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MASTER OF SCIENCE IN COMMUNITY ECONOMIC DEVELOPMENT
(2007)

ENVIRONMENTAL CONSERVATION THROUGH TREE PLANTING.
THE CASE OF NYAKATO, MWANZA.

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TABLE OF CONTENTS

PROJECT TITLE.....	I
SUPERVISOR’S CERTIFICATION.....	II
STATEMENT OF COPYRIGHT	III
DECLARATION BY THE AUTHOR.....	IV
DEDICATION.....	V
ACKNOWLEDGEMENT.....	VI
ABSTRACT.....	VII
EXECUTIVE SUMMARY	VIII
ACRONYMS/ABBREVIATIONS	X
CHAPTER ONE	1
COMMUNITY NEEDS ASSESSMENT.....	1
1.1 BACKGROUND INFORMATION.....	1
1.2 COMMUNITY PROFILE.....	3
1.3 OBJECTIVES OF THE STUDY	4
1.3.1 THE ULTIMATE OBJECTIVE	4
1.3.2 THE IMMEDIATE OBJECTIVE.....	5
1.4 HYPOTHESES	5
1.5 CHARACTERISTICS OF THE SURVEY	5
1.5.1 SURVEY METHODS AND TOOLS	5
1.5.2 PSYCHOMETRIC CHARACTERISTICS, RELIABILITY AND VALIDITY	9
1.6 IDENTIFIED COMMUNITY NEEDS	13

CHAPTER TWO	17
PROBLEM IDENTIFICATION	17
2.1 PROBLEM STATEMENT	17
2.2 IDENTIFIED PROBLEMS FROM THE STUDY FINDINGS.....	17
2.3 FACTORS CONTRIBUTING TO DEFORESTATION	19
2.4 LEVELS OF AWARENESS	21
2.5 TREE PLANTING AND ENVIRONMENTAL CONSERVATION	
PRACTICES AMONG THE CITY RESIDENTS:	28
2.6 RECOMMENDATIONS FROM THE INTERVIEWEES	29
2.7 COMMUNITY PARTICIPATION IN THE PROJECT	31
2.8 STAKEHOLDERS RELATED TO THE PROJECT	32
2.9 NYAKATO TREE PLANTING PROJECT	33
2.9.1 GOAL OF THE PROJECT	33
2.9.2 SPECIFIC OBJECTIVES OF THE PROJECT.....	34
CHAPTER THREE	36
LITERATURE REVIEW	36
3.1 THEORETICAL LITERATURE.....	36
3.1.1 CONCEPT AND DEFINITION OF URBAN FORESTRY.....	36
3.1.2 AN OVERVIEW OF ENVIRONMENTAL PROBLEMS IN MWANZA	
MUNICIPALITY	38
3.2 EMPIRICAL LITERATURE.....	42
3.2.1 A CASE OF SUSTAINABLE DAR ES SALAAM PROJECT (SDP)	42
3.2.2 A CASE OF Vi- AGROFORESTRY PROJECT MWANZA	44
3.2.3 URBAN GREENING AND URBAN FORESTRY.....	45
3.2.4 URBAN AGRICULTURE IN EAST AFRICA PRACTICE, CHALLENGES AND	
OPPORTUNITIES	49

3.2.5	<i>URBAN PARKS AS PARTNERS IN YOUTH DEVELOPMENT</i>	50
3.2.6	<i>THE PUBLIC VALUE OF URBAN PARKS</i>	51
3.3	POLICY REVIEW	51
3.3.1	<i>NATIONAL ENVIRONMENTAL POLICY</i>	51
3.3.2	<i>NATIONAL FOREST POLICY</i>	52
3.3.3	<i>NATIONAL STRATEGY FOR GROWTH AND REDUCTION OF POVERTY</i> <i>(NSGRP) OF OCTOBER, 2004</i>	52
3.3.4	<i>EAST AFRICAN FOREST CERTIFICATION INITIATIVE</i>	52
3.3.5	<i>GLOBAL FOREST POLICY</i>	53
	CHAPTER FOUR	54
	IMPLEMENTATION	54
4.1	THE PLANNED OUTPUTS, INPUTS, WORK PLAN AND STAFFING ARRANGEMENT	54
4.1.1	<i>PLANNED OUTPUTS</i>	54
4.1.2	<i>PROJECT IMPLEMENTATION WORK PLAN</i>	55
4.1.3	<i>PLANNED INPUTS NEEDED FOR IMPLEMENTATION</i>	56
4.1.4	<i>STAFFING ARRANGEMENT</i>	56
4.2	ACTUAL IMPLEMENTATION STATUS OF THE PROJECT	57
4.2.1	<i>IMPLEMENTATION OF THE PLANNED ACTIVITIES</i>	57
4.3	STAFFING ARRANGEMENT	58
	CHAPTER FIVE	59
	MONITORING, EVALUATION AND SUSTAINABILITY	59
5.1	MONITORING AND EVALUATION MECHANISMS USED	59
5.1.1	<i>MONITORING</i>	59
5.1.2	<i>EVALUATION</i>	65

5.2	SUSTAINABILITY	74
CHAPTER SIX		77
CONCLUSION AND RECOMMENDATIONS		77
6.1	CONCLUSION	77
6.2	RECOMMENDATIONS.....	82
BIBLIOGRAPHY		84
PRESENTATION: ENVIRONMENTAL CONSERVATION IN MWANZA CITY		91

LIST OF APPENDICES

DATA COLLECTION TOOLS FOR KAP STUDY ON DEFORESTATION

- APPENDIX I:** *INDIVIDUAL IN DEPTH INTERVIEW GUIDE FOR CBO DEALING WITH TREE PLANTING DATE:..... PLACE:.....*
- APPENDIX II:** *INDIVIDUAL IN-DEPTH INTERVIEW GUIDE FOR FORESTRY DEPARTMENT LEADERS AND POLICY MAKERS*
- APPENDIX III:** *FOCUS GROUP DISCUSSION GUIDE FOR KAP DEFORESTATION STUDY*
- APPENDIX IV:** *STRUCTURED INTERVIEW QUESTIONNAIRE FORE KAP STUDY*
- APPENDIX V:** *PROJECT IMPLEMENTATION PLAN*
- APPENDIX VI:** *PROJECT MANAGEMENT*
- APPENDIX VII:** *INFORMATION FOR MONITORING NYAKATO AFFORESTATION PROJECT*
- APPENDIX VIII:** *INDICATORS OF ACHIEVEMENTS OF PROJECT OBJECTIVES, INPUTS AND OUTPUTS*

LIST OF TABLES

TABLE 1: LEADING CONSEQUENCES OF DEFORESTATION ACCORDING TO RESPONDENTS ANSWERS	18
TABLE 2: LEADING CONTRIBUTING FACTORS TO DEFORESTATION ACCORDING TO	19
TABLE 3: LEVEL OF AWARENESS OF CAUSES AND CONSEQUENCES OF DEFORESTATION	21
TABLE 4: LEVEL OF AWARENESS OF CAUSES AND CONSEQUENCES OF DEFORESTATION ACCORDING TO RESPONDENTS' ANSWERS DURING THE STUDY BY AGE	23
TABLE 5: LEVEL OF AWARENESS OF CAUSES AND CONSEQUENCES OF DEFORESTATION ACCORDING TO RESPONDENTS' ANSWERS DURING THE STUDY BY RESIDENTIAL AREA	25
TABLE 6: INTERVIEWEES RECOMMENDATIONS ON WHAT MEASURES TO TAKE IN ORDER TO IMPROVE AFFORESTATION IN MWANZA CITY (FROM STRUCTURED INTERVIEWS CONDUCTED)	30

LIST OF FIGURES

FIGURE 1: LEADING CONSEQUENCES OF DEFORESTATION ACCORDING TO RESPONDENTS	18
FIGURE 2: LEADING CONTRIBUTING FACTORS TO DEFORESTATION MWANZA CITY	20
FIGURE 3: LEVELS OF AWARENESS OF THE RESPONDENTS ACCORDING TO GENDER	22
FIGURE 4: LEVEL OF AWARENESS OF RESPONDENTS ACCORDING TO THEIR AGES	24
FIGURE 5: LEVELS OF AWARENESS OF RESPONDENTS ACCORDING TO THERE AREA OF RESIDENCE.....	25
FIGURE 6: RESPONDENTS FEELINGS ABOUT THE SERIOUSNESS OF THE DEFORESTATION PROBLEM IN MWANZA CITY	27

ENVIRONMENTAL CONSERVATION IN MWANZA CITY THE CASE OF
NYAKATO TREE PLANTING SUBMITTED IN PARTIAL FULFILMENT FOR
THE REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE IN
COMMUNITY ECONOMIC DEVELOPMENT (2007) IN THE SOUTHERN NEW
HAMPSHIRE AT THE OPEN UNIVERSITY OF TANZANIA.

SUPERVISOR'S CERTIFICATION

The undersigned certifies that she has read and here by recommends for acceptance by the New Southern Hampshire University and the Open University of Tanzania a project entitled: Environmental Conservation in Mwanza City (The case of Nyakato tree planting) in partial fulfillment of the requirement for the degree of Masters in Community Economic Development.

Lukanga

Mrs. Editrudith Lukanga

SUPERVISOR

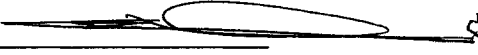
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DECLARATION BY THE AUTHOR

I, Anatory Bona Bunduki, declare that this project is my own original work and that it has not been presented and will not be presented to any other University for a similar or any other degree award.

Signature: 

DEDICATION

This work is dedicated to the members of Nyakato Tree Planting Community Based Organization whose efforts of applying participatory development approach at community level has improved and sustained the Environmental Conservation initiatives in Mwanza City.

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ABSTRACT

The Nyakato Tree Planting Project aims at addressing the deforestation problem facing Mwanza City. The deforestation problem has brought about undesirable consequences of soil erosion, soil infertility for peasant farmers around the city, formation of gullies, lack of tree shades and clean air, pollution, sedimentation and silting of the lake and drainage system in the City as a result of running water during rain seasons caused by minimal water percolation main reason been missing, tree and grass cover. Also health hazards caused by squatter dwellers on the hills whose human excreta is carried by running water down hills, into others homesteads and eventually into the lake causing water diseases, such as chlorella and diarrhoea. Also spoiling the natural beauty of the City.

Major causes of this problem are lack of awareness of importance of aforestation, unplanned settlements caused by huge population influx to the City accompanied by inadequate allocation of residential plots, income poverty, forcing cutting trees for selling for firewood and charcoal and other social cultural reasons.

The Nyakato Tree Planting Project operating in two wards is one of the few CBOs which has devoted to address the deforestation problem by doing the following interventions by awareness creation on the hazards caused by deforestation among the key Government and Religious Leaders and community at large. Also strengthening its capacity through human resource development and acquisition of tools and to expand tree planting interventions into other wards.

EXECUTIVE SUMMARY

Deforestation is one of the major environmental problems facing all districts in the region including Mwanza City and thus it has highly contributed to water scarcity in the area. According to the existing Mwanza City forestry department records, by 1998 Natural forestry covered 9.4% of the total land areas of the City compared to the 20% in year 1972. Before year 1998 seasonal rivers could be seen in most parts of the City's wards, but to date one can hardly find any.

This situation has brought very big impact to communities' livelihoods as people spend more time walking long distances to fetch water from the Lake Victoria which is the only potential source of water in Mwanza City. The situation has also changed the local climate in such a way that rainfall is no longer reliable thus affecting the farming practices for subsistence food production, and in a long has contributed to the decreased water level of the Lake Victoria.

To address this situation in early 1990s Nyakato Tree Planting group; a Community Based Organization in Mwanza City organized itself by establishing tree nurseries, selling tree seedlings to communities and creating awareness on tree planting activities in Nyakato ward so that all the stakeholders are involved in restoring their environment and leave away the habits that contribute to degrade the environment.

In order to fulfill the requirement for the Masters degree in Community Economic Development, in year 2005 Mr A. Bunduki identified the group and worked with them for the purpose of discovering the extent of the problem and its consequences,

finding out the communities responses towards the problem and what can be done to improve the situation, and lastly to design the expansion strategy.

The study revealed that the main contributing factors to deforestation were lack of awareness among the residents on the effects of deforestation, lack of government leaders' commitment at local level, high demand of wood for domestic use as fuel and lack of resources and skills needed to overcome the problem.

Through the communities responses, the study identified consequences of deforestation in Mwanza City being scarcity of water, decreased soil fertility in the cultivated lands leading to low food productivity for peasant farmers around City, soil erosion soil and formation of gullies, lack of tree shade and clean air. Others were sedimentation, pollution, silting of the Lake Victoria and drainage systems in the City as a result of running water during rain seasons caused by minimal water percolation in the high lands as a result of insufficient soil cover. The group is working very hard on this and to date the project has expanded to cover two wards that is Nyakato itself and Buswelu wards.

The major objective of the project aimed at increasing awareness and practices in tree planting among the residents in project operation area and capacity building among the implementers including the CBO.

The study recommends that more awareness creation efforts to the residents, political and Government leaders is of critical importance to enable them understand the effects and consequences of deforestation. This will enable them to design workable and sustainable implementation strategies.

