

**THE ROLE OF MEDIA IN THE CONSERVATION OF ULUGURU MOUNTAINS
FORESTS IN MOROGORO**



BY

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**FOR REFERENCE
ONLY**

**A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE MASTER IN RURAL DEVELOPMENT
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MOROGORO TANZANIA

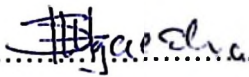


ABSTRACT

Deforestation is one of the major problems facing Tanzania. In Morogoro, the area under forests of Uluguru Mountains has been declining over time, which has threatened the survival of fauna and flora, human well-being, industrial production and the country's economy at large. The overall objective of the study is to assess the role of media in conserving forests of Uluguru mountains in order to achieve sustainable management of the biological resources. Cross-sectional design was adopted using open and closed ended questionnaires from a sample size of 80 respondents. Interviews with key informants, individual in-depth and focus group discussions (FGD) were also used. Data analysis was done using Statistical Package for Social Sciences (SPSS). Findings indicate that Morogoro has a number of mass media, which has not been utilized to disseminate environmental information particularly forestry. Despite the fact that there are three radio stations in the region, only one radio has been used by a single forestry organization to discuss and debate the way forward to conserve forests of the Uluguru mountains. Newspapers have covered a number of articles based on editorials, letter to the editor, features, special supplements, columns and pictures but the challenge they are limited to urban areas. Majority of the respondents own radio sets and they do listen to environmental radio programmes aired by a local radio in Morongo. This study recommends that mass media and forestry stakeholders should work together as partners in conservation of the Uluguru mountains. Foresters should effectively get the conservation messages out into the public arena to attract allies, convert foes, and win the minds and hearts of those involved in deforestation. By targeting different strata and hierarchy of media, environmental organizations will be able to reach the audience that is most important to them.

DECLARATION

I, Aminiel Aligaesha, do hereby declare to the Senate of Sokoine University of Agriculture that this dissertation is my original work, and has not been submitted for a higher degree in any other University

Signature..........

Date.....17/11/2006.....

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DEDICATION

This work is dedicated to my beloved mother Mrs. Emiliana Aligaesha for her prayers and strong moral support during my two years of study at Sokoine University of Agriculture.

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LIST OF ABBREVIATIONS

FAO	Food and Agriculture Organization
FBD	Forests and Beekeeping Division
PPFM	Framework for Participatory Forests Management
IEC	Information, Education, and Communication
JET	Journalists Environmental Association of Tanzania
MNRT	Ministry of Natural Resources and Tourism
NEMC	National Environmental Management Council
NGOs	Non-Governmental Organization
NSGRP	National Strategy for Growth and Reduction of Poverty
PFM	Participatory Forests Management
RFA	Radio Free Africa
SUA	Sokoine University of Agriculture
TAF	Tanzania Association of Foresters
TFCG	Tanzania Forests Conservation Group
TV	Television
URT	United Republic of Tanzania
WCED	Worlds' Commission for Environmental and Development
WCST	Wildlife Conservation Society of Tanzania
WWF	World Wildlife Foundation

CHAPTER ONE

INTRODUCTION

1.1 Background information

It is estimated that 27 percent of the 3.5 billion hectares of the earth's surface is covered by forests (Paul and Uusivouri, 1999). The current global rate of deforestation is about 14.6 million hectares annually (FAO, 2001). In tropical Africa, forests cover 520 million hectares and deforestation is estimated to be 0.85 million hectares annually (WWF, 2004). Tanzania's forests and woodlands are estimated to be 38 811 322 hectares, which is 41 percent of the country's total area of land and forests loss is 91 276 hectares (MNRT, 2002). Two thirds of Tanzania's land consists of woodlands on public lands whereby 13 million hectares have been gazetted as forest reserves (MNRT, 1998).

The Worlds' Commission for Environment and Development (WCED, 1987) assert that forests on mountain areas play an important role in maintaining the stability of the mountain systems and supporting people's livelihoods. They are vital as sources of water for irrigation and power generation. They intercept and store water from rainfall, mist, and snow, and release it slowly, thereby reducing soil erosion, avalanches, and downstream flooding impacts. Forests on mountain areas are important sources of timber and other wood and non-wood products, and are especially important as sources of fuel for local populations and for those in nearby foothills and plains. Mountain forests are very important as repositories of biodiversity and as a result, they are increasingly becoming important for tourism and recreation as well as hunting.

The area under forest on the Ulugurus has been declining over time. In 1955, there were over 300km² of forest remaining and by 1977 this had been reduced to 260km² while in

2000 the forest area was around 200km². The decline is threatening the survival of fauna and flora species (Africa, 2005). There has also been loss of forest at lower altitudes and outside the forest reserves on the mountain. The Uluguru Mountains in Morogoro have suffered a full assault. Deforestation in this area and indeed in many parts of the country has come to symbolize the lawlessness on Tanzania's forest sector.

More alarming however, is the fact that loggers have begun cutting rare tree species inside protected areas despite the fact that deforestation is causing drought, flood and massive soil erosion across the country. Surprisingly, local government authorities and law enforcement seem less concerned. It is equally disturbing to note that while the national policy on forest places greater emphasis on the involvement of the local population on conservation and management of forest resources, the locals have no say on how forest resources are used and receive no economic benefits from the plunder. Instead, the resources benefit a relatively small number of timber industrialists and officials. Mass media has a role to play here as both collaborator and a tool for conservation.

Hatar (2004) asserts that forests on mountains have been cut, the climate has changed, water flows have been affected, land has deteriorated and virtually laid bare. From thick covers of years ago, now only bare rocks and few stunted shrubs have been left after years of misuse. In Morogoro town at the base of the mountains, the streams no longer flow as they used to and the climate according to long time inhabitants, has changed considerably as it is much warmer in Morogoro compared to previous years. Determining the roles of media in conserving Uluguru forests may help in advocating conservation hence managing biological resources in the hotspot.

1.2 Research problem

Apart from Dar es Salaam, Arusha and Mwanza, Morogoro has a comparative advantage of having three local radio stations and two booster television stations. Daily and day newspapers are easily read early in the morning in the region. This advantage seems to be unexploited as far as mountains forests conservation is concerned. Personnel from farms of Sokoine University of Agriculture (SUA) and Morogoro Regional Agricultural Office report that water from up the mountains is no longer enough to cover the irrigation requirements (Hatar, 2004). In spite of various efforts employed in conserving forests, deforestation has been taking place due to human disturbances including domestic use such as fuel wood, subsistence agriculture, local brew making, commercial agriculture, timber and poles for construction.

The loss of Uluguru forests and any reduction in water supply from the mountains have negative impacts on human well-being, endemic species and industrial production in Morogoro and Tanzanian economy at large. Determining the roles of media in providing education, creation of awareness, attitude and behavioral change in conserving the Uluguru forests is vital. This study seeks to explore not only what the media has done but also how it can explicitly play its role in conserving the forests at Uluguru mountains which are under human pressure.

1.3 Justification of the study

Uluguru mountains is important due to the presence of numerous species which are endemic in a number of similar isolated mountains in Eastern Africa (mainly Tanzania). The mountains are home of over 100 000 Luguru people who prefer to live there due to favourable climate which allows them to grow crops through much of the year, including

fruits and temperate vegetables which they can export to the people of the lowlands and Dar es Salaam. Uluguru mountains are water catchment areas for the streams and rivers which join the Ruvu River that supplies water to Dar es Salaam City which has between 3 to 4 million people and Coast Region (Africa, 2005). Uluguru Mountains as part of Eastern Arc are endowed with exceptional number of species not found elsewhere in the world, including Uluguru Bush Shrike (*Malacotonus alius*), which is endemic and is endangered. Internationally, Uluguru is recognized as among the 25 important hotspots due to their unusual high concentration of endemic species (Fjeldsa, Svendsen and Hansen, 1993).

