest matured mushroom							Personnel,	Group members
4. To sell mushrooms of TZS 500,000 per month by August 2022	4.1. The mushroom products are sold to targeted market	4.1.1. Preparation of mushroom products							Personnel, baskets, cutters,	Group members, CED student
		4.1.2. Mushroom packaging and storage							Refrigerator, packaging bags,	Group members
	4.2. At least 60kg of mushroom is sold monthly	4.2.1. Perform actual sales							Personnel, mushroom products	Group members
		4.2.2. Keep sales register							Stationaries	Group leaders
		4.2.3. Project evaluation							Evaluation template, personnel	Project stakeholders

Source: Field data, 2022

4.3.2. Logical framework

This is analytical tool which is used to plan, monitor and evaluate projects. Its name has been derived from its logical relationship set by planner to bring about a connection between project means and its ends. The framework that has been used consists of vertical logic which shows the hierarchy of objectives known as narrative summary. It describes arrangement of objectives logically. It starts with goals followed by objectives, outputs and activities (CED handbook 2016).

The Matrix allows the planner to arrange objectives in logical order by asking simple questions such as: What objectives are needed to achieve this goal? What outputs are expected to realize objectives? What activities should be done to realize outputs?

Table 4.3. Logical Framework (Log-frame Matrix)

Hierarch of Objectives	Objectively Verifiable Indicators (OVI)	Means of Verification (MOV)	Assumption
Goal: To improve income of Akinamama Tujiendeleze group through mushroom farming at Viwanja Sitini ward in Ifakara township	Improved income status of group members	Individual income report	Every group member to disclose income and expenditure status.
Objective 1: To train 10 group members on Mushroom farming skills by June, 2022.			
Output 1.1: Formed 1 group of women for mushroom farming	Existence of active women group	Group registration document	Get access to group registration certificates
Output 1.2: At least 10 group members acquired mushroom farming skills	Group members participating in training sessions	Group attendance to training. Training manual	Participants signed attendance register
Activities			
1.1.1. Sensitize members to form group	Members attending the sensitization meetings	Meeting attendance	Participants filled attendance sheet
1.1.2.Create group bylaws	Availability of bylaws	Printout of bylaws	Access to printed materials
1.2.1. Develop training materials /manuals	Training manual prepare	Printed manuals	Access to training manual
1.2.2. Training group members	Participation of members to training sessions	Attendance register, training manual, evaluation form	Full participation of members,
Objective 2: To mobilize required resources for mushroom farming by July 2022			
Output 2.1: A ¼ acre piece of land was acquired	Availability of piece of land	Tenancy contract, physical visits to the area	Parties to adhere to terms of contract
Output 2.2: Mushroom seeds and ingredients were mobilized	Mushroom seeds and ingredients are available	Physical verification	Access to storage facility
Activities			

Hierarch of Objectives	Objectively Verifiable Indicators (OVI)	Means of Verification (MOV)	Assumption
2.1.1. Identify suitable area for farming	Sites visit and selected	Physical verification and activity report	Obtain space with minimum terms
2.1.2. Obtain and sign tenancy contract	Contract agreement	Contract Report	Access of Signed Contract
2.2.1. Collect farm ingredients and materials	Materials provided	Project progressive reports	Mushroom materials received by participants and used as plan
2.2.2. Purchase mushroom seeds	Availability seed	Purchases Report	Access to mushroom seed
Objective 3: To produce at least 60kg of mushrooms per month by August 2022			
Output 3.1: At least 50% of available space is used to grow mushroom	50%of land prepared	Project progressive report	Access of Report
Output 3.2: At least 2kg of quality mushroom is harvested	Harvested Mushroom	Physical verification of mushroom	Availability of mushroom
Activities			
3.1.1. Sanitize farm ingredients and mushroom seeds	Mushroom seeds and ingredients are Sanitize	Physical verification	Full participation of members,
3.1.2. Sow and grow mushroom seeds	Mushroom Seed are sow	Physical participation of group member	
3.2.1. Attend mushroom farm regularly	List of mushroom grow	Project Report	All mushroom are good condition
3.2.2. Timely harvest matured mushroom	Number of kg harvested	Report of harvested mushroom	Increase kg of mushroom harvested
Objective 4: To sell mushrooms of TZS 500,000 per month by August 2022			
Output 4.1: The mushroom products are sold to targeted market	Number Kg sold	Sales record books	Access Target amount achieved per month.
Output 4.2: At least 60kg of mushroom is sold monthly	60kg of Mushroom sold	Sales record books	Access Customer report of sales of mushroom goods
Activities			

Hierarch of Objectives	Objectively Verifiable Indicators (OVI)	Means of Verification (MOV)	Assumption
4.1.1. Preparation of mushroom product	Mushroom Products prepared	Preparation Report	Access prepared mushroom
4.1.2. Mushroom packaging and storage	List of kg of mushroom prepared to sales	Record of mushroom preparation	Mushroom are good standard for sales
4.2.1. Perform actual sales	Number of kg sold	Sales Record book	Access of sales Report
4.2.2. Keep sales register	List of Kg registered	Report of sales register	Access of sales register
4.2.3. Project evaluation	Sheet for evaluation	Report of Evaluation	Access of evaluation report

Source: Field data, 2022

4.3.3. Project Inputs

This part explains the process of using resources to implement all project activities. The project inputs were divided into three types: That are Human Resources; Financial Resources; and Equipment. Resources were supplied by project beneficiaries, financers, and CED student and host organizations.