ACRONYMS/ABBREVIATIONS

AIDS	-	Acquired Immune Deficiency Syndrome
CBO	-	Community Based Organization
CED	-	Community Economic Development
CSO	-	Civil Society Organization
FGD	-	Focus Group Discussion
HIV	-	Human Immunodeficiency Virus
IEC	-	Information Education Communication
III	-	Individual In-depth Interview
KAP	-	Knowledge Attitude Practice
Msc	-	Master of Science
NGO	-	Non-Government Organization
NTPP	-	Nyakato Tree Planting Project
RAS	-	Regional Administrative Secretary
SACCOS	-	Savings and Credit Co-operative Society
SFM	-	Sustainable Forest Management

CHAPTER ONE

COMMUNITY NEEDS ASSESSMENT

Needs assessment was done to collect information related to the deforestation in Mwanza City; the causes, effects and possible solutions to the identified problems. This kind of participatory approach was employed to ensure community's ownership of the process and to design interventions which address the problem effectively and as per community's real needs. The assessment involved getting information and data using the following research methods and tools:

- (i) Qualitative methods, using Individual In-depth Interview (III) guide, the Focus Group Discussions (FGDs) guide and physical observation.

- (ii) Quantitative method whereby structured interview (using a questionnaire) was applied.

- (iii) Secondary data sources by reviewing relevant records and reports.

1.1 BACKGROUND INFORMATION

One of the major problems facing Mwanza region is deforestation. The lack of forest cover has lead to soil erosion and generally compounds the depletion of soil fertility. Forest conservation and afforestation efforts should be redoubled.

Deforestation is very serious particularly in the “Sukuma Heart land” districts of Kwimba, Missungwi and Magu. Here, only partial solution can be applied to try and redress the depleted forest cover. Afforestation in all its manifestations of establishing community woodlots, controlled harvesting of reserved forest land by enforcing patrols, enrichment of such reserves and the setting aside of new areas for the regeneration of indigenous tree species, establishment of individual plantations or trees on household compounds and field boundaries is required.

Urban areas have also faced the environmental problem related to lack of tree cover.

Forest Land management is one of the key areas in the National Forest Policy of 1998. In Tanzania there exists three forest land Management categories namely: Government forest reserves, forest on public land and Private and Community forest.

Management in the forestry context has in the past meant management of only the forest-the trees, usually with the objective to maximize production of wood.

Today the number of factors among them being soil conservation, factors related to Labour, Social aspects, economy and environment has to be considered. Hand in hand with this is change in the management system of forestry from being a sole government activity to being an activity of interest to business/private individuals, farmers, villages, schools and communities.

1.2 COMMUNITY PROFILE

Mwanza City is composed of two districts namely Nyamagana and Ilemela with a total population of 474,679 according to 2002 census results. The city covers an area of 1,325 square kms out of which 425 square kms being land areas. The city has 20 wards out of which 13 are typical urban, 5 typical rural and 2 mixed.

With regard to forestry situation natural forestry coverage in City has greatly decreased due to extensive cutting of trees for Agricultural activities in rural wards, firewood, charcoal and residential houses construction etc.

By 1998 Natural forestry covered 9.4% of the total land areas of the city compared to the 20% in year 1972 (Forestry report 1998 for Mwanza Municipality).

Nyakato and Buswelu wards in the project operation are among the most deforested areas due to firewood charcoal, farming and settlements due to huge in migration of people from rural district and outside Mwanza Region. Aforestation efforts are minimal. For example out of 176, primary and secondary schools in rural Mwanza City (30%) have shown serious efforts in tree planting.

Identification methods of the Community needs:

Using the experience gained from the CED course a qualitative and quantitative study was conducted by the reporter of this report and other sources of data and information utilized by the researcher to identify community needs as shown below:-

This study was conducted in order to discover:

- i. The actual extent of the problem and its consequences.
- ii. Why people in Mwanza City seem to be least concerned with this environmental degradation problems.
- iii. Recommend approaches from the residents themselves on how to improve the situation.

1.3 OBJECTIVES OF THE STUDY

1.3.1 THE ULTIMATE OBJECTIVE

This study aimed at collecting information and data with regard to the causes and magnitude of the problem, contributing factors and community's opinion and recommendations which would equip decision makers with practical information useful for decision making purposes. On the other hand the study focused on helping the Nyakato Tree planting Project to review their program so that they design new workable strategies for the following implementation phase.

1.3.2 THE IMMEDIATE OBJECTIVE

The study aimed at determining afforestation knowledge, attitude and practices of the community members and their leaders in Mwanza City.

1.4 HYPOTHESES

- (i) Appropriate and effective Information Education and Communication (IEC) materials especially aiming at behavioral change communication play major role in changing peoples knowledge, attitudes, believes and practices. Therefore intensive IEC on afforestation programme can lead to peoples awareness on the importance of afforestation which in turn can influence increase number of people planting trees and hence conserving the environment in the City.
- (ii) Personal and official commitment among Government and CSO Leaders in any intervention is very instrumental to the success of that intervention. Therefore sensitization of such leaders on afforestation interventions will lead to their commitment and hence increase in tree planting in the City.
- (iii) High levels of field workers performance, in terms of skills encourage more people being involved in tree planting activities. If more tree nurseries will be established and more people trained or given skills in this area then it is more likely that tree planting practices will increase.

1.5 CHARACTERISTICS OF THE SURVEY

1.5.1 SURVEY METHODS AND TOOLS

This study employed both qualitative and quantitative methods to collect information important for decision making. The knowledge obtained is also

needed by the Nyakato Tree Planting Project for their future interventions. This approach was selected based on the nature of the study objectives, design and resources needed both financial and material so as to produce precise, quantitative findings as well as qualitative descriptive information.

1.5.1.1 QUALITATIVE METHODS

Individual in depth interview:

Two leaders, one from forestry Department in Mwanza City and another influential Government ward level leader were interviewed using an interview guide with seven questions which was meant to extract the awareness on environmental problem in particular deforestation; extent, causes and consequences of deforestation in Mwanza City; Measures being taken to address the problem; personal opinions to alleviate the problem.

Another leader from the CBO dealing with a forestation was also interviewed using a separate interview guide with eleven open ended questions which apart from collecting information related to the other two leaders above also probed on the purpose of establishing the tree planting projects; response of the public in tree planting and whether deforestation is adequately addressed by the stakeholders.

The in-depth Interview guides are attached to this report as appendices I-II

Focus Group Discussion (FGD):

Focus Group discussion was applied to understand people's knowledge attitudes, feelings towards a forestation issue. Four randomly selected groups of Adult and young males, Adult and young females, were interviewed using a FGD guide carrying ten questions. The interviews were carried out using

FGD moderators who were oriented and instructed to follow rules of carrying out this type of research method.

The moderator using the guide collected information related to the awareness of the group on extent, causes and consequences of deforestation; type of measures taken and their adequacy in addressing the problem; feelings attitudes and practices of the respondents about tree planting; recommended measures to address the situation.

The FGD guide is attached to this report as appendix III.

Physical Observation:

The researcher being a resident in the study area for the past 17 years has been able to observe the environmental and social changes which have occurred and whose impact is seen today:

- (i) Increase of residential houses due to immigrants to Mwanza City.
- (ii) Excessive cutting of trees for charcoal and houses constructions.
- (iii) Disappearance of hill beauties due to cutting trees for settlement purposes.
- (iv) Lack of serious Government commitment with regard of environmental conservation especially in relation to trees and vegetation conservation around the City.
- (v) Changes in the community's social behavior pattern accelerated by inadequate availability of water and fuel for domestic consumption.

1.5.1.2 QUANTITATIVE METHODS

Structured Interview:

Structured interview questionnaire was applied (see appendix IV). A total of 380 randomly selected interviewees were interviewed. The questionnaires helped in collecting the general information about the interviewee such as place of resident, sex, age, level of education and response (whether interviewed or not). They also assisted in discovering the level of awareness and type of attitude of the interviewee on a forestation as to whether deforestation is an issue as well as assessing the causes, extent and consequences of deforestation.

The third section of the questionnaire had four questions which helped to extract information on practices such as whether the interviewee has planted trees and protected them or not and reason for doing or not doing so.

The fourth and last section had two questions which were about recommendations by the interviewee on steps needed for improvement of tree planting activities in Mwanza City.

1.5.1.3 SECONDARY DATA SOURCES

Reviewing records and reports was another methodology used to identify the community needs. All the cited literatures are indicated in the bibliography.

1.5.2 PSYCHOMETRIC CHARACTERISTICS, RELIABILITY AND VALIDITY

1.5.2.1 SCALES

As indicated under section 1.5.1.2 above, the structured interview questionnaire carried a total of twenty questions which were intended to extract data and information from the respondents about knowledge, attitudes, practices and recommendations in relation to deforestation problem.

The responses from the interviewees were coded in order to ease the compilation of the data from this research (refer to the attached questionnaire copy). Levels of feelings were a bit tested under the section on awareness and attitude of the interviewee.

1.5.2.2 RELIABILITY AND VALIDITY

Reliability is a statistical measure of the reproducibility or stability of the data gathered by the survey instrument. In survey method research, error comprises two components which are random and measurement errors.

Validity refers to the presentation of the internal and external results. Internal validity indicates the extent to which the results obtained are because of the treatment variable. External validity explores the extent to which the results obtained apply to similar populations.

In this study reliability and validity of the results were ensured through

- i. Proper selection of the sample was made in order to get sample generalization. Selection of a true representation sample increases the researcher's ability to draw conclusion that are valid.
- ii. Competent research assistants were deployed to collect data and information from the respondents/interviewees.
- iii. Survey method was used in which respondents were asked the same set of questions in the same style to reduce the risk of getting inaccurate observation or information; Research questions were relevant to the entire population.
- iv. Research methods and tools which helped to answer the research questions were used.

The researcher also ensured that the survey instruments used were relevant and could give the information and data which are credible and reliable. This was done through pre-testing the relevant interview guides and questionnaire after being properly designed.

On top of that data quality checks was made through checking errors or consistency of response, re interviewing a 5% of respondents and checking it against the data from the first interview to see reliability of the data and checking using repeat questions in the questionnaire that can be used to check for consistence of response.

This research aimed at collecting information over a period of 18 months and comparing the status before and after the intervention.

The researcher was aware that this design was subject to several validity threats. These include history, testing, maturation and instrumentation. This is due to the following factors:

1.5.2.2.1 HISTORY

Due to the issue of environmental conservation being top agenda now, more push for tree planting could come from the top leadership and therefore the intended interventions can not alone account for the achievements in case there will be such a situation

1.4.2.2.2 TESTING

For the issue of knowledge frequent testing/asking people for example about the benefits of a forestation might make some people aware of the answer and therefore their knowledge will not necessarily be due to the IEC interventions only. A few research exercises will be conducted to avoid this validity threat.

1.5.2.2.3 INSTRUMENTATION

When ever a measurement instrument (such as a questionnaire) is changed between the pre-test and the post-test, this change is likely to result in an effect that is independent, of any effect due to a project or programme.

For example if the pretest questionnaire reads. "Have you herd of a forestation?" and the Post-test reads. "Name three benefits of a forestation", there will be very likely to be a difference to the percentage of people with "knowledge."

To avoid this risk, competent interviewers will continue to be deployed to probe on the issue of knowledge.

1.5.2.2.4 MATURATION

In longitudinal studies, especially those that extend over a long period of time, it is common to find that respondents become more experienced, more knowledgeable, wiser, and of course older. Maturation process can produce changes that are independent of the changes a programme intervention is designed to produce. Also if for example, post test is given to a group of trainees who are tired, hungry and bored, one might expect lower scores on the average than would occur if the trainees had not been hungry, tired or bored.

If these lower scores are then compared to with pre-test scores, an evaluator might find there were very little difference and thus conclude that the training programme was not successful. This may not be the case as it could be due to maturation effect.

1.5.2.2.5 ADMINISTRATION

The survey was conducted by the principal researcher who was attending CED program, assisted by two research assistants who are both graduates and have basic skills in conducting social researches.

The three were all involved in data collection, compilation and analysis, there was no need of deploying other interviewers for this exercise because of the small size and the magnitude of study.

To ensure quality out put of the study, the three worked, jointly and did quality checks and reliability regularly for data information collected.

The entire survey consumed one full month. However qualitative surveys such as FGD and individual In-depth interviews took only one week to complete.

1.6 IDENTIFIED COMMUNITY NEEDS

The study identified the following community needs:

- (i) Most institutions in the City including Schools, Churches, mosques, office premises and individual households, lack clean air and tree shades as a result of having no trees around them. There was need to change the situation.

This was revealed through Focus Group Discussions (FGDs) involving both community females and males respondents, the Individual In-depth Interviews involving the Nyakato Tree Planting CBO leader and the Government local leaders. Also almost 30% of the interviewees using the structured interview paper (questionnaire) indicated the same situation.

- (ii) Through the Individual In-depth interview with the City forestry officer and mere observation, there is increasing soil erosion and formation of gullies in various city areas. Major reason for this is lack of vegetation cover.
- (iii) Information from the documents produced in various relevant workshops and according to the explanation given by the Mwanza City Forestry Officer during this study, the situation is as such that for peasants around the City Soil erosion has resulted into loss of soil fertility and consequently low crop production. There was need of restoring soil fertility through soil conservation measures which include, tree planting.
- (iv) The City Officials dealing with environmental issues were worried about sedimentation of the Lake Victoria and its pollution caused by dirty materials and soil carried by running rainwater as a result of lack of adequate vegetation cover. This was narrated by the City Forestry Officer during the Individual In-depth interview session.
- (v) Documents review especially those presented during various relevant workshops reveals that City Health, Official and Engineers had already expressed their concern about frequent silting of drainage system causing flooding and water related diseases during rain season. This was also reflected through structured interviews.

