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Conservation and Management of the Eastern Arc
Mountain Forests Project

**Towards a Communication Strategy for the
Eastern Arc Mountains – results of a stakeholder
consultation process**

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Prepared by

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Executive Summary

The Eastern Arc Mountain Forests are found across 12 different mountain blocks (North and South Pare, West and East Usambara, Nguu and Nguru, Uluguru, Ukaguru, Malundwe, Rubeho, Udzungwa and Mahenge), ranging from Southern Kenya / Northern Tanzania to southern Tanzania. The Eastern Arc Mountain Forests in Tanzania are one of the world's most important areas for the conservation of biodiversity.

The Conservation and Management of the Eastern Arc Mountain Forests (CMEAMF) Project which is the third component under the Tanzania Forest Conservation and Management Project (TFCMP) of the Ministry of Natural Resources and Tourism (MNRT) is a consortium effort between government departments and NGOs with the aim of achieving the sustainable conservation of the forests. The Tanzania Forest Conservation Group (TFCG) and CARE International in Tanzania are NGOs contracted by the MNRT to undertake parts of this major project, all with financial support from UNDP / GEF.

Within CMEAMF the Tanzania Forest Conservation Society was contracted to develop an Information, Education and Communication Strategy for the Eastern Arc Mountains. One part of that strategy development process involved visiting districts and village around the Eastern Arc to find out what people towns and the rural areas thought about the Eastern Arc, what they knew about the values of the forests, and how they received information that they believed to be true.

The report presents the findings from visits to central government officers, senior staff in relevant NGO's and district officers, traders, and communities in six districts in the Eastern Arc Mountains, and other key Eastern Arc stakeholders who are based in Dar es Salaam. The six Eastern Arc districts visited were, Mpwapwa, Kilombero, Same, Handeni/Kilindi, Muheza and Iringa /Kilolo. This data report provides a record of the material collected from these field visits as a resource for different Eastern Arc stakeholders such as central government, local government, civil society organisations, development partners, Eastern Arc Mountain communities, environmental education practitioners, politicians, general public, media and International conservation organisations. The material contained within this report has been used to develop the CMEAMF Information, Education and Communication (IEC) strategy for the Eastern Arc Mountains forests, which is available online at www.easternarc.or.tz and at www.tfcg.org.

A variety of participatory methods were used to collect information during the visits, including: Questionnaires, Focus Group Discussions, Semi- Structured Interviews, Village Mapping, Information Source Trust Ranking, Pair-wise comparison of literature based materials, Preference of Audio Visual Methods, Forest Walks, Personal Observations and Communication Mapping.

The results from each of these methods are presented in full in this report. In summary they show that:

- 70% of Eastern Arc community groups **had not** heard of the term 'Misitu ya Milima Tao la Mashariki'. In comparison, 72% of district and ward staff, traders and NGO representatives **had** heard of this term or the English equivalent - Eastern Arc Mountain Forests.
- The practical values of forests were well understood by all stakeholders, the most commonly mentioned forest value was timber, followed by hunting, water conservation, environmental/ climate amelioration, fuel wood, food, animal habitat, tourist's attraction, building materials, soil conservation, mineral prospects, cultural/ spiritual, unique biodiversity, beekeeping, beauty and medicinal plants values.
- Some indirect forest values were not well appreciated e.g. none of the stakeholders within the Eastern Arc mentioned hydropower production as a value of forests.
- Only 11% of District Staff but 50% of community groups that took part in the forest walks mentioned biodiversity as a forest value.
- Knowledge of the **uniqueness** of Eastern Arc biodiversity was generally very low.
- 91% of focus discussion groups (Eastern Arc Communities) had not seen a copy of the 1998 forest policy or 2002 Forest Act or any summaries of the same.

- 50% of district staff were aware of the 1998 forest policy and 2002 Forest Act, but many of these (50%) had not seen a hard copy). Worryingly key offices such as district planning officers were not familiar with the new forest policy or Act.
- Staff within key stakeholder Ministries (Water and Livestock and Energy and Minerals) did not have copies of the new forest policy and act and were thus unfamiliar with its contents.
- Eastern Arc Communities would like information / training in: tree planting, nursery establishment and various income generating activities.
- Eastern Arc Communities (forest adjacent) have a strong cultural link to forests with a wealth of information, stories, customs and traditional practices involving or about the forest.
- There was a clear feeling in many villages that incentives to manage the forests were lacking at the community level. This was expressed in many of the forest adjacent communities who commented that 'they' are responsible for managing the forests and they suffer the negative impacts of being near the forest (in particular increased crop raiding by vermin) but that they are not compensated for their losses.
- There is a difference in the attitude towards forest loss between Eastern Arc Communities and Government staff. 90% of district and ward staff, traders and NGO representatives compared to 62% of Eastern Arc Community Groups said there is less forest than 10 years ago.
- There was broad agreement between stakeholders on forest threats, all said the greatest threats to Eastern Arc Forests are:
 - Fire
 - Illegal Logging
 - Illegal Hunting
 - Poor agricultural practices and encroachment
- 85% of Eastern Arc Community Groups said the incidence of forest fires is decreasing. 57% of District Staff said that the incidence of forest fire is decreasing. 83% of district and ward staff, traders and NGO representatives said the incidence of forest fire is decreasing. Evidence from satellite data shows that the number of fires in the forests is increasing. The belief that fires are decreasing is probably due to the fact that these stakeholders have activities to limit fires and there is a natural tendency unless presented evidence to the contrary to believe ones actions are having an effect.
- Radio Journalists and School Teachers are generally well trusted sources of information. In some areas, District Commissioners, MP's and Video are very highly trusted sources of information in some areas and in other others are not trusted.
- Radio is the preference form of audio visual communication in Eastern Arc Communities. Popular radio stations are: (in order of preference) Radio Free Africa, RTD, Sauti ya Injili, Radio 1, Radio Tz, Radio Abood, Harakati.
- 82% of sampled households had at least one person who had completed primary school and is therefore able to read and write. However there is a gender bias in education, with female headed households likely to have lower education levels and less likely to have a literate person in the household. (Village mapping)
- Only two of the 45 people interviewed mentioned listening to radio programmes about forests, these were the Radio Tz programmes aired once a week.
- On average 69 % of households surveyed owned a radio, although this varies between villages with only 54% of households in Kidabaga owning a radio to 83% in Muhero. Male headed households are more likely to have a radio than female headed households. 74% of male headed households owned a radio compared to only 45% of female headed households.

- 78% of Eastern Arc Community groups, 54% of District staff and 82% of district and ward staff, traders and NGO representatives do **not** receive any environmental newsletters, magazines or other written materials.
- In the six districts visited only two had environmental clubs, three in Same and three in Kilombero. It is noted that the district staff in other districts may simply be unaware of such activities.

Three major problems and constraints to sustainable conservation in the Eastern Arc were identified during the field study and discussions:

1. *Lack of resources*

- Lack of resources is severely limiting forest management activities at all levels. It is important that the IEC strategy includes activities that show decision makers how important the Eastern Arc Forests are to the national economy and try to encourage resource mobilisation for their management.
- There is a lack of investment in environmental education / communication in Tanzania with a resulting lack of skills. Environmental education in formal education is under-resourced in terms of training and materials for teachers to enable them to use interesting and innovative methods.

2. *Poor coordination of environmental issues and education – at all levels*

- During national level meetings it was clear that MNRT is not communicating an environmental agenda to other ministries. Conflicts between environment related policies and the activities of ministries exist, efforts are needed to harmonise these at the district and national level. Coordination between the different sectors at district level is especially important.
- There is a lack of an organisation leading or coordinating environmental communication or education in Tanzania, so such activities are occurring in isolation of each other. It is essential that efforts are coordinated to avoid duplication of activities and waste of precious resources.

3. *Poverty*

- Poverty reduction is central to all activities and initiatives in Tanzania. The Eastern Arc Mountain Forests contribute to poverty alleviation in direct (forest products contribution to households) and indirect ways (environmental services such as climate control and water catchment providing water for hydropower). Proper management of the forest resources is essential to poverty reduction.
- There is a need at the local level for practical and direct measures that will assist in alleviating poverty many of which are beyond the scope of an Information, Education and Communication strategy.

A discussion of the findings focusing on Knowledge, Attitudes and Practices (KAP) is given.

Knowledge about the unique biodiversity of the Eastern Arc forests was generally very low while there was more awareness of the role that the forests play in water catchment.

- 70% of Eastern Arc community representatives said they had **not heard** the term Eastern Arc Mountain Forests or Misitu ya Milima ya Tao la Mashariki'?
- 72% of government staff, traders and NGO representatives said they **had heard** the term Eastern Arc Mountain Forests or Misitu ya Milima ya Tao la Mashariki'.
- 5 % of Eastern Arc community representatives mentioned biodiversity as a forest value.
- 11% of District staff mentioned biodiversity as a forest value.
- 79% of Eastern Arc community representatives mentioned water as a forest value.
- 63% of District staff mentioned water as a forest value.
- 91% of Eastern Arc community representatives said they had **not seen** copies of the forest policy and/or laws
- 71% of district, ward and NGO staff **knew about** the new forest policy and laws but only 46% had seen copies.

Recommendations for assessing change against the baseline data presented in this report are given using the following criteria.

- Criteria 1: Knowledge about the term Eastern Arc Mountains.
- Criteria 2: Awareness of the importance of Eastern Arc biodiversity and its uniqueness.
- Criteria 3: Knowledge of new forest policy
- Criteria 4: Perception of threats to forest – fire
- Criteria 5: Perception of threat of loss of forest area
- Criteria 6: Access to environmental education materials.
- Criteria 7: Level of informal and formal environmental education activities

Seven issues or themes were highlighted for the Information, Education and Communication (IEC) strategy to address.

1. Inadequate knowledge about the Eastern Arc Mountain Forests among the general public / leaders / international community and communities living near the forests.
2. Policy / Laws are unknown or are inadequately implemented
3. There is a need to expand formal and informal environmental education activities and invest in information education and communication work.
4. There are inadequate incentives to people who effectively manage the forests.
5. There is poor accountability among forest managers.
6. There is weak information sharing and inadequate coordination between ministries, natural resource staff, NGOs etc.
7. Environmental service of the Eastern Arc Mountains need to be advocated to the general public and decision makers with a view to increasing resources available to protect and manage Eastern Arc Forests.

These were consolidated into 3 objectives that form the basis of the IEC strategy.

Objective 1: To increase key stakeholders understanding of the value of Eastern Arc Mountain forests, the threats that they currently face and the importance of investing in their sustainable management.

Objective 2: To raise awareness on the National Forest Policy and Act and to encourage feedback and participation from Eastern Arc stakeholders.

Objective 3: To guide stakeholders to implement formal and informal environmental communication and information sharing activities in a more effective and coordinated way within the Eastern Arc.

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ACRONYMS

CEPA	Communication, Education and Public Awareness
CEPF	Critical Ecosystem Partnership Fund
CI	Conservation International
CMEAMF	Conservation and Management of the Eastern Arc Mountain Forests Project
DFO	District Forest Officer
DNRO	District Natural Resources Officer
EA	Eastern Arc
EE	Environmental Education
FBD	Forestry and Beekeeping Division
FR	Forest Reserve
GEF	Global Environment Facility
GoT	Government of Tanzania
HH	Households
1°	Primary
2°	Secondary
IEC	Information Education Communication
ITV	Independent Television
KVTC	Kilombero Valley Teak Company
MMEM	Mpango wa Maendeleo ya Elimu ya msingi
MNRT	Ministry of Natural Resources and Tourism
NEECS	National Environmental Education and Communication Strategy
NEMC	National Environmental Council of Tanzania
NFP	National Forest Programme
PCB	Prevention of Corruption Bureau
PFM	Participatory Forest Management
RFA	Radio Free Africa
RTD	Radio Tanzania Dar es Salaam
TANAPA	Tanzania National Parks Authority
TFCG	Tanzania Forest Conservation Group
TVT	Television ya Taifa
UNDP	United Nation Development Programme
WCST	Wildlife Conservation Society of Tanzania
WWF	World Wide Fund for Nature

1 Introduction

1.1 What this report is about?

This report summarises the data collected during visits to twelve villages in six eastern arc districts, and key stakeholders based in Dar es Salaam. The data collected was used to guide the formulation of the Information Education and Communication Strategy and a baseline for doing monitoring and evaluation. The report was prepared by a team from the Tanzania Forest Conservation Group implementing a component of 'Conservation and Management of the Eastern Arc Mountains Forests' a project of the Forestry and Beekeeping Division of the Ministry of Natural Resources and Tourism.

The broad goal of the stakeholder consultation process was as follows:

To seek to bring together multiple stakeholders with interests in the Eastern Arc to develop a consensus about how best its biodiversity is to be conserved and to elaborate that consensus as a comprehensive and wide ranging strategy for the Eastern Arc.

The more specific objectives were:

- To identify the key audiences and stakeholders nationally and internationally who should be engaging in information sharing, education and communication about the Eastern Arc Mountain Forests of Tanzania.
- To identify existing information sharing, education and communication processes through the review documents relevant to the Eastern Arc Mountains and incorporate them in the strategy document.
- To integrate internationally recognised best practices for information sharing, environmental education and communication in the strategy document.
- To identify key messages and information that needs to be communicated to different audiences.
- To identify existing knowledge, attitudes and practices (KAP) of different stakeholder groups in the Eastern Arc and incorporate their views in developing the education, information and communication strategy

This report provides a summary of the data collected during field investigations that were undertaken to provide material to allow the development of the Information, Education and Communication Strategy.

1.2 Who is this report for?

The report is intended to be used for reference by people working for the Eastern Arc Mountains Project, Tanzanian Government and Civil Society organisations involved in communicating about the Eastern Arc Mountain forests. It summarises methods used in data collection, the main results and some conclusions.

1.3 How is the report organised

This report is organised into five sections. The first section covers a short review of the relevant policies and laws that support environmental education in Tanzania, and environmental education strategies that have been developed by various parts of government, NGOs, and projects. The second section describes the various methods used during the data collection and analysis phases of this project. The third section summarises the main results from the different types of field data collection. Within this section there is also a summary presentation of the main Knowledge, Attitudes and Practices in the Eastern Arc Mountains. The fourth section presents a discussion of the main findings of the report, which is followed by a summary of the main conclusions of the field work in terms of what needs to be included within an Information, Education and Communication Strategy for the Eastern Arc Mountains.

1.4 Description of the Eastern Arc Mountain Forests of Tanzania

The Eastern Arc Mountain Forests in Tanzania are one of the world's most important areas for the conservation of biodiversity. Over 100 larger animals and over 800 plants are endemic to the Eastern Arc, being found in no other area of the world. Many of these species are threatened with extinction because of the clearance and degradation of the remaining small and fragmented forest areas. Indeed the Eastern Arc has one of the highest risks of species extinction anywhere in the world.

The Eastern Arc also provide the water catchments for the major cities of Dar es Salaam, Tanga, Iringa and Morogoro, and over 50% of all the electricity in the country is generated in hydropower schemes using water from these mountains. More than a million people also live in the mountains, where they sustain themselves and grow food crops to feed urban inhabitants hundreds of kilometres away.

From North to South, the Eastern Arc Mountains are the North and South Pare, West and East Usambara, Nguu, Ukaguru, Nguru, Uluguru, Malundwe, Rubeho, Udzungwa and Mahenge Mountains.

The Eastern Arc Mountains are found in the Districts of Mwanza, Same, Lushoto, Korogwe, Muheza, Kilindi, Mvomero, Morogoro, Mpwapwa, Kilosa, Kilombero, Kilolo, Mufindi and Ulanga. These cover parts of Kilimanjaro, Tanga, Morogoro, Dodoma and Iringa regions.

The landscape of the Eastern Arc Mountains is a mosaic of farmlands, villages, government and village forest reserves. More than 70% of the original vegetation of the Eastern Arc has been converted to agriculture, mostly over the last one hundred years. Agricultural expansion still poses the largest threat to the long term survival of the forests and other natural habitats. However, a number of other threats are more immediately obvious when visiting the area. The first is uncontrolled fires that sweep up slopes and can enter and damage the forests, a second is mining for gold and gemstones along streams, a third is unsustainable harvesting of timber trees and firewood, and a fourth is unsustainable hunting (especially of larger mammals).

More than 150 forest reserves and two national parks (Udzungwa and a small part of Mikumi) protect forest and grasslands across the Eastern Arc, covering over 650,000 ha of land. This is around 25% of the total area of the Eastern Arc. Sub-montane or montane forest covers approximately 350,000 ha of the reserved and non-reserve land, or about 15% of the area of the Eastern Arc.

Most natural habitat, especially forest, only remains within government protected Forest Reserves, and within the Udzungwa National Park and the Amani Nature Reserve. Smaller areas of forest are also protected by villagers in traditional forest patches, clan forests, sacred forests and burial groves. In some areas village protection of remaining forest patches is increasing. But the funding available from national, district or village authorities for forest management is tiny, and there are few sustainable financing schemes in place to solve this issue. Moreover, local people are scarcely involved in management, and thus have little vested interest in seeing forests conserved.

1.5 Conservation and management of Eastern Arc Mountain Forests project

The Eastern Arc Mountains Conservation and Management Project (CMEAMF) is formulated as a consortium effort between government departments and NGOs. The Ministry of Natural Resources and Tourism – Forest and Beekeeping Division has overall responsibility for the project which is funded by the Global Environment Facility. CARE Tanzania and the Tanzania Forest Conservation Group (TFCG) are responsible for component of the project, in collaboration with Districts, and other locally based agencies

such as the Wildlife Conservation Society of Tanzania (WCST) and the Uluguru Mountains Agriculture Development and Environment Project (UMADEP). Collaboration and sharing of tasks is also undertaken with a broader range of government and NGO projects, in particular with the Critical Ecosystem Partnership Fund from the U.S.A, and the World Wide Fund for Nature – Tanzania.

The project has a single broad aim: *to develop and implement conservation strategies that ensure the sustainable conservation of the Eastern Arc mountains, both for the conservation of forests and biodiversity, but also to ensure the livelihoods of the more than a million people living on the mountains and the millions more who are dependant on the water and power coming from these areas.*

A holistic strategy covering the entire mountain range will be developed and implemented, including the following elements:

- A participatory process to develop an agreed strategy for long term conservation in these mountains.
- Improved status of the forest reserves within the Eastern Arc mountains, including the recognition of forest reserves as protected areas for biodiversity conservation.
- Improved levels of sustainable financing for the management of the reserve network and the improvement of the livelihoods of forest-adjacent communities.
- Mechanisms to monitor the status of the forest and biodiversity resources, the ecological services provided to people (water and power supply), and the livelihoods of local people.
- A broad education programme that provides appropriate messages to various stakeholders and allows them to make informed decisions on the use of forest resources.

1.6 Tanzania Forest Conservation Group

Tanzania Forest Conservation Group is responsible in developing an Information, Education and Communication strategy which will be a guiding tool in the conservation and management of the Eastern Arc Mountains. This report summarises the findings of a baseline study conducted to guide the formulation of the Information Education and Communication Strategy.

2 Review of relevant policies and strategies

In order to understand the context within which the Eastern Arc Mountains Information, Education and Communication strategy will work, TFCG undertook a brief review of government policies and existing communication strategies.

2.1 Policies

Tanzania has a number of policies developed by different government sectors, many of this impact on the conservation and management of Eastern Arc Mountains Forests. These are summarised very briefly below:

2.1.1 National Forest Policy (1998)

The National Forest Policy was approved in 1998 (Government of Tanzania 1998). Forest resources will be managed by the forest sector and other stakeholders. Main features include Participatory Forest Management (PFM), decentralization and privatization. Policy recognises rights and roles of all stakeholders.

2.1.2 Land Policy (1995)

The Land Policy was approved in 1995 (Government of Tanzania 1995) and provides incentives for efficient use of land and its resources. The policy encourages users to acquire title deeds in form of Rights of Occupancy so as to reduce land use conflicts and increase the value of land. This links land development with other policies of all land based sectors.

2.1.3 Wildlife Policy (1998)

The Wildlife Policy of 1998 (Government of Tanzania 1998), addresses the development and conservation of wildlife resources focusing on improving the conservation, protection and management of wildlife resources. Strengthening and improving the integration of wildlife conservation and utilization with rural development, and promoting and encouraging private sector, local communities and NGOs participation in wildlife conservation and sustainable utilization, in and outside protected areas.

2.1.4 Tourism Policy (1997)

The Tourism Policy of 1997 (Government of Tanzania 1997) highlights the potential contribution of tourism to the economic and social development of the country. The policy recognises that sound environment is a key to meaningful growth of the tourism industry in the country, hence, the necessity for environmental education.

2.1.5 Agricultural Policy (1997)

The Agricultural Policy of 1997 (Government of Tanzania 1997) aims at accelerating growth of production and exports through among others, raising of, income of Tanzanians especially the poor. Developing and introducing new technologies which will increase productivity of labour and land and, providing agricultural support services. The policy has an integrated approach and addresses environmental related matters.

2.1.6 Livestock Policy (1998)

The Livestock Policy (Government of Tanzania 1998) aims at increasing livestock production to attain self sufficiency in food production through long term use of the land. The policy however, mentions that unused land will be developed through bush clearing as one of the management option. This option of vast clearance for creating rangelands gives room for continued degradation of the environment. The policy also advocates for resettlement of livestock owners in overgrazed areas to lower stocked parts of the country. Implementation of this choice is leading to large scale land degradation as well as land use conflicts between grazers and cultivators. These are some policy conflicts that need harmonization.

2.1.7 National Water Policy (2002)

A new Water Policy was developed in 2002 (Government of Tanzania 2002). It aims to develop a comprehensive framework for sustainable development and management of national water resources, having produced a legal and institutional framework for its implementation. Policy aims at ensuring the beneficiaries participate fully in planning, construction, operation, maintenance and management of community based water supply schemes. It seeks to address cross-sectoral interests in water, watershed management and integrated and participatory approaches for water resources planning, development and management. Also, the policy lays a foundation for sustainable development and management of water resources in the changing roles of the government from service provider to that of coordination, policy and guidelines formulation and regulation.

2.1.8 Mineral Policy (1997)

The national Mineral Policy was approved in 1997 (Government of Tanzania 1997). It aims to attract and enable the private sector to take the lead in exploration, mining development, mineral beneficiation and marketing. The role of the public sector will be to stimulate and guide private mining investment by administering, regulating, and promoting growth of the sector.