The National Forests Policy (1998), through Policy statements 35 and 36 advocates use of extension services to increase awareness and skills amongst the people on sustainable forest conservation and management by providing forest related extension messages. There are few studies that have attempted to link media and forests conservation.

It is of vital importance to find out what the mainstream media can do in its potential of reaching the masses quickly and getting feedback earlier compared to other interventions in conserving environment, particularly considering forests of Uluguru mountains. The study has been designed with much attention on the presence of Information, Education and Communication Strategy for the Eastern Arc Mountain Forests of Tanzania, (MNRT/FBD, 2005), the NEMC Draft of a National Environmental Education and Communication Strategy (2004) which covers the year 2005-2009 and other communication strategies.

Furthermore, the study has a direct link with advocacy of forestry land and wildlife policies emphasizing conservation of forests in Tanzania. The Convention of Biological Diversity

(1992) Article 13, which reads as “Public Education and Awareness”, emphasizes developing educational and public awareness on the importance and measures required for the conservation of natural resources through the media.

Article 20 of the African Convention on the Conservation of Nature and Natural Resources (2002) emphasizes capacity building, education and training to promote environmental education through the media. It emphasize that by use of media, awareness will be created at all levels in order to enhance people’s appreciation of their close dependence on natural resources and their understanding of the reasons and rules for conservation, management and sustainable use of the natural resources. These are potentially the roles of mass media, which the study has explored.

The National Strategy for Growth and Reduction of Poverty (URT-NSGRP, 2005) targets increased proportion of rural population that access clean and safe water from 53 percent to 80 percent and in urban areas from 73 percent to 90 percent. The strategy further targets reduction of time spent on collection of water by the year 2010. In addition, the new government has introduced specific ministry of water. This cannot be achieved if water sources are not protected; in this case, the mountains providing water sources to Dar es Salaam City, Morogoro Municipal and Coastal region features prominently.

Information obtained is of use to different forestry stakeholders whereby workable media and conservation recommendations have been made in accordance to conservation communication strategies, national policies, laws, regulation, and international conventions that Tanzania has already ratified, but also the current political will in the country to

conserving the environment sustainably. This study is an entry point on how the media can explicitly help in conservation and sustainable utilization of natural resources.

1.4 Research objectives

1.4.1 General objective

The overall objective of the study is to assess the role of media in conserving forests on Uluguru Mountains in order to achieve sustainable management of the biological resources.

1.4.2 Specific objectives

- a) To identify media that cover forests conservation issues which can be reached by the local communities
- b) To determine the content of media coverage on forests conservation issues
- c) To find out constraints facing media in covering forests and other environmental issues
- d) To measure people's access to media and identify appropriate media for local communities
- e) To find how environmental NGOs and other institutions have used media in conserving forests

CHAPTER TWO

LITERATURE REVIEW

2.1 Overview of media in Tanzania

The wind of change that swept Tanzania late 1980s and early 1990s did not spare the media sector. Liberalization policy on various sectors of the economy being one of the conditions imposed by donor community has seen the influx of private and public Newspapers, Radio and Television stations in the country (Manara, 2000). Increase of media in early 1990s was expected to cover more issues and bring about sustainable development by addressing the poverty, ignorance, systematic abuse of power, food insecurity, conflict, environmental degradation and gender disparity which are pervasive in Tanzania. Instead, all these have continued to increase at alarming rate especially in rural areas where the mass are found.

2.2 Mass media and environmental issues

Effective implementation of environmental management and conservation programmes depend on education and raising awareness among different stakeholders in relevant areas. It is evident that without the understanding by communities of how to conserve their natural resources, or indeed, why they must do so, few of them would be motivated to participate actively in programmes/projects on environmental conservation and in this case forestry in particular (Dennis and LaMay, 1992).

Ponder (1986) assert that conservation of wild and natural landscapes is pursued in a variety of ways including scientific, spiritual, legal and economic. However, all efforts to conserve nature for future generations rely on one keystone task, which is communication.

Mass media is part of communication. Conservation work is successful only after the idea or message behind the work is in the minds of those people who are vital to accomplishing the goal. Such people include the grassroots, local champions, decision-makers, partners, challengers, and the like. So often, high-quality conservation work wilts when mass media priorities are not identified and their objectives not realized.

The Food and Agriculture Organization (FAO, 1987) ascertain that mass media such as radio and newspapers can be used in carrying forestry information to many people in a short period of time than can be reached by individual methods. They help also in creating awareness and interest on forestry activities. They help to form favourable attitude among the general public towards extension programmes. A study by Ojo and Kadri (2001) on the perception of the role of media in environmental conservation recommended that appropriate intervention to conserve the environment could be effectively implemented by the use of mass media for public awareness while persuading them to participate and not merely act as receivers. Unfortunately, the existence of media in Morogoro has not been exploited fully in the conservation of the environment.

A Report by WWF (1993) states that media coverage is also a crucial way to make conservation efforts known to local people, the rest of the country and the world by arranging media trips for environmental journalists. Media trips for journalists can help to appreciate, and thereby portray, the real situation in the field and not just receiving press releases, which can sometimes be difficult to digest due to lack of in depth understanding of the issues addressed. Media coverage motivates people involved in conservation by recognizing their efforts and reaches out to the public who are keen to know more about conservation issues.

According to WWF Nepal Programme, conservation education and communication through radio and newspapers have been an integral part of its activities since its inception in 1993 in Nepal. Numerous conservation awareness programmes were prepared for different target groups, hence helping them understand how to conserve the natural and cultural environment. Such conservation includes protection of biological diversity and restoration of forest corridors, which in turn enables the people to meet their livelihood resource needs sustainably. Therefore, using various tools to raise awareness, education and communication play a significant role in bettering understanding among the people living or surrounding reserves about the importance of conserving the natural and cultural environment.

In his paper titled Public Awareness on Biodiversity Conservation, Ongkili (2004) argue that the role of media in public awareness is crucial in garnering support of the people in conservation efforts because environmental education is one of the key approaches to raising awareness in numerous environmental aspects including forest. It is of great help for all forestry stakeholders involved with environmental education and public awareness on biodiversity conservation to collaborate with media and co-operate for maximum benefits thus leading to effective results. Ongkili (2004) adds that it is quite rewarding to invest enormous resources in media so that media can be able to educate, teach and convince the communities about the need to value and conserve forests for the communities daily and future benefits.

FAO (1987) and Ongkili (2004) accentuate that mass media especially newspapers and radios have enormous potential in creating a change in public awareness on biodiversity conservation through environmental education. While the focus of environmental

education and public awareness programmes has been in the school system, the important role mass media plays have often been overlooked.

Consequently, FAO (1987) and Ongkili (2004) call for the need for training media practitioners in key aspects of biodiversity resources and the role to be played in effecting conservation habit and practice. The power of the pen in this regard cannot be underestimated and the government, the private sector, and NGOs dealing with conservation have to invest resources in mass media.

2.3 Theatre media and reforestation

One of the dilemmas facing environmental conservationists is how to make community members realize that conservation efforts are indeed for their own benefit. The use of theatre media by producing plays which reflect the importance of planting trees and protecting them is a means towards improving communities' welfare and ultimately conserving the environment. Theatre media is a powerful tool for behaviour change, where the community takes up an issue of interest and create an information and communication package via the medium of theatre, to sensitize their fellow community members about the merits and demerits of certain actions (Hatar, 2004).