There was a need of avoiding this problem by ensuring adequate vegetation cover. The most notable case was the Mirongo stream flooding in the year 2001 which had devastating effects to Mwanza City

(vi) People residing on the hills around Mwanza City are causing health hazards due to cutting trees and grass and most of them (90%) have no proper latrines due to the stone ground. As a result of these during rain season the human excreta is carried by running water down hills into others homesteads and eventually to the lake causing water borne diseases such as cholera and diarrhoea. To reverse the situation this entailed a resettlement or/and investing enormous in promoting quality sanitary facilities and services for the hill dwellers.

This is according to Mwanza City paper presented to one of the workshop to discuss urban environmental issues in the year 1998.

(vii) Natural beauty of the hills around Mwanza have been lost due to tree cutting. There was a need to restore beauty. This was as expressed by the Mwanza City Forestry official and Government leaders who gave their information during Individual In-depth Interviews, being part of this study.

(viii) Most of the respondents during study involving FGDs and Individual In-depth Interviews had the feeling that there was a need to have fruit trees around household and Institutional premises for nutritional purposes. By then only 30% of the household had tree fruits around them.

(ix) The Nyakato Tree Planting CBO leader during the interview felt that there was a need to allocate pieces of land for establishing recreational grounds with beautiful gardens, parks and trees which are lacking now.

- (x) The Nyakato Tree Planting CBO leader also when interviewed had the opinion that poverty especially among many residents is an issues that needs to be dealt with in Mwanza City.

One way of alleviating this problem was establishment of income generating activities which among them could be raising and selling tree seedlings which have high demand currently. This also has been expressed in various papers presented by Mwanza City participants during several relevant workshops and seminar as shown in the bibliography.

CHAPTER TWO

PROBLEM IDENTIFICATION

Major focus of the study was to understand the knowledge, attitude and practice gaps (KAP) in relation to afforestation in the study area and get recommendations from the interviewees on what measures should be taken to alleviate the deforestation problem in their area. Secondary sources of information were also used to get the real situation of the problem. The problem identification helped greatly the CBO to identify relevant stakeholders and set goal, objectives and targets to be reached in reducing the KAP gaps.

2.1 PROBLEM STATEMENT

Deforestation in Mwanza City is one of the major environmental concern for the City dwellers. Various sources of information indicate that three decades ago the area including the hills was covered by green vegetations but the situation has worsened very rapidly due to various reasons. As indicated above for example by 1998 Natural forestry covered 9.4% of the total land area of the City compared to 20% in the year 1972 (Forestry report for Mwanza Municipality). Deforestation in Mwanza City has caused various problems affecting the residents in many ways as revealed in community needs assessment exercise.

2.2 IDENTIFIED PROBLEMS FROM THE STUDY FINDINGS

Major problems identified through the study include soil erosion, soil infertility, formation of gullies, lack of tree shade and clean air, sedimentation of the Lake,

Lake pollution, silting of the lake and drainage system, health hazards and spoiling the natural beauty of the City.

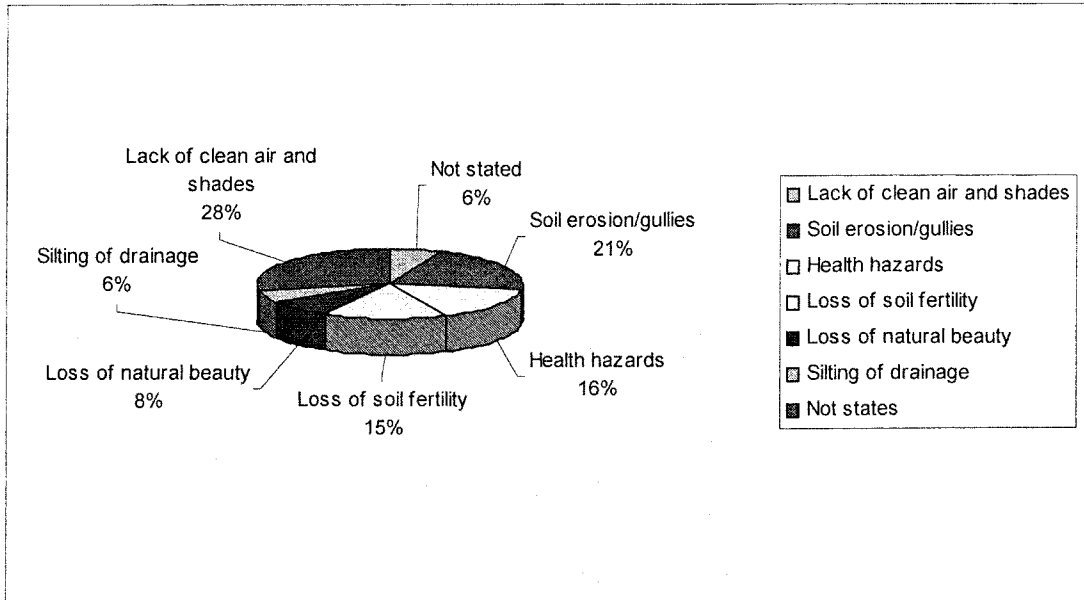
The figure No. 1 and table 1 below indicates the quantitative study respondents' views about this situation.

Table 1: Leading consequences of deforestation according to respondents answers

Response	Frequency	Percentage
• Lack of clean air and tree shades	106	28%
• Soil erosion/Gullies	80	21%
• Loss of soil fertility	58	15%
• Silting of drainage systems	21	6%
• Health Hazards	62	16%
• Loss of Natural beauty	32	8%
• Not sure	21	6%
TOTAL	380	100%

Source: KAP study on deforestation Mwanza City by A.B. Bunduki (2006)

Figure 1: Leading consequences of deforestation according to respondents answers



2.3 FACTORS CONTRIBUTING TO DEFORESTATION

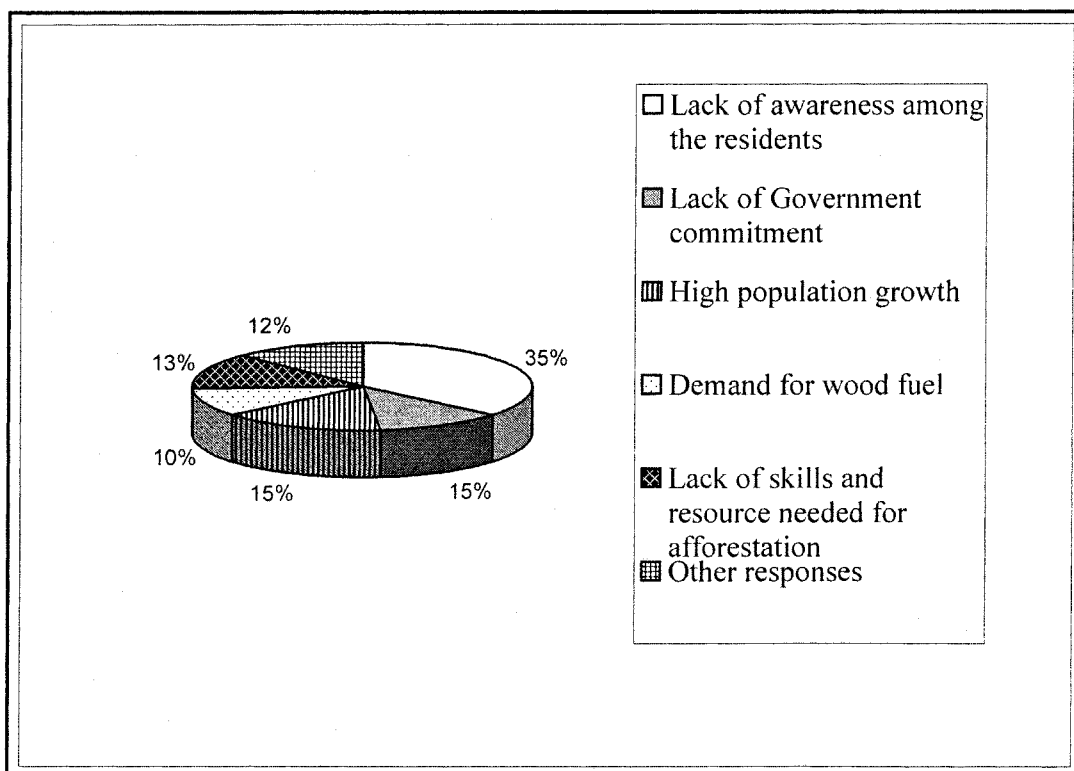
This study revealed the following factors accelerating deforestation.

- (i) Rapid population growth resulting from immigration. According to year 2002 census reports, the population growth rates are 4.6% for Nyamagana and 6.2% for Ilemela districts which is a very high rate compared to the available area for settlement.
- (ii) Improper and inadequate allocation of residential plots leading to squatter settlement especially at hills.
- (iii) Income poverty which exacerbate cutting of trees for income generating purposes by either selling of firewood, charcoal or timber.
- (iv) Lack of Government commitment to follow up on the implementation of the available environmental policies.
- (v) Lack of awareness on the importance of tree planting and conservation among the city residents.

Table 2: Leading contributing factors to deforestation according to respondents answers

Response	Frequency	Percentage
• Lack of awareness	133	35%
• Government Commitment lacking	58	15%
• Lack of resources and skills	37	10%
• Unplanned settlement	27	7%
• Use of wood for fuel	48	13%
• High population growth	56	15%
• Not sure	21	5%
TOTAL	380	100%

Figure 2: Leading contributing factors to deforestation Mwanza City according to the interviewees' responses



2.4 LEVELS OF AWARENESS

According to this study the levels of awareness were measured under three levels as fully/highly aware were those respondents who could manage to spontaneously mention four or more causes and at least four consequences of deforestation; partially aware were those respondents who could spontaneously mention one to two causes and at most three consequence of deforestation; unaware respondents were those who could manage to mention only one cause and consequence of deforestation or who failed to mention any.

The levels of awareness by gender, age, area of residence according to this study are as indicated in tables 3, 4 and 5 and their corresponding figures.

Level of awareness according to gender:

According to this study finding, there was a difference of levels of awareness according, to gender. Males were found to be more aware on causes and consequences of deforestation compared to females. For females those who were fully aware were 27% of the total female respondents and 67% were very little or not aware. For males 35% were fully aware and 53% had little or no knowledge about the issue. For more clarification see table No. 3 and figures No. 3.

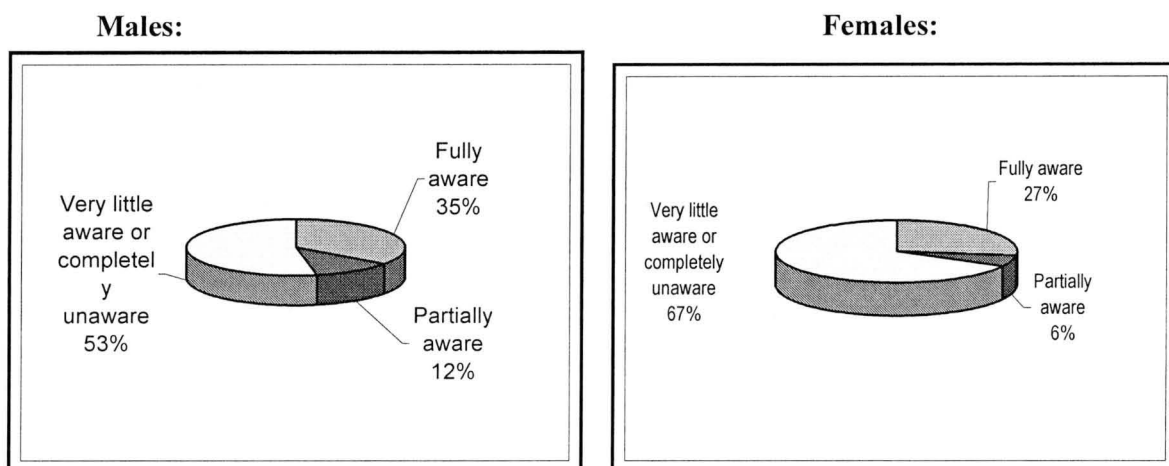
Table 3: Level of awareness of causes and consequences of deforestation according to respondents answers during the study by gender

Number of causes/ consequences mentioned	Frequency			Percentage (out of total interviewed)		
	Males	Females	Total	Males	Females	Average
• Respondents who mentioned 4 or more causes and at least 4 consequences	69	49	118	34.8%	27%	31%

• Respondents who mentioned 2 – 3 causes as well as 203 or less consequences	23	11	34	11,6%	6%	9%
• Respondents who mentioned just one/or failed to mention any cause or consequences	106	122	228	53.6%	67%	60%
TOTAL:	198	182	380	100%	100%	100%

Source: KAP study on afforestation by A. Bunduki 2006

Figure 3: Levels of awareness of the respondents according to gender



Factors that can contribute to lower awareness among women need to be further researched. However among them could be lower level of literacy as found during the 2002 census (89% for males and 84% for females urban dwellers). Another reason is that they have less access to print and electronic

media eg. Radio, TV, News papers etc. because of not having time to listen or view them as result of domestic chores.