2.2 Strategies

Communication is increasingly being recognised as an integral part of any organisations work. This is reflected in the government of Tanzania by all ministries being required to produce a communication strategy and the founding of a central communication body.

In addition, non-governmental organisations and even projects are taking a strategic approach to communication. These various strategies dealing with communication, education, public awareness and information create a context into which this strategy should fit. Hence a review of relevant communication strategies was undertaken in order to identify areas of potential overlap (areas for collaboration and synergy) and gaps. In addition the challenges faced by other communication strategies that are similar to challenges faced by this strategy are detailed, so that information sharing on how these challenges are overcome can be shared. A summary of the relevant points are presented.

2.2.1 The Draft National Environmental Education and Communication Draft Strategy (NEES), NEMC (2003)

This strategy has recently been finalised and is not yet being implemented.

Objective 1: Developing and Enhancing Environmental Knowledge, Skills and Practices among the Stakeholders

Strategies:

1. Update and make inventories of all environmental education stakeholders
2. Initiate and enhance the effectiveness of ongoing environmental education initiatives
3. Raise awareness, knowledge competency and skills of stakeholders
4. Plan and initiate new environmental education activities

Objective 2: Enhancing and Improving Awareness and Sensitization of the Public at Large on Environmental Issues

Strategies:

1. Update the state of environmental education activities in the country and prioritize environmental issues problems, and links between poverty and environment.
2. Identify and categorize target audiences
3. Design and formulate relevant environmental education themes/topics and methods
4. Define communication channel to be used
5. Raise awareness as appropriate

Objective 3: Developing and Improving Human Resources on Environmental Education Management

Strategies:

1. Assess and catalogue environmental education activities in formal curriculum
2. Develop training programme for environmental education practitioners
3. Develop programme for facilitating school community relationship
4. Sensitize heads of schools, inspectors and colleges
5. Train media personnel on basic environmental knowledge

Objective 4: Enhancing Support and Commitment in Environmental Conservation

Strategies:

1. Raise awareness of politicians
2. Raise awareness of the government systems, civil society and public at large
3. Sensitize heads of schools, colleges and other institutions,
4. Sensitize local government leaders at all levels

Objective 5: Developing and Improving Learning Support Materials (LSM) on environmental education

Strategies:

1. Appraise the state of affairs as regards to learning support materials
2. Produce, support and enhance production of learning support materials

Objective 6: Collecting, Processing and Disseminating Information on environmental education

Strategies:

1. Identify environmental education reports and activities and disseminate them to environmental education practitioners.
2. Facilitate the establishment of the new environmental education activities in the community
3. Support, encourage, catalogue and document environmental education related information and data on environmental conservation as well as available methods
4. Translate and interpret information and lesson learnt into suitable materials and media for various stakeholders/target groups.
5. Identify ecological status and species data and make appropriate target groups.
6. Disseminate information on appropriate environmental management methods and practices

Objective 7: Coordinate environmental education activities in the country

Strategies:

1. Determine suitable coordination frameworks for implementing environmental education activities
2. Establish and initiate coordination mechanisms

Objective 8: Monitoring and evaluating environmental education activities in the country

Strategies:

- (1) Develop and operationally environmental education monitoring and evaluation mechanism
- (2) Develop Meta database of environmental education practitioners and their institutions

Areas for collaboration

Develop mechanisms to enable supply and distribution of environmental education materials and technology to rural and marginalized communities of the Eastern Arc. Promote of research on IEC among Eastern Arc communities. Create conducive environment of good collaboration/ information sharing with other partners/organisations undertaking environmental education in the Eastern Arc area such as NEMC, WWF, WCST, UMADEP and the district education departments.

2.2.2 VPO, Communication Strategy

Key issues to be addressed by the strategy:

Challenges of implementation

- Institutional linkages and implementation coordination to achieve the desired outcomes /goals
- Limited /inadequate capacities of key distribution /actors limited
- Resources mobilization and little allocation of available resources

Challenges of communication

- Availability and accessibility of information to all citizens
- Capacity building to enable a better flow of information from the community to national levels and *vice versa*
- Information as a right to every citizen.

2.2.3 NFP, Communication Strategy

Strategy finalised, implementation expected shortly.

Key issues to be addressed by the strategy:

- Demand for PFM at local level is low; this was seen to reflect the facts that conservation of local forest resources is not a high priority for poor people
- Low level of knowledge of legal framework of PFM
- Weakness in the capacity for implementation within districts, partly due to inadequate resources and also lack of ability to communicate effectively with local communities.

2.2.4 Wildlife Conservation Society of Tanzania - Information and Communication Draft Strategy (2004)

Key issues to be addressed by the strategy:

- Study on the indigenous environmental conservation knowledge
- Production of environmental education materials for use in implementing the strategy
- Environmental awareness workshops
- Promotion of public awareness through media
- Production of video films on environmental issues
- Facilitating coordination and networking of environmental education
- Electronic communication
- Documentation
- Procurement of environmental related publication
- Drama shows
- Study tours

2.2.5 Communication, Education and Public Awareness strategy for the Malagarasi -Muyovozi Ramsar Site (MMRS) (Hogan and Doody, 2004)

Issues addressed by the 'CEPA' strategy are:

- Inadequate access to published information about natural resources at all levels.
- Inadequate supply of information about the Ramsar Site to relevant stakeholders.
- Weaknesses in skills and methods to communicate about environmental issues.
- Information stalling at higher levels and with most prominent people.
- Limited communication of wetland issues between wetland adjacent communities and the district, region and national levels.
- Inadequate emphasis on environmental issues in formal education.
- Opportunities to increase Regionally, Nationally, and International awareness of MMRS.
- Limited capacity for awareness raising and implementing an education programme.

Activities to address these issues included:

- Production of leaflets with basic natural resources and legal information.
- Supply of ecological books.
- Website training
- Improving information distribution systems.
- Radio Programmes
- Environmental training courses / Environmental Education for primary and secondary schools.
- Supporting writers and journalists
- Improving internal communication and civil participation.
- Educational merchandise.

This strategy has been accepted by the Wetlands Unit and is being partly implemented.

3 Methods

3.1 Sampling strategy

In order to gather information required to design and appropriate Information, Education and Communication Strategy it was necessary to visit sites in the Eastern Arc, Officers of relevant organisations and Central Government Ministries.

The Eastern Arc Mountains straddle fourteen districts, time and resources allowed for field visits to only six districts for data collection. The districts were selected to ensure a range of situations were sampled. Two main criteria were used in selecting which districts to visit were:

- **External Support to District**

It was known that some districts had received extensive donor support, others are involved in the current PFM process led by FBD, and others have received little external support. The aim was to choose districts that represented the whole range of levels of support given to districts, particularly in relation to natural resources.

- **Geographical location / Mountain Blocks**

The Eastern Arc Mountain Forests are found across 12 different mountain blocks, ranging from Southern Kenya / Northern Tanzania to southern central Tanzania. Districts were chosen along the length of the Eastern Arc in order to include any geographical variation into the sampling and from different mountain blocks.

The six Eastern Arc districts chosen were:

- Mpwapwa
- Kilombero
- Handeni
- Muheza
- Same
- Kilolo

Table 1: Summary of the donor support level, involvement in the PFM process and location along the Arc for each of the chosen districts.

Name of District	Mountain Block	PFM Processes	Donor support
Mpwapwa	Rubeho	Nil	Nil
Kilombero	Udzungwa	Initial	Moderate
Handeni/Kilindi	Nguu	Nil	Little
Muheza	East Usambara	In progress	High
Same	Pare	Initial	High
Iringa/Kilolo	Udzungwa	In progress	High

During the field visits to six districts the following methods were used to collect information to guide the preparation of the IEC strategy.

The selection of Central Government Ministries to whom requests for an interview were made were guided by the stakeholder's analysis (key audiences and actors) and experience gained during the field visits.

Efforts were made to meet with all relevant organisations during the field visit and whilst in Dar es Salaam. The choice of organisations was guided by the list of stakeholders compiled in the stakeholders analysis.

3.2 Stakeholders' Analysis

A preliminary stakeholder's analysis was undertaken prior to the collection of field data in order to:

1. To identify the different groups of people this strategy will be dealing with and who to focus on whilst collecting information.
2. To identify which are the more important groups in terms of impact on the overall aim of the project (i.e. not just the communication strategy) i.e. who are the important groups for us to communicate with?
3. Through the process of the analysis to highlight groups that are not yet represented on our stakeholder list. (May include intra-village level groups).

A simple methodology was used which included the following stages.

1. A list of individual stakeholders was prepared by the project team and utilising the results of other similar stakeholder analyses (e.g. CMEAMF). A stakeholder was defined as persons, groups or organizations with interests in forest conservation in Tanzania and Kenya.
2. Similar types of stakeholders were grouped by the project team (e.g. the various district natural resources offices across the geographical area were grouped into a category named 'District Government').
3. These groups were then used to guide the selection of organisations to visit and formed the basis of the key audiences as defined in the IEC strategy.

3.3 Questionnaire

The questionnaire (see appendix 8.1) is intended for use with District Staff, Ward Staff, Village Leaders, Religious Leaders, Village representatives (mixtures of social groups).

Aim: The aim of the questionnaire is to gather information about IEC activities currently taking place in the area, gain an understanding of levels of awareness and knowledge and find out about preferred means of communication.

Activity: Distribute the questionnaire to staff on arrival in the district make arrangements for its collection prior to departing at the end of the week. For people less familiar with questionnaires read the questions and record responses on the form.

The responses to the questionnaire will be entered into a database for comparison and simple analysis (e.g. percentage of respondents who said X or Z) in order to extract the main themes, issues and comments.

3.4 Focus Group discussions

Aim: To gather opinions on importance of natural resources, commonly used means of communication, important environmental issues, levels of knowledge and awareness.

Activity:

- Introduce yourself and explain the reason for your visit and the purpose of the meeting/discussion.
- Invite everyone to introduce themselves.
- Start the discussion by asking a few of the questions from the semi-structured interview question list (choose appropriate questions for the group you have). If the

discussion goes well and generates interesting and relevant points about communication, environmental awareness, environmental issues let the discussion run. If it stalls or goes off the subject, get it back on track by asking another question from the list (the list is not exhaustive).

- One person should record the main points of the discussion and where possible who expressed which views.

Target: 4 Groups in each village to include one male and one female group, then a selection of the following as available (should not be limited to these only):

- Group of young people (separated by sex).
- Group of older people.
- Group of woodworkers.
- Group of farmers.
- Group of business people/traders.

3.5 Semi-structured interview questions

Note: The following questions can be used during interviews with all stakeholder groups. They are intended to provide ideas for discussion and it is not necessary to pass through each question in turn. Some questions may be irrelevant for certain groups of people.

Activity: During meetings with people use the questions to prompt discussion.

- Record answers / notes of discussion that follows.
- Record details of where the meeting took place, when and who was present including brief details of their background (e.g. XX Village Wazee and leaders, Group of women from Village XX)

3.6 Village Mapping

Aim: To gather information about education (literacy) levels, availability of 'media' and village natural resources.

Activity:

- Ask for a group of people to assist drawing the map, this should include some village leaders, some women, some men and 'key' people in the village who know lots of other people.
- Provide paper and pens.
- Ask the group to select one or two people to draw the map.
- Ask the group to draw a map of every households in the village (or sub-village). For each households collect the following information in table as follows, and indicate details on the map.
- Make sure the group goes house by house and does not skip certain areas or people. Ask about any outlying households.
- Ask the group to then draw onto the map the village's main supplies natural resources and indicate whether these are village/public/government owned. Observe when group are drawing the natural resources of the village – are the areas well known? Is there status well known? Is there much discussion over what constitutes natural resources? Is there a link between forest and water made?
- Enter data into excel spreadsheet and calculate number households with and without a literate person, number of households with a radio, number of households with cassette players. Record observations of natural resource mapping.

Table 2: Example of the information and details to be collected for each house hold.

Number	Head of Households (F) Female (M) Male	Education of Head of Households (P) Primary completed (S) Secondary completed Form IV Or state higher qualifications or final yr of studies. e.g. certificate or Form II	Highest level of education amongst households members (if higher than Head of Households indicate who – wife / children etc.)	Does the households have a radio? (Y) Yes (N) No	Does the radio have a cassette player? (Y) Yes (N) No
1	M	P	Form VI (Child)	N	-
2	M	S		Y	N
3	F	Form VI	Certificate (Child)	Y	N

3.7 Information Source Trust Ranking Exercise

Aim: to identify the sources of information people trust and distrust.

Activity:

- Explain to a participant that on each card is a ‘source’ of information, show a couple of examples.
- Explain that we are talking about any information not just environmental issues.
- Ask the people to quietly read all the cards in front of them.
- Show participants the blank card and offer them the chance to add extra sources of information.
- Give the participants 5 mins to put the cards in order of those information sources they trust the most, to the least.
- Collect details of the participant’s age, occupation and sex.
- Thank the participants and note which order the cards were ranked in onto the table below.

Notes:

Make sure a range of people are included in the sample, try to get equal numbers of male and female, young and old, and if possible a range of occupations.

3.8 Pair wise comparison of literature based materials

Aim: To determine which types of communication materials are preferred by stakeholders and why.

Pair wise comparison - Activity

- Select a group of people to include the following: literate, non-literate, young, adult, elderly, leader, village member.
- Explain the exercise to the group and ask if anyone has any questions.
- Show the group the materials to be compared (a leaflet, a small book, a poster, a magazine and a letter) and briefly describe what each is. I.e. this is a one –page leaflet with text and pictures.
- Taking each person a little way away from the group, lay out the materials and one by one compare each with every other item. (Follow the table below so you don’t get lost).
- Ask with each comparison which item do you prefer as a means of communication and why? Record the answers separately for each person.
- Record the persons name, age, occupation/background and thank them for there time.

Table 3: Pair wise comparison of literature based materials details/information

	Leaflets	Letter	Posters	Small book	Magazine
Leaflets					
Letter					
Posters					
Small book					
Magazine					

By indicating which item is preferred over every other item you can establish which are the preferred forms of literature based information.

3.9 Preference ranking of audio/visual methods

Note: Comparing literature based materials is comparing different types of the same means of communication. This is not the case when comparing different types of audio-visual materials; radio is a different means of communication to TV or drama groups. Thus a simple ranking exercise is suggested. For practicality cards will be used to show different types of audio/visual methods.

Activity:

- Select a group of people to include the following: literate, non-literate, young, adult, elderly, leader, village member.
- Explain the exercise to the group and ask if anyone has any questions.
- Show the group the three cards and explain what is meant by: Radio, Television programmes and drama productions.
- Give each person a set of the three cards and ask them to rank them in their order of preference, ask them to explain why they prefer one over the other. Record the answers separately for each person.
- Record the persons name, age, occupation/background and thank them for there time.

3.10 Walk in the forest

This activity is an informal method that aims to give team members the chance to assess the attitude and knowledge of the group towards forests.

The team will request the village leaders to go for a short walk in the forest to learn about the forest. Request to be accompanied by people that can tell you about the forest history, its uses, plants and animals. Ask for a mixture of men and women to join on the walk. The idea is for the village to show you the forest and teach the team about it.

Team members should try to walk and LISTEN to what the group have to tell you about the forest, asking questions about the plants/animals you see, about the plants that can be used etc can initiate discussion. BUT remember that the purpose is to get an idea of the community's knowledge /attitude to the forest.

After the walk the team members should make notes about the walk and complete the Forest Walk form.

3.11 Personal Observation

Each team member is responsible for taking notes about her/his personal observations about the district / village and people you meet. Things that might be noted include:

- District staff are motivated and keen / or not.
- District staffs are co-operative and able to find data and information quickly and are happy to share records.

- Signs of environmentally friendly activities around the village, e.g. rubbish disposed of carefully, water sources protected, trees planted in public/private areas, zero grazing or livestock, using fuel efficient stoves etc.
- Signs of environmentally unfriendly activities around the village, e.g. piles of fresh cut timber, no trees in sight!.
- Names of enthusiastic people who might be able to be involved in implementing the IEC strategy.
- Feeling about the attitude towards forest management, are people positive, interested, don't seem to care or resentful?

3.12 Analysis of secondary resources of information

This involves the collection and analysis of secondary information such as reports, historical data (about fires, licences, seizures of illegal timbers etc) and materials. Where possible copies should be obtained for future reference. The process of going through all the documents will take place in the field and after during analysis.

3.13 Drawing / graphic art / use of visuals

In order to gain a little peace and quiet for discussions – distribute pencils and paper and ask children to draw a picture from the environment / an animal from the forest etc. Ask children to write their name and age on the picture – by studying the pictures you can gauge the children's level of awareness of the topic. If you ask for a picture about the environment and get lots of pictures of forests, birds and other forest animals you can deduce that there is some awareness of natural environment. If you are presented with lots of pictures of cows or chickens you can deduce that there is not. This can be followed up by asking children what environmental activities they do at school.

This activity is to give the children something to do and to allow you to get an idea – it is not at all scientific or quantitative and should not be treated as such.

4 Results

The results obtained for each of the methods are presented. Each method forms a separate sub-section of this chapter.

Table 4: Summary of participation in each of the methods used.

Methodology	Number of participants
Stakeholder Analysis	N/A
Questionnaires	37 - F=4, M=33
Semi structured interview	57 individual.- F=13, M=44
Focus group discussion	1079 individual F=328, M=751 39 groups
Pair-wise comparison of written materials	316 individuals.
Preference Ranking of audio visual methods.	402 individuals.
Village mapping	12 villages 4786 households
Forest walks	257 individual F=62, M=195 12 villages
Information source trust ranking	281 individual – F=98, M=183

4.1 Stakeholder Analysis

A total of 166 organisations / individuals were listed and grouped according to the type of organisation, forming 27 groups. A list of the individual stakeholders assigned to each of the groups is presented in appendix 8.1.

These groups were used to guide the choice of stakeholders to be interviewed during visits and later to assist in identifying the key audiences the IEC strategy should aim to reach.

4.1.1 Missing Stakeholders

Due to the process by which the list of stakeholders was drawn up stakeholders that do not form 'organisations' or discreet user groups are not represented.

On reflection it is clear that people from Eastern Arc Communities that are not in CBO's or NGO's are also a very important group. Similarly but to a lesser extent the 'general public' across Tanzania are also an important group.

4.2 Questionnaire

37 people completed the questionnaire, 4 women and 33 men. The respondents were mainly district and ward staff, i.e. government employees. A list of respondent's names and positions is given in appendix 8.3.

The results for each question are presented below.

Q. Do you undertake Environmental Education and communication activities? (or any other type of education/awareness raising)(Formal and non-formal education activities)

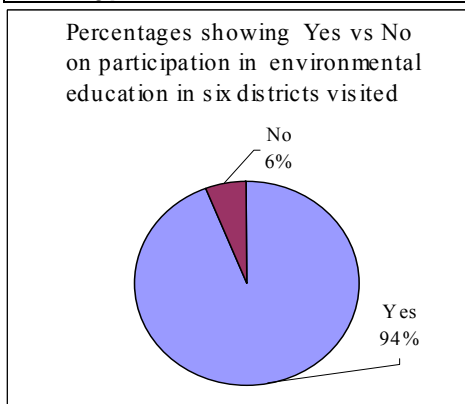


Chart 1 Shows that 94% of respondents said that they are undertaking environmental education, communication and awareness raising activities and only 6% of respondents are not undertaking environmental education, communication and awareness raising activities.

Chart 1: Summary of participation in Environmental education in six districts visited.

Q. If yes please give details of which areas you are working in?

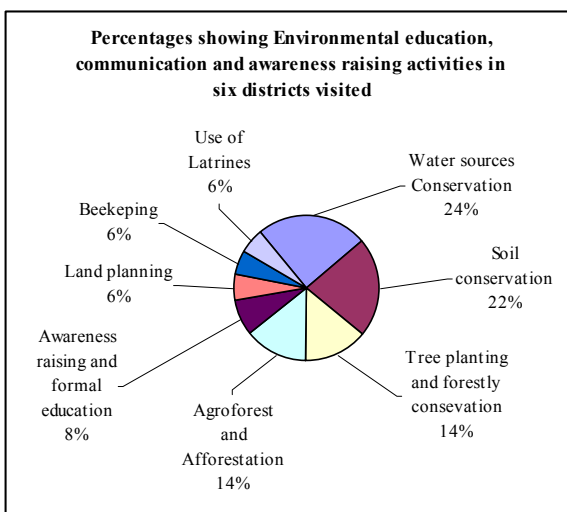


Chart 2 Shows that 24% of respondents mentioned they are undertaking water source conservation, Soil conservation (22%), tree planting and forestry conservation (14%), agroforestry and afforestation (14%), awareness raising and formal education (8%). The other activities scored the same percentages (6%) are beekeeping, land planning, agroforestry and health issues (use of latrines).

Chart 2: The most common environmental education, communication and awareness raising activities. (see left)

Q. Which groups of people are you working with?

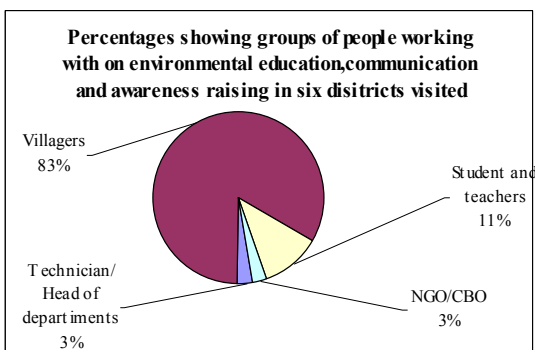


Chart 3 shows that the majority (83%) of respondent's (n = 37) are working with villagers group, 11% of respondents are working with Students and teachers and 3% mentioned working with NGO/CBO's and technicians.

Chart 3: Summary of groups of people respondents to questionnaires are working with (see left).

Q. What are the key messages that you disseminate?

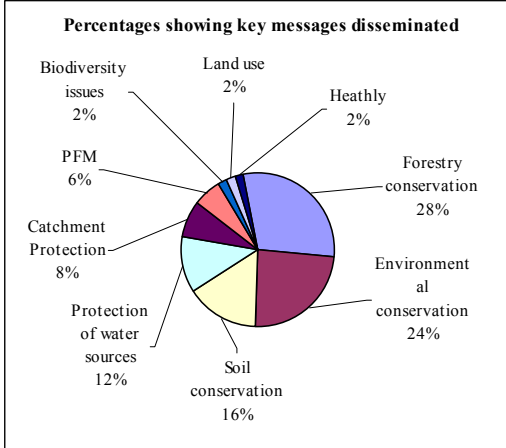


Chart 4 shows that the key messages disseminated by respondents are forest conservation (28%), followed by environmental conservation (24%), soil conservation (16%), water sources protection (12%), catchment protection (8%) and PFM (6%). Other issues disseminated mentioned less frequently are Land use, health issues and biodiversity with 2% each.