In order for conservation to make sense, people should be made to understand it, comprehend the consequences of unfettered use of the natural resources. People ought to be shown viable alternatives which will reduce their pressure of over exploitation of natural resources. That is where radio and newspapers, the researcher's interests, have to intervene and make people aware by using media expertise of raising awareness and raise their conscious towards forests conservation.

2.4 Media and participatory forest management

The Framework for Participatory Forest Management (FPFM, 2003) stresses mobilization and awareness of district and communities especially in areas where there are no development support programmes of FPFM are underway. The media can in this case be used in campaigning as a partner. Mpanduji (1999) put emphasis on involving community members in solving problems such as deforestation due to the fact that community members are the creator of the problems knowingly or unknowingly and at the same time are victims of the same problems. Thus, well-coordinated public education and conservation efforts can be very effective in fostering and motivating good environmental behavior, forests conservation, and private resource management.

2.5 Media and forests conflicts resolution

Despite forests laws and acts, human kind continues to have the urge in using protected natural resources. Conflicts are usually the result of incompatible interests. Human beings are in one form of relationship both themselves and environmental practioner. It is in these relationships where conflicts occur. "Many people depend on forests for shelter, timber, medicine, food, fodder, honey and dyes. Forests protect water sheds, reduce erosion, offer habitats for wild species and play a key role in climatic systems. As population growth puts more pressure on agricultural land, people start looking at forest reserves as unoccupied land which could be utilized for agriculture or timber, conflicts between the forest authorities and those in need for land and timber emerge. The fact that forest encroachers and forest authorities work mutually exclusively raises the question of who will protect the forests against the protectors" (Haulle 1999, Kajembe *et al.*, 2003).

Kovarik and Nenzil, (1996) emphasizes that in deeply divided societies, media can shape opinions and decisions related to the nature and scope of conflicts, as well as how to constructively handle actual and potential conflicts. Where social, political and economic conflicts have degenerated into widespread violence, the role of information in mitigating the effects of violence or in presenting alternatives can be crucial. The media constitute major human resources that help to prevent and moderate social violence.

Acayo and Nathan (2001) argue that the print media has played a major role in challenging and advising the belligerents in Northern Uganda on the inhuman acts. It has been done by prominently publishing information on escalations of conflicts and peaceful means of resolving them and other related issues. The same media can be used to solve the on going conflicts between communities and forest reserves on issues like boundaries and the like. Mmuya (2000) emphasizes that media can help a lot in conflict prevention by providing early warning systems to avert conflict hence moderating its escalation and resolving it in areas of natural resources competitiveness.

2.6 Media and forest policy

The National Forest Policy (1998) advocates use of extension services by increasing awareness and skills amongst people on sustainable use of forest resources by providing forest related extension messages delivered by different natural resources management sectors. The policy declares that even messages delivered to farmers are sometimes conflicting due to poor coordination between different actors. Forestry practice is a specialized type of field which requires specialized type of reporting in media. According to Tolba, (1992) as cited by (Johan and Lok-Sistika, 2002) successful environmental communication is not measured by public acceptance of the solutions formulated by

decision-makers. It is achieved when the best solutions are chosen by a well-informed public. One of the most important roles of media is to expand the audience for debate on particular issues like environmental conservation so that the audience is better informed.

2.7 Challenges of media on environmental reporting in Africa

According to Johan and Lok-Sistika (2002) information disseminated by media has a narrow understanding of environment as is often limited to ecological, biophysical and technical aspects. In many cases environmental reporting was (and still is) limited to sensationalist headlines, followed by superficial interpretations of environmental issues. Environmental journalism is often not seen as a priority. This influences the nature and amount of media coverage given to environmental issues. Many journalists find it difficult to frame environmental stories within the available media frames as it does not easily fit a single frame due to lack of insight into the complexity and diversity of environmental issues. As a result, conservation issues remain to a large extent the domain of conservation scientists, associations, and project managers.

To this end, mass media particularly radio and newspapers have been not involved actively in environmental education and interpretation. This entails providing reporters with up to date information on events in a language that is accessible to them and understood by the public. Conservationists therefore have the role of interpreting their research results in simple an understandable language, (Dennis and LaMay, 1992).

CHAPTER THREE

METHODOLOGY

3.1 Description of the study area

Uluguru mountains is part of the Eastern Arc Mountains, which is a long chain of mountain forests stretching from Ethiopia to Malawi (Lovett & Wasser, 1993). Others say the Eastern Arc Mountains stretch South to Namibia (Werger, 1978). They are part of the tropical rain forests and some of these forests are to be found along the estuaries of rivers (Lovett & Wasser, 1993). The prominent forest though have dwindled in size (Rodgers 1993), are major mountainous areas in Kenya, Uganda, Tanzania, Malawi and on to the South which forms a kind of arc that has been extremely useful in trapping rains for the regions in which they are found, as cited by Rutatora *at el.* (2004). However, Uluguru mountains are divided into South and North. The Uluguru mountains are located in Eastern Tanzania rising steeply from the dry coastal plain to an altitude of 2600m. The Uluguru range is approximately 100 km long by 20 km wide and is isolated from other mountains by tracts of lowland savanna woodland. At higher altitudes, and especially within a number of forest reserves, tropical montane forest is found.

The study area was selected because of its global importance for bird conservation and for conservation of other species of flora and fauna. Tropical lowland forest is also found in few remnants on the eastern margins of the range, and this also has a high conservation importance. Nationally Uluguru mountains form water source of Dar es Salaam, Coastal and Morogoro regions.