Therefore a project proposal design involving IEC interventions should consider this situation. One possible strategy is to use multimedia method of communication including use of groups or individual contacts.

Level of awareness according to age:

Table number 4 and figure number 4 clearly indicate that there was variations in levels of awareness on causes and consequences by age. For example those who were found to be fully aware the proportions were 34% for youth and 27% for adults.

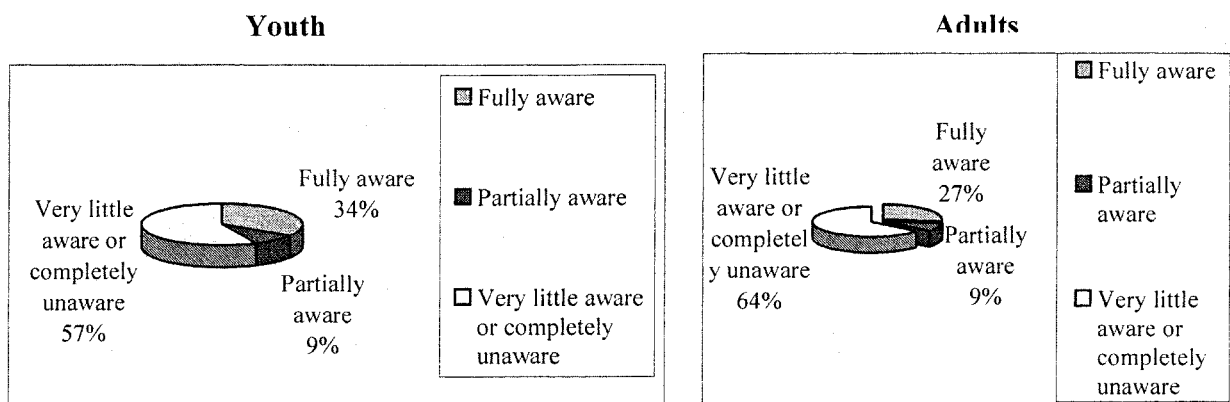
Contributing factors could be that youth are more literate and exposed to information than the elders. Therefore a project proposal design should take special consideration in designing and carrying out an IEC strategy so as to fully involve the elders also.

Table 4: Level of awareness of causes and consequences of deforestation according to respondents' answers during the study by age

Number of causes/ consequences mentioned	Frequency			Percentage (out of total interviewed)		
	Youth	Adults	Total	Youth	Adult	Average
	15-35 yrs	36+yrs		15-35 yrs	36 + yrs	
• Respondents who mentioned 4 or more causes and at least 4 consequences	75	43	118	33.8%	27.2%	31%
• Respondents who mentioned 2 – 3 causes as well 2-3 or less	20	14	34	9%	8.9%	9%

consequences						
• Respondents who mentioned just one or failed to mention any causes or consequences	127	101	228	57.2%	63.9%	60%
TOTAL	222	158	380	100%	100%	100%

Figure 4: Level of awareness of respondents according to their ages



Level of awareness according to residential area:

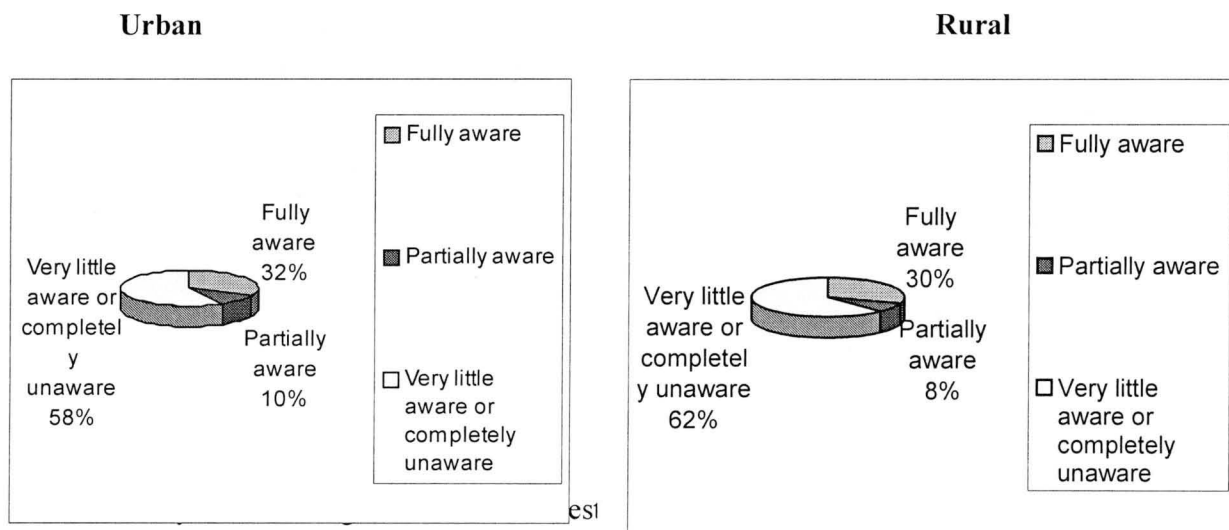
Levels of awareness according to area of residence show some little variations. As shown in table No. 5 and figures 5.

Urban dwellers were found to be more aware than rural dwellers. For example proportion of urban respondents who were fully aware was 32% as compared to the rural respondents which was 30%. Also those who were found to be with very little or no knowledge about the causes and consequences about deforestation were 58% for urban compare to 62% rural. The major reasons could be that rural residents have more access to mass media compared to those living in rural or city peripheral areas. Therefore the project proposal design should consider using an appropriate media mix in its IEC interventions.

Table 5: Level of awareness of causes and consequences of deforestation according to respondents' answers during the study by residential area

Number of causes/ Consequences mentioned	Frequency			Percentage		
	Rural	Urban	Total	Rural	Urban	Average
• Respondents who mentioned 4 or more causes and at least 4 consequences	47	71	118	30%	32%	31%
• Respondents who mentioned 2 – 3 causes as well 2-3 or less consequences	12	22	34	8%	10%	9%
• Respondents who mentioned just one or failed to mention any causes or consequences	98	130	228	62%	58%	60%
TOTAL	157	223	380	100%	100%	100%

Figure 5: Levels of awareness of respondents according to their area of residence



respondents views (in brackets) including those who mentioned one factor are lack of awareness among the city dwellers (35%) lack of Government commitment (15%). high population growth for Mwanza City (15%) and use of

wood for fuel (13%). Other factors mentioned are lack of resources and needed skills for tree planting and unplanned settlements. For more elaboration see table No. 2 and figure 2. Any project intervention needing to address deforestation problem should therefore take into consideration in planning its strategies and activities intended to increase awareness, Solicit Government support, Impart skills to implementers.

The Sukuma who are the prominent ethnic group residing in Mwanza City have a negative attitude towards having tree nearby. This is due to various reasons one of them is that tall trees are disliked because they attract owls during the night. These birds are believed to bring bad omen over to families around which these birds will be “Singing”.

Trees are also disliked because they invite birds which eat crops. Some residents of Buswelu and Nyakato wards had small plots of farms e.g. paddy in and around the City. The process of deforestations also enhanced in Mwanza rural area as a result of a big number of children per family. According to the 2002 Census the proportion of children aged 0-14 years was 41% and 50% for under 18 years, out of the total population. There is a high number of children for most of the families. According to the existing traditional situation many of these children will have to build their houses around their parents’ homesteads especially in rural areas and thus clearing more land and cutting trees to give room for the construction of more houses.

Discussions during FGD sessions revealed that Political and Government leaders failed to take corrective measures to address the glaring deforestation problem due to the following reasons:-

Negligence on the part of Government and political leaders (decision makers) leading to lack of planning of effective strategies and interventions and allocating resources to address the problem. This is despite of the fact that there is forestry policy.

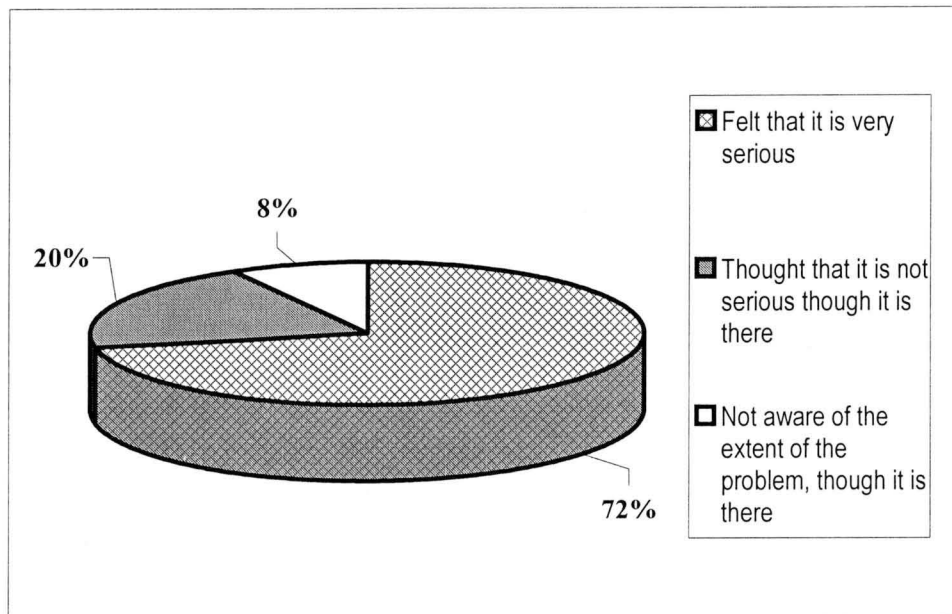
There is lack of political will on this issue. There was no personal and official commitment on afforestation among the policy makers from regional to grass root levels for example members of parliament, councilors and village political leadership.

Some respondents during the study stated that failure of planting trees was in some cases due to people lacking skills in this field.

Residents' attitude towards deforestation problem:

Only 28% of the respondents felt that deforestation in Mwanza City was an issue. Out of 106 who indicated that deforestation was an issue, 72% of them thought that it was very serious 20% stated that it was not very serious and the remaining 8% said that they did not know exact magnitude of the deforestation problem in the city.

Figure 6: Respondents feelings about the seriousness of the deforestation problem in Mwanza City



Source: KAP study on afforestation in Mwanza City by A. Bunduki , 2006

2.5 TREE PLANTING AND ENVIRONMENTAL CONSERVATION

PRACTICES AMONG THE CITY RESIDENTS:

Only 15% of all the respondents indicated that they had meaningfully planted trees but mainly for fruits and flowering. With regard to purpose of planting trees, 18% of the respondents who indicated to have planted trees stated that they had done so for fruits purposes, 15% for soil conservation, 25% in order to get shade and clean air and 20% for mere beauty.

According to the secondary data source only 30% of 176 Primary and Secondary Schools in Mwanza City have planted trees though at small scale. 73% of the respondents indicated that they had not taken any step to prevent further deterioration of existing forestry or vegetation cover. No village or streets have tree plots or taking a measure to protect environment in this sense. As a result of little efforts to conserve the trees and vegetation the city has experienced decrease of forest cover from, 20% (1972) to 9.4% (1998). Major

reasons given for not planting trees according to the proportions of the respondents were due to lack of funds, seedlings not available, lack of skills and little space.

2.6 RECOMMENDATIONS FROM THE INTERVIEWEES

The following were the recommendations from the interviewees themselves both through qualitative and quantitative study methods as what was needed to be done to alleviate the deforestation problem in Mwanza City:

- (i) The public should be educated through interpersonal, group or mass media methods of communication on the need for the residents to plant and conserve trees.
- (ii) To solicit support from Political Government and CSOs leaders in order for them to fully participate in the aforestation endeavor.
- (iii) Introduction of tree planting in all schools, religious centers, villages, open spaces, along the roads etc.
- (iv) To establish and apply village/community by-laws to protect trees and vegetation in general.
- (v) Provision of technical and financial support to active NGOs, CBOs engaged in raising tree seedlings and planting trees through city council budgets, donors etc.
- (vi) The city authority should set aside adequate resources for land surveying and allocating land plots for residential purposes, cultivation, tree plots etc. This will discourage mushrooming of squatters and ensure proper land use.
- (vii) The city authority should tackle the problems of hill settlement especially in the areas of deforestation, poor sanitary conditions and squatters.
- (viii) Establishment of recreation gardens in villages and streets (mitaa).

- (ix) To establish more meaningful tree nurseries so as the seedlings to be easily accessible and affordable to city dwellers.
- (x) Villages should be advised to seek support from big projects in Mwanza region dealing with afforestation e.g. VI Agro forestry.

According to the quantitative study 80% of the respondents recommended the following:

- (i) The need for more awareness creation
- (ii) Government should be more involved and commit resources for afforestation intervention.
- (iii) The need for getting more surveyed plots for residential purposes and,
- (iv) The need for establishing more tree nurseries.