Chart 4: Summary of the key messages disseminated to Eastern Arc communities by the respondents (see left).

Q. What means of communication do you use and which is most effective?

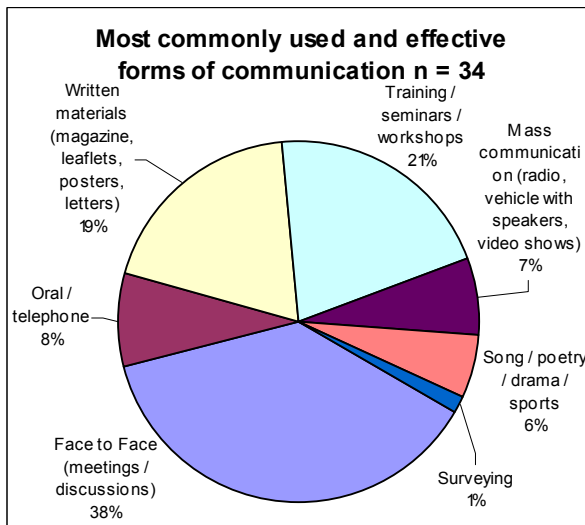


Chart 5 shows that face to face forms of communication are most effective and commonly used (Meetings 38% and Training / seminars / workshops 21%), followed by written materials (19%), Oral communication, mass communication, songs / poetry / drama / sports (6%) followed by surveying (1%).

Chart 5: Most effective and commonly used forms of communication which are used to disseminate information (see left).

Q. Do you collaborate on environmental education communication or awareness activities with other organisations?

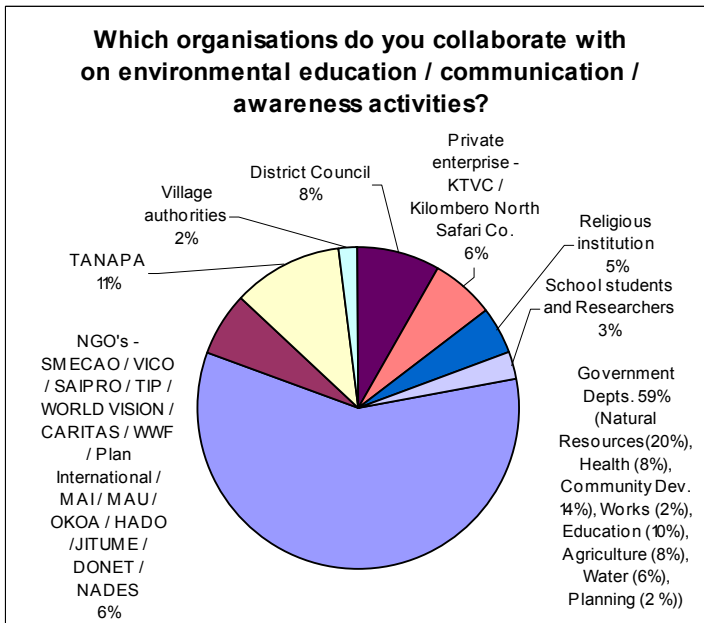


Chart 6 shows that district government staff are collaborating most with other government departments (forest department is mentioned most often (20%) other frequently mentioned departments are community development (14%), education (10%), health (8%) and water (6%). Combined government departments account for 59% of the organisations mentioned. TANAPA is another important collaborator with 11% of mentions. Other collaborative partners include NGOs (development or environmental) (6%), Religious institutions (5%), District Councils (8%), Private enterprise (6%), Students and Researchers (3%) and Village authorities (2%).

Chart 6: Collaborating organisations (see left).

Q. Does your district have the capacity to produce any environmental education Materials?

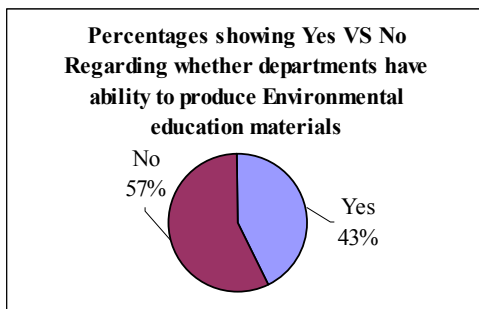


Chart 7 shows that 43% of districts have ability to produce environmental education materials, the remaining 57% do not.

Note: Materials produced are: pamphlets, booklets, videos, calendars and posters

Chart 7: Ability of the districts to produce environmental education Materials (see left).

Q. Do the districts receive environmental education materials from external organisations?

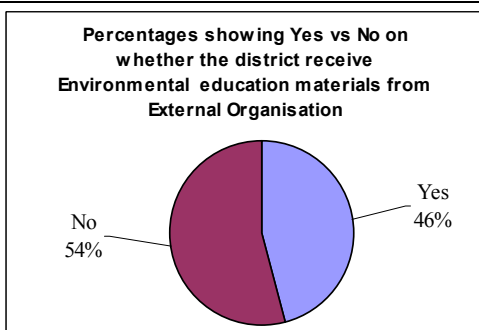


Chart 8 shows that 46% of respondents receive environmental education materials from external organizations, and 54% do not receive environmental education materials.

Note: Materials provided are useful because of the following:

- Help to create awareness to people on Environmental Issues
- Education to all levels
- Provide up to date messages to people
- Remind villagers on conservation issues

Chart 8: Do districts receive environmental education materials from external organisations?

Q. What are the key themes the above mentioned materials discuss?

The key themes discussed are:

- Environmental Conservation and management
- Soil and water conservation
- Forests and personnel development issues
- Construction of Latrines
- Good /improved agricultural methods

Q. Do you know of any other organisations working in this district on environmental issues?

Table 5: List of organisations working on Environmental issues in the six districts visited.

District	Organisation Name	District	Organisation Name
Same	MMEM SAIPRO T I P – Irrigation Programme Sokoine Univ. of Agric. National Environmental Council of Tanzania	Same, Handeni, and Mpwapwa	WORLD VISION Religious groups (i.e. Roman Catholic, Lutheran, Anglican)
		Handeni	DIAP
Muheza	TFCG TANGONET	Mpwapwa	DONET(Dodoma Network) HADO(Hifadhi Ardhi Dodoma) JITUME FOUNDATION
Kilombero	OKOA MAI (Mazingira Institute) KILOFEDA MIIBA MAU (Mazingira ni Uhai) Kilombero Valley Teak Company Katurukila Forest Conservation Group Kilombero Northern Hunting Company	Kilolo/Iringa	HIMA - Hifadhi Mazingira) MEMA - Matumizi Endelevu ya Mali Asili) MGM Consulting Company IREDA

Q. Which groups of people are these organisations working with?

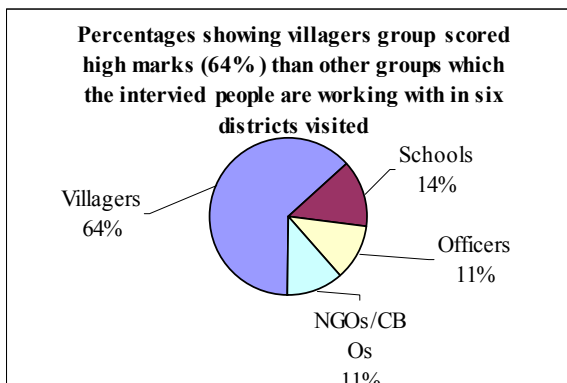


Chart 9 shows the groups of people that organisations in the districts visited are working with. Organisations are working mainly with villagers (64%), followed by schools (14%), then NGO's / CBO's and officers (11%).

Chart 9: Which groups of people are organisations working in the Eastern Arc Mountains working with? (see left)

Q. What are the key message these organisations disseminate?

Organizations are disseminating messages about:

- Environmental education (85%),
- Forestry messages 'Tunza Mitsu ikutunze (6%)
- Soil and water conservation (3%)
- Land issues (3%)
- Health issues (3%)

Q. What means of communication do they use?

Table 6: Means of communication used by organisations working in the six districts visited.

Means of Communication	Freq.	%	Means of Communication	Freq.	%
Phone	2	3.7	Letter	2	3.7
Radio	1	1.85	Theatre, art, drums, poems and songs	3	5.5
TV	1	1.8	Poster	1	1.8
Magazines	2	3.7	Seminar	7	12.9
Exhibition	3	5.5	Visits	4	7.4
Meetings	20	37.0	Motorcycle	2	3.7
Leaflets	4	7.4	Workshops	2	3.7

Table 6 shows that organisations working in the six districts visited most commonly use meetings and seminars to communicate environmental messages.

Q. Are there any groups undertaking effective awareness work on non-environment issues?

Table 7: List of groups or organisations which are undertaking effective awareness work in the visited area on non-environment issues.

District	Group
Same	SAIPRO VECCO
Handeni	DIAP
Kilombero	Plan International
Kilombero, Iringa /Kilolo	SHDEPHA+
Mpwapwa, Iringa/Kilolo	REDCROSS
Mpwapwa	MSHIKAMANO AFNET CARE PATUU JITUME Foundation SWAAT WAMMA VHSP SIWAUPONE

Table 8 shows that district staff mentioned thirteen organisations which are undertaking effective awareness work in the area on non-environment issues in the six districts visited.

Q. Are there any drama / song / poetry specialists working in your area?

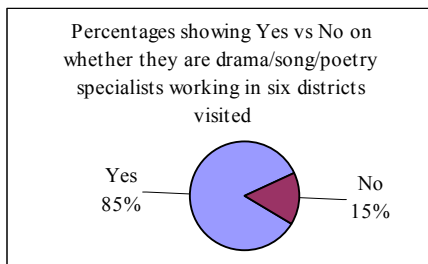


Chart 10 shows that 85% of respondents said there were drama/ poetry/ song specialists working in their districts, only 15% said there were none. Despite this no-one mentioned the names of these performers implying they are not being frequently used for awareness work organised through the district.

Chart 10: Percentages showing presence of drama / song / poetry specialists that are working in the six districts visited.

Q. What are the major Environmental issues of concern in the district?

Table 8: Major Environmental issues of concern in the 6 districts visited.

Environmental issues of concern	Freq.	%	Environmental issues of concern	Freq.	%
Bush fires	18	22	Firewood	3	3.7
Forest protection	14	17	Illegal harvesting of NR	3	3.7
Combating bad agric methods	10	12	Overgrazing	2	2.4
Tree planting and management	8	9.8	Mining	1	1.2
Environmental campaign i.e. changes in weather-drought	8	9.8	Hunting	1	1.2
Water and soil protection	4	4.9	Encroachment	1	1.2
Catchment areas protection	4	4.9	Malaria	1	1.2
Charcoal making	3	3.7			

Table 8 shows that the environmental issues of greatest concern in the 6 districts visited are bush fires, forest protection, combating bad agricultural practices, tree planting and combating changes in weather patterns.

Q. What methods are used in your district to communicate with different stakeholder groups?

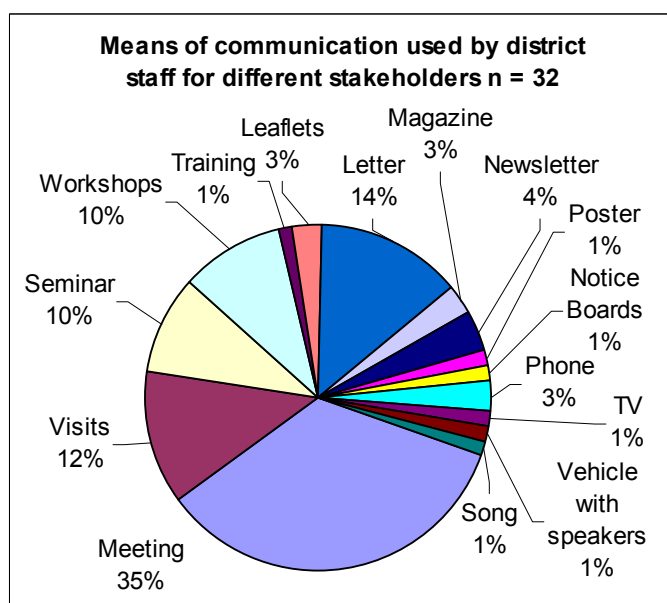


Chart 11 shows that meetings are the most commonly used form of communication by district staff (35%), followed by Letters (14%), Visits (12%), Seminars (10%) and Workshops (10%).

Chart 11: Means of communication used by district staff for different stakeholders.

Q. Which methods are most effective and why?

- Posters, radio broad casting, because they are easy to organize and can reach for interior easily.
- Meetings and seminars because people have the opportunity to discuss ideas.
- Meetings because a good resolution can be achieved.
- Workshops which allows different stakeholders to brainstorm and exchange ideas on environmental issues.
- Letters are not always effective because they can be lost.

Q. How could communication methods be improved?

- They should have permanent employees.
- Construction/maintenance of roads.
- Have more workshops/Meetings.
- By providing motorcycle or vehicle to the department staff in order to fulfil the objective of the activities.
- Frequent meetings with communities.
- By including all the stakeholders during meetings.
- To form a district task force.
- By assisting the district with transport facilities and funds to enable foresters in their activities.

Q. Are Schools in this district / area involved in any environmental education activities?

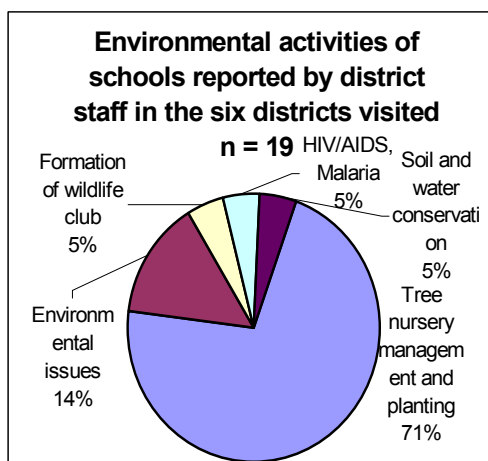


Chart 12 shows environmental education activities undertaken in the Eastern Arc Mountains schools.

Chart 12: Environmental education activities undertaken in Eastern Arc schools.

Q. How many environment clubs are there in schools in your district?

There was a particularly poor response to this question, only 26% of people questioned responded. Some people mentioned that there environmental clubs in there areas but did not say how many.

Three people put of 37 gave full answers as follows: Same - 3 clubs, Kilombero 3 clubs.

Some of the clubs are supported by the district offices but again the response to this question was poor.

Q. Do schools in your district / area celebrate environment days or events?

89% of respondents said that schools do celebrate Word Environmental day, whilst 11% said they did not celebrate environmental days

Q. How many schools are there in your district?

Table 10: Total Secondary schools in six districts visited

District	Government schools	Private Schools	Total
Same	22	8	30
Kilombero	6	3	9
Mpwapwa	5	0	5
Handeni	7	1	8
Muheza	10	3	13
Iringa/Kilolo	13	3	16
Total	63	18	81
%	78	22	100%

99.6% primary schools are owned by Government, and only 0.4% are private.

Table 9: Total Primary Schools in six districts visited

District	Government schools	Private Schools	Total
Same	173	2	175
Kilombero	122	2	124
Mpwapwa	110	0	110
Handeni	207	0	207
Muheza	160	0	160
Iringa/Kilolo	202	0	202
Total	974	4	978
%	99.6	0.4	100%

78% of secondary schools are owned by the government and 22% are private.

Q. Do you distribute any environmental education materials to schools about nature conservation?

- 57% of respondents said that they are distributing environmental education materials to schools
- 43% do not

Q. Is there an established materials distribution system which we could also use?

Unfortunately this question was mis-interpreted and no sensible answers were provided so it is assumed that distribution is done on an *ad hoc* basis.

Q. How many Teachers Resource Centres are there in you district, how many teachers do they reach ?

Table 11: Teachers resource centres

District	Teachers Resources Centres
Same	6
Mpwapwa	6
Muheza	3

Note: Responses to these questions were limited with only 22% of respondents providing any information.

Q. Is there a district /ward library or library book system of any kind?

Only Kilombero district has a library which is owned by the church, in the other five districts there is no operational library.

Q. Is there a shortfall of teachers in this district? If yes how many?

Very few responses were given to this question; Mpwapwa indicated there was a shortfall of teachers but did not say by how many. Other districts failed to answer.

Knowledge of forest values

Q. Please list all the forest values you can think of.

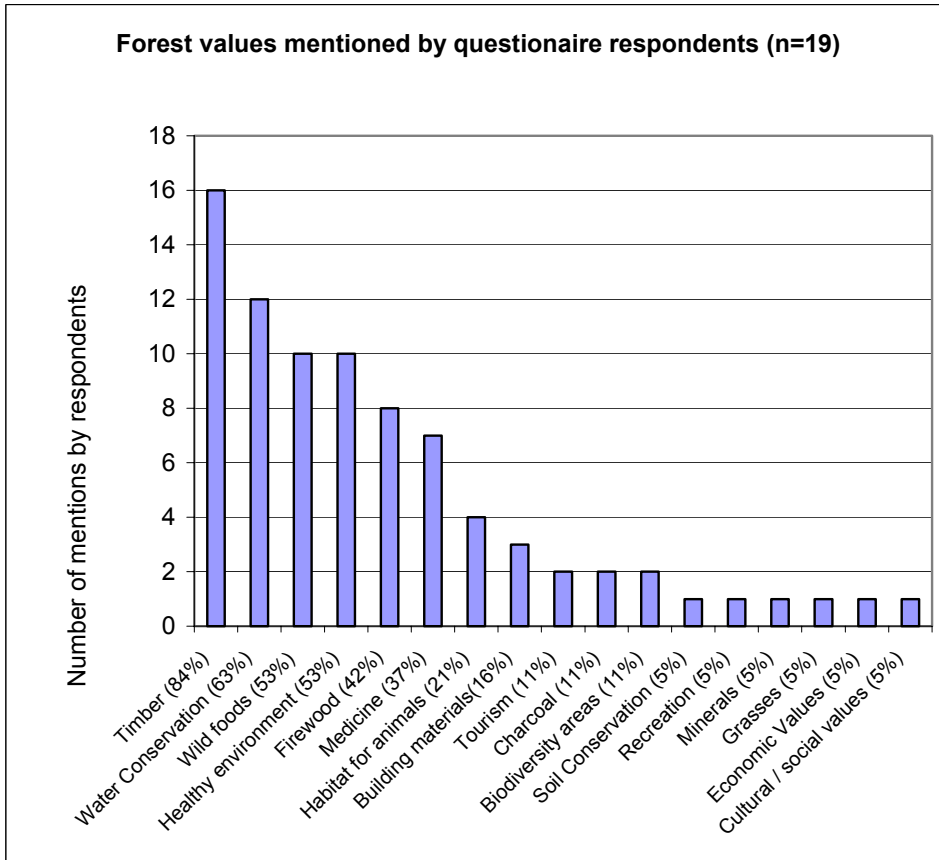


Chart 13 shows the most commonly mentioned forest value was timber (mentioned by 84 % of respondents) followed by water conservation (63%), food and a healthy environment mentioned by 53%. Firewood was mentioned as a forest value by 42% of respondents, medicine (37%), building materials (16%), habitat for

animals, tourism, charcoal, and biodiversity areas were all mentioned by 11% of respondents. Lastly soil conservation, recreation, minerals, grasses (fodder) cultural and social values were mentioned by 5% of respondents. 'Economic values' was mentioned by one respondent but and includes many of the values listed above.

Chart 13: Values of the forest in the Eastern Arc Mountains as listed by questionnaire respondents (district staff).

Q. Do you have any forest related campaigns in your district?

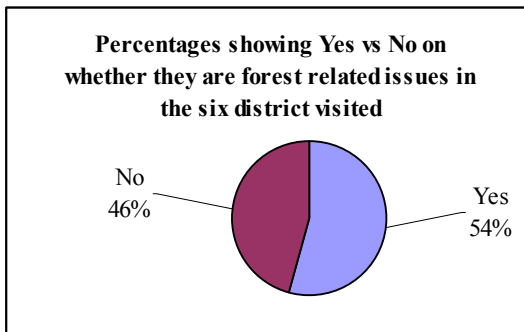


Chart 14 shows that 54% of respondents said there are forest related campaigns in their district whilst 46% said there were not.

This result is possibly skewed by non-NR staff not being aware of the details of forest related programmes in the district, or people did not understand the question.

Chart 14: Forest campaigns in the six districts visited

Forest related campaigns mentioned are as follows:

- Planting trees

- Patrol
- Fire campaign
- Training on Environmental issues
- Soil and water conservation

Q. Are external organisations involved in any forest campaigns, e.g. international, national NGO's, bilateral government projects and CBO's.

87% of respondents said there were external organisations involved in Forest campaigns in their district, whilst only 13% said there are none.

Table 12 lists the external organisations mentioned by respondents working in each district.