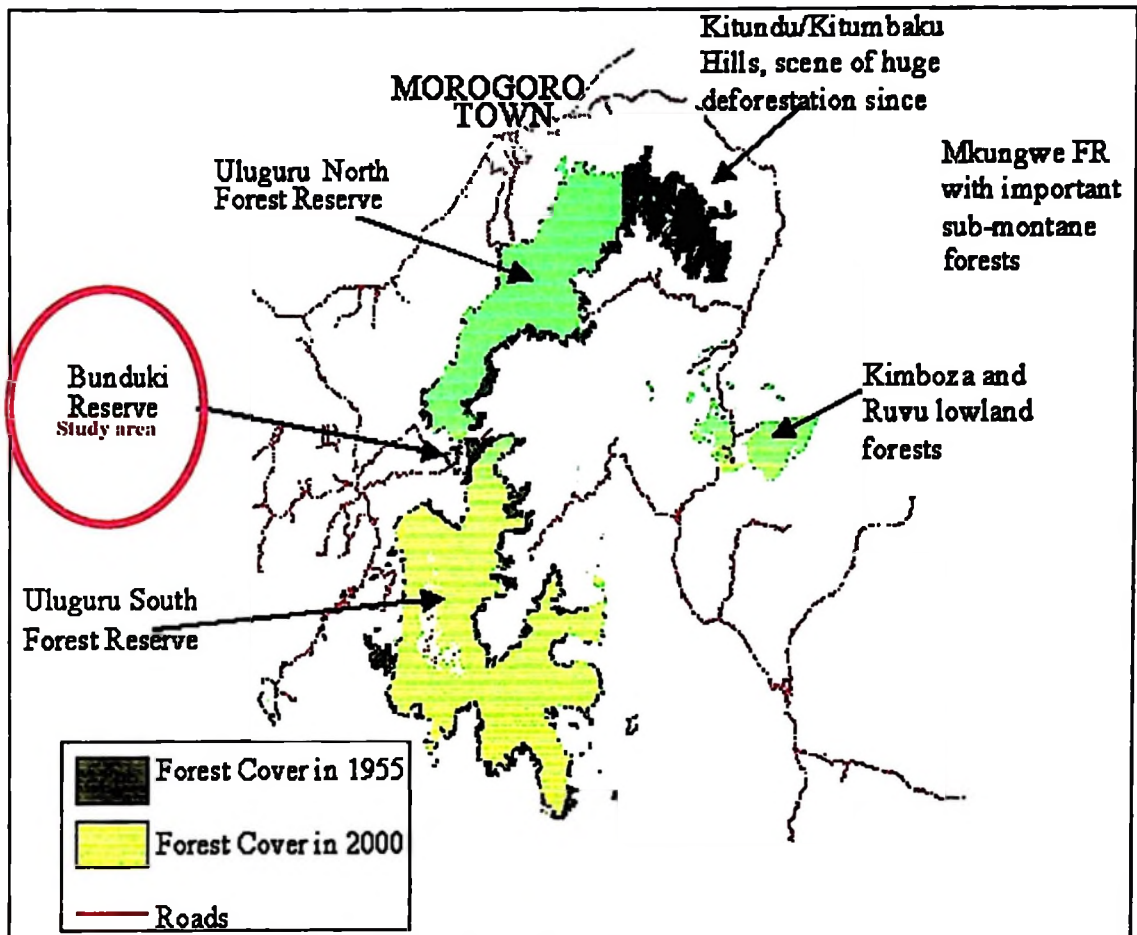


Figure 1: Bunduki Forests Reserve is in middle of Uluguru South and North Forest Reserves

3.2 Research design

This study was carried out using cross-sectional research approach which is common in survey research as it makes possible the collection of data at a single point in time. Questions were asked to representative sample of the population. According to Bailey (1978) and Babbie (1973), this research design is the most appropriate for social science research so long as the researcher can identify the population relevant to his/her interest. The method is considered to be useful because of time limitation and resource constraints.

3.3 Study population

3.3.1 Population

The study population consisted of households in Vinile, Kinole, Bunduki, Tandari and Maguluwe villages in the Bunduki Ward in Mvomero District. Some of these villages are adjacent to forest reserves. In addition staff from the electronic and print media, NGOs and institutions dealing with environmental issues and radio programmes were also included.

3.3.2 Sampling procedure and sample size

In order to obtain the desired population sample, simple random technique was found to be convenient for the study since it allows direct to the intended subject. Thus selection of villages took into account the presence of farmers cultivating around the forests reserve. The sample size was drawn from households in the study area. Resources, in terms of time and finance were limited, hence the need for sampling as opposed to census was adhered to (Babbie, 1973; Bailey, 1978). The sampling unit were individuals from households. Regardless of population size, a sub-sample of not less than 30 is the minimum acceptable for studies in which statistical data analysis is to be done (Bailey, 1978). A total of 80 respondents were drawn, 10 from each of these villages and 10 respondents were drawn

from the print and electronic media, with the remaining 10 being drawn from NGO and Institutions dealing with environmental and forestry activities in and for two newspapers and one radio station based in Morogoro.

3.3 Methods of data collection

Statistical Package for Social Science (SPSS) computer software was used to analyse the data. The collected data were first classified into meaningful categories that were further assigned numerals/codes to assist in the analysis. Descriptive analysis was employed whereby frequencies and percentages were determined. Thereafter research findings were put into categories based on research objectives. Presentation was done in tables whereas content analysis technique was used to analyze qualitative data.

3.4 Methods of data analysis

The study involved multiple data collection methods. The application of more than one instrument in data collection was vital in order to provide checks and balances concerning shortfalls characterized by individual and specific data gathering instrument. Both primary and secondary data were collected. Primary data were gathered using questionnaire, direct observation, structured interviews, and triangulation and focus group discussions. Secondary data were obtained from documents mainly, newspapers, radio programme schedules, annual and progress reports from environmental NGOs, press release and village register book.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Demographic and socio-economic characteristics

Basic demographic and socio-economic statuses of the sampled households in Bunduki Ward in Mvomero district are shown in Table 1. The parameters for demographic characteristics include age, sex and marital status while socio-economic variables include educational level and occupation.

Table 1: Characteristics of respondents at Bunduki Forest Reserve (n= 60)

Characteristics	Frequency	Percent
Sex		
Male	41	68.3
Female	19	31.7
Total	60	100.0
Age groups		
18-34 yrs	19	31.7
35-44yrs	23	38.3
45-60yrs	18	30.0
Total	60	100.0
Marital status		
Single	3	5.0
Married	57	95.0
Total	60	100.0
Education level		
Primary school	59	98.3
Secondary	1	1.7
Total	60	100.0
Occupation		
Employment	2	3.3
Farming	58	96.7
Total	60	100.0

4.1.1 Demography

Majority (68.3%), of respondents were male and 31.7% were female. The age distribution is presented into three groups where 31.7% were aged 18-34 years, 38.3% were aged 35-44 years, and 30% were aged 45-60. Thus making the age brackets of 35-44 years constituting the majority of respondents. Ninety five percent of respondents were married, while 5% were single (Table 1).

4.1.2 Education

Results show that literacy is very high as 98.3% of the respondents have completed primary school and the remaining 1.7% had attended secondary school (Table 1). The high level of literacy can help Bunduki dwellers to read information and education communication materials distributed to them, which are in print form and understand issues that are aired through radio channels.

4.1.3 Occupation

As presented in Table 1, agriculture accounted for 96.7% of the available occupation. It is followed by formal employment (3.3%). The findings reveal that agriculture is very important in the area as it is above the national figure, which says that 80 percent of Tanzanian resides in rural areas where agriculture is the main occupation is clearly supported.

4.2 Media covering forestry issues

The overall goal of the study was to examine the role of media in conserving forests of the Uluguru mountains in order to achieve sustainable management of the biological resources. Identification of media channels that cover forests conservation issues and which the local

communities reach is the first objective of this study presented in this section. Variables guiding the objective were identifying radio programmes such as documentaries, talks, news bulletins, and radio magazines that focused on conservation issues as shown in Table 2.

Table 2: Radio covering forestry issues

Radio station	Programme Name	Type of radio programme	Day/Time Aired	Model of delivery	Sponsor
Radio Ukweli	Mazingira Yetu	Documentary	Friday 04:-04:30pm	Recorded but field and studio based	Wildlife Conservation Society of Tanzania (WCST)- Morogoro
		News bulletin	-	Live	-
		Radio talk	-	Live	-
		Radio magazine	-	-	-

4.2.1 Radio programmes (Radio Ukweli)

The Catholic Church of Morogoro Diocese owns radio Ukweli. The Radio is running a programme covering environmental issues, especially conservation of the Uluguru mountains. The programme is called "Mazingira Yetu" under the sponsorship of the Wildlife Conservation Society of Tanzania (WCST), which has an office in Morogoro town. To date however, due to WCST sponsorship, the programme producer was financed to visit the field to talk to communities directly on the implementation of various forestry and other conservation activities carried out by WCST and how they participate for conserving their forests.

Due to sponsorship of WCST, a number of field-based programmes, which involve communities, are aired on radio Ukweli. Field based radio programme are very informative and educative and provide platforms for communities living around or adjacent to forest

reserves and receive information, discuss and debate problems and receive environmental advice on sustainable use of their natural resources.

Radio Ukweli signifies a two way process which entails the exchange of views from various sources and the adaptation of media use by the communities. It has allowed at least members of the communities living around forest reserve to gain access to information, education, and entertainment, but also has offered them opportunities to participate actively in producing and performing in the radio. Therefore, it is an expression of the communities rather than for the community. The challenges for radio stations and NGOs in conservation of the Eastern Arc including Uluguru mountains is achieving the goals as shown in the communication strategy as a denominator to cause change.