Table 6: Interviewees recommendations on what measures to take in order to improve afforestation in Mwanza City (from structured interviews conducted)

No.	Stated Measure	Frequency	Percentage
1.	More awareness creation efforts needed	138	36.3%
2.	Establish more tree nurseries	62	16.3%
3.	Government should allocate more resources for afforestation	74	19.5%
4.	City need to survey and allocate more plots for residential purposes	32	8.4%
5.	Establish by – laws for planting and	11	2.9%

	protecting trees		
6.	Seek for big projects support to assist villages/mitaa/CBOs	16	4.2%
7.	Establish recreation gardens	15	3.9%
8.	Other measures	12	3.2%
9.	Not stated	20	5.3%
Total:		380	100.0%

2.7 COMMUNITY PARTICIPATION IN THE PROJECT

The problem of deforestation is being addressed by various stakeholders at Nyakato ward being spearheaded by a CBO known as Nyakato Tree planting groups since 1991. The CBO has successfully applied community participation in caring out the afforestation project.

The CBO has been promoting community in planting trees along the streets, at schools and Religious institutions premises. Community has responded positively as by 2005. 10 Parish churches, 6 primary schools, 1 Secondary schools and many individual households in Nyakato ward have planted trees. A part from promotion efforts the CBO has been preparing trees seedling and seedling them at affordable prices to the community members who are interested in tree planting.

The growers have been also given some skills and knowledge on tree planting and rearing by the CBO. More could have been achieved if the CBO had more resources.

2.8 STAKEHOLDERS RELATED TO THE PROJECT

There are various stakeholders who in one way or another are and will continue to be key players in the project, the major ones are the following:

Nyakato tree planting CBO who implement this project; Schools and religious Organizations who can plant trees at their premises; Nyakato and Buswelu wards have a total of 25 Primary schools, 5 Secondary schools and 10 Religious Institutions; Tree planting groups within the community which could promote tree planting through awareness creation to the community and also preparing and selling tree seedlings; City land Officials who are responsible for allocating plots for tree nurseries, residential houses and land for recreational purposes; Forestry department in the City who are instrumental in providing technical advices and capacity building to the CBO and tree planting groups; Government leaders who can support on promotion activities.

For the past 15 years of its operation, the CBO has received good cooperation with schools, Parish churches, tree planting groups they have worked with and forestry department in the city. The Government leaders at all level after been sensitized by a CBO during the first phase, they had assisted in tree planting campaign endeavor in their areas.

The only shortfall of the project was the failure to acquire bigger plots for preparation of seedlings and children playing grounds and recreational areas.

The project had met some aspirations of some Institutions which successfully planted and kept trees. The 10 Parish churches and 7 schools and 7 tree planting groups in Nyakato ward.

The City Authority was so happy with the CBO efforts whereby motivated them by giving study tour to Uganda to learn more on tree planting and promotion techniques, these efforts needed to be replicated at other areas of Mwanza City. Therefore this project proposal is the expansion of Nyakato Tree Planting interventions to Buswelu ward in two years period.

The following is an extract from Tanzania environment policy. “The lives of all Tanzanians are ultimately connected to the environment: Our survival and that of our future generations depends on the harmonious relationship with the natural elements. Tanzanian have no choice but strive to manage the environment and its natural resource in ways that enhance the potential for growth and opportunity for sustainable development of present and future generations”.

2.9 NYAKATO TREE PLANTING PROJECT

2.9.1 GOAL OF THE PROJECT

The goal of Nyakato tree planting group is to have contributed to the improvement of environmental conservation through tree planting and caring on a sustainable way in Mwanza City.

The **mission** of Nyakato tree planting group is to carry out interventions that will promote and enhance the capacity of the Community and institutions in Mwanza City to participate fully and effectively in environmental conservation particularly through tree planting and caring on sustainable basis and which will bring about improved quality of life.

The CBO perceives their goals as a long term and or destination which will be reached through various effective strategies.

The project was seen to be more likely to achieve its goal. However the following conditions had to be met. Capacity building was to be done through allowing more members and giving them necessary skills. This could be managed by the groups itself. Also to acquire tools and equipments for implementation plus transport to ferry tree seedlings to the respective customers.

The group was expected to be assisted by existing projects such as Vi Agro forestry which was expected to start in Ilemela district starting 2006. Unfortunately this project has been re-scheduled to start in early 2007. Also the group was expecting to get a loan from Women Development Fund from Mwanza City for the same purpose.

In order to verify that the project was progressing towards achieving its goal various monitoring indicators were planned to be utilized. Among them were: Change of level of awareness and attitude among City residents on importance of tree planting and proportion of households, institutions and villages with effective tree planting activity.

2.9.2 SPECIFIC OBJECTIVES OF THE PROJECT

Basing in the study findings and in order to achieve the ultimate project goal the following project objectives were planned:

- (i) Improve awareness on the hazards by deforestation and importance of aforestation at least by 50% among key local Government and

Institutional leaders and community at large by the end of 2006 in the project area.

- (ii) To strengthen the capacity of Nyakato tree planting group so as to enable it implement effectively its intended interventions through human resources development (HRD) and provision of necessary tools, equipments and means of transport by mid 2006.
- (iii) To expand tree planting Interventions from 1 ward to 2 by the end of 2006.
- (iv) Increase number of tree nurseries from 1 (2005) to 3 by (2006)
- (v) To establish 2 recreation gardens at Nyakato and Buswelu wards.

To achieve the above mentioned objectives requires resources both human and capital/ finance, Awareness creation requires skillful personnel in communication and mobilization and financial resources for promotion activities, such as leaflets, Newsletters, Posters, etc.

Capacity building involves training and provision of tools and equipments needed for a forestation project and transport preferably one motor vehicle pick up type. This depends, on availability of adequate finance. In order to fulfill these demands the project had to be assisted to some activities as it did not have adequate resources to carry out the intended interventions.

CHAPTER THREE

LITERATURE REVIEW

Literature review was done in order to gain and compare experiences from similar work successfully carried out by others at local, national and regional levels. National, Regional and International policies related to environmental conservation, particularly on tree planting and urban parks were reviewed. It was revealed through literature review that this project support the national forestry policy and the national forestry program. As well, the global forestry policy fosters common understanding of sustainable forest management which is in line with this project.

3.1 THEORETICAL LITERATURE

3.1.1 CONCEPT AND DEFINITION OF URBAN FORESTRY

Urban forestry accordingly to Dr. Guido Kuchelmeister, **Journal titled state of the Art on Urban Forestry**, has at least three roots: (i) Urban green management in Europe (ii) Forestry in North America and (iii) Urban agriculture in developing countries.

Worldwide, policy decision makers and citizens are increasingly recognizing articulating and investing in the urban forests as vital component of the urban landscape, infrastructure and quality of life.

Multipurpose urban forestry in developing countries is still in its infancy. There is an urgent need to allocate more resource to this area, especially for global, regional and National networking and in particular with a focus on poverty alleviation related to urban forestry issues.

Present trends suggest that urban forestry and urban greening approaches are merging world wide, and terms are frequently used interchangeably. The latest impetus of urban forestry comes from urban agriculture initiatives in development cooperation. Definition of urban agriculture includes forestry and even all urban vegetation.

For the general public it would be best to use the term urban greening as a comprehensive term, comprising all urban vegetation management (green spaces or urban vegetated areas) including farming and forestry.

The Urban forest, this resource can be broken down into various tree categories including garden and farm trees, street, parks and open space trees, woodlands on vacant and derelict and as well as trees and woodlands along rivers.

In brief: Urban forestry is a modern urban ecosystem approach of urban tree management encompassing long-term planning, interdisciplinary professional coordination and local participation. The aim of urban forestry is to secure the health and vitality of the urban forest resources, and therefore, the sustained delivery of benefits for both current and future generations of urban dwellers. Urban forestry is an approach to make trees compatible and functional in an urban environment (urban ecosystem). Hence, the main focus of urban forestry has to be on the portion of the forest found within the built environment.

According to Dr. Guido Kuchelmeister, urban forests have the various benefits. Which are tangible and less tangible environmental and societal benefits and services. Among major benefits include: food such as fruits, flowers, forming recreational areas and gardens, shelter, air quality improvement and carbon dioxide reduction in industrialized areas.

Also urban forests help in storm water management and prevention of soil erosion. Societal benefits includes provision of work opportunities for labour intensive including provision of work opportunities for labour intensive a forestation activities and environmental education for urban dwellers.

The extent of deforestation in Mwanza City causes and consequences have been expressed in the following literature.

3.1.2 AN OVERVIEW OF ENVIRONMENTAL PROBLEMS IN MWANZA MUNICIPALITY

According to the presentation of Town Planner during the workshop on sustainable Mwanza Project, using the paper titled “An overview of Mwanza Municipality Environmental Problems (1998)” rapid urban growth that Mwanza Municipality experienced in past decades has reached an extent that both central and local Governments have been unable to exert control or regulations or to provide requisites resources thus created sound environmental problems in human settlements.

For example the rate at which these settlements have been growing is an alarming situation. According to the master plan, Mwanza had a housing stock of some 30,773 houses in 1991 of which 11,268 (37%) were built on squatter settlements. In 1996 the housing stock was estimated to be over 40,000 out of which approximately 25,000 (50%) are squatter houses. Most of these unplanned settlements allocated on hills, hill sides and steep slopes. These areas include: Bugando, Igogo, Mkuyuni, Mabatini, Nyamanoro, Kilimahewa, Kabuholo, Isamilo, Kirumba, Kitangiri, Kiloleli, Nyakato and Igoma.

Factors contributing to fast squatter housing growth in Mwanza Municipality are mainly rural Urban migration of people looking for employment and other social services and also lack of funds to survey enough plots for applicants.

There is also a problem of lake pollution caused by among other things industrial effluents untreated sewage from the City center and squatter areas.

Due to heavy pollution of lake water and environment, many diseases are occurring in Mwanza Municipality which are water based, water related and water washed. common ones have been cholera and diarrhoea.

Situation of Environmental System in Mwanza Municipality by Kampassax International June, 1998:

According to this publication natural vegetation has been greatly depleted for the past three decades. By 1998 Natural and planted forestry was covering only 9.43% of the Land area of Mwanza Municipality. Lack of tree cover is leading to depositing soil in to the lake during the rain season. On top of that the Mwanza Municipality is prone to fierce winds soil erosion and flooding due to the same reason.

One of the measures to address the problem is establishing by laws intending to recover the situation.

By 1998 approximately 60% of the house stock were squatters accommodating about 74% of all Mwanza Municipality residents. Most of these squatters are on the hills. These areas are faced with poor social infrastructures. Due to this condition and existing poor sewerage disposal dirty water and wastes are swept into three rivers and eventually into the lake during the rain seasons.

In addition to that all hills of Mwanza Municipality have been greatly spoiled through cutting trees for firewood charcoal and construction purposes. Poor water percolation during the rain seasons as a result of loss of trees has caused many springs to be dried up, increase in soil erosion and increase of water borne diseases.

Invasion of the hills for residential purposes done illegally has also spoiled the natural beauty of the hills of Mwanza Municipality.

There has been frequent flooding which cause soil erosion in squatter areas causing gullies and spoiling roads and drainage systems. Frequent flooding had been caused by deforestation whereby soil is left bare and water percolation becoming minimal. This situation leads to rapid filling and silting of drainage system and eventually flooding.

The National Forest, Policy of 1998 led to the development of the National Forest Programme (NFP), 2001 – 2010. The NFP is a tool for implementing the National Forest Policy.

The National Forest Programme has three pillars of sustainable Development which are Economic growth Environmental protection and social equity.

Based on the three pillars among the major objectives are as follows:

- (i) To increase the number of employment opportunities in the forest sector and thus to help reduce poverty.
- (ii) To build capacity at local and national levels for policy programme and project design, implementation, monitoring and evaluation.
- (iii) To make sure that there is a sustainable supply of a wide range of affordable, accessible and good quality forest products and services for both local and export markets.
- (iv) To conserve the nation's biodiversity and ecosystems.
- (v) To protect water catchments, areas so as to help control droughts and floods and prevent soil erosion.

The social economic and environmental objectives are linked. The National Forest Programme (NFP) works with them all through Sustainable Forest Management (SFM) which is a participatory management that involves all stakeholders and that maintains and enhances the long-term health of forests for the benefit of all living things while providing environmental, economic, social and cultural opportunities for present and future generations.

The guiding principles of SFM are to:-

- (i) Build local commitment to national and international policies.
- (ii) Raise public awareness about sustainability issues
- (iii) Encourage the participation of a wide range of stakeholders
- (iv) Work in partnership with communities and the private sector
- (v) Build the capacity of stakeholders at all levels

According to the Regional plans management and expansion of forest and tree resources in Mwanza Region has focused on the following three priorities:

- (i) Management of existing forests and trees
- (ii) Efficiency use of wood products whereby wastage of forestry, resources is reduced through use of efficient stoves
- (iii) Increase of tree resources through intensifying afforestation in areas with little or no tree resources particularly on farm land school compounds, denuded hills and along streets and enhance environmental protection as noted by FAO Publication, 1986.

3.2 EMPIRICAL LITERATURE

3.2.1 A CASE OF SUSTAINABLE DAR ES SALAAM PROJECT (SDP)

Environmental Planning and Management (EPM) process in Dar es Salaam through the sustainable Dar es Salaam project (SDP). The Program is a joint initiative between UN habitat and UNEP, and it intends to improve the environment through capacity building of the City Council, community and other stakeholders.

SPD was established in Dar es Salaam with the intention of improving planning process for environmental improvement through participation of Public Sectors, CBOs and NGOs in Implementing SDP activities. These stakeholders were fully involved in identification of problems, planning strategies of implementation in short and long term period.