Organisation Name	Location/ District	Organisation Name	Location/ District
SAIPRO	Same	SMECAO	Same
WORLD VISION	Same Handeni Mpwapwa	UNDP	Same
JICA	Same	VECO	Kilombero
TANAPA	Kilombero/ Kilo	TIP	Same
GEF	Same	WWF	Kilombero
Plan International	Kilombero	TFCG	Muheza

Q. What are the major threats to the forest biodiversity in your district/area?

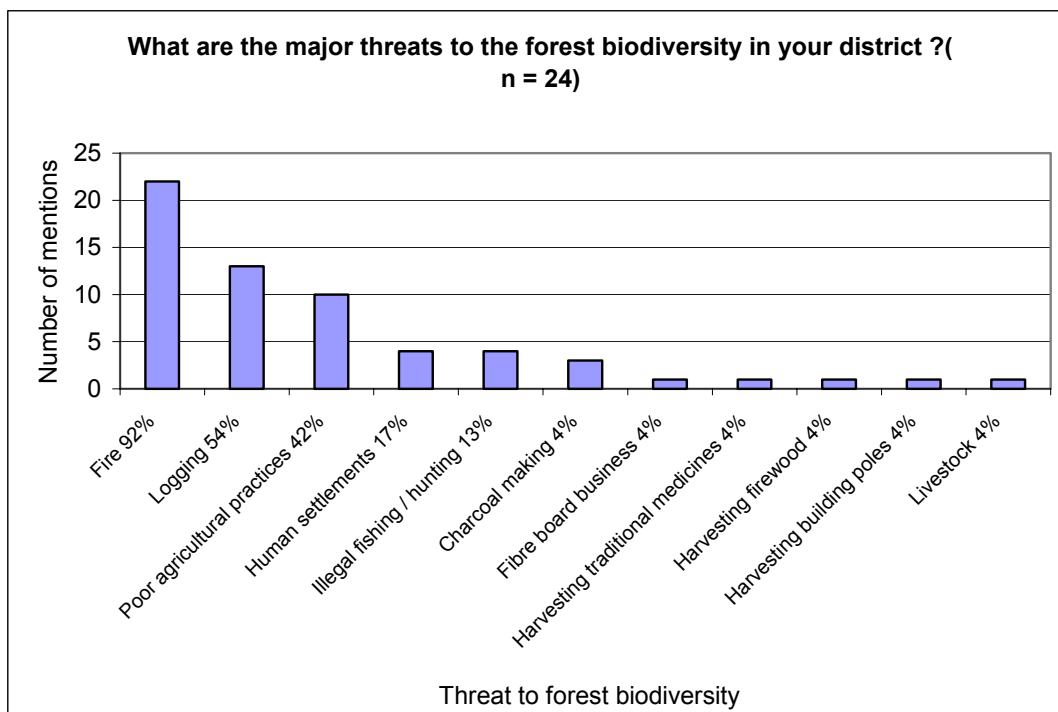


Chart 15: Reported threats to the Eastern Arc forest biodiversity.

Chart 15 shows that the most commonly mentioned threat to forest biodiversity is fire, 92% of respondents mentioned fire as a threat, 54% of respondents mentioned illegal logging. Poor agricultural practices which include (shifting cultivation and agricultural encroachment) were mentioned by 42% of respondents. Deforestation/human settlements and illegal hunting of animals (fishing, for food or for trade) were mentioned by 17% of respondents. Charcoal making was mentioned as a threat by 13% of respondents and finally livestock, harvesting of building materials, firewood and medicine were mentioned as threats by 4% of respondents.

Q. In your opinion are the general public aware of the EA forests' ecological and economic importance?

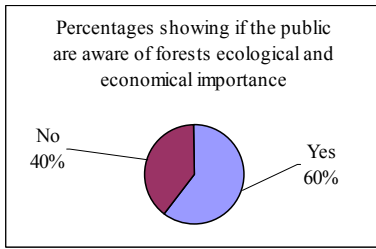


Chart 16 shows that 60% of respondents felt that the general public are aware of forests' ecological and economic importance, however many of these commented that it is 'partial awareness' and more is needed. 40% said that the general public are not aware.

Chart 16: Awareness to the EA forests ecological and economic importance.

Q. Is fire an increasing or decreasing threat to forests in your area?

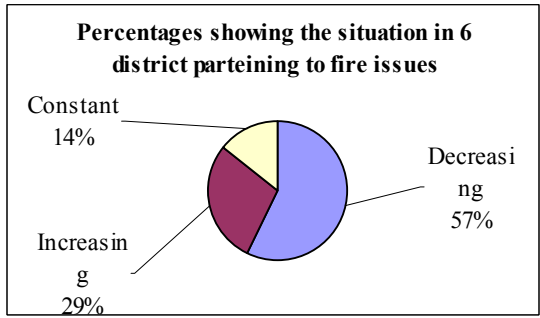


Chart 17 shows that 57% of respondents thought that the threat of fire is decreasing, 29% thought it is increasing and 14% thought there was no change.

- Additional comments provided:
- Decreasing threats due to increased awareness among the community
 - Is increasing because societies around these forests have no education on conservation issues

Chart 17: Is the threat of fire increasing or decreasing in your district?

Q. What are the main causes of forest fires in you area / district?

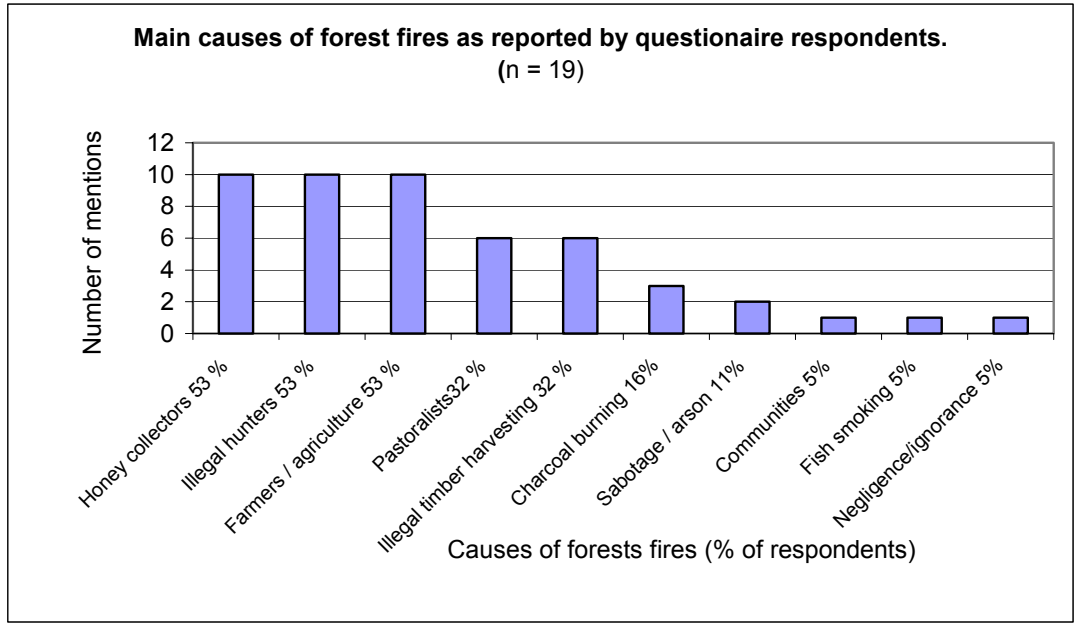


Chart 18: Main causes of forest fires

Chart 18 shows that the respondents reported the main causes of forests fires to be Honey collecting, Illegal hunting and farming / agricultural practices (53% of respondents mentioned these causes). Pastoralists and illegal timber harvesting was mentioned by 32% of respondents, charcoal burning and arson / sabotage was mentioned by 11% of respondents. Negligence and ignorance, fish smoking and 'communities' were also mentioned as causes of forests fires (5% of respondents).

Q. How do you think these threats can be reduced?

- Collaboration of members
- Patrol
- Awareness raising
- Fire campaign
- PFM

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- Facilitating on usage of alternative energy sources
- Strict bylaws

Q. Are there any gender specific forest conservation issues?

- Men and women work together in different activities i.e. protection of Catchment forests, bee keeping, nurseries establishment and tree planting campaign
- Forest uses are different. Women - firewood collection, grass cutting, searching for medicines. Men- Poles for Building charcoal production

Q. Where are the major forests in your district?

It is unknown why this question was not answered, perhaps district staff are not very familiar with forest reserves which are often far from the District Head Quarters, or perhaps the question is phrased poorly and they did not understand the question.

Key themes for an Information Education and Communication strategy

Q. What in your opinion should be the key themes for an IEC strategy in the Eastern Arc?

The key themes for an IEC strategy in the Eastern Arc mentioned by respondents are as follows:

- Forest for Life
- Closely be with community and advocate the very immediate demand to them if you want to be effective and objective
- Fire is an enemy of the forest, adjacent villages must be forest friends /guiders
- Its better to improve the education on environmental health to the community
- Keep forest for today and tomorrows life
- Education on basic elements of forest and its management should be provided to the communities around the forests in order to mobilize their participation in conservation.
- Tree nurseries should be established
- There should be re forestation of corridors between the forests fragments.
- Task force for conservation should be trained.
- To stop wild fires in the Arc Mountain.
- Education on Environmental conservation issues and Forest protection has to be known well to the communities
- Establishment of forest nurseries and village forests
- Tapping untapped human resources through education, communication and economic empowerment
- Involvement of stakeholders during Environmental Conservation

Human Resources (District Staff and Ward Staff)

Q. Please can you give a summary of the education qualifications of staff?

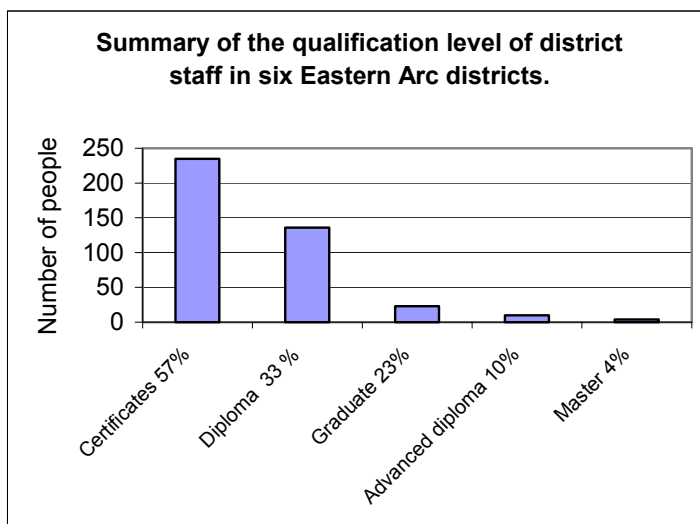


Chart 19 shows that range of the level of education of district staff. 57% of staff hold a certificate / or technical qualification, 33% have a Diploma, 2 % and Advanced Diploma, 6% a bachelors degree, 1% a Masters degree.

Chart 19: Summary of the education qualifications of districts and ward staff.

4.3 Focus Group Discussions

The following questions were discussed with groups of young and old women and men separately in each of the 12 villages visited. Not all questions were answered by all groups as the discussion was allowed to follow a natural path. The data given here summarises the responses for each group that ranged between 10 and 30 people.

Please remember when reading these results they are not individual's opinions but a group consensus. All the villages visited were adjacent to an Eastern Arc Mountain Forest.

Q. What Natural Resources do you have in this village / district / ward / constituency?

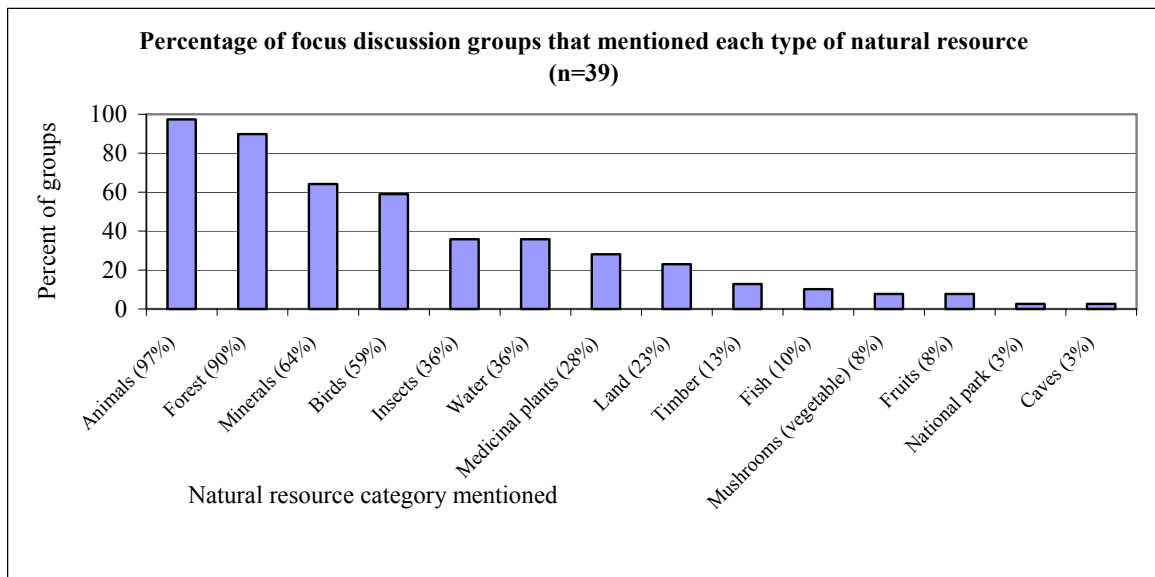


Chart 20: Natural Resources found in the Villages

Chart 20 shows that when asked to mention natural resources in their area 97% of groups mentioned animals, 90% mentioned forest, 64% mentioned minerals and 59% mentioned birds. Just over a third (36%) of groups mentioned insects and water; medicinal plants were mentioned by 28% of groups, land was mentioned by 23% of groups, whilst surprisingly timber was mentioned by only 13%. Food sources mentioned separately were Fish (10%) mushrooms and fruits 8% of groups. Combined food was mentioned by 15% of groups. It is clear that animals refers to mammals as groups identified birds and insects separately, this a common distinction and arises partly as a result of linguistics.

Q. Are there any forest resources, if so, who owns them?

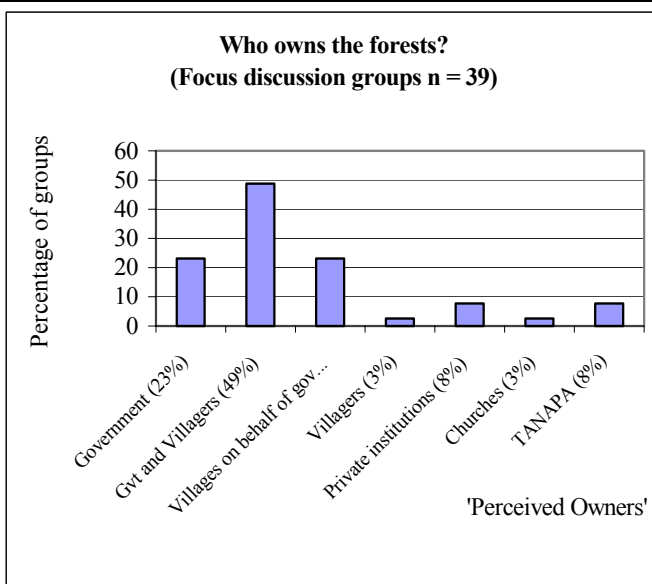


Chart 21 shows that 23% of groups said the government owns the forests, whilst 49% said the Government and Village own the forests, 23% said the village owns the forest on behalf of the government. Very few groups 3% said the Village owns the forest which may reflect the low number of village forest reserves in existence. Other owners included private enterprises (8%), TANAPA (8%) and churches (3%). The low occurrence of TANAPA as a forest owner reflects the distribution of villages selected for study, only villages in Kilolo and Kilombero were near a national park managed by TANAPA.

Chart 21: Owners of Forest resources

Q. Who is responsible for managing the forest?

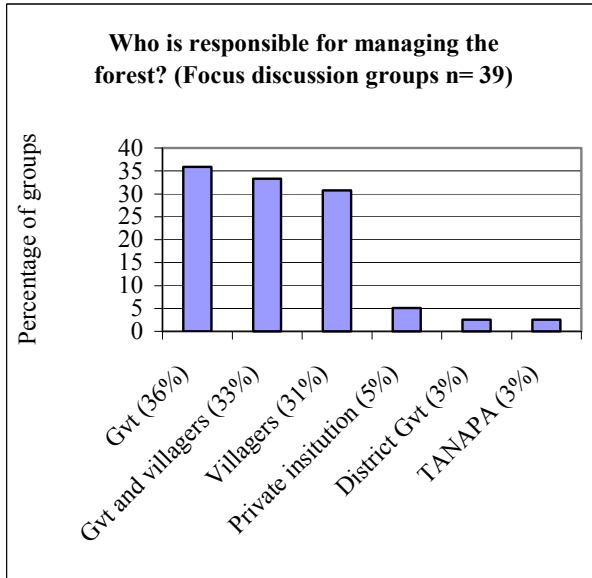


Chart 22 shows that 36 % of groups thought that the government is responsible for managing the forest (an increase on the 23% that said governments owned the forest), 33% thought responsibility lies with the government and villagers, 31% thought that the villagers were responsible. In particular locations where there were private forests, or a national park groups mentioned correctly those management authorities e.g. 5% of groups mentioned private institutions (Kilombero Valley Teak Company), 3% mentioned TANANPA and District Government.

To interpret these results another way, over 60% of the focus discussion groups stated that the village has responsibility for forest management.

Chart 22: Who is responsible for managing the forest?

Comparing charts 22 and 23 shows that there is an increase in groups who thought that the government was responsible for managing forests. However it should be mentioned that during the discussions it was clear that people did not really differentiate between ownership and responsibility for management.

Q. Do you have any role/responsibility in forest management?

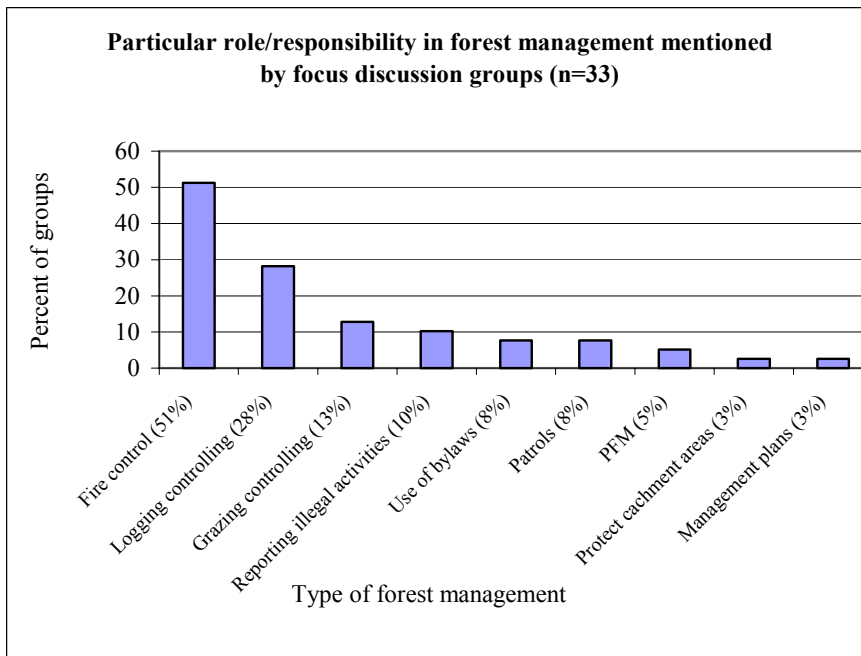
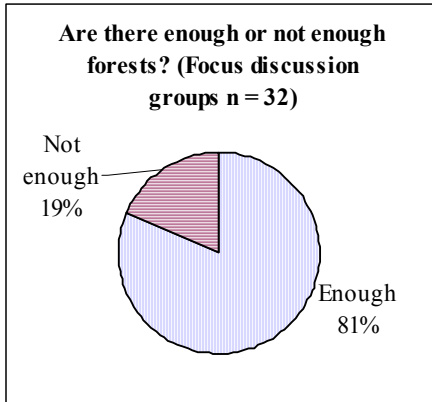


Chart 23: Role/responsibility in forest management

95% of all groups (n=39) said they play a role in forest management, Chart 23 shows that more half (51%) of the groups mentioned they are involved in controlling fires, 28% of groups mentioned controlling logging and 13% controlling grazing. Other management activities mentioned included, reporting illegal activities (10%), use of bylaws (8%), patrols (8%), management through participatory forest management (5%), protecting catchment areas (3%) and creation/implementation of management plans (3%).

Q. Are there enough forest resources or not?

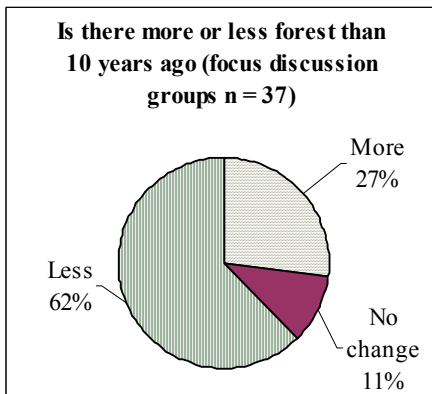


82% of groups answered this question.

Chart 24 shows that 81% of groups that answered the question felt there are enough forest resources, whilst 19% said there are not enough.

Chart 24: Status of Forests in six districts visited

Q. Is there more/less forest than ten years ago?

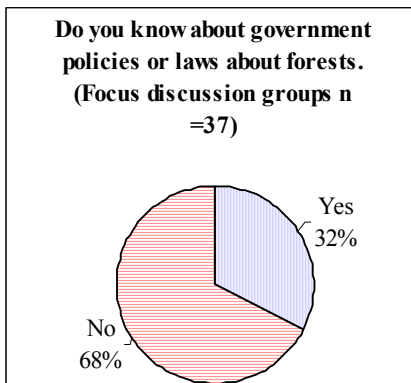


95% of groups answered this question.

Chart 25 shows that 62% of groups said there are less forest resources than ten years ago, 27% of groups said there more forests, 11% said there is no change.

Chart 25: Is there more or less forest than 10 years ago?

Q. Do you know/aware of any government policies or laws about forests?



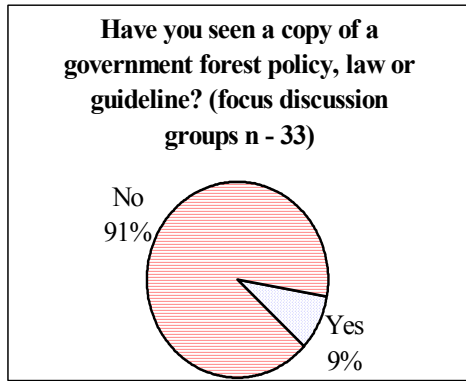
95% of groups answered this question.

Chart 26 shows that 68% of groups that answered said they were not aware of any government policies or laws about forests, whilst 32% said were aware.

22% of the groups although not aware of government policies or laws have seen local district bylaws.

Chart 26: Do you know about government policies or laws about forests?

Q. If Yes: Have you ever seen a copy of a policy, law or guideline from government about forests?

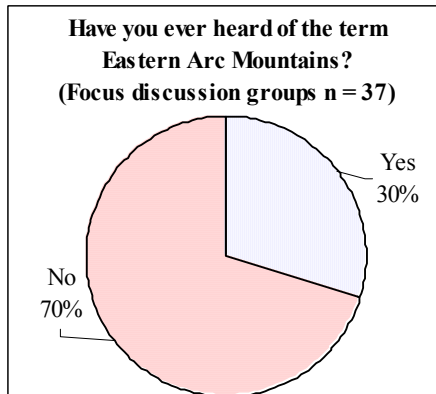


85% of groups answered this question.