4.3.3.1. Staffing Patens

The staffing process is of hiring eligible candidates in the organization for specific positions (Tyler, 2011). In this project key staff included chairperson, secretary, treasury, and group members. All had specific roles as indicated in Table 19 below.

Table 4.4. Project Personnel Roles and Responsibilities

Staff role	Staff responsibilities
Chairperson	Overall leader of group activities, overseeing project implementation and keeping discipline of group members
Secretary	Coordinate group activities, take minutes of group meeting, keeps all records of group project
Treasure	Keep financial records, control project budget, ensure safety and integrity of group funds and physical assets
Group members	Ensure proper implementation of all activities to meet project goals, including attending farms and sales of products

Source: Field data 2022

4.3.3.2. Project Budgets

The project budget is derived from inputs required to implement project plan. The total Project Budget was TZS 6,935,000 as indicated in Table 20. These funds were contributed by various stakeholders, including group members' contributions, host organization, and other stakeholders.

Table 4.5: Project Budget

Project Objectives	Project Outputs	Project Activities	Resources /inputs	Quantity (in #)	Unit Cost (TZS)	Totals (TZS)
1. To train 10 group members on Mushroom farming skills by June, 2022.	1.1. Formed 1 group of women for mushroom farming	1.1.1. Sensitize members to form group	Refreshment	10	2000	20,000
			Venue	1	50000	50,000
		1.1.2.Create group bylaws	Refreshment	10	2000	20,000
			Stationaries,	1	10000	10,000
			Venue	1	50000	50,000
	1.2. At least 10 group members acquired mushroom farming skills	1.2.1. Develop training materials /manuals	Computer, stationaries	1	10000	10,000
		1.2.2. Training group members	Personnel, venue, training manual,	N/A		
2. To mobilize required resources for mushroom farming by July 2022	2.1. A ¼ acre piece of land was acquired	2.1.1. Identify suitable area for farming	Transport, personnel,	1	10000	10,000
		2.1.2. Obtain and sign tenancy contract	Personnel, funds	N/A		
		2.1.3. Construction of mushroom farming shed	Construction materials	1	1,200,000	1,200,000
			Labour	1	300,000	300,000
	2.2. Mushroom seeds and ingredients were mobilized	2.2.1. Collect farm ingredients and materials	Personnel, funds, storage room	1	350,000	350,000
		2.2.2. Purchase mushroom seeds	Funds	30pc	2500	75,000
3. To produce at	3.1. At least	3.1.1. Sanitize farm	Sanitizer, water,	1	90000	90,000

Project Objectives	Project Outputs	Project Activities	Resources /inputs	Quantity (in #)	Unit Cost (TZS)	Totals (TZS)
least 60kg of mushrooms per month by August 2022	50% of available space is used to grow mushroom	ingredients and mushroom seeds	charcoal, barrel			
		3.1.2. Sow and grow mushroom seeds	Personnel, papers mushroom seeds, sanitizer, rubber	1	50000	50,000
	3.2. At least 2kg of quality mushroom is harvested daily	3.2.1. Attend mushroom farm regularly	Personnel,			
		3.2.2. Timely harvest matured mushroom	Personnel,	1	-	-
4. To sell mushrooms of TZS 500,000 per month by August 2022	4.1. The mushroom products are sold to targeted market	4.1.1. Preparation of mushroom products	Personnel, baskets, cutters,			
		4.1.2. Mushroom packaging and storage	Refrigerator,	1	4,500,000	4500,000
			packaging bags,	2pack	55000	110,000
	4.2. At least 60kg of mushroom is sold monthly	4.2.1. Perform actual sales	Personnel, mushroom products			
		4.2.2. Keep sales register	Stationaries		60000	60,000
		4.2.3. Project evaluation	Evaluation template, personnel		30000	30,000
Total Project Budget						**6,935,000**

Source: Field data, 2022

4.4. Project Implementation (Actual)

Project implementation is the breakdown of project into the distinct steps required to accomplish a particular goal. Within the plan, each step required to achieve the goal has an owner and a due date. Often, the goal of the plan supports larger business objectives. This section shows how the implementation process was undertaken and all the activities that were undertaken in relation to all the resources employed to ensure the whole process was successful and in time. This part is subdivided into narrative project implementation report, and tabulated time management plan – Gantt Chart.

4.4.1 Project Implementation Report

The implementation report presents completion of activities designed at planning stage. Main activities were aligned to project objectives. The first activity was to identify project and build capacity of project participants; followed by mobilization of project resources; then actual farming of mushroom; and later the sales activities. These activities were summarized below, and supported by photos taken from the field.

4.4.1.1 Capacity Building of Project Beneficiaries

After identification of project. Group members were trained in mushroom farming. The training was externally sourced and lasted for 3 days; each day spent 2 hours. The continuous follow up was done by the trainer to ensure consistence with knowledge and members to follow right procedures in growing and attending mushroom farm.


Figure 3.1: Group members attending training sessions

Source: Field data, 2022

4.4.1.2. Mobilization of project resources

Three main project resources were needed. The human resources, financial resources, and materials. Project members provided human resources and collected raw materials which were found locally. Financial resources were contributed by project members and some donated by host organization. The CED student coordinated training activities. Various raw materials needed for mushroom production were mobilized. Important materials included rice husks, timber wood, sugar, and ashes which are mixed together. Materials are packed in polyethylene plastic bags with a capacity of 2kg. Special sanitizers are applied to kill bacteria before planting mushroom.