Planned interventions included; rehabilitation and improvement of recreation gardens, improvement of Oyterbay beach, managing open spaces, recreation areas, hazard lands and Urban agriculture and managing of coastal resources.

However, the following Problems were experienced:

- (i) This project was not seen as owned by the City and therefore given little priority in City plans because city officials were not fully oriented about the project.
- (ii) Lack of expertise to carry out the project activities at the beginning of the project.
- (iii) Financial constraints leading to many CBOs failing to carryout their activities effectively.
- (iv) Change of political leadership especially councilors decreased momentum of implementation due to varying commitments among the councilors.

The lessons learnt from SDP provided useful experience for Nyakato Tree Planting group as follows: The need for intensive sensitization and creation of awareness; The Importance of political leaders Commitment to the project; Ensuring availability of needed resources including finance for carrying out

the project; The importance of human resources capacity building for project implementers; Incorporating project interventions into the respective district plans and the need of involving key stakeholders in the project implementation.

The NTPP Phase II design made use of lessons learned from the SDP by setting objectives and interventions that can help to avoid the SDP shortcomings.

3.2.2 A CASE OF Vi- AGROFORESTRY PROJECT MWANZA

Vi Agro forestry Project - Mwanza is one of six projects in the Vi Agro forestry Programme which is financed by the Firendition Vi Planterar Traid, and international Non Governmental Organization (NGO) with headquarter in Stockholm, Sweden and registered in Kenya, Uganda, Tanzania and Rwanda as an international NGO.

The goal of the Vi Agro forestry Programme is to make a significant contribution towards improved livelihood of small scale farmers residing in selected areas within the lake Victoria Basin within a period of 5 –10 years.

Vi Agro forestry was expected to start operating in year 2007 in Ilemela district, focusing among other things:

On sustainable activities that will improve the environment (deforestation, desertification) around Lake Victoria through the lake Victoria initiative; Local democratization process through Participatory rural Appraisals (PRA) and Working together with schools and other. Local institutions to build capacity and knowledge in relation to Agro forestry.

For East Africa Region Programme activities started in 1983 in West Pokot District of the Rift Valley Province of Kenya. The original aim and concept was to try to halt the desertification process by planting trees and making the area green. Programme activities later spread to the neighboring Trans Nzoia District, with office in Kitale in 1986. the programme then extended to Masaka, Uganda in 1992 and Musoma, Tanzania in 1994.

3.2.3 URBAN GREENING AND URBAN FORESTRY

According to Kjell Nilson document, (Forest and Landscape Denmark Project 2002) the importance of urban greening has received limited attention in many poor countries, as it is often perceived as being associated with beautification projects; which are considered a luxury benefiting only the wealthier part of population. However, urban greening may have a number of environmental, economic and socio-cultural values which will also benefit the poorer segment of population.

Environmental values include reduction of air pollution and protection of water sources; reduction of harmful influence of the sun, wind and temperature. It also increases biodiversity.

Economic values include production of food, fodder and fuel wood. Other economic benefits include setting for new development, new business and jobs.

For socio-cultural values urban greening can help to improve health and recreation, can keep in contact with nature, education and training.

The author argues that urban greening is a worth investment if done in time. Once every piece of land is developed for housing and infrastructure, it will be very difficult to create green areas unless these are planned from the beginning.

The author cites various cases of urban greening among them being the following:

- (a) In Russia, the development objective of the Russian-Danish urban Project (1999-2002) was to conserve and develop the cultural history, social and ecological values of St. Peterburg city green areas by elaborating a structured well-informed planning and management approach. A GIS - database was developed with data categories for each park established. The approach was participatory in order to create a higher environmental awareness and responsibility towards conservation and development of green areas as well as enhance collaboration between stakeholders.

It is explained that sustainability in project cooperation is important for achieving a long-term impact. It was therefore very positive that the Russian-Danish partnership could be continued through a new environmental aid project (2002-2005) focusing on the forest greenbelt around St. Peterburg. Comprehensive participatory planning and

management system has been developed in order to optimize the benefits of multifunctional green belt for St. Petersburg and its citizens.

The CDE student feels that Mwanza City can emulate this by having a sister city (development partner) which it can co-operate with in this area.

- (b) Another case is of the Twinning Malaysia, whereby Kuala Lumpur is characterized as a rather green city with a number of larger parks and forest reserves located within the city limits. The potential; of green structure is however, not fully realized because of the lack of green corridors or green ways to connect the various areas and to make safe, non-motorised traffic to the areas possible. Another important issue is the development of more management-oriented skills at the City Hall's landscape and Urban Cleansing Department. By then the department's profile was very project-oriented towards construction of new parks. This needed to be supplemented by developing a strategy for and knowledge in urban forest and tree maintenance.

Urban forestry greening was one out of three components in an ongoing (2003-2006) twinning co-operation between Forest and Landscape Denmark, Forest Research Institute Malaysia and University Putra Malaysia. The project was expected to be finished by June, 2006.

The CDE student feels that Mwanza City authority can learn a lot from this experience especially in relation to the necessity for proper planning and need for capacity building in knowledge and skills related to urban forestry and tree maintenance, in an effort to pursue for Mwanza urban greening.

- (c) The author also observes that in many cities in Southern and East Africa, the development goes the opposite direction. For a City like Dar es Salaam both the quantity and quality of green spaces are decreasing fast on all levels. Citywide the quantity of green areas and open land fell from 80% in 1982 to 73% in 1992 and further 55% in 2003. A lot of this consumption of land consists of informal settlements due to population growth from one million to three million people. Forest and Landscape Denmark has developed tools and experiences in dealing with an overall green pasture management and planning under hard urban pressure.

Sub-Saharan Africa is one of the regions that are prioritized examples of urban greening programme and studies are known from for instance, Burkina Faso, Gambia, South Africa, Tanzania and Zimbabwe.

But comprehensive knowledge of existing (good) practices in urban greening and involving local communities in Sub-Saharan Africa is still very limited. This type of knowledge will be needed as a basis for development and implementation of sustainable urban greening efforts in the region.

3.2.4 URBAN AGRICULTURE IN EAST AFRICAN PRACTICE, CHALLENGES AND OPPORTUNITIES

The authors on this subject are Caleb Mireri, Aphonse Kyessi Nimrod Mushi and Peter Atekyereza.

The authors argue that East Africa have registered rapid growth of urbanization during the last four decades. This trend has resulted into massive growth of slum and squatter settlements, which has contributed to environmental degradation. It is known that the squatter settlements are estimated at 70% in both Nairobi and Dar es Salaam.

The document explain that urban agriculture in East Africa during the same period has registered rapid growth as one of the important sources of food for the urban poor as well as viable commercial venture for the high and middle income households. During colonial period urban agriculture was excluded from formal urban land use and could only be authorized under strict conditions.

Since independence little has been done to integrate urban agriculture and an integral part of urban land use system. Although Tanzania has integrated the sector into urban use system, the full effect of the initiative has not been realized.

As a result urban agriculture continue to suffer from official policy bias as well as socio-cultural practices that have informed by colonial influence.

Practice of urban agriculture on road reserves, riverbanks and other hazardous areas may contaminate the produce with health implications. Also urban agriculture competes with other urban land uses.

In addition, demand for water causes poor urban farmers to destroy conventional sewage systems to access water for irrigation, which causes environmental degradation and increased infrastructure maintenance costs.

In order to realize the full potential of urban agriculture, there is a need to develop a policy and institutional framework for the sector. This will enable urban farmers unlock critical technical and financial support services. Also, urban agriculture would be carried out in designated and safe places.

3.2.5 URBAN PARKS AS PARTNERS IN YOUTH DEVELOPMENT

Margery Austin Turner in the publication titled “urban parks as partners in youth development”, published in June, 2004, argues for parks role in a constellation of community-based activities citing lessons from Wallace Urban Parks initiative. The author provides a guide to designing high-quality programmes that young people will want to attend.

The document explains that parks can offer young people more than just a place to play by providing well-designed programmes that can promote physical, intellectual, psychological and social development.

3.2.6 THE PUBLIC VALUE OF URBAN PARKS

The author, Mr. Chris Walker using also the lesson learned from Wallace Urban Parks describes about the public value of urban parks.

He states that parks have long been recognized for their positive physical and aesthetic influences on urban neighborhoods; but they are now considered key contributors to larger urban policy objectives such as job creation, youth development, public health and community building. The author explains how parks are taking more active roles in these pursuits, building partnership to sustain their work and advocating for increased and continued public support.

3.3 POLICY REVIEW

3.3.1 NATIONAL ENVIRONMENTAL POLICY

This policy defines the environmental framework for forest policy (Vice Presidents office 1998). The overall objectives of the national environmental policy are the following:

- 1) To prevent and control degradation of land, water, vegetation and air which constitute our life support systems.
- 2) To improve the condition and productivity of degraded areas including rural and urban settlements in order that all Tanzanians may live in safe, healthy, productive and aesthetically pleasing surroundings.
- 3) To raise public awareness and understanding of the essential linkages between environment and development and to promote individual and community participation in environmental action.

3.3.2 NATIONAL FOREST POLICY

Policy statement (1) of March 1998; states that “To ensure sustainable supply of forest products and services and environmental conservation, all types of forest reserves will be managed for production and/or protection based on sustainable management objectives defined for each forest reserve. The management of all types of forest reserves will be based on forest management plans”.

3.3.3 NATIONAL STRATEGY FOR GROWTH AND REDUCTION OF POVERTY (NSGRP) OF OCTOBER, 2004

The strategy has the following strategically set objectives:

- (i) Promote actions that incorporate environmental protection measures in plan and strategies.
- (ii) Develop action plan for implementation of Environmental Management Act.
- (iii) Improve land Management including afforestation.

3.3.4 EAST AFRICAN FOREST CERTIFICATION INITIATIVE

There is an East African Forest Certification Initiative which encourage and sustain networking for exchange of experiences in forest certification within and among Eastern Africa countries. The Faculty of Forestry in Sokoine University of Agriculture, Tanzania is one of the National focal point Institutions.

In all the countries of Eastern Africa forest management has deteriorated in the last decade resulting in a loss of forest cover. This is attributed to a variety of reasons including declining public investment in forest management. Deforestation and forest mismanagement is prevalent in the region.

Forest certification among other things can help in achieving improved, forest management by incorporating environmental, social and economic goals; Be used as a communication tool to promote quality forest management in teaching, training and as an education resource; Be used as a tool for human resource development, i.e for professionals related to forestry; Be used to effectively and efficiently implement social and community forestry programmes; Improve the image of forestry; Improve social investments, ie. Creating more job opportunities; Contribute to the bridging of gaps between conservation and development and help in forest campaigns for members of society and industry to participate in forest conservation.

3.3.5 GLOBAL FOREST POLICY

Global forest policy has been developed in a variety of fora. The major international bodies include; United Nations conference on Environment and Development (UNCED); Intergovernmental panel on Forests (IPF); Intergovernmental Forum on Forests (IFF); United Nations Forum on Forests (UNFF); committee on Forestry (COFO) of the UN Food and Agriculture Organization (FAO) etc.

Deliberations during their meetings include; enhancing cooperation, fostering a common understanding of sustainable forest management, assessing progress at National, Regional and Global levels, strengthening political commitment, ensuring equitable benefits from forestry Industries sector etc.

CHAPTER FOUR

IMPLEMENTATION

This afforestation Knowledge, Attitude and Practices (KAP) study in community was conducted as a crucial prerequisite exercise for designing a project proposal which was necessary to address the deforestation problem in Mwanza City.

In order to ensure effective implementation of the proposed afforestation project, necessary interventions had to be carried out through planned activities. Relevant inputs were needed for each activity to be carried out. The implemented activities helped to produce outputs which were necessary for the project implementation.

A work plan for the entire implementation period was prepared for effective implementation and for optimal utilization of resources.

4.1 THE PLANNED OUTPUTS, INPUTS, WORK PLAN AND STAFFING ARRANGEMENT

Taking into consideration of the situational analysis done through community needs assessment, the following interventions were planned and implemented in order to meet the desired objectives as indicated below:

4.1.1 PLANNED OUTPUTS

The planned outputs under each specific objective are those that were needed to be realized in order to achieve the stated objectives and ultimately to meet the project goal. The major outputs planned were as follows:

- (i) In awareness creation the plan was to produce 500 leaflets for promotion activities, to train forest promoters and to sensitize 12 community leaders so as to support forestry promotion activities in their respective areas.
- (ii) In strengthening the implementation capacity of Nyakato Tree Planting group, 10 groups' representatives from various groups were to be trained on tree nursery management. Also various tree nursery tools were to be provided to support the project implementation.
- (iii) To have 2 more tree nurseries in the project operation area.
- (iv) Two recreational gardens to be established.

4.1.2 PROJECT IMPLEMENTATION WORK PLAN

In order to ensure smooth project implementation, a work plan was in place to indicate activities to be carried out, the required resources, time frame and person responsible for each project objective. The plan is briefly described below:

- (i) Objective one; Improvement of awareness on the hazards caused by deforestation among the city community was planned to be done through developing IEC materials, training of voluntary community forest promoters in promotion skills and orienting street/village and ward leaders to support advocacy efforts related to afforestation. All these activities were planned to be carried out during the first quarter of the project period.