Chart 27 shows that 91% of groups that answered had not seen a copy of a government forest policy, law or regulations, whilst 9% of groups had seen such a document.

Chart 27: Copy of a policy, law or guideline from government about forests ever seen

Q. Have you ever heard of the term Eastern Arc Mountains?



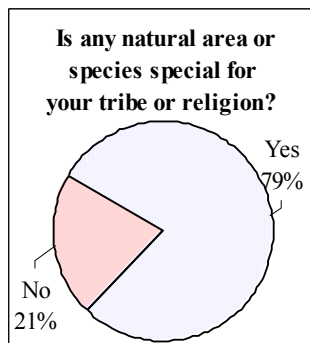
95% of groups answered this question.

Chart 28 shows that 70% of groups said they had not heard of the Eastern Arc Mountains. 30% of groups had heard of the term.

It is important to note that of the 11 groups (30%) that had heard of the term Eastern Arc Mountains, in five of those only one person in the group had heard of the EA Mountains, i.e. it was not common knowledge in the group.

Chart 28: Have you heard of the term Eastern Arc Mountains?

Q. Is any natural area or species special for your tribe/ religion?



All the groups answered this question.

Chart 29 shows that 79% of groups said there are natural areas or species that are special to their tribe or religion. 21% of groups said there are none, many of the groups that gave a negative answer mentioned that now Christian beliefs dominate.

Chart 30 below details the special areas or species mentioned.

Chart 29: Natural area or species special for the tribe/ religion.

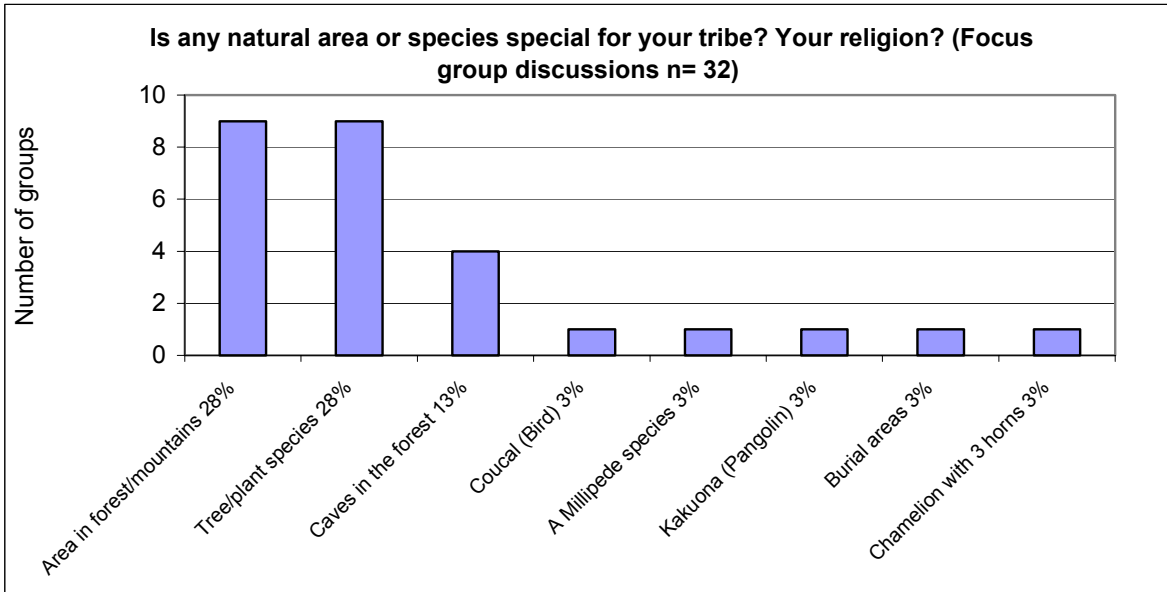
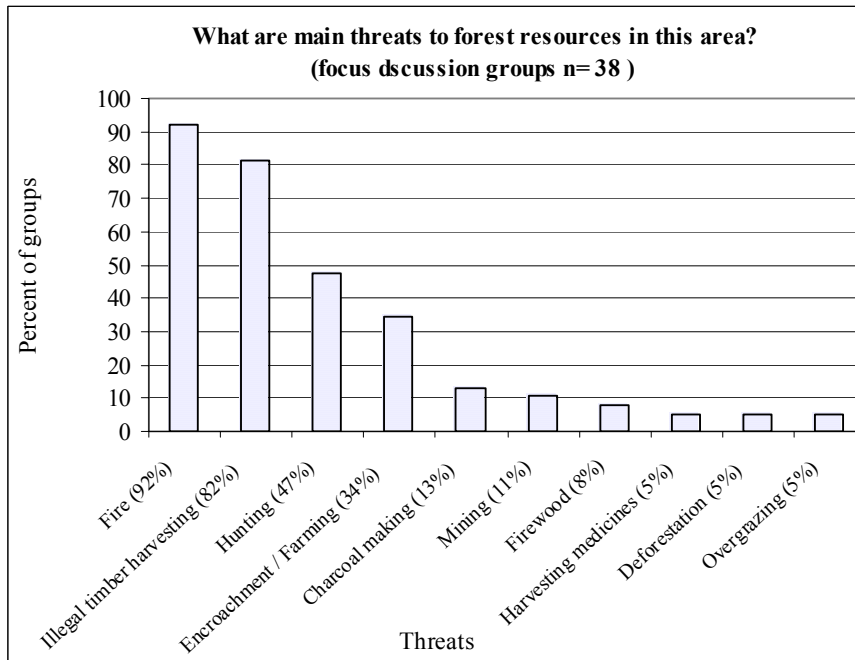


Chart 30: Species or natural areas mentioned as special.

Q. What are main threats to forest resources in this area?



97% of groups answered this question. Chart 31 shows that 92% of groups that answered the question mentioned fire as a threat to forests in the Eastern Arc. 82% of groups mentioned illegal logging or timber harvesting (note all logging in Catchment forests is technically illegal). 47% of groups mentioned hunting as a threat. 37% of groups mentioned encroachment / farming. Other threats mentioned by less than 20% of groups included: firewood, charcoal making, local medicines, deforestation, mining and overgrazing.

deforestation, mining and overgrazing.

Chart 31: What are the main threats to forest resources?

Q. What does 'Mazingira' mean to you?

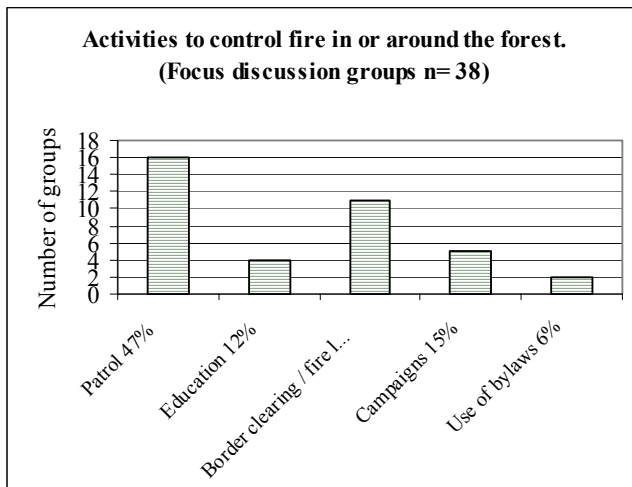
Table 13: Meaning of the word Mazingira.

'Mazingira' (n = 36 groups)	No. of groups	% of groups
Area around homes	18	50%
The place where we live	1	3%
Living things	1	3%
Forest / Trees	15	42%
Mountains	1	3%
Water / rivers	11	30%
Climate	3	8%
Rainfall	9	25%
Wild animals	10	28%
Schools / homes	1	3%
Insects	2	5%
Flowers	2	5%
No activities are allowed in its reserve	1	3%
GoT officials who takes care of it	1	3%
Toilets	1	3%

Table 13 details the perceptions of the word 'Mazingira' for the 36 groups who answered the question.

It is clear that the word 'Mazingira' can mean many things to many different people. The area around us or the area around our homes was the most common response given (50% of groups), followed by Forest / Trees (42% of groups). However one group understood the word Mazingira to mean 'toilets'. This shows that the language used in the strategy must make efforts to be as unambiguous as possible.

Q. Are there any activities to control fires around or in the forest?



38 out of 39 groups answered this question (97%).

89% of groups that answered said there were activities to control fires in their village whilst 11% said there were not.

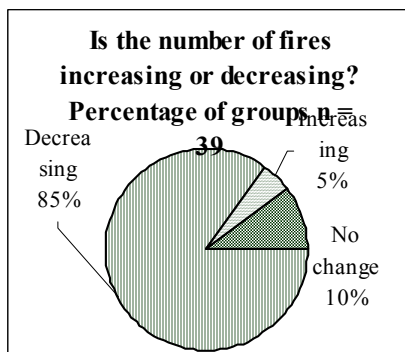
Chart 32 details the activities mentioned by groups used to control fires, these were patrols (47% of groups), border clearing/ making fire breaks (32% of groups). 15% of groups mentioned the use of a fire campaign and 12% mentioned education. Finally 6% of groups mentioned using byelaws to control fires.

Chart 32: Activities to control fires around or in the Eastern Arc mountains forest

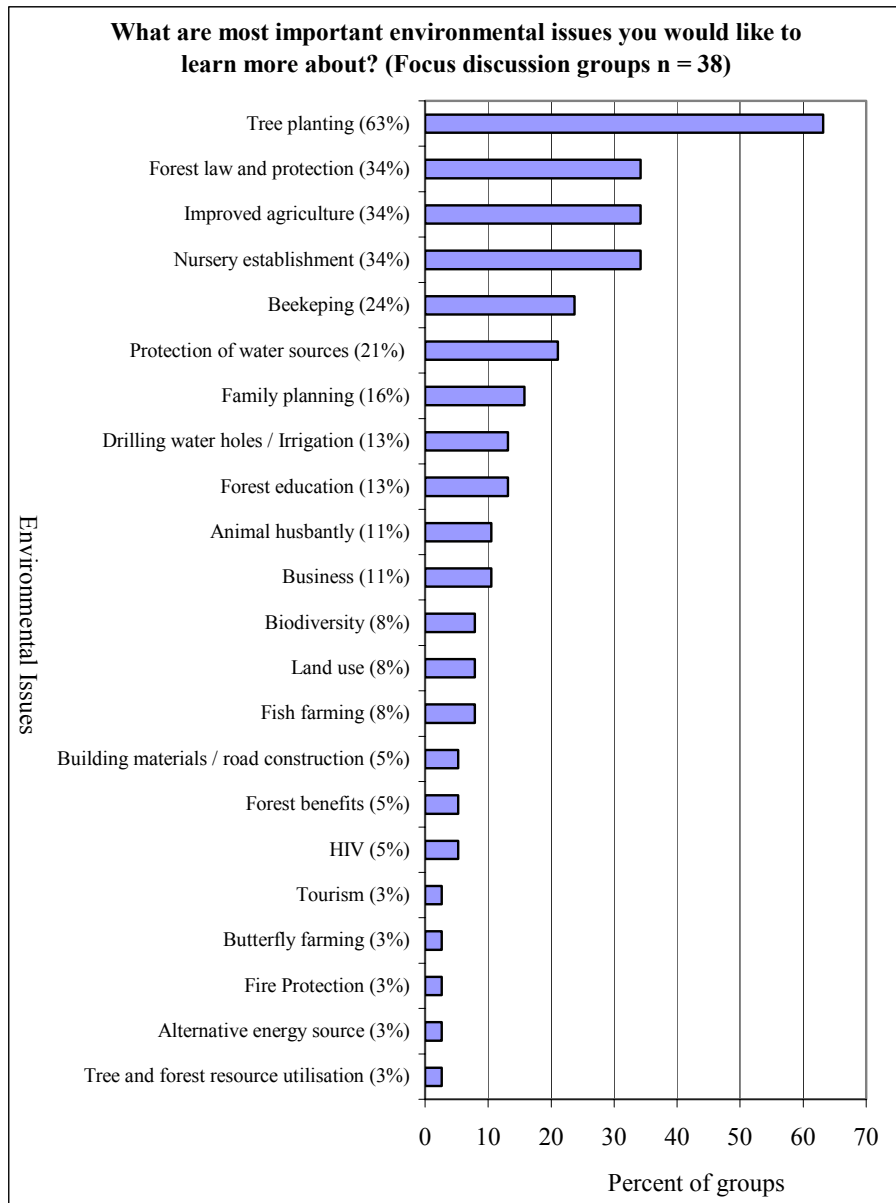
Q. Is the number of fires increasing or decreasing?

All groups answered this question.

Chart 33 shows the majority of groups (85%) said fire incidences are decreasing, whilst 5% said the incidence of fire is increasing. In Kilindi village it was reported that no fires had been seen in the forest, thus 10% of groups said 'no change'. **Chart 33: Is the number of fires increasing or decreasing in this area?**



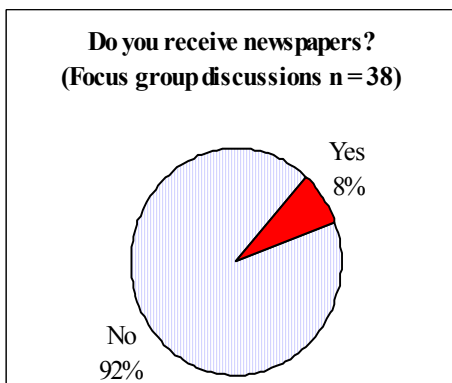
Q. What are most important environmental issues you would like to learn more about?



38 out of 39 (97%) of groups answered this question and mentioned issues about which they would like to learn more. Popular subjects include tree planting (63%), tree nurseries (34%), forest laws and protection (34%), improved agriculture (34%), beekeeping (24%) and protecting water catchments (21%).

Chart 34: important environmental issues Eastern Arc Communities would like to learn about

Q. Do you receive newspapers? Which ones?



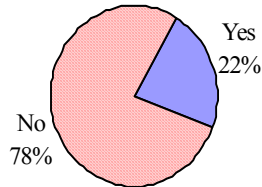
97% of groups answered this question. Chart 35 shows that 92% of groups that provided answers said they did not receive newspapers (or very rarely) whilst 8% of groups said they do receive newspapers or at least 'sometimes'.

Preferred newspapers mentioned by groups are: Nipashe (32% of groups) and Majira (29% groups).

Chart 35: Do you receive newspapers? If so, which ones.

Q. Do you receive the environmental magazines or newsletters e.g. Komba?

Do you receive any environmental magazines or newsletter? (Focus group discussions n = 36)



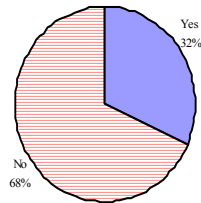
92% of groups answered this question. Chart 36 shows that 78% of groups said they do not receive environmental magazines or newsletters. 22% of groups said they did receive such written materials.

It is important to note that some of the villages visited are part of the TFCG Community network and therefore receive the Environmental Magazine Komba.

Chart 36: Availability of Eastern Arc newsletter/ Komba magazine/ other environmental magazines / newsletter to the EA communities

Q. Is there a place you can watch TV near where you live?

Is there a place you can watch TV nearby? (Focus discussion group n= 38)



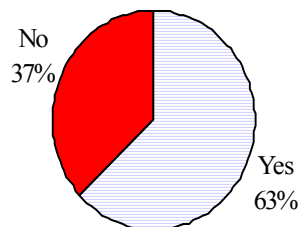
97% groups answered this question.

Chart 37 shows that for 68% of groups there is no-where near there homes they can watch TV, whilst 32% of groups indicated there is a place to watch TV nearby.

Chart 37: Is there a place you can watch TV nearby?

Q. Is there a place you can watch videos near where you live?

Is there a place you can watch videos nearby? (Focus discussion groups n = 38)



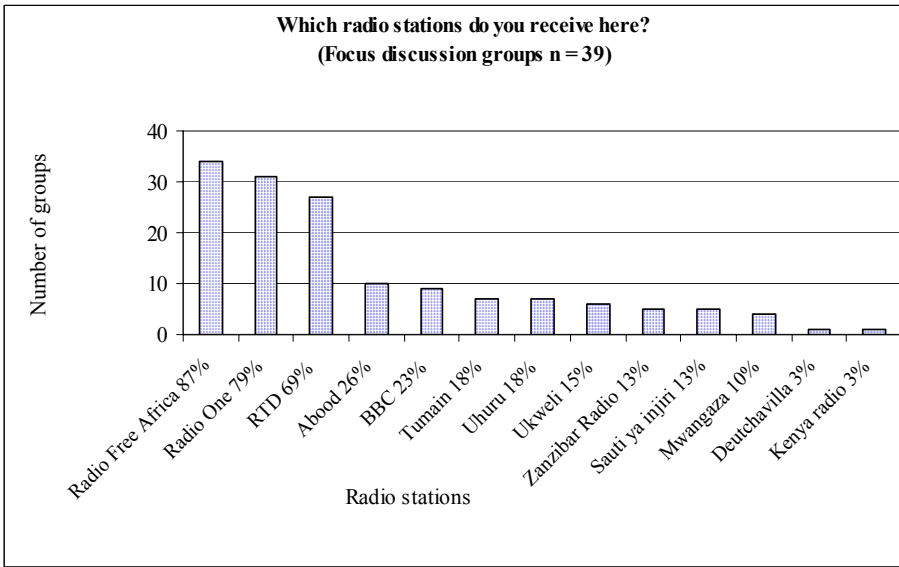
97% of groups responded to this question.

Chart 38 shows that 63% of groups that answered indicated there is a place to watch videos nearby. Often this was a visiting video shower.

37% of groups indicated there was no place for them to watch videos nearby.

Chart 38: Is there a place you can watch videos nearby?

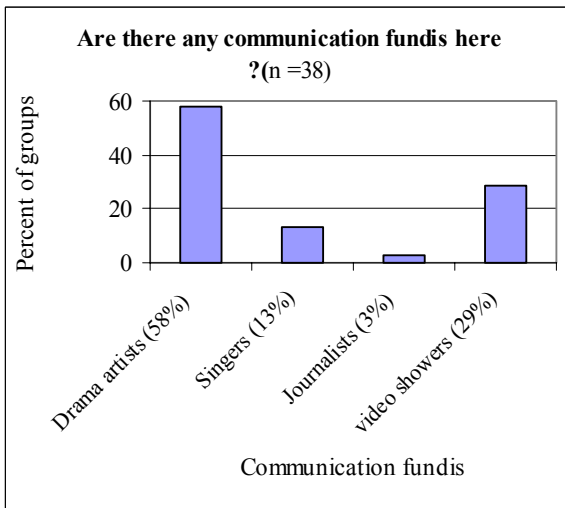
Q. Which radio stations do you receive here?



All of the focus discussion groups answered this question. Chart 40 shows the radio stations that are received in the twelve villages visited in the Eastern Arc Mountains. The most frequently mentioned radio station (87% of groups) is Radio Free Africa (RFA). Radio One was mentioned by 79% of groups, followed by RTD (69%).

Chart 39: Radio stations received in the Eastern Arc Mountains

Q. Are there any communication fundis available in the village or who visit the village e.g. drama artists, singers, drummers, journalists, video showers?

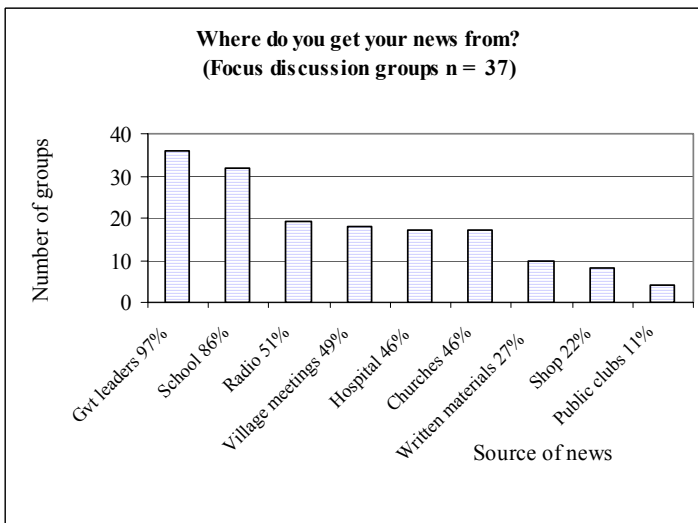


97% of groups answered this question.

Chart 40 shows that over half (58%) of groups said that drama groups were available or visited their area, video showers were mentioned by 29% of groups. Singers were mentioned by relatively few groups (13%) followed by journalists mentioned by only 3% of groups.

Chart 40: Are there communication specialists in the village or who visit the village?

Q. Where do you get your news from?

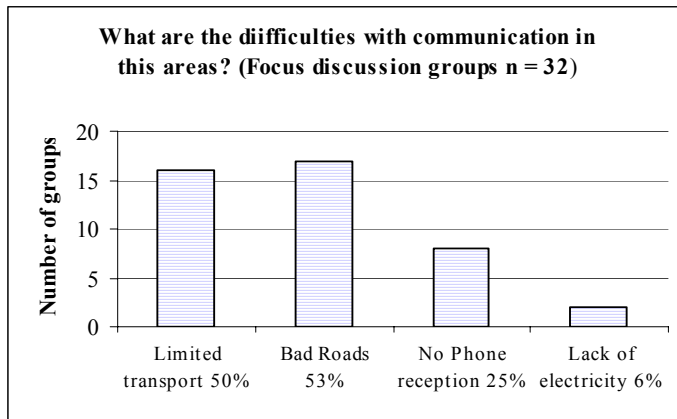


94% of groups answered this question.

Chart 41 shows that the most commonly mentioned sources of news in the 12 villages visited were government (mentioned by 97% of groups) and schools (mentioned by 86%). After those the hospital (46%), radio (51%), village meetings (49%) and churches (46%) were frequently mentioned. Written materials, shops and public clubs were the least mentioned sources of information.

Chart 41: Sources of News to the EA mountains communities.

Q. What are the difficulties with communication in this area?



82% of groups answered this question.

Chart 42 shows that lack of transport, and poor roads (these are inter-related) were mentioned by more than half of the groups (50% and 53% respectively).