Figure 4.2: Some resources used in mushroom farming

4.4.1.3 Growing Mushroom

Mushroom are planted by seed and constantly cared. Depending on weather, they grow and reach harvesting stage within twenty-eight days. In hot season they may take up to thirty days. The harvesting time can last within 90 days.

Figure 4.3: Mushroom farm in the first three weeks

Source: Field Data 2022

4.4.1.4 Mushroom Harvesting and Sales

Harvesting of mushrooms was done by knife. They were placed on sieve to prepare them for packaging. The harvest were stored in a cold dry place to keep quality and prevent them from spoilage. Fresh mushrooms couldn't last more than seven days while in good quality unless were packaged for sale. The packed mushroom measured in 1kg, 2kg, etc.

Figure 4.4: Harvested Mushroom ready for packing and sale

Source: Field Data 2022

4.4.2. Project Time Management Plan (Gantt Chart)

Project time management plan (Gnatt chart) shows the implementation schedule of all activities performed to achieve project objectives. For every activity there is specific time indicated in weeks when it was completed as indicated in Table 21.

Table 4.6: Project Time Management (Gantt-Chart)

Project Objectives	Project Outputs	Project Activities	Month 1				Month 2				Month 3				Month 4				Month 5			
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1. To train 10 group members on Mushroom farming skills by June, 2022.	1.1. Formed 1 group of women for mushroom farming	1.1.1. Sensitize members to form group																				
		1.1.2.Create group bylaws																				
	1.2. At least 10 group members acquired mushroom farming skills	1.2.1. Develop training materials /manuals																				
		1.2.2. Training group members																				
2. To mobilize required resources for mushroom farming by July 2022	2.1. A ¼ acre piece of land was acquired	2.1.1. Identify suitable area for farming																				
		2.1.2. Obtain and sign tenancy contract																				
		2.1.3. Construction of mushroom farming shed																				
	2.2. Mushroom seeds and ingredients were	2.2.1. Collect farm ingredients and materials																				
		2.2.2. Purchase mushroom seeds																				

Project Objectives	Project Outputs	Project Activities	Month 1				Month 2				Month 3				Month 4				Month 5			
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
	mobilized																					
3. To produce at least 60kg of mushrooms per month by August 2022	3.1. At least 50% of available space is used to grow mushroom	3.1.1. Sanitize farm ingredients and mushroom seeds																				
		3.1.2. Sow and grow mushroom seeds																				
	3.2. At least 2kg of quality mushroom is harvested daily	3.2.1. Attend mushroom farm regularly																				
		3.2.2. Timely harvest matured mushroom																				
4. To sell mushrooms of TZS 500,000 per month by August 2022	4.1. The mushroom products are sold to targeted market	4.1.1. Preparation of mushroom products																				
		4.1.2. Mushroom packaging and storage																				
	4.2. At least 60kg of mushroom is sold monthly	4.2.1. Perform actual sales																				
		4.2.2. Keep sales register																				
		4.2.3. Project evaluation																				

Source: Field data, 2022

CHAPTER FIVE

PARTICIPATORY MONITORING, EVALUATION AND SUSTAINABILITY

5.1 Overview

This chapter covers project monitoring, evaluation and sustainability. Project monitoring emphases the process of measuring performance of activities alongside the resources allocated. Project evaluation deals with examining achievements of project objectives. Project sustainability explains the continuing of project activities after initial withdrawal of external support. Also provides the connection of project benefits with crosscutting matters like environment and socio-economic issues.

5.2 Participatory Project Monitoring

Participatory project monitoring as a process performed routinely to collect information on attending project activities. Participants in project monitoring were project beneficiaries and CED student. The responsible personnel were able to perform the activity due to knowledge they possessed about the area, project resources and various conditions encountered during project implementation.

The importance of participatory project monitoring was to work in collaboration on collecting information necessary to analyze project performance, to timely identify problems, establish various trends and patens, and keep on track all activities. The monitoring report helped to make some decisions on project schedules and resources.

In order to complete participatory project monitoring, we deployed three elements.

The Monitoring Information Systems (MIS), Participatory Monitoring Methods, and we tabulated Participatory Monitoring Plan. The following subsection explains methods used in Participatory Project Monitoring.

5.2.1 Monitoring Information Systems

The Monitoring Information Systems was designed to collect and report project activities to enable participants to plan, monitor and make evaluation about project performance. The system helps to access complete and accurate information for project monitoring.

The template designed to perform information monitoring contains spreadsheet with rows and columns. The row has information on elements to monitor which are generated from activities attended to complete objectives. The columns has some indicators of what to monitor, what records to keep, who collects records, who uses records and what decisions can be made from those records. Table 22 below indicates the project monitoring information systems.