- (ii) For objective two; strengthening the capacity of Nyakato Tree Planting group implementers was planned to be carried out through human resources development and provision of tools. Time frame of these activities was in second quarter of project lifetime.
- (iii) Objective three; Involved expansion of tree planting intervention by establishment of more tree nurseries during the second quarter of the project time.
- (iv) For objective four, was to carryout effective monitoring and evaluation exercises. Monitoring was planned to be done continuously as usual while evaluation was planned to be done in mid-way and towards the end of the project.

A total of Tzs. 549,200/= was needed to carry out all the above planned activities. More work plan details are as shown in Appendix V.

4.1.3 PLANNED INPUTS NEEDED FOR IMPLEMENTATION

Key inputs needed for implementation depend upon type of objective as indicated in appendix VIII. However the major ones planned were training facilitators, Finance/Funds and time.

4.1.4 STAFFING ARRANGEMENT

During first phase of Nyakato Tree Planting Project implementation, the CBO had the Chairperson, Secretary, Accountant and Forest Technical Staff head.

For expansion project, the CBO was advised by the project advisor who was the CED student to have extra components in the project which are namely the

IEC Unit, Community Forestry promotion (CFP) head and project advisor so as to implement the interventions successfully as indicated in Appendix VI.

4.2 ACTUAL IMPLEMENTATION STATUS OF THE PROJECT

The expansion project has been planned to be carried out in the duration of two years starting 2005. Therefore the implementation status shown in this report is for the first year of operation.

4.2.1 IMPLEMENTATION OF THE PLANNED ACTIVITIES

The implementation status of the activities planned by December, 2006 is as follows:

4.2.1.1 ACTIVITIES RELATED TO OBJECTIVES 1: IMPROVEMENT OF AWARENESS ON HAZARDS CAUSED BY DEFORESTATION AND IMPORTANCE OF AFFORESTATION AMONG KEY LOCAL GOVERNMENT AND INSTITUTIONAL LEADERS AND COMMUNITY AT LARGE.

To achieve this project objective:

Four hundred leaflets were produced and distributed, However to minimize the costs, the planned workshop to produce materials was not done instead the CBO used its own resources to reproduce relevant materials produced by other related projects e.g. CARITAS; Training of 4 forest promoters was conducted; 8 Community leaders were given orientation seminar to solicit for their support for forestry promotion activities in their respective areas.

4.2.1.2 ACTIVITIES RELATED TO OBJECTIVE 2: STRENGTHENING THE NYAKATO TREE PLANTING PROJECT IMPLEMENTATION CAPACITY:

Ten Group representatives on tree nursery activities were trained on more skills in nursery operations, planting and caring young trees; Purchase of garden tools, was done by individual groups using their own resources at the cost of between 45,000.00 to 50,000.00 for each group. However this was not adequate.

4.2.1.3 ACTIVITIES FOR OBJECTIVES3: EXPANSION OF TREE PLANTING INTERVENTION:

More tree nurseries than had earlier been earlier planned were established by individuals who were promoted/trained by Nyakato tree planting project in both phases. By the time of reporting, they were a total of 7 nurseries established whereby 4 in Nyakato ward and 3 in Buswelu ward. However all nurseries were operating using temporary and unallocated sites

The plot allocation for the establishment of recreation garden has been applied by Nyakato Tree Planting Group (CBO) but to - date it has not obtained the allocation permit around Nyakato National housing areas. However the City Authority promised them the allocation permit as soon as possible.

4.3 STAFFING ARRANGEMENT

The staffing arrangement which was advised by the Msc – CED student and which is now in place is shown in appendix VI.

CHAPTER FIVE

MONITORING, EVALUATION AND SUSTAINABILITY

As a yardstick of measuring whether implementation of the activities is done in accordance to the stipulated objectives, the process of monitoring and evaluation commences as the project starts. Monitoring and evaluation of development activities provides government officials, development managers, and civil society with better means for learning from past experience, improving service delivery, planning and allocating resources and demonstrating results as part of accountability to key stakeholders. Project monitoring and implementation was conducted by the members of the Nyakato Tree Planting Project. The researcher joined the group on weekly, monthly and quarterly basis by reviewing the planned activities and looking at the indicators to see if they have been attained or not. Semi annual and annual project participatory evaluation is planned to be conducted by the project stakeholders. The stakeholders will include group members, community leaders and project's management team.

5.1 MONITORING AND EVALUATION MECHANISMS USED

5.1.1 MONITORING

Monitoring is an essential process of routinely gathering information on all aspects of the project. The **purposes** of monitoring Nyakato Tree Planting Project like any other project or activity are:

- (i) To provide information during the life of the project so that adjustments or modifications can be made if necessary before it is too late to take corrective measures.

- (ii) To provide information for decision makers by keeping track of activities regularly. It gives immediate feedback and can be used for future evaluation.
- (iii) It helps to examine progress towards objectives and activities.
- (iv) Descriptive information with quantitative information helps to do analysis or project progress.
- (v) Continuous feedback throughout the life of the project activities ensures that the quality of activities is sufficient to provide good results.
- (vi) It helps to indicate whether resources are used effectively.
- (vii) Monitoring can provide realistic information while also showing trends.

The major monitoring questions are **“What do you want to know?”** and **“What do we monitor that will tell us this?”** For each monitoring question they are monitoring indicators that answer the monitoring questions.

For Nyakato tree planting project there are several things that were monitored and will continue to be monitored. These include: The effective utilization of project resources, time, people, funds, tools and equipment essential for the implementation of activities, implementation of each and every activity according to the planned work plan and also following-up of project progress in general, the effectiveness of the project strategies applied so as to revise them if need may arise and the “impact” realized as a result of implementing relevant activities. Some of the information needed for monitoring the Nyakato Aforestation Project is as shown under appendix VII.

The major data and information collected are as indicated below:

For the training and seminars conducted an activity report was prepared showing type of training or seminar, its purpose, number of participants and the performance, which is whether it has reached the intended expectations. Others include the number of names of the old and newly established tree nurseries and their performance; the number of people demanding tree seedlings from tree nurseries from time to time; the number of households, schools, religious institutions planting trees and the extent of this activity; the number of community tree lots established/number of trees planted; types and number of IEC materials prepared and distributed; the number of recreational gardens established; Performance of the CBO staff and all implementers in general after acquiring more skills as a result of training and the existing bottlenecks and challenges facing the forestry interventions in the project operational area.

As explained earlier, the Phase II Nyakato Tree Planting Project (NTPP) started to be implemented after conducting community needs assessment exercise and identifying the exiting Knowledge Attitude and Practice (KAP) gaps in relation to afforestation among the residents in the intended project operational area.

The success of the NTPP Phase II project therefore, highly depend upon how much the project will be able to narrow the identified KAP gaps.

In order to measure the project implementation status and its direction in achieving its immediate and ultimate objectives, the following monitoring methods and tools are being used:

- (i) Assessment of tree planting attitudes and practices among the residents in the project operational area is being done through personal observation, holding Focus Group Discussions (FDG) and Individual In-depth Interview (III) involving community and institutional leaders.

A few qualitative study sessions conducted by a researcher using FGDs and Individual In-depth Interview methods also revealed that there has been a notable abrupt increase in number of people selling tree seedling starting year 2006. Most of the interviewees thought that this is because of many “Mamalishe” (women food sellers) being thrown out of business after their food selling premises being demolished by the city lords.

However, the some interviewees argued that the fact that these women decided to shift to tree seedling business confirms that there is a demand for such “a commodity”.

- (ii) The researcher was able to observe various changes six months after the take off of second Phase of NTPP regarding tree-planting practices. Most notable observation include seeing many people especially women carrying tree seedlings on their heads and trying to get customers wherever they meet them. Another observation is the mushrooming of the makeshift and unauthorized tree nurseries of all sizes.

- (iii) The Phase II NTPP has established an exercise of routinely (every quarter of a year) collecting data related to tree planting practice. The quarterly reports are being submitted by the Project Community Forestry promotion Staff (CFP), a post established during the Phase II of NTPP.

As indicated above, there are many institutions, groups and individuals who have planted trees.

The analysis done at the end of the year 2006 indicates that there is an increase in efforts of tree planting in the project operational areas as indicated in the schedule below:

**Status of tree planting in the project operational area
(Nyakato and Buswelu)**

#	DESCRIPTION	STATUS BY DEC. 2005	STATUS BY DEC. 2006
1.	Number of religious institutions	10	10
2.	Number of religious institutions with tree plots	10	10
3.	Number of learning institutions	30	30
4.	Number of learning institutions with tree plots	12 (7 Nyakato)	16
5.	Number of recreation areas/urban parks	0	0
6.	Number of tree nurseries	1	7

Source: NTPP – compiled reports from CFP

- (iv) The report prepared by the NTPP chairperson on human resources development endeavor, specifically on training of tree planting groups on tree planting skills and tree nursery operations indicated that the training was conducted successfully. The trainees attendance was good, the trainers were competent and the training evaluation shows that the subjects were understood. One of the trainers was the City Forestry Department head. However with regard to the impact of this training, the evaluation will have to be conducted later.
- (v) The project management also carried out follow-up visits to physically observe the implementation of project activities.

The tree planting groups and the project community promoters were given relevant advices by the project monitoring teams during these visits. Most of the areas visited were found to have tree planting activities.
- (vi) The project management also during its quarterly meetings does also produce a report on progress of the planned activities including those which are under their responsibility, for example official acquisition of plots for tree planting tree nurseries and recreation gardens. The latest meeting held during early January 2007 showed that there had been no progress in this area.

5.1.2 EVALUATION

5.1.2.1 PURPOSE OF EVALUATION

Evaluation is a key element in the project cycle as it serves the following purposes:

- (i) It provides an opportunity to stop and reflect the past in order to make decisions about the future. It can help to modify or change the strategy, the objectives, or discontinue all together the project or activity.
- (ii) Evaluation should not be a final judgment on whether activities are successful or not successful. But the information encourages an adjustment either during the lifespan of the activities or future phases of activities.
- (iii) It helps to assess the success in meeting overall and immediate objectives, their relevance and effectiveness of the activities.
- (iv) It helps the management and Government officials to determine whether the project interventions and strategies applied can be successfully replicated elsewhere.

5.1.2.2 TYPES, METHODS AND TOOLS OF EVALUATION USED

For the Nyakato-Buswelu project both formative and summative evaluation mechanisms were planned.

Formative evaluation involves gathering information during the early stage of the project; with focus on finding out whether efforts put are unfolding as planned, uncovering any obstacles, barriers or unexpected opportunities that

have emerged, and identifying mid-course adjustments and corrections which can help insure success of ones work.

As it is narrated in detail later in this report under preliminary assessment of project achievement, one of the major obstacles noted at the early stage of this tree planting project is political and Government leaders not being supportive enough in this project despite the fact that they were given orientation seminars as part of project activities.

These leaders support was expected to be more vigorous than before after attending the seminar. This did not happen as expected because their attention now is more focused to construction of secondary schools.

The project management therefore has decided to intensify efforts in convincing political and Government leaders at district and local level to support project interventions.

However, on the positive side, the CBO has experienced several emerging opportunities during the implementation of this project; the first one is the open declaration of the national leaders of their intention to conserve the environment including through tree planting. Therefore there is a national level political will to depend upon. The second one is the rise of many people dealing with tree seedlings business as explained above. These two opportunities will be utilized to promote tree planting not only in the project operational area but also in the whole of Mwanza City.

With regard to this summative evaluation, this is a method of judging the worth of a project at the end of the project activities. The focus is on outcome (Bhola 1990). Nyakato tree planting project will collect data that will help to evaluate the impact of the project after operating in the two wards for a period of time.

Successful formative and summative evaluation depends not only to the project design and planning but also on early adoption of an effective data collection strategy and management information database which is in place for this project.

The project will also use internal and evaluation systems to assess its progress and impact. There will be an internal evaluation which will be carried out using the CBO staff themselves (the project personnel and community forestry facilitators from tree planting groups in respective wards) using well prepared monitoring methods, tools and indicators.

Also external evaluation will be conducted using people outside the project area, preferably district or regional forestry officials. The terms of reference will be provided.

At any case, both internal and external evaluation will try to evaluate: Increase of proportion of key Government and institutional leaders and community at large who are aware of the hazards caused by deforestation and importance of aforestation. Also change in political will among Government

leaders; Increase in capacity of implementing afforestation activities among the Nyakato tree planting CBO and the project implementers as a whole; Increase in number of individuals, groups, institutions, villages/streets involved in planting trees and the magnitude of the impact; the changes noted with regard to hill tops trees coverage and whether recreational gardens are established.

Due to late start of the project the mid-term evaluation exercise will be done during March 2007. The summative evaluation will be done fifteen months from now (March, 2008).

The **methods** and **tools** that will be used to conduct the summative evaluation are as follows:

- (i) Carrying out a thorough Knowledge, Attitude and Practice (KAP) study using structured interviews, Focus Group Discussion And Individual In-depth Interviews in the project operation area to learn whether there will be a change after carrying out the interventions. The results obtained from the two KAP studies (March, 2007 and March, 2008) will help to analyze the impact of the project.
- (ii) Analyzing the quarterly and annual reports being received by the project management from the Community Forestry Facilitators to assess the changes that occur.
- (iii) Using Mwanza City reports on forestry development situation.
- (iv) Conducting biannual project meetings to review project progress and performance.