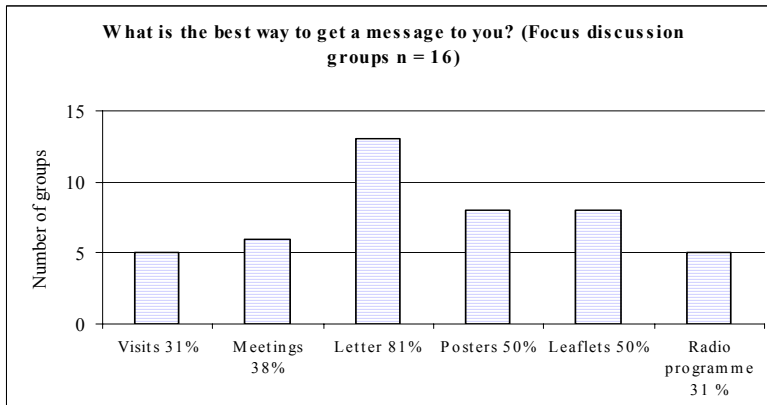
Lack of telephones (25%) was mentioned by a quarter of groups and lastly lack of electricity was mentioned by 6% of groups.

Interesting lack of postal services

was not mentioned by any of the groups.

Chart 42: Communication difficulties In the EA mountains communities

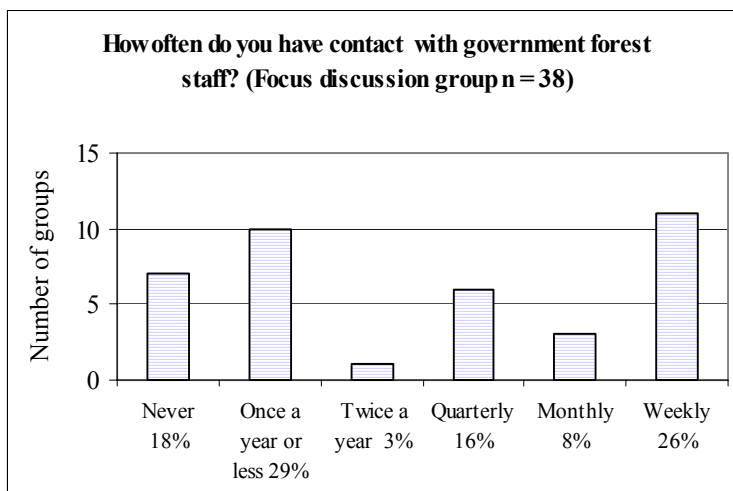
Q. What's the best way to get a message to you?



Only 16 groups (41%) answered this question. 81% of groups that answered the question indicated that a letter was the best mean of getting information to them. This is interesting given the limited postal services in these areas. 50% of groups mentioned posters and leaflets. Roughly a third of the groups mentioned Radio, meetings and visits to the village as the best ways to spread a message.

Chart 43: What is the best way to get a message to you?

Q. How often do you have contact with government forest staff?



97% of groups answered this question. Chart 44 shows that 18% of groups that answered said they never have contact with government forest staff. 29% of groups said they have contact once a year or less. 16% of groups said they have contact quarterly, 3% of groups said twice a year and 8% said monthly. Where there is a forest (ward) officer in the village there is weekly contact (26% of groups). It was noted that the level of contact depends greatly on the remoteness of the village.

Chart 44: Government forest staff visits to the EA mountains villages

Q. If you could put a picture on a poster to show how you feel about forests what would it be?

Ideas for posters suggested by focus discussion groups.

- A picture of a person who cut tree and put words which says do not cut trees
- Plant trees for the future generation
- Reflect collaborative activities of conservation, to include forests, people, water, fire, animals etc
Conservation of natural forests
- Panda mti kata mti - Plant a tree, cut a tree.
- Uharibifu mazingira - Huchoma Moto – Don't destroy the environment – don't start fires.
- To show the link between human activities and forest, water conservation
- Forests, people, water and animals
- Misitu ni Mali – Forest is Wealth.
- Care the environment with a picture of a woman planting a tree
- Natural environment and forests
- Trees, animals , people and water
- Picture of school kids planting trees
- "Misitu ni vyanzo vya maji" – Forests are the source of water.
- Forests and people
- "Kilio Cha Mti"
- Tree planting and conservation
- Mti ni mali, a picture of a farmer selling trees

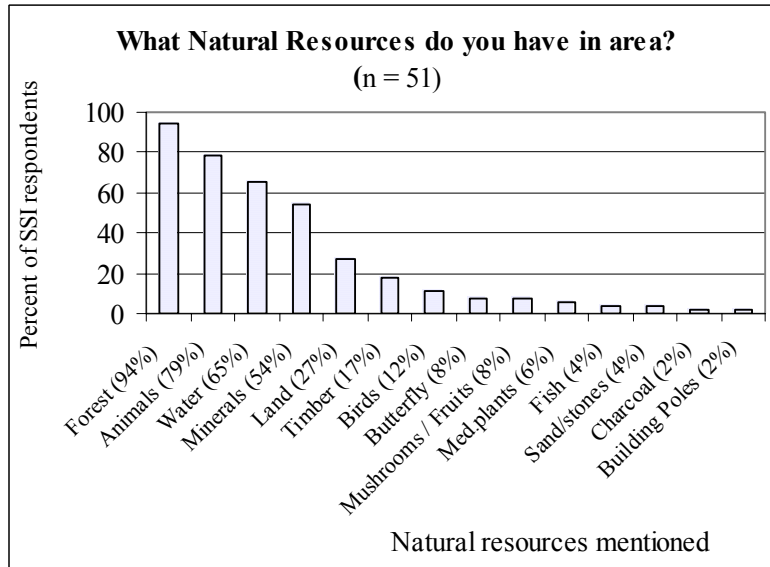
Q. What should be the goal of an Eastern Arc Mountain Forest communication strategy?

- To educate communities on the importance of conserving forests.
- Improved transportation will help frequent visits of forests experts.
- To provide conservation education to all forest adjacent people.
- To provide conservation education to all forest adjacent people in the Eastern Arc.
- To make people aware of the government policies.
- To inform people on tree planting and related issues, water problems.
- To make people aware of the government policies.
- To inform people on tree planting and forest conservation.
- To improve people knowledge in environmental issues.
- Gender issues should be consider when conducting meetings and seminars.
- To make people aware of the government policies, PFM AND JFM.
- Education on forestry to women.
- More women should be educated /participate in seminars.
- To provide people with tree planting knowledge, forest bylaws, forest conservation Education.
- To inform people on tree planting and related issues, water problems.

4.4 Semi- Structured Interviews

56 semi-structured interviews were conducted with a variety of people including district and ward government staff, timber dealers, and representatives from NGO's active in the Eastern Arc. A list of participants is presented in appendix 8.4.

Q. What Natural Resources do you have in this village / district / ward / constituency?

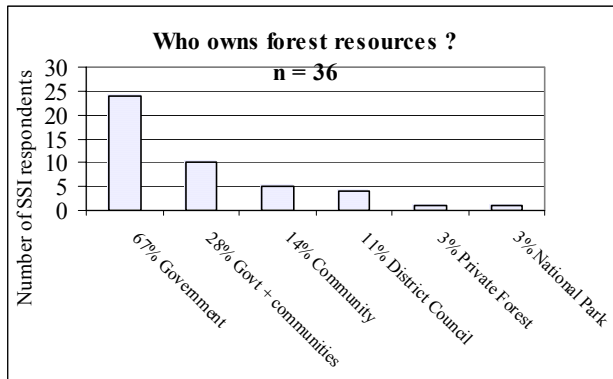


51 respondents answered this question.

Chart 45 shows forests, animals, water and minerals are commonly mentioned as natural resources in the Eastern Arc area. Fewer people mentioned land, charcoal, food items, timber, and specific animal groups.

Chart 45: Natural Resources found in the village / district / ward / constituency

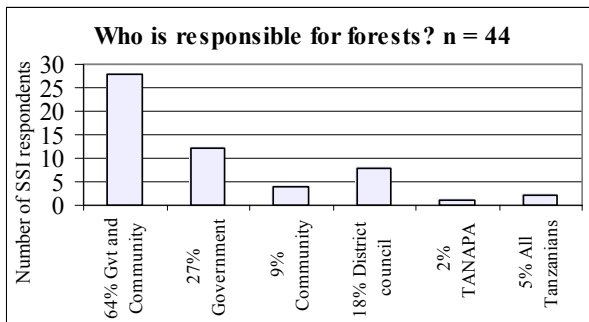
Q. Are there any forest resources, if so, who owns them?



36 of the 56 (64%) of respondents answered this question, all of those said yes there are forest resources in the area. Chart 46 shows that when asked about the ownership of the forests 67% of respondents said the 'government' owned forest resources, 28% said government and communities, 14% said 'community', 11% said district council and 3% mentioned Private forests and TANAPA respectively.

Chart 46: Who owns forest resources?

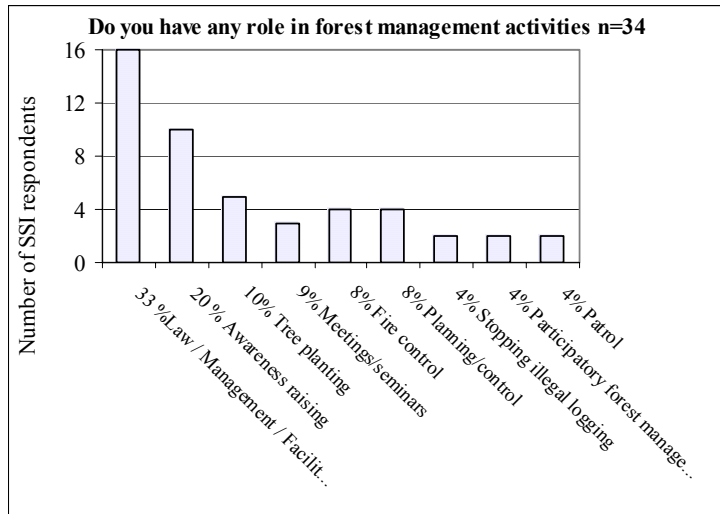
Q. Who is Responsible for forest resources?



44 respondents answered this question. Chart 47 shows that 64% of respondents said the government and communities are responsible for forest resources, whilst 27% said the government and 9% said the communities separately. 18% of respondents said that the district council, 2% said TANAPA and 5% said all Tanzanians are responsible for forests.

Chart 47: Who is responsible for forests?

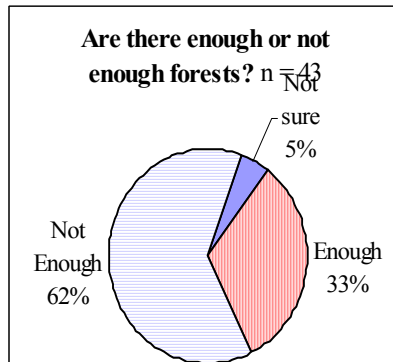
Q. Do you have any role/responsibility in forest management?



49 out of 56 (87.5%) respondents answered this question. Of these 49 respondents 46 said they played a role in forest management. Chart 48 shows that of those 46, 34 mentioned forest management activities they are involved with. 33% mentioned law enforcement, management and facilitation activities. 20% mentioned awareness raising activities. 10% mentioned tree planting. 9% mentioned holding meetings / seminars. 8% mentioned fire control and planning respectively. 4% of respondents mentioned stopping illegal logging, participatory forest management and patrols.

Chart 48: Do you have a role in forest management activities?

Q. Are there enough/too many forests?

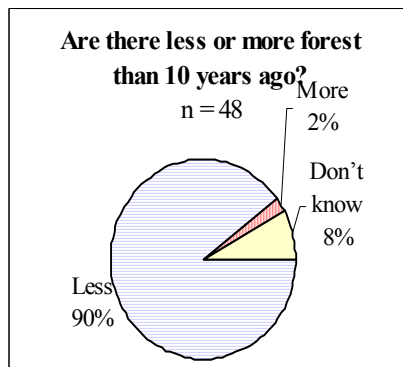


43 out of 56 (76%) people answered this question.

Chart 49 shows that the majority of respondents (62%) said there were not enough forests. About a one third (33%) said there were enough forests. 5% of respondents were not sure.

Chart 49: Are there enough or not enough forests?

Q. Are there more or less forests than 10 years ago?



48 people out of 56 (85%) answered this question.

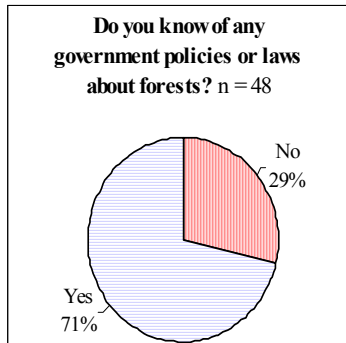
Chart 50 shows that the large majority (90%) stated there was less forest than 10 years ago.

2% said that forests are increasing (this is a representative from Kilombero Valley Teak Company that is undertaking commercial forestry of non-indigenous species).

8% said they did not know.

Chart 50: Is there more or less forests than 10 years ago?

Q. Do you know of any government forest policies or laws?

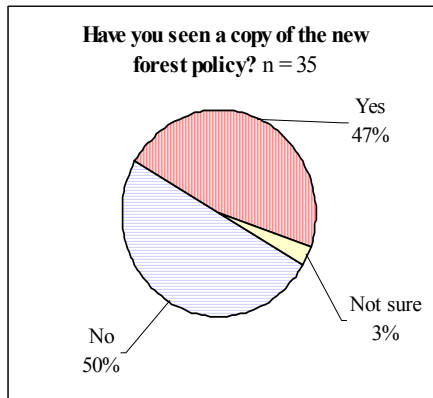


48 people out of 56 responded to this question (85%).

Chart 51 shows that 71% said they were aware of government forest policies and laws whilst 29% said they were not.

Chart 51: Do you know any government policies or laws about forests?

Q. Have you seen a copy of the new forest policy?



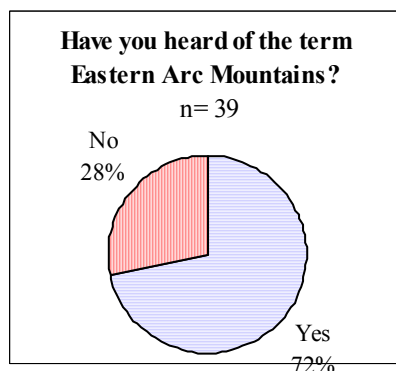
35 people answered this question (those who said they did not know of government forest policies in the previous question were excluded).

Chart 52 shows that just under half (47%) had seen a copy of the new forest policy.

50% of respondents had not seen a copy of the new forest policy and law. 3% of respondents were not sure.

Chart 52: Have you seen a copy of the new forest policy?

Q. Have you heard of the term 'Eastern Arc Mountains'?



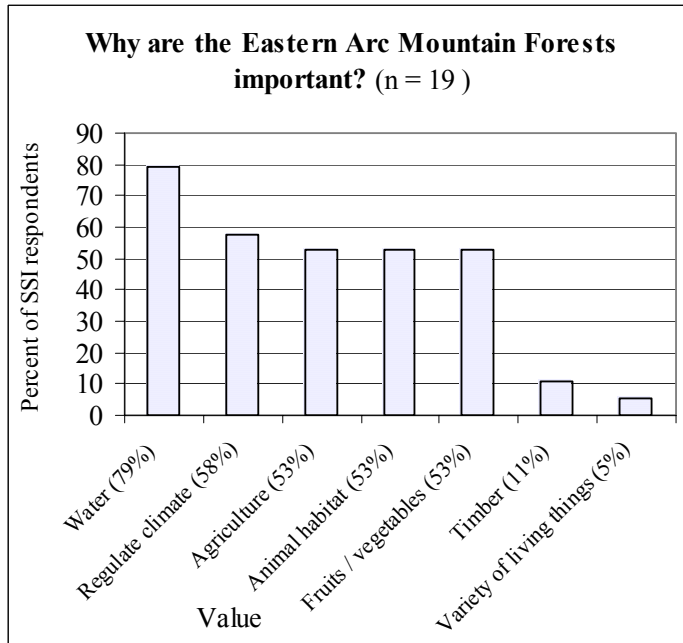
39 people out of 56 respondents answered this question (69%).

Chart 53 shows that the majority of respondents (72%) were familiar with the term Eastern Arc Mountains.

28% of respondents had not heard of the term.

Chart 53: Term Eastern Arc Mountains Forests

Q. Why the Eastern Arc Mountains important?

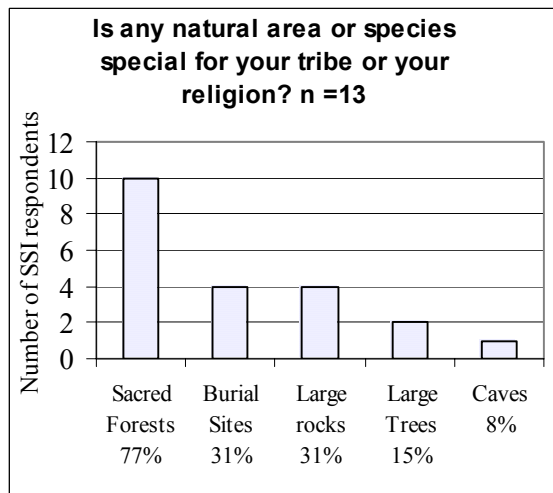


19 out of 56 (33%) interviewees answered this question.

Chart 54 shows that 79% of respondents said the Eastern Arc Mountains are important for water. 58% said they are important because they help regulate the climate. 53% of respondents said the mountains are important for agriculture, animal habitat, fruits and vegetables respectively. 11% said the Eastern Arc is important for timber, and 5% mentioned the variety of living things.

Chart 54: Why are the Eastern Arc Mountains important?

Q. Is any natural area or species special for your tribe or your religion?

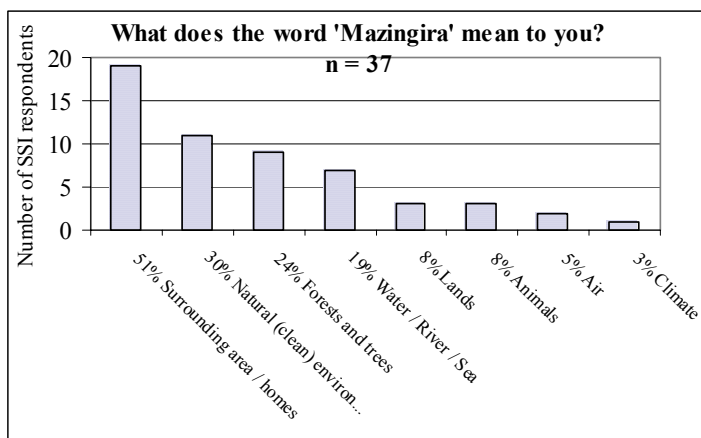


13 people answered this question (23%). Of these 85% said yes there are special areas or species, 15% said there were not.

Chart 55 shows the areas or items that have special cultural importance. 77% of respondents mentioned sacred areas of forests, 31% mentioned burial (or ritual sites) and specific large rocks. 15% mentioned large trees and 8% mentioned caves.

Chart 55: Is any natural area or species special to you, your tribe or your religion?

Q. What does Mazingira mean to you?

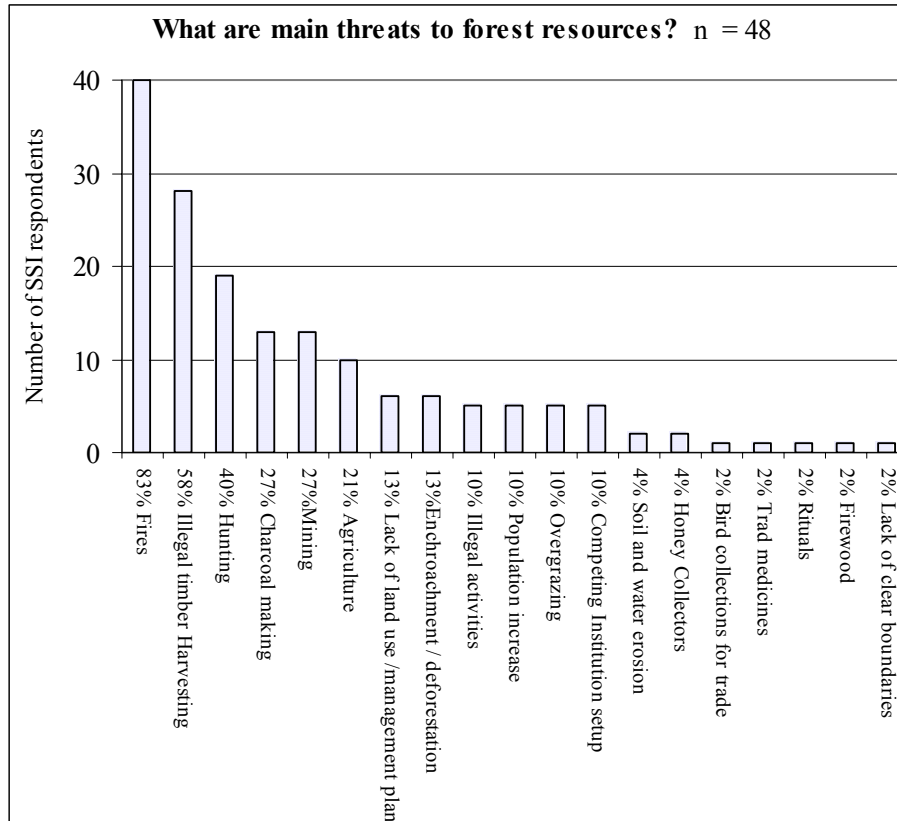


37 interviewees answered this question (66%).

Chart 56 shows that 51% of respondents said 'Mazingira' means the area surrounding them / their homes. 30% said it meant 'natural (clean) environment'. 24% felt Mazingira meant 'forests and trees'. 19% said Water (including rivers and seas). 8% of respondents said it meant land and animals respectively. 5% of people said Air and 3% said climate.

Chart 56: What does the word 'mazingira' mean to you?

Q. What are main threats to forest resources in this area? E.g. are they over-harvested?



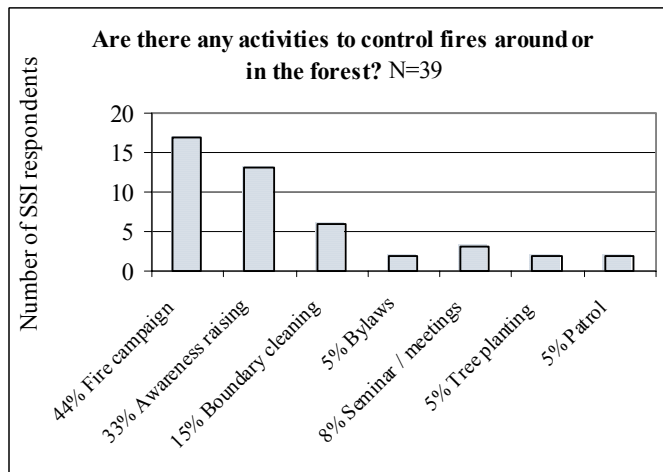
48 interviewees answered this question (85%).