Table 5.1: Project Monitoring Information Systems

Categories of Information	What to monitor	What record to keep	Who collects data	Who uses data	How to use Information	What decision can be made
Workplan and Activities	Timing of activities Supply of resources Supply of personnel Training of personnel	Work schedules Inventory cards Attendance sheets Training evaluations	CED student Group leaders	CED student Project team Host Organ.	Timely supply of resources	Allocate resources as per plan
Cost and Expenditures	Purchases of materials Payment of services	Inventory book Payment receipts	Group leader	CED student Group leader	Monitoring budgets	Track spending patterns
Human resources & Supervision	Skills of members Attendance at work Productivity	Training records Attendance sheet Production records	CED student Group leader	CED student Group leader Host Organ.	Performance evaluation of participants	Improve group productivity
Materials and Tools	Timely supply Quality of materials	Stock records Assessment records	CED student Group leader	Group leader CED student	Supply of quality materials	Reorder materials are necessary
Results	Knowledge gained Income obtained Improved livelihood	Training reports Sales report Impact Assessment	CED student Host Organ.	CED student Group leader Host Organ.	Identify areas for improvement	Review project objectives
Project Sustainability	Project ownership Project impact Project continuity	Impact assess report	Group leader Host Organ.	Group leader Host Organ.	Obtain project capacity beyond current support	Revise projection of project duration

Source: Researcher Analysis, 2022

5.2.2 Participatory Monitoring Methods

Project members were engaged in project monitoring. The aim was to ensure participant understand the progress of implementing project activities. Researcher used Beneficiary Assessment methods to complete participatory project monitoring. This method involved asking project beneficiaries how they see the progress and appreciate the impact of project outcomes. Researcher collected information provided by participants for further analysis. The techniques used to achieve this method were: Observations, Group Discussion, and Observation.

The researcher made several visits to the project site. He observed how project team was carrying out activities in line with project plan and supplied project resources. For every observable element was recorded by researcher in notebook and later shared with project team for necessary improvement.

The group discussion was done through group meetings. The project team discussed the progress of implementing project activities and any challenge encountered during the process. Interviews were conducted by researcher to individual project members to get understanding if they followed project schedules. Both techniques helped to establish: which area needs improvement, what resources to be supplied, what changes to be made, and what potential challenges. It was important to record properly all information gathered from observation, interview, and group discussions so that they can be used to revise project objectives wherever necessary.

5.2.3 Participatory Monitoring Plan

The participatory Monitoring Plan was developed to track the progress of implementing project activities against project objectives. The monitoring plan show timeframe when activities was performed and indicated measurable indicators for easy follow up. Table 23 below details participatory monitoring plan.

Table 5.2: Participatory Monitoring Plan

Project Objectives	Project Outputs	Project Activities	Indicator	Data source	Methods/tools	Responsible persons	Time frame
1. To train 10 group members on Mushroom farming skills by June, 2022.	1.1. Formed 1 group of women for mushroom farming	1.1.1. Sensitize members to form group	Group registration	Group leader	Registration certificate	Group leader	Jun 2022
		1.1.2.Create group bylaws	Written rules	Group leaders	Review report	CED student Group leader	Jun 2022
	1.2. At least 10 group members acquired mushroom farming skills	1.2.1. Develop training materials /manuals	Training manual	CED student	Review manuals	CED student	Jun 2022
		1.2.2. Training group members	# attended training	Training report	Review attendance register	CED student	Jun 2022
2. To mobilize required resources for mushroom farming by July 2022	2.1. A ¼ acre piece of land was acquired	2.1.1. Identify suitable area for farming	Size of area located	Group leader	Review field report	Group leader	Jul 2022
		2.1.2. Obtain and sign tenancy contract	Size of area obtained	Group leader	Review contract	Group leader	Jul 2022
	2.2. Mushroom seeds and ingredients were mobilized	2.2.1. Collect farm ingredients and materials	Amount of materials	Group leader	Inventory report	Group leader	Jul 2022
		2.2.2. Purchase mushroom seeds	Amount of seeds	Group leader	Inventory report	Group leader	Jul 2022
3. To produce at least 60kg of mushrooms per month by August 2022	3.1. At least 50% of available space is used to grow mushroom	3.1.1. Sanitize farm ingredients and mushroom seeds	Amount sanitized	Group leader	Quality assessment	CED student	Aug 2022
		3.1.2. Sow and grow mushroom seeds	Size of farm planted	Physical verification	Field visit	CED student	Aug 2022

Project Objectives	Project Outputs	Project Activities	Indicator	Data source	Methods/tools	Responsible persons	Time frame
	3.2. At least 2kg of quality mushroom is harvested daily	3.2.1. Attend mushroom farm regularly	Attendance report	Group leader	Review report	CED student	Aug 2022
		3.2.2. Timely harvest matured mushroom	Stock records	Group leader	Review report	CED student	Aug 2022
4. To sell mushrooms of TZS 500,000 per month by August 2022	4.1. The mushroom products are sold to targeted market	4.1.1. Preparation of mushroom products	Amount harvested	Stock record	Review report	Group leader	Sept 2022
		4.1.2. Mushroom packaging and storage	Amount harvested	Stock records	Review report	Group leader	Sept 2022
	4.2. At least 60kg of mushroom is sold monthly	4.2.1. Perform actual sales	Sales record	Group leader	Record book	Group leader	Sept 2022
		4.2.2. Keep sales register	Amount of sales	Group leader	Record book	Group leader	Sept 2022
		4.2.3. Project evaluation	Evaluation report	Project report	Group discussion	CED student Group leader	Sept 2022

Source: Field data, 2022

5.3 Participatory Project Evaluation

Participatory Project Evaluation was achieved by working together with project beneficiaries to collect and analyze various project information. It aimed at establishing whether the project was implementing its planned activities; and at what degree those activities would achieve the stated project objectives. Participants involved in project evaluation understood the effectiveness of project, progress of achieving objectives, the impact of project outcome, and lesson learnt for future improvement. The project evaluation was done in phased approach, where first stage was completed at end of project cycle and other stages to follow in later periods. The next sections will detail project performance indicators, project evaluation methods, and general summary of project evaluation process.