Meanwhile, the project management with technical support of the researcher (the CDE student) has carried preliminary assessment of project performance (results) using the following methods and tools:

- (i) Carrying out a few Focus Group Discussions and Individual In-depth Interviewees as explained earlier on.
- (ii) Analyzing the quarterly implementation reports from the project operational area being prepared by the Community Forestry Promoters (CFPs).
- (iii) Reviewing biannual project management meeting reports which contains the progress and achievements of all project interventions.
- (iv) Through the researcher's own observation being a resident of the project operational area.

The preliminary assessment of project results are as indicated below under section 5.1.2.3.

The indicators of performance or achievements of project objectives and outputs are as shown in the appendix VIII.

The performance indicators are measures of inputs processes, outputs, outcomes and impact of development projects. When supported with sound data collection, analysis and reporting, these indicators will enable project management to track progress, demonstrate results and take corrective actions to improve service delivery.

5.1.2.3 PRELIMINARY ASSESSMENT OF THE PROJECT PERFORMANCE (RESULTS) USING INFORMATION OBTAINED FROM COMMUNITY FORESTRY PROMOTERS, INTERVIEWS AND MERE OBSERVATION

Definitely it is too early to evaluate the actual impact of the current Nyakato tree planting project despite of great efforts made by the project staff in promotion, training and providing physically the technical advices to tree planting groups at the project operational area.

However it is worth mentioning what has been noted as a new development in the forestry field in Mwanza City and also the project performance to date.

(i) About awareness on the importance of tree planting:

As stated above, the actual extent or level of awareness on advantages of tree planting and the disadvantages of not doing so among the targeted population can not be exactly determined unless another similar KAP study is conducted. Awareness creation was carried out by the project through mainly public meetings, using religious groups meetings and distribution of leaflets, also by visiting individual institutions.

(ii) Political will:

Basing on community tree planting groups' reports, there is no sign that there has been a notable change with regard to Government, political and CSOs leaders commitment and support to tree planting efforts at local level.

This was also expressed during the interview with a few community and institutional leaders. It is true that the Political and Government leaders are also advocating for tree planting during public meetings but their emphasis in this area cannot be compared with that shown in education and the fight against HIV/AIDs campaigns.

(iii) Capacity built

Most of the tree growers have indicated that the training received and technical support being provided by the current Nyakato Tree Planting Project has increased their skills and knowledge in this field. However a study has to be conducted to assess the real impact of the trainings.

(iv) The tree planting practices

The community forestry groups have reported a notable demand for tree seedlings. The most desired species are Panga uzazi (*Terminalia* species), Misira (*Maesopsis eminii*), Carribea, Miboyo (*Melia azadirach*), and Eucalyptus species. Others are Mlonge (*P. longifolia*), Michungwa (*Citrus sinensis*), Maembe (*Mangifera indica*), Papai (*Carica papaya*), Mzambarau (*Syzygium cuminii*), *Grevillea robusta* and Mijohoro (*Senna siamea*).

The main purposes of the trees demanded are for shades, beauty, fruits and some construction work.

One nursery tree group at Nyakato has reported that the demand for tree seedlings a year ago was such that at the average only 3 people visited it to purchase about 15 seedlings each (a total of 45 seedlings per day) during November – December 2005 compared to the average of 4 customers,

purchasing at the average of 20 seedlings each (a total of 80 seedlings per day) , during same time in 2006.

Another evidence of high demand for seedlings is the mushrooming of “petty tree nurseries” in the city which in most cases have no official plot allocations. The sudden rise in demand for tree nurseries definitely can not be attributed to the current Nyakato tree planting project only.

The main reasons given by the project operational area tree nursery groups are as follows:

People replicating the Nyakato tree planting project initial phase. City residents from even outside the project area have seen the beauty around the houses where the pioneer project had carried out intensive tree planting campaigns as explained earlier. In other words it could be a “spill-over” effect of the Nyakato tree project (initial phase) initiatives. One tree seedlings group at Buswelu has reported that recently they had an order of 15,000 seedlings from far away but within Mwanza City. The group sold each seedling at the price of Tshs. 100 each.

The KAP study type for this project does not have “control” versus “Treatment area” comparison approach. It is simply not easy. It is also not ideal.

Economic hardship has forced some “Mama lische” (women street food sellers) to shift in to selling tree seedlings after the City lords had demolished their

business premises. You can even see them in city buses carrying some seedlings and trying to fetch a market for them.

The number of schools planting trees has also increased by 30%. This is a result of promotion efforts and also through the “spill-over” effect explained above.

For the community tree lots, a few community tree planting groups have tried to assist some communities to plant a huge area but they have been discouraged by these young trees being eaten up or destroyed by roving animals especially goats mostly at the city peripheral areas. The community and ward leaders have been asked to take stiff measures to check this, for example by establishing by-laws. The other problem is lack of adequate plots for establishing permanent tree nurseries and planting of trees.

As for the establishment of recreation gardens, as explained earlier Nyakato tree planting CBO has requested for the plot and is waiting for the city authority response as explained above. The area requested is at Kingunge ground near Nyakato NHC.

The groups also complain of lack of relevant tools and equipment needed for establishing and running permanent tree nurseries. For the mushrooming tree nurseries, most of the owners have no skills to run them. However the project has managed to support some of them. The groups have also suggested the idea of forming “Mwanza City association for the tree growers”.

The project is promoting for establishment of Mlonge (*P. Longfolia*), a traditional tree which is mainly for medical purpose.

In summary it can be stated that although there are good signs of Mwanza City residents in planting trees, unless there is thorough KAP study it is difficult to determine the extent and causes of change of knowledge, attitude and practices in relation to tree planting among the city dwellers.

5.2 SUSTAINABILITY

According to the CBO (NTPP) initiative and strategies and existing social economic and political environment, sustainability of the project is highly likely to happen due to the following situation.

The current forestry and environmental conservation policies are in great support of the idea. The current top country leadership has urged the Government and political leaders to support afforestation activities at all levels. The City authority is also interested to beautify their City. This includes planting trees. In fact for the past two years they have ranked top two positions in the country with regard to general cleanness. What is needed for the City authorities to establish a concrete afforestation programme. This entails allocating adequate resources to support tree-planting groups in provision of skills, tools and allocation of plots for tree nurseries and lots. Also they need to establish by - laws for protecting trees and vegetations.

The CBO has managed to build a spirit of self reliance among tree planting groups it has helped to establish. So far beneficiaries have been able to continue planting trees without external support after being sensitized and given relevant skills by the CBO.

On the financial aspects, the tree planting is expected to thrive because it is now commercialized. As shown above, tree seedlings are being sold to the individuals and institutions. And it is high in demand. Another evidence is the mushrooming of the temporary tree nurseries around the city.

The city authority will use this opportunity of rising demand for tree seedlings to promote tree planting.

Another aspect of finance is that some tree planting groups have managed and will continue to get loans from different sources such as Women Development Fund. Also there are other related programmes and stakeholders in Mwanza which can work together with Nyakato CBO to sustain the afforestation project. One of them is the Vi Agroforestry Project which has been scheduled to start in Ilemela district in early 2007. The CBO has been advised by CED Msc student attached to it to contact City Authority so that it can be supported through this programme.

Nyakato and Buswelu tree planting groups are in the process of establishing an association that will help them to exchange experience and collaboration. The CED Msc student has advised the project to encourage the groups to form SACCOS that can help them to raise funds for their interventions.

The project builds implementers and the CBOs capacities needed for its implementation. The project ensures community participation in all stages of the project: identification, planning, Implementation and Monitoring and evaluation.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

The community needs assessment and identification of the existing knowledge, attitude and practices “gaps” in relation to tree planting in Mwanza City was very instrumental in designing a project proposal for Nyakato tree planting CBO. Methods used for obtaining the needed information included interviews, document review and observation.

The Nyakato Tree Planting Project (NTPP) proposal includes set objectives with planned interventions that need to be monitored and evaluated overtime to assess whether the project succeeds in promoting afforestation and “turning Mwanza green”.

6.1 CONCLUSION

Deforestation is one of the environmental problems which are worrying many policy makers, the National Government leaders (CSOs) and all stakeholders at large.

One of the CSOs, the Nyakato tree planting CBO is among the stakeholders, which felt that deforestation in Mwanza City is an issue of concern. In early 1990s the CBO established small-scale tree nurseries and started selling tree seedling and creating awareness on need to check deforestation to the surrounding communities.

This CBO's initiative was highly appreciated by local Government leaders and as a result some of its pioneer members were given a study tour to Uganda to gain more experience in tree planting activities. Despite of the fact that the Nyakato tree planting CBO members were given such a study tour their activities were in a small scale and confined to their locality. In 2005 the CBO was assisted by the CED student in improvement of their interventions by preparing a project proposal and implementing the project itself.

In preparing a project proposal community needs assessment was conducted through a study, which revealed not only the existing "gaps" but also came up with recommendations on how to promote environmental conservation through afforestation activities.

The project design came up with four major specific objectives that were needed to be met in order to turn the project operation area green and conserve the environment on a sustainable way.

With a short time of project implementation (about a year) it will be too ambitious to expect that all objectives will be met and the impact realized.

With regard to specific objectives, the implementation status is as follows:

- (i) The objective with regard to awareness creation has been met in a great part though the level of awareness can only be determined through KAP study.

Under this objectives all activities were implemented as planned. This included training of forestry community promoters, preparing and distributing of relevant leaflets and orienting community leaders to carryout advocacy role on afforestation in their respective areas.

The community forestry promoters have played their role well in terms of IEC interventions according to the reports received by project management.

The only worry is that the Government leaders who were oriented and sensitized in order to support afforestation campaign, fully integrate afforestation interventions in their local and district plans and support tree growers in obtaining surveyed plots for tree nurseries and recreation gardens, have not played their roles accordingly. This could be as a result of being engaged in other crucial national issues such as construction of secondary schools and HIV/AIDS prevention campaigns.

Had the Government leaders played their roles more effectively the situation could have been much better.

The project management has decided to keep on reminding the Government leaders to make tree planting a cross-cutting issue during their local public meetings and also to establish or implement existing by-laws that are aimed at protecting planted trees and/or existing vegetation.

- (ii) Another objective which was on strengthening the capacity of the Nyakato tree planting CBO was partially met. The human resources development was done well through training. However, the provision of the needed tools and equipment could not be done due to financial constraints. Instead individual groups purchased a few items using their meagre resources as explained earlier.

However, this snag is expected to be solved by the groups getting loans from various sources including from the national small loans arrangement, with easy conditions. In fact a few groups have already secured some loans.

- (iii) The expansion of tree planting intervention has been effected as explained earlier. Nurseries have been established more than had been expected and tree planting is now a common phenomenon. However, most of these nurseries are on unallocated plots and trees planted are mostly around households.

Another research is needed to determine what has actually triggered this situation. The initial explanation is that this could be as a result of the Phase I combined with Phase II of Nyakato Tree Planting Project accompanied by other socio-economic factors.

The City authority should use this right opportunity to support and promote tree planting in its area.

- (iv) Monitoring and evaluation mechanisms have been greatly improved by assigning these tasks to the Project Chairperson with the assistance of her secretary.

There was no major occurrence that remarkably impeded the implementation of project activities apart from the funds limitation specifically for procurement of the needed tools for tree nurseries operations; less funds were availed than expected. It was initially thought that transport needed for distribution of seedlings could be a constraint to project implementation but this was never the case because tree seedlings being in a big demand, were collected by the buyers themselves.

In brief, if there were no snags mentioned under objectives related to leaders' advocacy and support and capacity building in terms of provision of tools, the Nyakato Tree Planting Project could have realized in a bigger way its desire of helping the City authority to turn Mwanza green, conserve the environment and see well established recreation gardens around the city.

In summary it can be concluded that the CBO vision will be realized as the project is in conformity to needs of the community involved and the National policies. In fact currently National leaders are very supportive to environmental conservation including tree planting and conserving. It is worth repeating that if the local authorities become personally and officially committed to the afforestation endeavor, there is a high chance of success as the community has started to show signs of positive attitudes towards this issue.

6.2 RECOMMENDATIONS

In order to improve environmental conservation in Mwanza City in terms of tree planting and protection the researcher (CED MSc student) recommends the following measures to be taken:

- (i) City authorities should establish a comprehensive and sustainable afforestation programme and allocate adequate resources for its implementation. There is need also the City leaders to learn from other cities that have succeeded in urban area greening and other related interventions.
- (ii) The tree planting groups including N.T.P.P should be assisted through alleviating existing constraints facing them, such as lack of surveyed plots for tree nurseries and recreation gardens/urban parks.
- (iii) The City authority should also survey more plots for residential purposes in order to avoid the problem of squatters' settlements.
- (iv) Many tree planting groups have reported to Nyakato Tree Planting Project office that they are being faced with a problem of roving animals destroying young trees. The City authorities should put to force existing by-laws to solve this problem.
- (v) City authority should take up the idea of tree planting groups by facilitating formation of a body or associations related to tree planting interventions and give them necessary support.
- (vi) Effective IEC intervention is needed to reduce the KAP gap, by increasing level of awareness and creating positive attitudes and practices in relation to tree planting among the city dwellers.

- (vii) The City to encourage private sector to establish recreational gardens/parks and tree nurseries, to start with at least one garden and one tree nursery in each ward.
- (viii) A similar study should be carried out from time to time in order to assess the progress of tree planting and environmental conservation over time.

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