Chart 57 shows the main threats mentioned by respondents are: Fires (83%), Illegal timber harvesting (58%), Hunting (40%), Charcoal making and mining (27%), Agriculture (21%).

Other threats to forests mentioned by less than 15% of respondents are shown on chart 58.

Chart 57: Main threats of forest resources.

Q. Are there any activities to control fires around or in the forest?

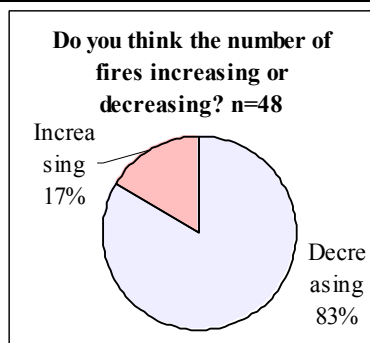


39 out of 56 interviewees answered this question (70%).

Chart 58 shows the activities to control fires mentioned the respondents, 44% said that are involved in fire campaigns. 26% mentioned awareness raising / education. 15% mentioned boundary clearing, 5% bylaws, 8% seminars / meetings, 5% tree planting and patrols.

Chart 58: Activities to control fires around or in the forest.

Q. Do you think the number of fires is increasing or decreasing?



48 people responded to this question (86%).

Chart 59 shows that 83% of respondents said the number of fires is decreasing.

17% of respondents said they are increasing.

Note: remote sensing data shows that in general fires are increasing across the Eastern Arc Mountains.

Chart 59: Status of the fires in the six districts visited

Q. What are most important environmental issues you would like to learn more about?

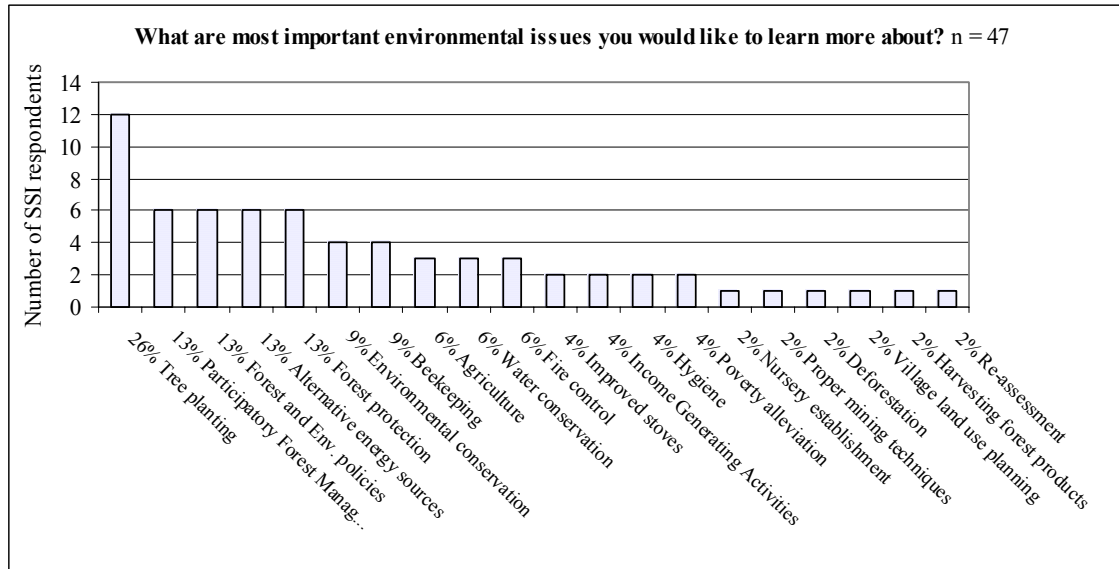
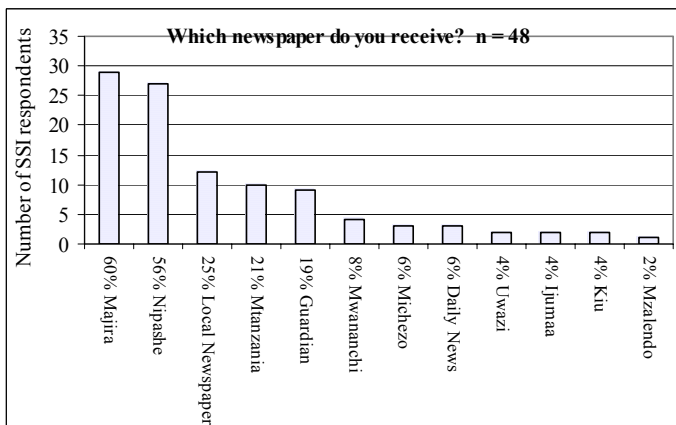


Chart 60: Most important environmental issues would like to learn more about

47 interviewees answered this question (84%). Respondents mentioned 20 different environment issues they would like to learn about. The most frequently mentioned issues are, tree planting (26% of respondents), followed by participatory forest management, forest and environmental policies and alternative energy sources, each mentioned by 13% of respondents. 9% of respondents mentioned environmental conservation and bee-keeping. Other topics mentioned less often are shown on chart 61.

Q. Do you receive newspapers and which newspapers do you read.

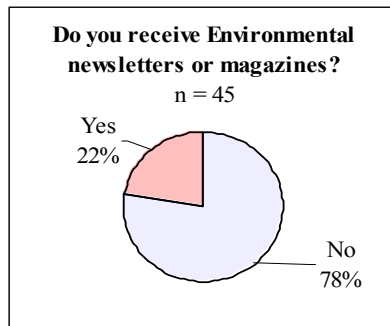


51 out of 56 interviewees answered this question (91%). Of those 94% (48) said they do receive newspapers.

Chart 61 shows that the most popular newspapers are Majira read by 60% of respondents and Nipashe 56%. 10 other newspapers were mentioned as shown in chart 62.

Chart 61: List of News papers received in the EA communities

Q. Do you receive environmental newsletters or magazines?



45 interviewees answered this question (80%).

Chart 62 shows that 22% of respondents said they receive environmental newsletters or magazines, the majority however, 78% do not.

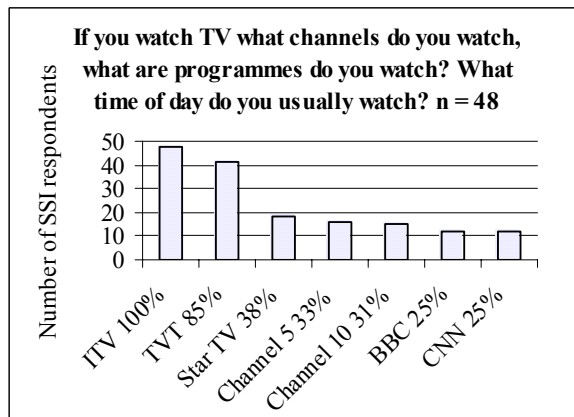
Chart 62: Do you receive environmental newsletters or magazines?

Q. Is there a place you can watch TV/video near where you live?

44 interviewees answered this question (78%).

95% of respondents said yes that have places to watch TV, 5% said no, they do not have a place watch TV/Video.

Q. If you watch TV which channels do you watch?



48 interviewees answered this question.

Chart 63 shows that 100% respondents watched ITV, closely followed by 85% that said they watched TVT. 38% of respondents mentioned Star TV. 33% mentioned Channel 5 and 31% mentioned Channel 10. 25% of respondents watched BBC and CNN which are the only English Language TV channels mentioned.

Chart 63: TV channel watched in the EA

Q. Which radio stations do you receive here?

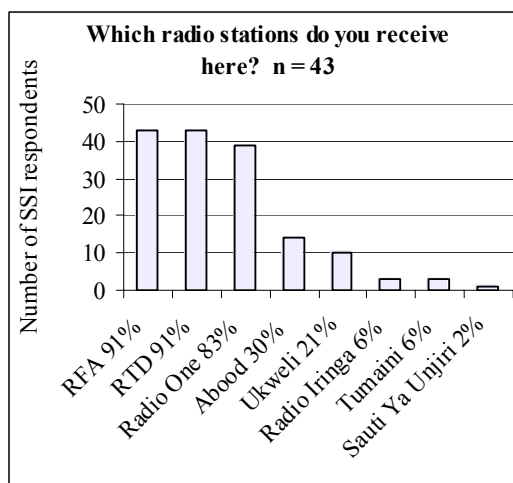
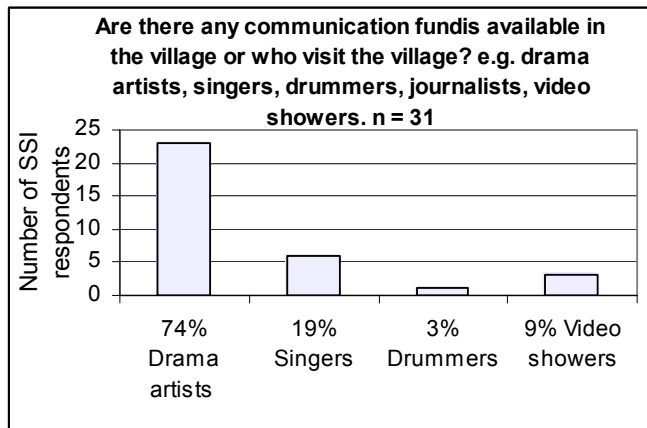


Chart 64 shows the radio stations received in the communities around Eastern Arc Mountains are RTD (91% of respondents), RTD (91%), Radio One (83%), Abood (30%), Ukweli (21%), Radio Iringa (6%), Tumaini (6%) and Sauti ya Unjiri (2%).

Chart 64: Radio stations do you received in the EA

Q. Are there any communication fundi's available in the village or who visit the village e.g. drama artists, singers, drummers, journalists, video showers.

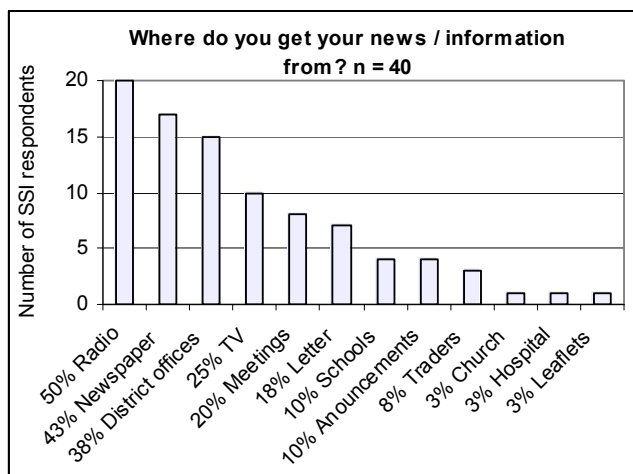


31 interviewees answered this question (55%). Of those 87% said there are 'communication fundi's' in the area.

Chart 65 shows that 74% of respondents said there are Drama groups in the area. 19% of respondents said there are Singers in the area. 3% of respondents mentioned drummers and 9% mentioned video showers.

Chart 65: Availability of 'communication fundi's'

Q. Where do you get your news / information from?

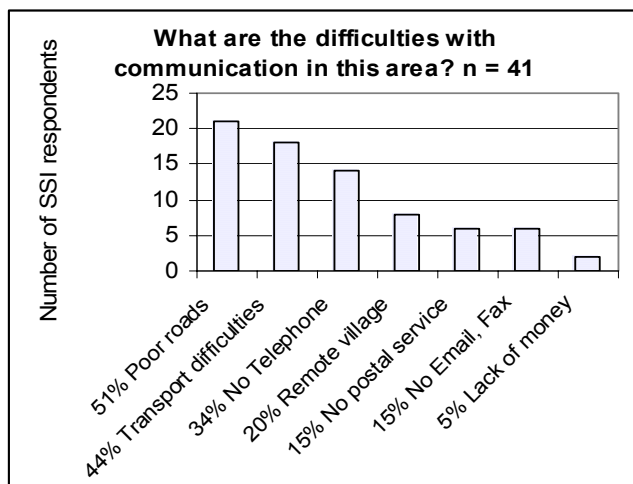


40 interviewees answered this question (71%).

Chart 66 shows twelve sources of information were mentioned. The most frequently mentioned source of news / information was the radio mentioned by 50% of respondents. Newspapers followed closely with a mention by 43% of respondents. 38% of respondents said they get information from the District Office, 25% said from TV, 20% said meeting, 18% said letters and 10% said schools. A few respondents (8%) said they get news from traders and finally 3% mentioned Church, Hospitals and Leaflets as sources of information.

Chart 66: Sources of News/Information.

Q. What are the difficulties with communication in this area?

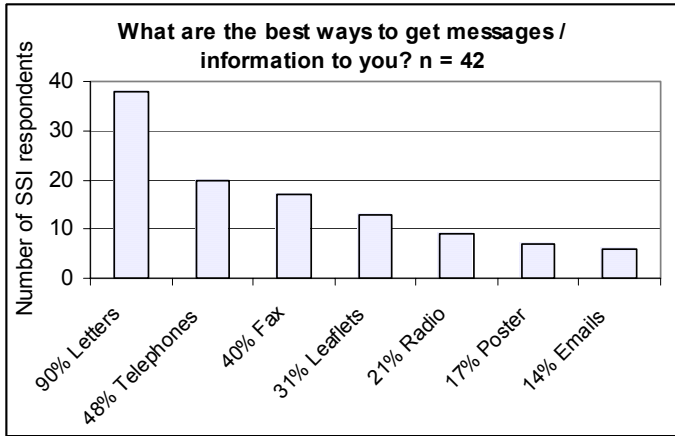


41 interviewees answered this question (73%).

Chart 67 shows the causes of communication difficulties in the Eastern Arc Mountains. 51% of respondents mentioned poor roads, and 44% mentioned lack of transport. Of course these two factors are linked. No telephone was mentioned by 34% of respondents, 20% mentioned remote villages, 15% lack of postal service and no email or fax. Lastly 5% mentioned lack of money as a cause for communication difficulties.

Chart 67: Communication difficulties in the Eastern Arc Mountains

Q. What is the best way to get messages/information to you?



42 interviewees answered this question (75%). Chart 68 shows that 90% of respondents said letters were the best way to get information to them followed by telephones (48%), fax (40%).

31% of respondents mentioned leaflets which is interestingly more than the 21% who said radio. Posters were mentioned by 17% of respondents and lastly emails were mentioned by 14%.

Chart 68: The best ways to get the messages to the EA communities.

4.4.1 Summary of findings from higher level stakeholders

Semi structured interviews were conducted with 18 senior level stakeholders.
Table 16 below summarises the findings from these interviews.

Table 14: Summary of findings from higher level stakeholders

Name of Stakeholder Organization	Position	Comments on the goal of IEC Strategy	What did we learn from them about their activities / coordination / knowledge of new NFP / awareness of forest values etc. (where appropriate)
Mr Ngalason Green COM	Coordinator	-Link with other sectors and avoid duplication of activities -Harmonized with MNR strategy and be global	-environmental education activities well established in project areas and are linked with other government projects/programs such as the Simmors and TFCMP -Quite aware of the NFP and have linkages with its communication policies/strategies
Felix Malya TFCMP	Coordinator	-The strategy should include local communities needs and solve problems which were observed during data collection	-TFCMP is a major project that supports the NFP. -Conservation and Management of Eastern Arc mountains Forest if part of TFCMP and the implementation of the NFP
Mr Matiku FBD	Communication Officer	-For the EA strategy there should be specific means of communication accepted by the community	-The Communication Department of FBD have already designed own strategies of information and communication which are operational. -Translates and distribute NFP to district forest level, as well have a newsletter and radio programs on forests.
Mary Kivaria Ministry of Education	environmental education Officer	-A strategy should involve coordination of all stakeholders to provide Education for sustainable development	-Has produced Environmental Education guidelines for primary school but these are still untested and in the draft form. - Collaborates with the Institute of Education in the process of mainstreaming environmental education in schools curriculum -Not aware of the NFP, and do not have any links with either FBD or the Ministry of Natural Resources.
Anna Maembe NEMC	Coordinator environmental education	-Merge it with Local Knowledge/Information, use local institution to disseminate information	-Has NEECS strategy in draft form. -Quite aware of the NFP and collaborates well with FBD and MNRT in daily activities -Have forest conservation programs in 12 districts as a pilot for testing the National Environmental Education Strategy which was developed in collaboration with WWF.
Stephen Mwinuka Institute of Education	Principal Curriculum developer	-To provide Environmental Education from Primary School levels	-Environment is included in the curriculum as a cross cutting issue but teachers need more support in teaching Environmental Education. - Undertake training seminars for DEOs in environmental education so that they become familiar - Have not seen the NFP activities have no linkage with those of MNRT

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Name of Stakeholder Organization	Position	Comments on the goal of IEC Strategy	What did we learn from them about their activities / coordination / knowledge of new NFP / awareness of forest values etc. (where appropriate)
			-Weak communication links with NFP and no direct coordination of information.
Mr Kami Ministry of Lands	Communication Officer	-To incorporate land use management plans as part of participatory forests management and conservation	-Have developed own communication strategies specifically for channelling ministerial information, and reaching the communities on land issues. -Have never seen the NFP, and have weak links with the MNRT.
Mr Mariki	Conservation Programme Director	-To incorporate all the ideas from Village levels to National level	-Involved and collaborates with the MNRT in implementing the NFP
Mary Shuma	Education Officer	-To provide formal and Informal Environment Education to Communities in the EA mountains	-Have environmental education programs and collaborates with Ministry of Education and other stakeholders.
Joyce Bayona WWF	Communication Officer	-To involve more stakeholders in environmental management	
Mrs Taraba Ministry of Water and Livestock Development	Communication and Protocol Officer	-To work with all stakeholders in the proper use and management of water resources	- Programs involve the conservation of forests in water catchments areas. -Have not seen the NFP; have weak links with MNRT. -Some parts of its policy differ with the NFP.
Sechelela Balisidya LEAT	Communication Officer	-The strategy should address with the needs of the society	-Addresses community issues including forest conservation
Mr. Odhiambo VPO	Communication Officer	-Finding alternative ways to the threats present in the EA mountains	-Have developed a communication strategy so as to link processes with other stakeholders in their Poverty Reduction Strategy -Aware of the NFP and FBD activities, have activities of forest conservation as part of their programs.
Joan Mbuya Ministry of Finance	Acting Principal Information Officer	-Educate the people on the benefits of EA mountains for the present and future generation. Benefits must be clear to be understood by people	-Have developed a communication strategy to enable linkage with other ministries communication strategies. -Established information sharing links and produces information packs for communities -Not aware of FBD as well as the NFP.
Gertrude Lyatuu UNDP	Energy and environment Unit- Team leader	-To achieve overall community participation on conservation of Eastern Arc mountains. - To design information packages which will be very specific for targeted groups	-UNDP has various programs national wide on environment and forest conservation in particular -Finances the CMEAMF Project -Quite aware of FBD and collaborates in many issues/areas of policies and strategies.
Dr. Kafumu Ministry of	Senior Communication	-To have a cross sectoral strategy which can be	-In the process of establishing communication strategy

Information, Education and Communication Strategy - Data Report – Semi-structured Interview Results

Name of Stakeholder Organization	Position	Comments on the goal of IEC Strategy	What did we learn from them about their activities / coordination / knowledge of new NFP / awareness of forest values etc. (where appropriate)
Energy and Minerals	Officer	understood by many people	<ul style="list-style-type: none"> -There is no sectoral coordination with the MNRT - Have own policy which at some areas differs with those of the NFP -Aware of FBD but due to lack of coordination of activities, mining licenses are provided to prospectors regardless of whether the site is in a forest reserve.
Peter Potter Dutch Embassy	Environmental Education and Health Attaché	-To provide people with actual environmental education so as to bring about behavioural change in natural resources conservation	<ul style="list-style-type: none"> -Collaborate with the Ministry of Education and the Ministry of Health in providing education on environment and assist in HIV/AIDS programs -Not aware of FBD of the NFP and interested to get information Aware of threats on existing forest resources and can support programs if involved.
Mr. Marten Lumbanga Presidents Office	Principal Secretary	-To be very comprehensive and have a vision of understanding all national strategies responsible in environmental education to avoid duplication of efforts.	<ul style="list-style-type: none"> -The Presidents office has established Directorate of Communication which has already set up communication departments in all ministries. -This Directorate of Communication coordinates information flow among ministries and creates two way communication channels with other sectors activities. -Formulated a communication policy and strategies (Drafts) to implement the policy.

4.5 Village Mapping

Various types of data were collected during the village mapping exercise, this is summarised below.

4.5.1 Male / Female head of households

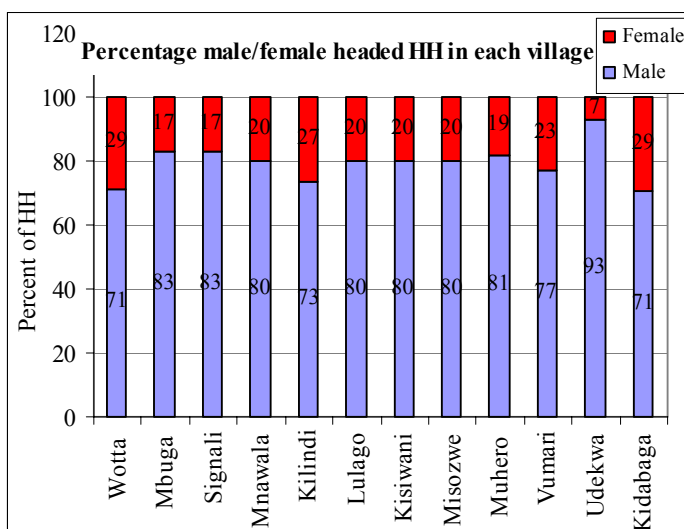


Chart 69: Male /Female headed households in 12 villages visited

Village	No. of male headed households	No. of female headed households
M'wotta	316	128
Mbuga	324	66
Signalali	334	69
Mnawala	562	139
Kilindi	399	56
Lulago	246	89
Kisiwani	226	56
Misozwe	396	98
Muhero	286	65
Vumari	207	62
Udekwa	383	28
Kidabaga	177	74

Chart 69 and Table 15 show there is some variation between the twelve villages in the percentage of households headed by females. Ranging from only 7% of households in Udekwa to 29% in Kidabaga and Mwanawotta.