5.3.1 Performance Evaluation

Project performance indicators were success criteria used to measure the achievement of project objectives. Indicators appear in quantitative and qualitative form. Three classes of indicators were used to complete project performance evaluation. Table 24 indicates types of indicators used; whether input indicators representing what went into the project, output indicators representing what came out of project, and impact indicators representing actual changes in status caused by project.

Table 5.3: Project Performance Indicators

Project Objectives	**Project Outputs**	**Project Activities**	**Performance Indicators**	**Type of Indicators**
1. To train 10 group members on Mushroom farming skills by June, 2022.	1.1. Formed 1 group of women for mushroom farming	1.1.1. Sensitize members to form group	Group registration	Output indicator
		1.1.2.Create group bylaws	Written rules	Output indicator
	1.2. At least 10 group members acquired mushroom farming skills	1.2.1. Develop training materials /manuals	Training manual	Output indicator
		1.2.2. Training group members	# attended training	Impact indictor
2. To mobilize required resources for mushroom farming by July 2022	2.1. A ¼ acre piece of land was acquired	2.1.1. Identify suitable area for farming	Size of area located	Input indicator
		2.1.2. Obtain and sign tenancy contract	Size of area obtained	Input indicator
	2.2. Mushroom seeds and ingredients were mobilized	2.2.1. Collect farm ingredients and materials	Amount of materials	Input indicator
		2.2.2. Purchase mushroom seeds	Amount of seeds	Input indicator
3. To produce at least 60kg of mushrooms per	3.1. At least 50% of available space is used to grow mushroom	3.1.1. Sanitize farm ingredients and mushroom seeds	Amount sanitized	Input indicator
		3.1.2. Sow and grow mushroom	Size of farm planted	Output indicator

month by August 2022		seeds		
	3.2. At least 2kg of quality mushroom is harvested daily	3.2.1. Attend mushroom farm regularly	Attendance report	Output
		3.2.2. Timely harvest matured mushroom	Stock records	Output indicator
4. To sell mushrooms of TZS 500,000 per month by August 2022	4.1. The mushroom products are sold to targeted market	4.1.1. Preparation of mushroom products	Amount harvested	Output indicator
		4.1.2. Mushroom packaging and storage	Amount harvested	Output indictor
	4.2. At least 60kg of mushroom is sold monthly	4.2.1. Perform actual sales	Sales record	Output indicator
		4.2.2. Keep sales register	Amount of sales	Impact indicator
		4.2.3. Project evaluation	Evaluation report	Output indicator

Source: Field data, 2022

5.3.2 Participatory Evaluation Methods

Project participants were involved in participatory evaluation of the project. Researcher used self-assessment methods, which were important to build capacity of participants and ensure they remain active during the process. Researcher used different techniques to implement participatory evaluation of the project. They included: Observation, interview, and discussion. During the observation process, researcher took photos instantly to keep records of some project activities. The interview and discussions were done regularly to analyze progress of implementing project activities; wherever discrepancies were observed, changes were recommended for improvement.

5.3.3 Project Evaluation Summary

The project evaluation summary is indicated in Table 25. It shows project objectives, project outputs and their specific planned activities. Each activity has performance indicators which are measured by expected outcomes against actual outcome.

By using this analysis method, it was observed that, at least 95% of planned activities were implemented by evaluation period in September 2022. Neither any activity were changed nor schedule were altered. It was expected that other evaluation will take place in a month after first evaluation stages.

Table 5.4: Project Evaluation Summary

Project Objectives	**Project Outputs**	**Project Activities**	**Performance indicator**	**Expected outcome**	**Actual outcome**
1. To train 10 group members on Mushroom farming skills by June, 2022.	1.1. Formed 1 group of women for mushroom farming	1.1.1. Sensitize members to form group	Group registration	Form 1 group	1 group formed
		1.1.2.Create group bylaws	Written rules	Write bylaws	Written
	1.2. At least 10 group members acquired mushroom farming skills	1.2.1. Develop training materials /manuals	Training manual	Printed manuals	Not done
		1.2.2. Training group members	# attended training	10 members	10 members
2. To mobilize required resources for mushroom farming by July 2022	2.1. A ¼ acre piece of land was acquired	2.1.1. Identify suitable area for farming	Size of area located	¼ Acre obtained	⅕ Acre secured
		2.1.2. Obtain & sign tenancy contract	Size of area obtained	¼ Acre obtained	⅕ Acre secured
	2.2. Mushroom seeds and ingredients were mobilized	2.2.1. Collect farm ingredients and materials	Amount of materials	Timely supply	All collected
		2.2.2. Purchase mushroom seeds	Amount of seeds	Timely supply	All collected
3. To produce at least 60kg	3.1. At least 50% of available space is used	3.1.1. Sanitize farm ingredients and mushroom seeds	Amount sanitized	All sanitized	All done