4.2.2 Newspapers (Mwananchi and Majira)

The two newspapers selected were Mwananchi and Majira, the Kiswahili leading newspapers in Tanzania, as shown in Table 3. A total of 69 articles were covered, ranging in various themes including bushfires, effect of deforestation, conservation of water catchment's areas, corruption practices in forestry, and use of efficient energy saving stove. These articles covered the whole the country, not only Uluguru Mountains.

Table 3: Newspapers covering forestry issues from 2002-2003

Types of news	Mwananchi	Majira
Ordinary news	13	10
Features	4	3
Cartoons	2	3
Special supplements	1	2
Editorials	4	2
Letters to the editor	4	5
Photos	6	3
Columns	4	3
Total	38	31

This is a commendable work. They were reporting as their social responsibilities. On the other hand, when it comes to quantification, it becomes difficult because no set or rule, which was aside to ascertain that each newspaper should have covered certain number of articles. The Information, Education and Communication Strategy for the Eastern Arc Mountain Forests of Tanzania, (2005) aims at publishing at least 12 feature articles per year in the national press in both Kiswahili and English newspapers on the local, national, and international values of the Eastern Arc Mountain Forests, whereby forests are inclusive. In this case, the print media (Majira and Mwananchi) have gone beyond what the strategy intends to reach per year in a period of four years of the communication strategy.

It should be noted that maximizing profits is the motto of majority of media outlets be it public or private owned. Consequently, articles that cover other forestry areas might not feature in their newspapers space or in radio. Nevertheless, a lot has been done with regard to conserving forests, which require media attention in raising awareness at different levels of forestry stakeholders. The negative attitude by media outlets towards environmental reporting that it is not of interest and therefore not selling news to audiences is false because people need to know things which have negative impacts in their future and not only those impacting them positively as perceived by other media practitioners.

The current local government reforms which are being driven through decentralization by devolution features prominently in forestry, especially in areas of joint forest management and participatory forests management. Media has partly a role and responsibilities to play in this area. Environment is people's lives. There is therefore a need to increase public education in understanding the potentiality of conserving them for people's livelihoods.

4.3 Determination of content

Data collected from radio and newspapers were extensively assessed on how they are being delivered to the community. For peoples' behaviors to change, their attitude must change as well. Persuasive communication by policy or strategy has a role to play in encouraging attitude change among the targeted group. In this case, the Information, Education and Communication Strategy for the Eastern Arc Mountain Forests of Tanzania is an important mechanism to achieve public education in which media features prominently as a communication tool. The strategy also act as a partner by investing in communicating about the values of the Eastern Arc Mountains forests but also raising the level of awareness to others at local, national and international levels.

4.3.1 Coverage of radio programmes

The radio programme aired by radio Ukweli is focusing only where the project sponsoring the programme is operating. The Radio programme is therefore not covering the entire Uluguru mountains and the Eastern Arc at large. This calls for the media to be sponsored to cover wider area instead of where the single project is operating only as it is only through wider coverage where a large audience is reached and therefore more effective communication.

4.3.2 Content of newspapers (Mwananchi and Majira)

The content observed, whether in editorial forms, letters to the editor, features, or columns were goal oriented because issues and themes addressed by the IEC strategy for Eastern Arc have in one way or another been addressed. However, it is not enough if they are not reaching the target audience in appropriate formats that suit their environment in terms of

purchasing power to buy newspapers but also the distribution systems from Dar es Salaam to the end users in the village.

4.4 Constraints by media practitioners

Media practitioners face a number of challenges in performing their duty. This part identifies constraints, which journalists encounter while covering forestry and other environmental issues. Findings in Table 4 show that 70% of the journalist admitted to encounter problems compared to 30% that did not encounter problems during their course of performing their duties related to environmental issues.

Table 4: Journalists encountered restrictions during the course (n=10)

Response	Frequency	Percent
Journalist encountered constraints		
Yes	7	70.0
No	3	30.0
Total	10	100.0
Identified constraints by media practitioners		
Bureaucracy by NGOs/institutions	14	70.0
No resources to visit the field	6	30.0
Total	20	100.0
Nature of environmental reporting		
Challenging and complex	10	100.0
Means of getting rid from constraints		
Establish environmental information center	22	44.0
Respect to journalist	3	6.0
Remove barriers	5	10.0
Equal treatment for all journalists	7	14.0
Provide regular training on forestry issues	13	26.0
Total	50	100.0

4.4.1 Bureaucracy by NGOs/Institutions

Just like other public offices and institutions in Tanzania, NGOs and other organizations have to date inherited the bureaucracy applied in public offices in delivering services to

their clients. In spite of the fact that 30% of the journalists show that they have no resources to visit the field especially areas of Uluguru mountains, the majority (70%) indicate that there is bureaucracy in NGOs and organizations dealing with conservation in Morogoro. When journalists visit these institutions and NGOs in search for news, the Institutions and NGOs tend to provide empty appointments. A number of these NGOs and organizations have a tendency of saying that the spokes person of the organization is away on other official duty, hence the Acting person cannot talk to and is not responsible for talking to journalist or release any information regardless of the fact that the information is for the good of the organization. Some of the journalists said that even when they come back for scheduled appointments they might not find these officials in their offices. Such kinds of behavior on the part of organization/NGOs discourage journalists who search for news in the organizations.

4.4.2 Complexities of the field

Environmental reporting is another area with many technical jargons that are not easy for some journalists and forestry officers to digest for public consumption. All the interviewed journalists acknowledged that forestry and environmental reporting in general is a complex field with terminologies that require extra effort to digest. This is true because journalists always want to describe issues in simple language so that their audiences and readers can understand easily. This calls for use of words that would not require a dictionary for more clarification of what have been aired on radio or written in newspaper articles. It also requires journalist to be well informed on forestry reforms as well as environmental issues taking place in the country.

In forestry, there are a number of reforms going on including participatory forest management and joint forestry management approaches on which journalists can write and report including the associated policy implications. Reporting outside policy and programme focus is not enough. It requires accessibility of these policies for journalists. Reporting issues that are policy oriented requires a reporter to understand clearly the implications of what is being reported versus the beneficiaries otherwise this may be mere reporting which leads to mere filling of newspaper spaces without any impact.

4.5 Peoples access to media

Rural people have faith in mass media because they believe that they are the only means of information dissemination which cover immense area. The rationale of the fourth objective was to examine communities' access to media in Bunduki Ward. Variables guiding this objectives are identifying the kind of media they access, ownership of radio, what community members and whether community member have ever heard any radio programme and read newspaper articles about forests conservation or environmental conservation issues.

Findings from the field as shown in Table 5 indicate that 91.9% of the interviewed respondents get news through radio, followed by posters (6.5%) and leaflets (1.6%). Among all media sections, radio is the most efficient medium in serving rural masses because it is faster and a bit affordable in comparison with the television, newspapers and magazines. Apart from being the cheapest and fastest way of disseminating information, radio also can be heard in areas without power connection.

Table 5: Access to radio by the communities(n= 60)

Category	Frequency	Percent
How communities get news		
Radio	57	91.9
Posters	4	6.5
Leaflets	1	1.6
Total	62	100.0
Ownership of radio sets		
Yes	57	95.0
No	3	5.0
Total	60	100.0
Listening to radio		
Daily	57	95.0
No	3	5.0
Total	60	100.0
Radio preference		
Radio Ukweli	57	82.6
Radio Abood	3	4.3
RFA	9	13.0
Total	69	100.0
Radio programme preferences		
News and civic education	54	73.0
Sports and music	20	27.0
Total	74	100.0

Majority of respondents (91.9%) are getting news through radio. This is attributed by the fact that radio remains the most effective mass medium, particularly in rural areas where other forms of media access are still very much embryonic.

Ninety five percent of the households interviewed are owning radio sets while five percent don't. Majority own radio because they are cheap to buy, available locally even by petty traders, and in some retail shops in respective villages, batteries are also easily available and they last longer, thus encouraging local communities to buy and manage to run the radio.

Ninety five percent of the respondents show that they are listening to radio every day. Therefore, environmental institutions can tap this potential number of people who are listening to radio every day by placing series of radio programmes which deal with conservation issues through using dynamic magazine-style format which is using a presenter, on-location reporting and interviews with different people especially those who are residing near forests reserve, beneficiaries of certain conservation programme or project. People want to hear their names and voices in the media and apart from this interest, they will be persuaded when listening the programme.

People have different choices of mass media they want to listen, read and view but in some areas the choice may be limited due to presence of a single medium. Majority 83% showed that they prefer to listen to Radio Ukweli, while 4.3% listens Radio Abood and 13.0% listens RFA. This provides an opportunity to work more with radio Ukweli because already people have shown interest and more faith in listening to the radio station.

Findings on preferences of radio programmes indicate that 73.0% of respondents prefer to listen to news and civic education while 27.0% prefer sports and music. Radio programmes with many listeners are good for various institutions, in this case environmental institutions and NGOs may sponsor and put some short messages such as jingles which can be aired at the very beginning, during and at the end of the radio programme to capture a big number of audience.

For example, if a 'promo' or a short message of few seconds addressing forestry conservation is prepared and aired before news bulletin or civic education programme had started, it is obvious that a number of people who are ready to listen the

forthcoming news bulletin programme will get an opportunity to listen to that promo but also can get a chance to discuss it because it is timely and address issues that are of concern to them. Such opportunities have not been utilized to convey conservation messages. Timing is another factor which whoever wants to air a certain radio programme to promote or advertise his/her product take into consideration. As shown in Table 6, 87.7% of the respondents show that they listen to radio from 0500-0900 hours and at 1500-2100 hours.

Table 6: Time preference (n=60)

Category	Frequency	Percent
Time preferred for listening radio		
Morning 0500-0900 h and afternoon 1500-2100 h	57	87.7
Morning 0500-0900 h and evening 1200-1500 h	8	12.3
Total	65	100.0

This is because from 0500-0900 hours they are already awake and are preparing themselves to go to their fields or their other mundane and for this reason, they are tuning to radio in order to get various news. Also from 1500-2100 hours most of them have already finished their day's work and are at their homes waiting for food and their radio are also on. This is another timing opportunity that can be tapped by environmental conservation messages in the radio stations because a great number of people who don't go in their fields with radio sets are back to their homes waiting for lunch and later on dinner. It is at this where advertisers are interested in capturing great number of audience can place a message for public consumption.

4.6 Listening to radio programme by the communities

Ninety five percent of respondents have listened to conservation radio programme (Table 7). They acknowledged that the programme is useful since most issues raised are

field based and are challenges community members face in conservation of the environment especially in the area they reside, which is adjacent and close to forest reserve. These show the seriousness and close follow up on the programme activity among respondents, for where they are partly a source of information. The conservation radio programme on Radio Ukweli is aired at 1600-1630h on Friday. Ninety five percent of the respondents as indicated in Table 7 acknowledged being satisfied with the time it is aired because it is when people are back at their homes after their fieldwork.

Table 7: Listening to radio by the communities (n= 60)

Category	Frequency	Percent
Listeners of conservation programme		
Yes	57	95.0
No	3	5.0
Total	60	100.0
Pleased with time aired		
Yes	57	95.0
No	3	5.0
Total	60	100.0
Listening radio with		
Family	57	95.0
Alone	3	5.0
Total	60	100.0
Happened to hear a programme on Conservation		
Yes	57	95.0
No	3	5.0
Total	60	100.0
Media channel found the programme		
Radio	57	95.0
No	3	5.0
Total	60	100.0
Getting enough news of this type		
Yes	8	13.3
No	52	86.7
Total	60	100.0

4.7 Access to newspapers by the communities

Table 8 reveal that only 11.7% of respondents read newspapers while the remaining 88.3% do not read newspapers. Reasons given by respondents' not reading newspapers range from financial inability, limited access and circulation in their local settings. Even the 11.7% who reads newspapers get the papers by borrowing from researchers who go to the area for data collection, teachers who bring newspapers when they come from town to collect their salaries, and relatives from.

Table 8: Access to newspapers by the community members (n= 60)

Category	Frequency	Percent
Ever read newspapers		
Yes	7	11.7
No	53	88.3
Total	60	100.0
Frequency of reading newspapers		
Once per week	1	1.0
Once per month	4	7.3
Not easy	55	91.7
Total	60	100.0
Means of getting newspapers		
Buying	2	28.6
Borrowing	5	71.4
Total	7	100.0

As indicated in Table 8, it is not easy for 91.7% of the respondents to read newspapers while 7.3% read at least once per month and one percent once per week. A number of factors are attributed to the low readership of newspapers among respondents. Firstly, owners of newspapers normally focus in urban areas where they expect good return in sales compared to rural areas, which results into owners/business people dispatch few newspapers in rural areas. Secondly, insufficient infrastructure such as roads make difficult the distribution of newspapers from Dar Es Salaam where they are produced to rural areas

and it takes at least two to three days for newspapers to reach the rural area. Improvement of rural roads will attract newspaper agents to reach many people.

In addition, the purchasing power in rural areas is low due to slow circulation of money compared to urban areas where small and medium enterprises are very high. In rural areas, majority depend on agriculture, which takes time to generate income. Therefore, this cannot allow them to buy newspapers daily because their sources of income are seasonal.

4.8 Use of media by forestry stakeholders

Variables guiding this objective are press releases which have been made available to media, the number of press conferences held, sponsored conservation radio programmes, circulation of organizational newspapers, leaflets, posters, calendars special supplement in newspaper about conservation issues, and making quarterly, mid and annual reports available to media outlets.

Table 9 present data on use of media by foresters. Thirty seven percent of respondents say that it is expensive to buy radio air time or space in newspapers for posting issues pertaining their activities. Thirty three percent cited limited budget to produce Information, Education and Communication (IEC) as the problem while being expensive to make media visit to the field as a constraint was reported by 29.6 % of the respondents.

Table 9: Use of media by forestry stakeholders (n=10)

Category	Frequency	Percent
Reasons for not working with media		
Expensive to buy air time	10	37.1
Limited budget to IEC materials	9	33.3
Expensive to make media visit	8	29.6
Total	27	100.0
Organizations worked with media		
Yes	3	30.0
No	7	70.0
Total	10	100.0
How NGOs/institutions have worked with media		
Sponsoring radio programme	1	50.0
Arranging media visit in the field	1	50.0
Total	2	100.0
Outputs delivered to media		
Press releases	3	50.0
Press conference	1	16.7
Leaflets	1	16.7
Meetings/seminars	1	16.6
Total	6	100.0
Organizations with IEC units		
Yes	3	30.0
No	7	70.0
Total	10	100.0
Media can facilitate organizational activities		
Yes	10	100.0
No	0	0
Total	10	100.0

In spite of the reasons mentioned above, there are some NGOs/Institutions which have managed to work with media. Thirty percent of organizations in Morogoro have worked with media while 70% have not. The percent of organization that are not working with media is big because there is a culture of various development projects/programme which have extension components and very well documented for implementation. In some cases such information remain in theory and not in practise. There is lack of committment of various development practitioners to invest in information management and dissemination and even to some it is not a priority. Information dissemination requires financial and

technical commitments and that is why some institutions have committed financial and technical resources in formulating communication strategies to ensure that organizational activities are streamlined and communicated to different levels of stakeholders and in appropriate formats.