of mushrooms per month by August 2022	to grow mushroom	3.1.2. Sow and grow mushroom seed	Size of farm planted	To cover 100%	80% covered
	3.2. At least 2kg of quality mushroom is harvested daily	3.2.1. Attend mushroom farm regularly	Attendance report	Regular attendance	Done
		3.2.2. Timely harvest of mushroom	Stock records	Keep records	Kept
4. To sell mushrooms of TZS 500,000 per month by August 2022	4.1. The mushroom products are sold to targeted market	4.1.1. Preparation of mushroom products	Amount harvested	Timely harvest	Done
		4.1.2. Mushroom packaging, storage	Amount harvested	Timely harvest	Done
	4.2. At least 60kg of mushroom is sold monthly	4.2.1. Perform actual sales	Sales record	Keep records	Kept
		4.2.2. Keep sales register	Amount of sales	60kg /month	56kg/month
		4.2.3. Project evaluation	Evaluation report	Evaluation report	Not done

Source: Field data, 2022

5.4 Project Sustainability

Project sustainability involves its capacity to continue running beyond external support. We look at various aspects to analyze project sustainability. The consideration was made in terms of nature of project, project location, type of project beneficiaries, and ways to implement planned project activities. Thus, we analyzed project sustainability in terms of institutional functioning, financial self-sustaining, and safety to environment. Research was very optimistic that project would continue functioning even after withdrawal of his technical support and the project product of improving community livelihood will be achieved.

5.4.1 Institutional Sustainability

The project of mushroom farming aimed to continue even after the researcher leaves. The project participants were organized to work in group for easy management and support. The group developed binding bylaws, registered constitution, and obtained registration certificate. By working in groups, project participants are able to obtain financial support to scale up the group projects and individual economic activities. The host organization had specific role to monitor activities of the group and ensure continuity of the project. Since group members were well trained, are able to transfer knowledge to others in the community. This too will multiply the initiative to improve income of marginalized community members in the project area.

5.4.2 Financial Sustainability

The process of mushroom farming has economic importance and is financially viable. It uses much of locally obtained raw materials and some other ingredients

obtained at cheap prices. It uses simple technology which can easily be imparted to local people. The harvesting period is very short around 30 days which provide chances for repeated harvesting cycles in a year. The harvested products are sold in various forms; either as fresh from farm in local markets or as processed products in medium and large sized supermarkets. The income obtained can be used to fund successive projects and invest in other income generating activities.

5.4.3 Environmental Sustainability

Growing mushroom helps to protect environment. The raw materials used as inputs in the process of mushroom farming are collected from remains of dead plants or farm byproducts such as rice husks. Participants of mushroom farming are trained on knowledge of protecting environment as prerequisite condition for growing and harvesting quality mushroom products. Also mushroom farming use small area of land to produce large amount of products as opposed by crop production which use large piece of land to produce outputs of equivalent economic value. Generally, the process of mushroom farming is ecofriendly and use recycled materials to produce large amount of mushroom at economic scale.

CHAPTER SIX

CONCLUSION AND RECOMMENDATION

6.1 Overview

This chapter provides overview on the entire report. It gives summary of other chapters, extending from: Participatory Needs Assessment; Problem identification; Literature review; Project implementation; to Participatory monitoring, evaluation and sustainability. The chapter is presented as two parts; Conclusion and Recommendation. The conclusion part provides account on the findings from CNA and literature review; and on the outcome of project implementation. The recommendation part presents some statements given by researcher to improving study methodology, taking further research, and amending some policies.

6.2 Conclusion

The idea of mushroom farming project came from Participatory Needs Assessment (PNA) which was conducted in Viwanjasitini ward in Ifakara town council. The CED student with support of local government officials mobilized community members to undertake Community Needs Assessment (CNA). Researcher used four (4) data collection methods to gather information; which were questionnaire, interview, focus group discussion, and observation. The respondents indicated various needs and opportunities, and proposed some economic activities to redress identified needs.

The major community needs faced Viwanjasitini community were listed as: Lack of access to nutritious food, Lack of reliable income source, Lack of capital to start

IGA, and Lack of supply of agricultural inputs. Through pairwise ranking technique, the lack of reliable income source was identified a priority need needing immediate intervention. The findings for the CNA laid a foundation to identify economic project. Through same pairwise ranking, the mushroom farming was ranked a priority economic activity to improve income of community. Project participants were organized into formally registered group for easy management. The group registration provided formalization status which is required for financial and nonfinancial support from stakeholders.

Various literatures indicated that mushroom farming was becoming popular economic projects. It was important to improve livelihood of marginalized communities while considering environmental conservation. Mushroom farming was proved to have less negative effects on the environments due to using plant remained and industrial wastes. Some literatures reveal that despite of the mushroom farming project having great economic benefits; it was considered a side work by most communities. Only if the project was considered a main source of livelihood, it would have supported many communities. However, mushroom farming provides numerous financial opportunities than horticultural could have if taken seriously as major source of livelihood.

Before undertaking the project, planning phase was completed. At least four specific objectives were developed. They included capacity building of project participants by June 2022. About 10 women were trained on mushroom farming activities to increase income and protect environments. The objective to mobilize project

equipment and tools for mushroom farming was targeted by July 2022. The mobilized equipment and tools were capable of producing at least 60kg of fresh mushroom products by August 2022. The project projected TZS 500,000 to be earned every month from selling mushroom by end of August 2022.

From participatory monitoring and evaluation, it was evident that the lives of the project participants would improve. There was a positive perception to the project and high expectations to the project results. Increased income as a result of selling mushroom products was significantly mentioned by 56.2 % of the project participants.

The ability of project participants to treat project as a business entity and a fulltime job, attending different training sessions as organized during the project period changed their view of apiculture business. All changes seemed to be related either to business growth or improved livelihoods. The project was sustainable in terms of institutional, financial, and environment.

6.3 Recommendation

Basing on the experience gained from this particular project, the researcher was able to provide the following recommendations for the continuity of the project and for other projects planned in the future.

I recommend that project design should be done immediately after prioritizing the community needs and project identification. This starts with stakeholder analysis,

logical framework analysis and project implementation which entails activity planning and shows who will do what, when to do and types of inputs needed.

Under this ground, the researcher recommends to CED students that before introducing a project, the project implementers should first conduct a thorough assessment to identify the actual community needs in a particular community where the project is expected to be implemented. This will help the project to meet the community's expectations, motivate the people to take part in the project and ensure its sustainability. Furthermore, by thorough selecting project participants and involving community from the beginning will help to avoid possible duplications of projects in the same communities.

Through project monitoring, evaluation and sustainability, it was revealed that the project aimed at helping poor households to generate income that support their lives as well as other socio-economic activities like farming. Mushroom farming was proved to be beneficial and sustainable since the project participants were able to understand ways of managing the project. They also transformed skills obtained through trainings to actual practices and make the project implementable. Therefore, the researcher recommends practitioners that community projects should consider empowering the beneficiaries through training sessions to help them carry on the project activities even when the external support is terminated. This is important for projects supported by TASAF where in some cases they fail to run after funding is terminated.

Other recommendations are made to ministry of Agriculture to review some policies. Because most are outdated. Policies should focus on building capacity of people who need to deal with Mushroom farming and consider it as a cash crop. The ministry responsible with Community Development should emphasize and give priority to community based projects and ensure their continuation by providing enabling environment for reliable markets. Government through responsible ministries should provide conducive environment for self-employment through such projects.

There should be enabling environment to increase access to credit and market information. The Agricultural policy must state how the Mushroom farmers can easily get loan from credit institution which can facilitate mushroom faming and access a wider market internally and globally which can generate employment and sustainable income.

The private sector should be supported as considered an engine of employment to women. It provides ground for job creation. That women reduce dependence ratio in community and be a part environment conservation. The framework for policy guideline should allow mushroom farmers to own business entity which will generate employment and sustainable income. This should go together with capacity building on mushroom production and enable utilization of large market internally and globally.

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APPENDICES

Appendices I: Description of the demographic characteristics of Viwanja Sitini Ward community

1. Part A: Respondents' Profile

   a) Age: Between 18 – 25 years

   b) Between 26 - 40 years

   c) Between 40 – 59 years Above 60 years

2. How many people depend on you for a living?

   a) 1-5

   b) 6 – 10

   c) More than 10

3. Put a tick (v) at the row showing your level of education

Level of Education	Put a tick (v) at the row of appropriate level of education
Below STD seven	
STD seven	
Form two dropout	
Form four	

4. Fill the table below on your marital status by putting a tick (v) in the relevant place

Marital status	Put a tick (v) in the relevant place of your marital status
Married	
Single	

5. A. Can you rank the listed challenges facing Ifakara Community? Rank by putting a tick (v) at the appropriate row of your choice

Challenges	Put a tick (v) in the row of your choice
Lack of starting capital	
How to increase income	
Farming skills	
Lack of education	

B. Rank the following sources of income found in Viwanja Sitini Wardby putting a tick(v) in the appropriate column and row of your choice (1- Very important, 2- Important, 3- Somehow important, 4- Not important

Sources of income	Ranks			
	1	2	3	4
Crop production				
Poultry farming				
Food vending				
Dairy cattle farming				

6. Rank the following different ways of raising funds for project implementation by putting a tick (v) in the appropriate column and row of your choice showing which one is 1- Very important, 2- Important, 3- Somehow important, 4- Not important

Different ways of raising funds for project	**Ranks**			
	Number 1	**Number 2**	**Number 3**	**Number 4**
Saving contributions				
Loan from Microfinance				
Youth Development Funds				
Fundraising				

7. Which of the following projects will suit your position in alleviating income poverty? Rank by putting a tick at the appropriate row of your choice. (1- Very important, 2- Important, 3- Somehow important, 4- Not important)

Project	Put a tick of ranking in the appropriate row of your choice			
	1	2	3	4
Crop production				
Diary production				
Poultry farming				
Food vending				

Appendix II: Community needs assessment questionnaire for Viwanja sitini Wards in Ifakara Town Council

Questionnaire Identification Number_____

Date of Interview_____

Part I: Demographic Information of Respondents

1. Sex of the respondent_____
    1) Male
    2) Female
2. Age of the respondent in years_____
3. Education level of the respondent_____
    1) No formal education
    2) Primary education
    3) Secondary education
    4) College education
4. Marital status of the respondent_____
    1) Married
    2) Single
    3) Widow
    4) Divorce

Part II: Petty Business Investment

5. What is main source of household income? (mention)
    1) ……
    2) …….
    3) …….
    4) …….
    5) ……
6. How many years have you Mushroom farm engaged in petty trade business?