NGOs which managed to do work with media have communication strategies and Information Officers responsible with its implementation. They have been sponsoring radio programmes. Some of them have been able to provide press release, sometimes holding press conferences and when possible, arranging meetings with reporters. But also some have managed to arrange press field visit to locations where they are implementing their activities. All these are very well documented in their communication strategies.

Press visit for journalists from the national media and abroad can be and is a very powerful tool to gain support and visibility for forestry projects and programmes. Successful press visits provide organizations with friends for life. However, press visits also tend to reveal the weaknesses and problems of projects and programmes that make many projects and programme managers/coordinators to dislike the press visits.

Most journalists have a positive attitude towards development aid and towards projects and programmes in the field. They are very keen on aspects that are important in the public debate such as whether or not the money really goes where it should be. In other words, journalists may provide information to the public on how bureaucratic or corrupt is the receiving government or organization. If the money truly being spent wisely and effectively. If programme beyond doubt serving the needs of poor people. If clients are being treated with respect and any change on the client's quality of life. However, such

criticisms by media might be hampering them to be invited by not only forestry organizations but also many other development projects/programmes to pay field visits.

Furthermore, inadequate preparations in arranging media visits causes poor output for journalists because the responsibilities, needs, and interests of journalists are different from those of politicians, policy makers, or parliamentarians. It is therefore not a good idea to combine visits of these groups. Similarly, radio, television, and print media journalist have different requirements and should constitute separate groups. Such kind of critical preparations are usually not taken into considerations that result inadequate appreciation of the usefulness of media visits.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 Overview

The main objective of the study was to examine the role of mass media in conserving forests of the Uluguru mountains in order to achieve sustainable management of the biological resources for the benefits of present and future generations. The study specifically aimed at identifying the mass media involved and issues covered in the media with regard to conservation that are reached by the local communities who reside close or adjacent to forests reserves but encroaching protected areas to improve their livelihoods.

Content covered in media was also determined while constraints, which in one way or another are impediment to the mass media, were also identified. Access to media by local communities was also determined. It was also determined how forestry stakeholders have exploited the mass media as a partner and tool in implementing their activities to reach the large number of beneficiaries timely but also with right information in conserving the Uluguru mountains.

5.2 Conclusions

The following conclusions are made from the findings of this study:

- a. Morogoro has a number of media outlets, which have not been utilized fully to disseminate environmental information in general, and forestry information in particular. Despite the fact that there are three-radio stations in the region, only one has been used by a single forestry organization, which in one way has limited projects coverage. A number of field based radio programmes have been covered and

journalists have managed to make field visits to ascertain activities of the organization being implemented and getting views and comments from the sole recipients of the conservation projects. Such kind of radio programmes are very informative and educative because they provide platforms for communities who are living around the forest reserves or adjacent and the general public at large to air their views, share information, discuss and debate the way forward to conserving their environment.

- b. Newspapers selected have covered a number of articles in terms of editorials, letters to the editor, features, special supplements, columns, ordinary news but also cartoons and pictures, which have been covered beyond what the Eastern Arc Information, Education, and Communication strategy aims per year in local media.
- c. Data collected from radio and newspapers were extensively assessed on how they are being delivered to the community. In this case, the content covered is within the framework of the Information Education and Communication Strategy of the Eastern Arc Mountain Forests of Tanzania. This is an important mechanism to achieve public education in which media not only features prominently as a communication tool but also as a partner. Investing in communication about the values of the Eastern Arc mountains forests and raising the level of awareness at local, national, and international levels is vital.
- d. Journalists have encountered a number of constraints during the course of performing their duties including bureaucracy by institutions and NGOs dealing with forest activities in the region. Another impediment acknowledged by media practitioners is

the complexities of the field especially tough technical jargons, which sometimes become hard to digest for public consumption.

- e. On people's access to media, the study has shown that majority of the respondents have access to media especially radio, followed by posters and leaflets. In addition, majority of the households own radio sets thus channeling conservation messages through radio can reach a large number of communities in the area.

- f. The use of mass media by forestry stakeholders and other institutions dealing with conservation is low. Among 10 respondents from organizations and institutions, only one of them has utilized the media by sponsoring a radio programme, arranging media visits in the field where the organization is running conservation activities. Other organization/NGOs have not managed to do so due to various reasons including limited budget to produce Information Education and Communication materials but also lack of enough funds to buy airtime and space in newspapers.

5.3 Recommendations

This study recommends the following;

- a. Forestry and other environmental conservation stakeholders should acknowledge that media has the power to educate, to inform and to change people's attitudes, perception and even directions in making decisions. Foresters and other environmental conservationist and journalists as professionals should work as partners in addressing issues about forests conservation. It is true that media alone cannot achieve success without working in partnership with respective stakeholders. That is why using the power of communication such as mass media is one of the most important and critical

challenges for any environmental organization that wants to effectively change the habits and behaviors of a crowd, a nation, or even the world. Therefore, forestry and other environmental conservationists organizations should effectively get the conservation messages out into the public arena to attract allies, convert foes, and win the minds and hearts of those in power through media. Messages should be multiplied in a sense that there is no single, more effective way of taking the conservation message to the masses than through the media. Moreover, by targeting different strata and hierarchy of media, environmental organizations will be able to reach the audience that is most important to them at that moment- from rural farmers to government decision makers.

- b. Working with journalists: Although the ultimate goal of an environmental organization may be to interact with the media as a whole, that work truly begins on an individual level. While it may be self-evident, organizations must work with individual journalists and get to know journalists as people if they ever hope to have an effective press outreach. This can be done in four areas of interaction with journalists, which are on going media outreach, field visits, environmental journalism training, awards, and competitions.
- c. Ongoing media outreach: This is one of the most important interactions a conservation organization and media can have, which is open and free exchange of information. Ongoing coverage and daily exchange of information are the bread-and-butter of media outlets and a key part of having an effective communications team. Ongoing media outreach means interacting with journalists on a regular basis and not just when there is a pressing story for respective organization, which needs publicity in the next

morning's papers. It is recommended that outreach for journalists in the field should be strengthened to acquaint themselves of actual activities carried out.

d. Field visits are another key element to producing solid media coverage for the environment. It is hard work for journalists to cover the great outdoors from the confines of the cubicle in their metropolitan newsroom. That is why it is so important for journalists to visit sites where conservation is taking place and can talk to experts in the field and communities being affected by the conservation programmes and projects. Unfortunately, media outlets in many countries including Tanzania simply do not have the resources to send their journalists to the field. That is why it is important for organizations to consider supporting journalist field visits by allocating funds for press visits. It is recommended that field visits for journalists in the field should be strengthened to acquaint themselves of actual activities carried out.

c. Journalism training: Another key pillar of solid environmental journalism is education and training. Journalist should be provided with training on issues about forests and environment at large. This will increase a number of specialized environmental reporters in Tanzania media outlets. Forestry organizations should hosts training seminars and workshops for journalists in partnership with Journalist Environmental Association (JET) and higher learning institutions such as St. Augustine University of Tanzania, which offer short courses on environmental journalism to build the capacities of journalists' hence increasing wide and focused coverage of forestry in particular and environment at large. Training on environmental journalism should be offered to journalists frequently to increase their field knowledge.