    _____ years
7. What type of petty trade business have you Mushroom farm doing? (mention)
    1) ……..
    2) ……
    3) ……
    4) …….
    5) ……

Part III: Business growth

8. What is the size of your business? (Capital investment in

    Tshs)_____
9. What motivated you to start a business?
    1) ……
    2) ……..
    3) ……..
    4) …….

10. What are challenges faced by petty trade business owners?

    1) ……..
    2) …….
    3) …….
    4) ……
    5) ……..

Part IV: General question

11. What are stakeholders providing support for the development of the area?

    1) …….
    2) …….
    3) ……
    4) ……..

12. What are your other opinions related to the petty trade business in your area?

    1) ……
    2) ……
    3) …….
    4) …….

Appendix III: Interview Guide for Focus Group Discussion

1. What reasons influenced you to join groups for Mushroom production?
2. How have you benefited from your group membership?
3. Do you have access markets for your products?
4. In what ways are residents involved in development activities in your area?
5. What are the development challenges facing your ward?
6. What are the challenges facing petty trade business owners?

Appendix IV: Research Clearance Letter

THE UNITED REPUBLIC OF TANZANIA

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY

THE OPEN UNIVERSITY OF TANZANIA

Ref. No OUT/PG201900873 **30th August, 2023**

Town Director,
Ifakara Township Council,
P.O.Box 433,
MOROGORO.

Dear Director,

RE: RESEARCH CLEARANCE FOR MR. CHRISTIAN MWILENGA, REG NO: PG201900873

2. The Open University of Tanzania was established by an Act of Parliament No. 17 of 1992, which became operational on the 1st March 1993 by public notice No.55 in the official Gazette. The Act was however replaced by the Open University of Tanzania Charter of 2005, which became operational on 1st January 2007.In line with the Charter, the Open University of Tanzania mission is to generate and apply knowledge through research.

3. To facilitate and to simplify research process therefore, the act empowers the Vice Chancellor of the Open University of Tanzania to issue research clearance, on behalf of the Government of Tanzania and Tanzania Commission for Science and Technology, to both its staff and students who are doing research in Tanzania. With this brief background, the purpose of this letter is to introduce to you **Mr. Christian Mwilenga**, **Reg. No: PG201900873**), pursuing **Masters in Community Economics Development** (**MCED**). We here by grant this clearance to conduct a research titled "**Improving Income of Akinamama Tujiendeleze Group through Mushroom Farming at Viwanja sitini ward in Ifakara Township**". He will collect his data at your area from 31 August to 31st September 2023.

4. In case you need any further information, kindly do not hesitate to contact the Deputy Vice Chancellor (Academic) of the Open University of Tanzania, P.O.Box 23409, Dar es Salaam. Tel: 022-2-2668820.We lastly thank you in advance for your assumed cooperation and facilitation of this research academic activity.

Yours sincerely,
THE OPEN UNIVERSITY OF TANZANIA
Prof. Magreth S.Bushesha
For: VICE CHANCELLOR

Kinondoni Biafra, Kawawa Road; P.O 23409; Dar es Salaam; Tel: +255 22 2668 445;
E-Mail:vc@out.ac.tz|| Website:www.out.ac.tz

Appendix V: Letter of Acceptance to Conduct Research

JAMHURI YA MUUNGANO WA TANZANIA

OFISI YA RAIS

TAWALA ZA MIKOA NA SERIKALI ZA MITAA

HALMASHAURI YA MJI IFAKARA

Unapojibu tafadhali taja:

Kumb. Na. IFTC/E.10/80 VOL IV/112 07/09/2023

Mtendaji wa Kata,
Kata ya ViwanjaSitini,
HALMASHAURI YA MJI IFAKARA

YAH: KUMTAMBULISHA MR. CHRISTIAN MWILENGA KUTOKA CHUO KIKUU HURIA CHA TANZANIA

Husika na mada tajwa hapo juu.

2. Ofisi ya Mkurugenzi wa Mji Ifakara inakiri kupokea barua yenye Kumb.Na. **OUT/PG201900873** ya tarehe 30/08/2023 kuhusu ombi la **kufanya utafiti** katika Ofisi tajwa hapa juu.

3. Hivyo basi, namtambulisha kwenu mtajwa hapo juu apewe ushirikiano ili aweze kufanikisha kukusanya taarifa (Data Collection).

4. Kiini cha mada ya ukusanyaji wa Taarifa yake ni **"Improving of Akinamama Tujiendeleze Group through Mushroom Farming"**. Pamoja na barua hii ameambatisha na barua ya upitishwaji wa pendekezo la utafiti huo kutoka Chuo Kikuu Huria cha Tanzania.

5. Nakutakia kazi njema.

Michael A. Mgowe
Kny;-**MKURUGENZI WA MJI**

Nakala: Mkurugenzi wa Mji - Aione kwenye Jalada
IFAKARA.

Mkuu wa Chuo,
The Open University of Tanzania,
S.L.P 23409,
DAR ES SALAAM. - Kwa taarifa

Ofisi ya Mkurugenzi wa Mji , S.L.P 433 Ifakara, Simu na 023-2934212,Nukushi 023-2934212,Barua Pepe:info@ifakaratc.go.tz, Tovuti http://ifakaratc.go.tz