- f. **Awards and competitions:** Another good way of encouraging increased coverage of issues that are important to conservation organizations is by sponsoring an award. The purpose of the award is to recognize and reward outstanding local and international environmental reporting, to increase, and improve environmental coverage both in local and in international media outlets. One of the primary philosophies of the award is that journalists should be rewarded with opportunities for capacity building and professional development. For this reason, the top prize every year is an all-expenses-paid trip to participate in an international environmental journalism gathering. In this case, the Eastern Arc Endowment Fund, Tanzania Forest Conservation Group (TFCG) Tanzania Forests Association (TAF) and the Ministry of Natural Resources and Tourism (MNRT) should take into consideration of having such competition award for Tanzania local and international media outlets. It is therefore recommended that organization/NGOs dealing with conservation sponsor awards and competitions.
- g. **Press Clubs:** Currently there are more than 15 Journalists Press Clubs in Tanzania which are more organized. Journalists should be empowered in terms of expertise and funds to launch their own media outlets such as local weekly newspapers to cater for the demand and needs of news and information so that issues such as conservation feature prominently in their respective areas. In this case, Morogoro Press Club should be empowered in terms of resources to launch its environmental newspaper, which should be covering issues with regard to conservation at large, particularly the potential Uluguru mountains that have been just mentioned to be protected area as a whole.
- h. It is recommended that environmental organizations should have specialized communication officers to deal with issues with related to media in order to unpack and

disseminate news and information to the mass media in appropriate ways. Currently a number of public and private offices are recognizing the role of mass media and are therefore employing Public Information Officers in their offices. This should be done also in environmental organizations so that Information, Education and Communication units/departments are able to deliver the services, as they are required to media outlets and the public at large.

- i. The relationships between journalists, public and private offices should be enhanced. Journalist should not be seen as enemies when they visit offices searching for news, but they should be given mutual collaboration as determined partners. The actual role and responsibilities is to work together in order to attain sustainable achievements of the organization and conservation at large.

5.4 Further research

Areas, which require further research, include, integration of the mass media with environmental variables, the impact and the performances of Information, Education and Communication Strategies in environment areas particularly forests. This will give the basis and show an entry point for media practitioners and natural scientist to work together in conserving the environment.

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APPENDICES

Appendix 1: Household questionnaire survey form

Household No.....

Date.....Division.....

Ward.....Village.....

Section A:

1. Household Baseline Data

Name of respondent.....

Sex:

- | | |
|-----------|-----|
| 1. Male | () |
| 2. Female | () |

Age

- | | |
|----------|-----|
| 1. 18-34 | () |
| 2. 35-44 | () |
| 3. 45-60 | () |

Marital status

- | | |
|-----------------------|-----|
| 1. Single | () |
| 2. Married | () |
| 3. Divorced | () |
| 4. Separated | () |
| 5. Widowed | () |
| 6. Other specify..... | |

1.5 What is your highest level of education?

- | | |
|----------------------------------|-----|
| 1. No formal education | () |
| 2. Primary school | () |
| 3. Secondary education | () |
| 4. Post secondary non-university | () |
| 5. University | () |
| 6. Others (specify)..... | |

1.6 What is your occupation?

- | | |
|--------------------------|-----|
| 1. Employment | |
| 2. Business | |
| 3. Farming | () |
| 4. Others (specify)..... | |

Section B:**2. Socio-Economic Status - Land use History****2.1 How was land of your farm holding acquired?**

1. Inheritance
2. Bought
3. Village offer
4. Clearing natural forest ()
5. Others (specify).....

2.2 How big is your family's farm?

1. Less than one acre ()
2. 1-5 acres ()
3. 6-15 acres ()
4. More than 15 acres ()

2.3 Is it possible to get more land?

1. Yes
2. No ()

2.4 How is additional land acquired?

1. Buying ()
2. Bush clearing in open land ()
3. Clearing forest reserve ()
4. Others (specify).....

Section C: Part One**3. Media accessibility and Radio listening by the communities**

Circle the correct answer(s) only?

3.1 How do you get news (Here you can circle more than one answers)

1. Family member (s)
2. Teacher
3. Radio
4. Newspaper
5. Posters
6. Leaflets
7. Folk media
8. Others (specify)

3.2 Do you have a radio set in your home?

1. Yes
2. No
3. Yes but it is broken

3.3 Do you listen to radio?

1. Daily
2. 2-3times per week

3. Once per week
4. Occasionally
5. Hardly ever
6. Week ends only
7. Never

3.4 Which radio station do you listen to

1. Radio Ukweli
2. Radio Abood
3. Radio Iman
4. Other (specify)

3.5 At what time do you listen to radio?

1. Morning 05-09am and afternoon 03-09pm
2. Morning 05-09am and afternoon 12-03pm
3. Morning 05-09am and afternoon 06-09pm
4. After 09pm
5. Full time 24hours

3.5 Among the following radio programmes which ones you find to be most interesting according to your test of preferences

1. News and Civic Education
2. Sports and Music
3. Happy birthdays
4. Others (specify)

3.7 Do you like environmental conservation education programmes?

1. Yes
2. No

3.8 Are you pleased with the schedule (timing) of this radio programmes?

1. Yes
2. No

3.9 Do you listen to radio?

1. Alone
2. With family
3. With friends
4. With neighbors
5. At the shop
6. In communal listening room
7. In another form (specify)

3.10 Have you ever listened to radio programme about conservation?

1. Yes
2. No

3.11 Do you get enough news of this type?

1. Yes
2. No

3.12 Have you ever heard about participatory forests management?

1. Yes
2. No

3.13 If the answer for the above question is yes, in which media did you hear read

1. Radio
2. Newspaper
3. Village meetings
4. Leaflets
5. Posters
6. Other (specify)

Part Two: Newspaper accessibility and reading by the communities

3.1 Do you read newspapers?

1. Yes
2. No

3.2 If yes, how often do you read?

1. Daily
2. 2-3times per week
3. Once per week
4. Once per month
5. A couple of times per year

3.3 How do you get newspaper?

1. By buying
2. Borrowing
3. In reading rooms & school libraries
4. In other forms (specify)

Appendix 3: Questionnaires for NGOs and Institutions

Name of the institution/NGO: _____

Area of coverage: _____

Project beneficiaries: _____

Project duration: _____

1. Have your organization in one way or another worked with media institutions?

1. Yes
2. If no, why?

2. Reasons for working with media

1. Expensive to buy air time
2. Limited budget to IEC materials
3. Expensive to make media visit in the field

3. If the answer is yes for question no. 2 how?

4. How institutions have worked with media

1. Sponsoring radio programme
2. Arranging media visit in the field
3. Other (specify)

5. Do you have a unit/component of Information Education and Communication (IEC) in your organization/institution?

1. Yes
2. No

6. If the answer is yes, what standard outputs are being produced with regard to IEC

Unit/component to your beneficiaries?

1. Press releases
2. Press conferences
3. Media visit
4. Brochures
5. Leaflets
6. Meetings/Workshops

7. Do you think media can compliment/facilitate some of your activities, which focus on conservation?

1. Yes
2. No

Appendix 4: Identification of deforestation by media practitioners

1. Are you are that there is deforestation at mountains?
 1. Yes
 2. No

2. What do you think could be the reasons?
 1. Bushfires
 2. Agriculture
 3. Charcoal making
 4. Building posts
 5. Hunting
 6. Negative attitudes
 7. Other (specify)

3. Have you covered issues about conservation on mountains?
 1. Yes
 2. No

4. How do you find environmental reporting in your field?
 1. Complex and challenging
 2. Other (specify)

5. Have you encountered any constraints that have restricted you to cover forest conservation issues?