4.5.2 Literate / Non Literate households

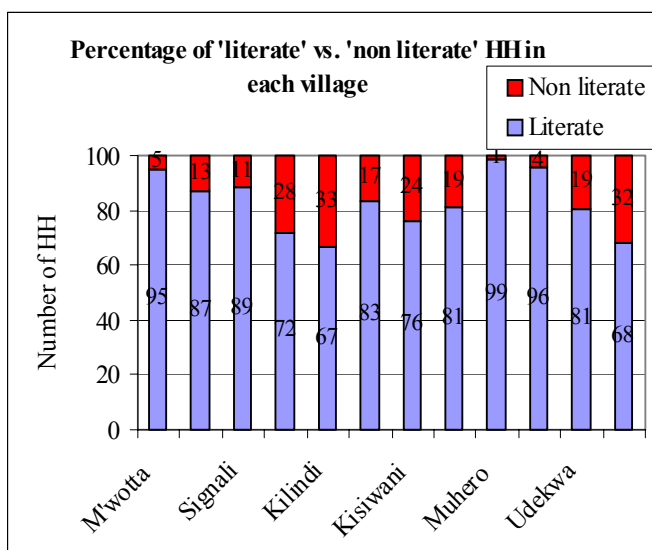


Chart 70: Summary of Literate vs. non literate households

Chart 70 and Table 16 show that the percentage of 'literate'¹ and 'non-literate'² households ranges from only 1% in Muhero village to 33% in Kilindi village.

Village	Literate households	Non literate households
M'wotta	420	24
Mbuga	339	51
Signalali	357	46
Mnawala	502	199
Kilindi	304	151
Lulago	278	57
Kisiwani	214	68
Misozwe	401	93
Muhero	346	5
Vumari	258	11
Udekwa	332	79
Kidabaga	171	80

¹ 'Literate' for the purposes of this report is defined as a household with at least one person who has completed primary school.

²'Non-literate' for the purposes of this report is defined as a household with no one who has completed primary education.

4.5.3 Education level of households heads

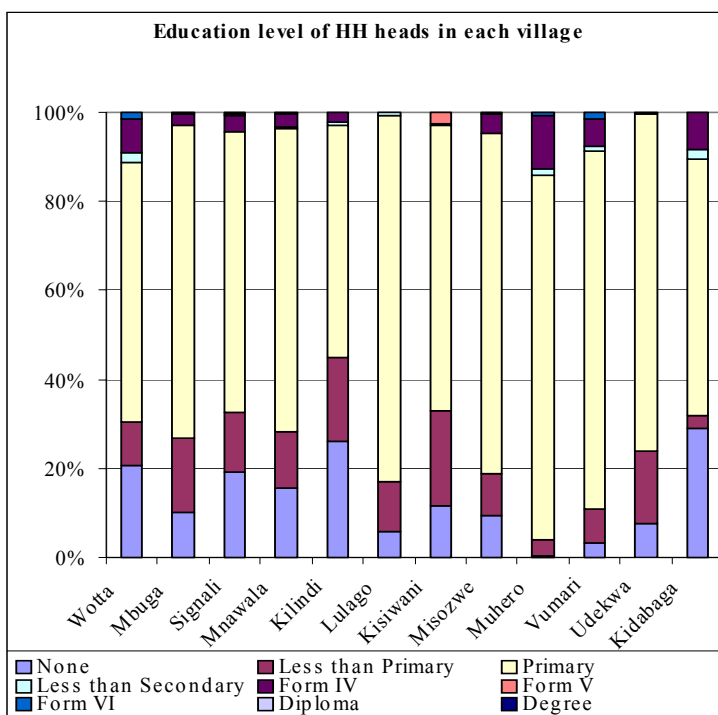


Chart 71 and Table 17 show the variation in the level of education of the heads of households in each village.

Notably in Muhero all heads of households have had some form of education.

Kilindi and Kidabaga have the highest number of households heads with no formal education.

Chart 71: Education level of heads of households

Table 17: Education level of heads of households

Village	M'wotta	Mbuga	Signal	Mnawala	Kilindi	Lulago	Kisiwani	Misozwe	Muhero	Vumari	Udekwa	Kidabaga	Total
None	92	40	78	109	118	20	33	47	1	9	32	73	652
<1°	43	65	53	90	87	37	60	46	13	20	66	7	587
1°	259	274	254	476	237	275	181	377	288	217	312	145	3295
<2°	9	0	0	3	3	3	0	1	5	3	1	5	33
Form IV	35	9	15	21	10	0	1	22	42	16	0	21	192
Form V		0	0	0	0	0	7	0	0	0	0	0	7
Form VI	6	2	2	2	0	0	0	0	2	4	0	0	18
Diploma	0	0	1	0	0	0	0	0	0	0	0	0	1
Degree	0	0	0	0	0	0	0	1	0	0	0	0	1

4.5.4 Households with and with out radios

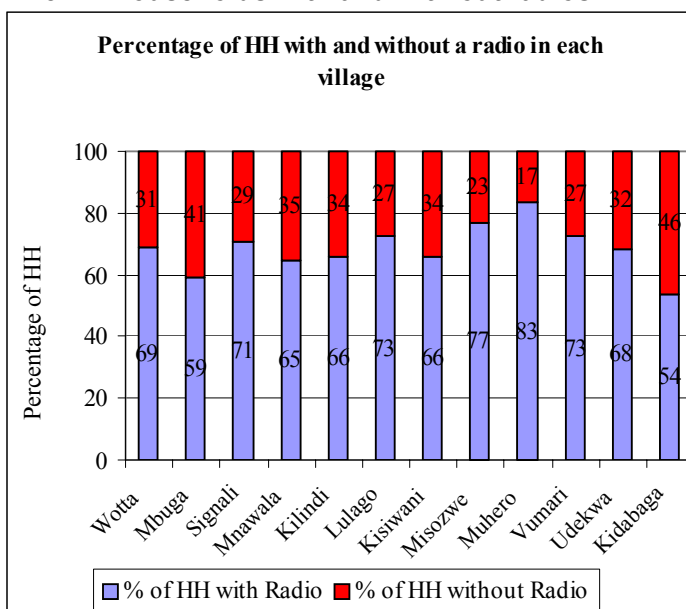


Chart 72: Percentages of households with and without radio

Table 18: Number of households with and without radio.

Village	households with Radio	households without Radio
M'wotta	307	137
Mbuga	231	159
Signalali	285	118
Mnawala	453	248
Kilindi	301	154
Lulago	244	91
Kisiwani	186	96
Misozwe	381	113
Muhero	293	58
Vumari	196	73
Udekwa	281	130
Kidabaga	135	116
Total	3293 (69%)	1493 (31%)

Chart 72 and Table 18 show the percentage/number of households with and without radios.

Many households in the study area own a radio (overall average of 69%), although this varies between villages with only 54% of households in Kidabaga owning a radio to 83% in Muhero.

4.5.5 Households with and with out cassette players

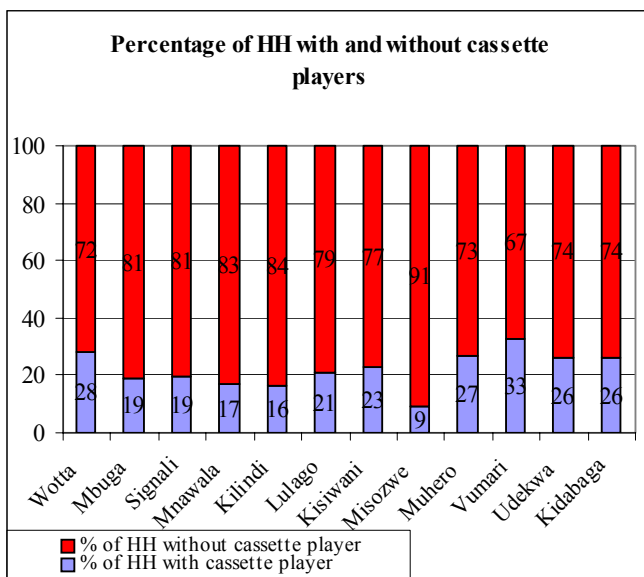


Chart 73: households with and with out cassette players

Table 19: Number of households with and without radio cassette player

Village	households with cassette player	households without cassette player
M'wotta	125	319
Mbuga	75	315
Signalali	78	325
Mnawala	117	584
Kilindi	73	382
Lulago	69	266
Kisiwani	65	217
Misozwe	45	449
Muhero	94	257
Vumari	88	181
Udekwa	107	304
Kidabaga	66	185
Total	1002 (21%)	3784 (79%)

Chart 73 and Table 19 show that relatively few (average 21%) households own a cassette player, this drops to as little as 9% in Misozwe Village and is as high as 33% of households in Vumari village.

4.5.6 Impact of gender of head of households on radio ownership

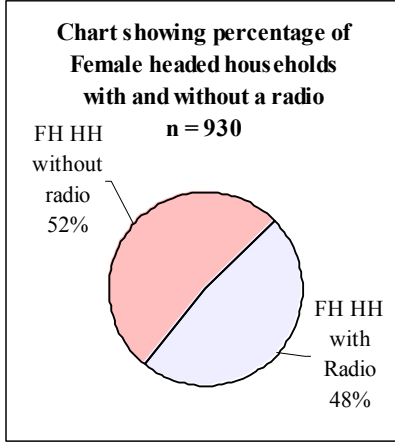


Chart 74: Female headed households with and without a radio

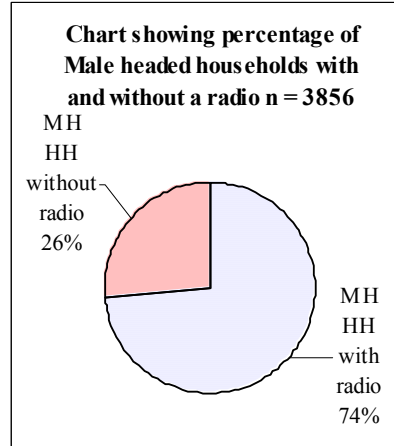


Chart 75: Male headed households with and without a radio

Charts 75 and 76 show that Male headed households are more likely to have a radio than female headed households. 74% of male headed households owned a radio compared to only 45% of female headed households.

4.5.7 Impact of gender of head of households on education levels

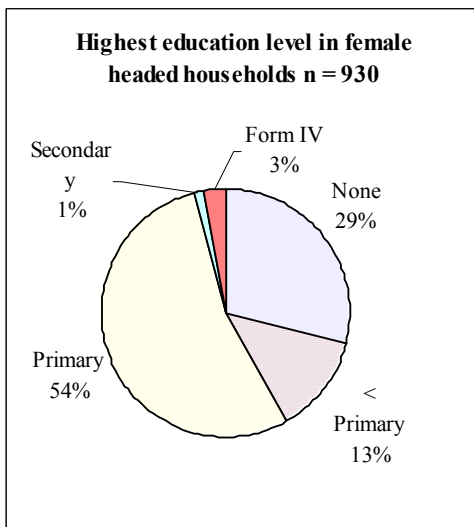


Chart 76: Education level of female headed households

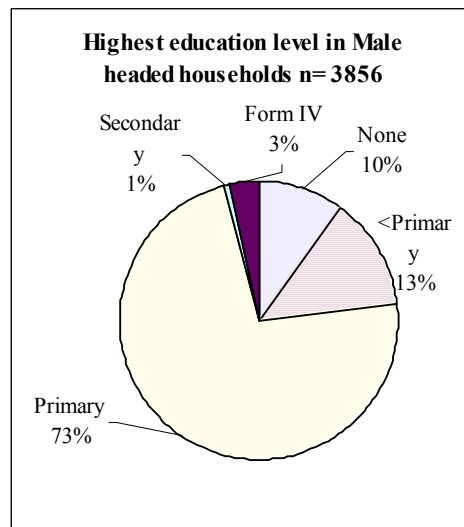


Chart 77: Education level of males headed households

Charts 77 and 78 show there are more male headed households with primary education, 73% versus 54% of female headed households, and consequently fewer households with no education 10% of male headed households versus 29% of female headed households.

4.5.8 Impact of gender of head of households on literacy

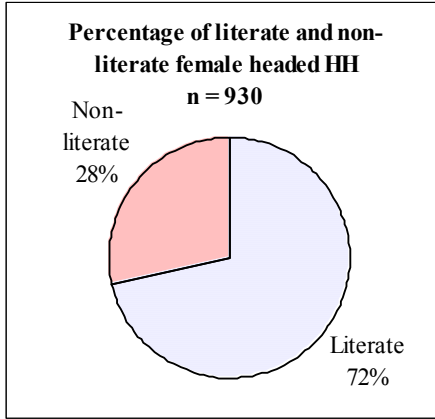


Chart 78: Literate and non literate female headed households

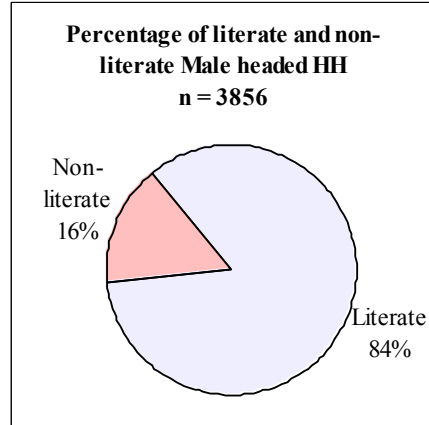


Chart 79: Literate and non literate male headed households

Charts 79 and 80 show that a larger percentage of male headed households are literate than female headed households, 84% versus 72% respectively.

4.6 Information Source Trust Ranking

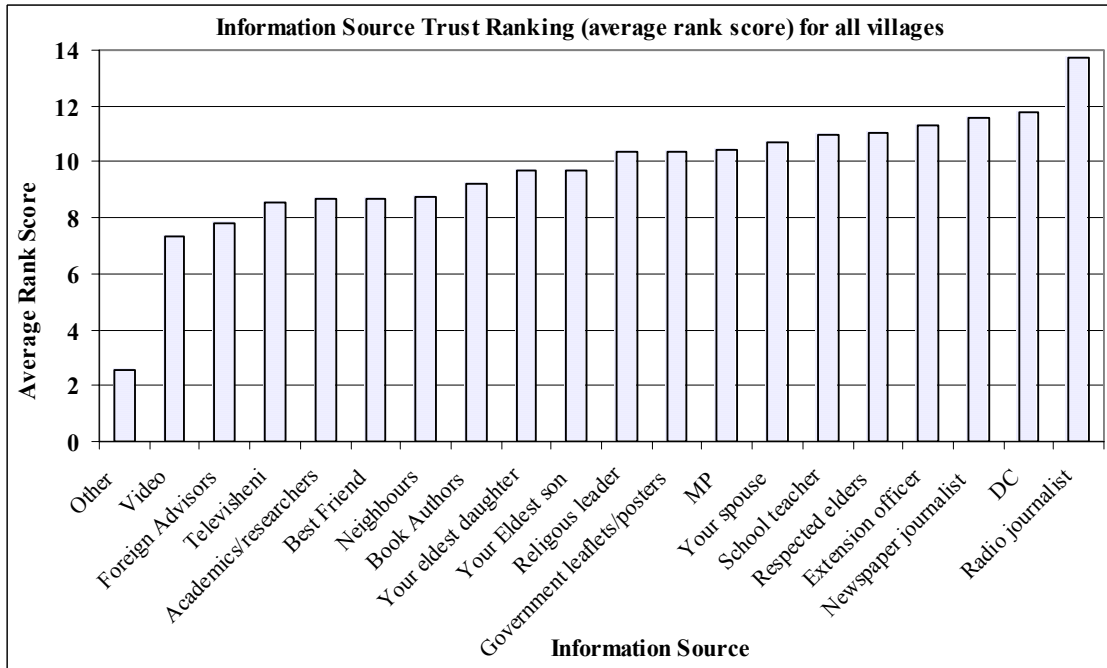


Chart 80: Information Source Trust Ranking (average rank score) for all the villages

Chart 81 shows the average trust ranking of various information sources. On average Video is least trusted and radio journalists most trusted (other relates to a mixture of other information sources defined by the participant). This average ranking masks a lot of variation between villages as shown in Appendix 8.5.

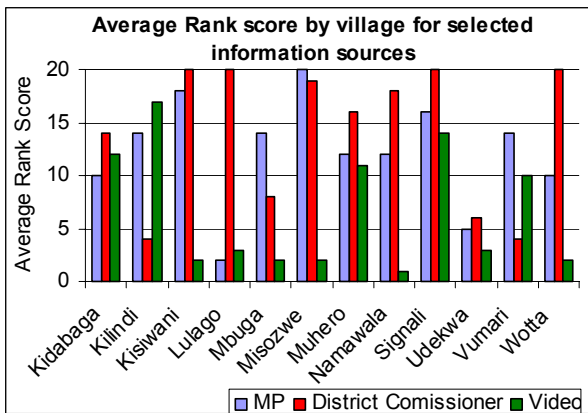
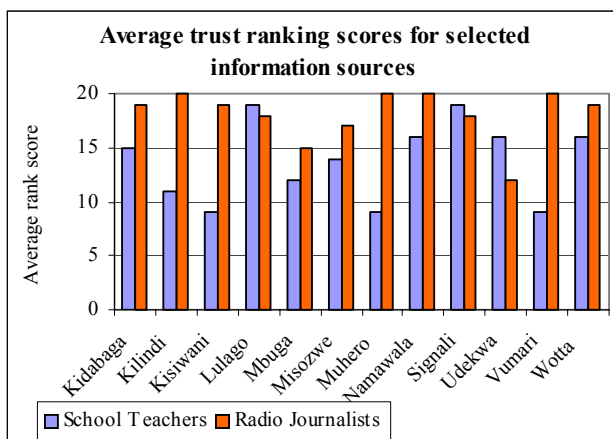


Chart 82 shows the variation in ranking between villages for three selected information sources. MP's were ranked as the most trusted source of information in some villages but ranked lowest in others. A similar pattern is seen with District Commissioners. Video seems to divide opinion with some villages ranking it as a relatively well trusted information source and others ranking it very low.

Chart 81: Average rank scores by villages for selected highly variable information sources



Some of the information sources have a uniformly high ranking across all the villages.

Chart 82 shows that School Teachers and Radio Journalists are trusted sources of information across all the villages.

Chart 82: Average trust ranking scores for selected 'uniform' information sources

4.7 Pair-wise comparison of literature based materials

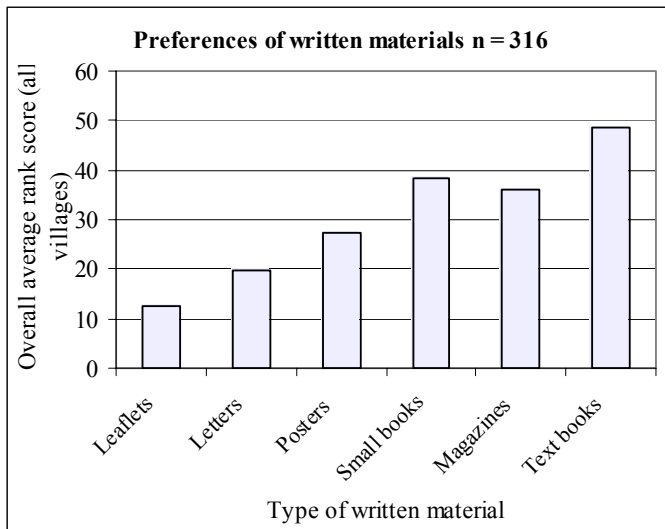


Chart 84 shows that text books were the most preferred form of written materials, followed by small books, magazines, posters, letters and finally leaflets.

Text books were preferred because of the quantity of information and the fact they can last a long time.

It was noted during the exercise that people were swayed by the perceived value of the item displayed, rather than considering the item as a 'means' of communication.

Chart 83: Average written material preference ranking scores combined for 12 villages

However it is clear that there is a demand for written materials that provide detailed information about a topic.

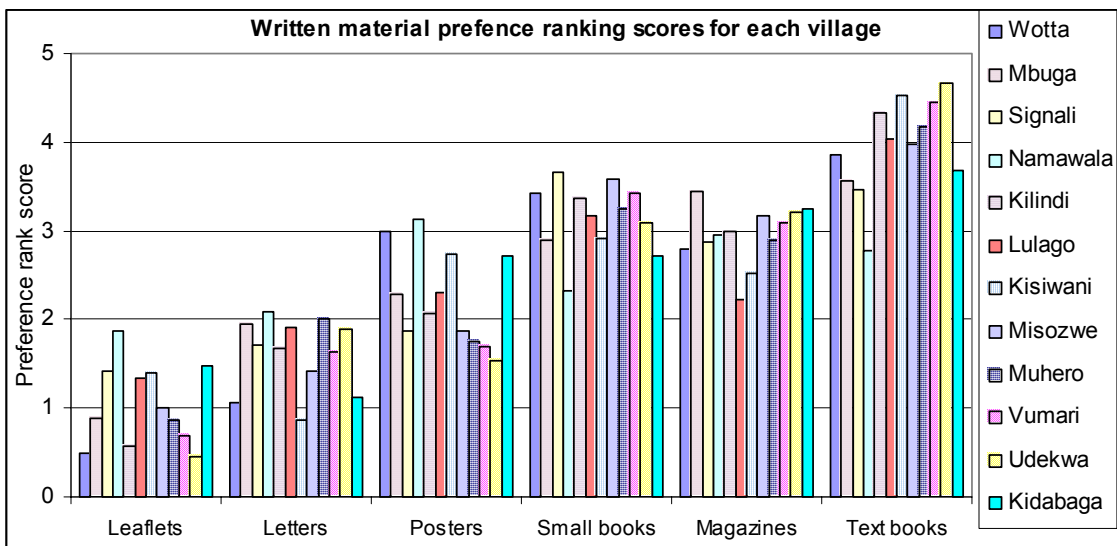


Chart 84: Average written materials preference ranking scores for each village

Chart 85 showing average preference ranking scores for each village shows a similar pattern Chart 84 (combined average scores for all villages). Text books are clearly most popular and leaflets clearly least popular. There is some small variation in the overall pattern, for example in Namwawala village posters were on average more popular than small books and magazines.

4.8 Preference of Audio Visual Methods

When asked to choose between Radio, TV, Information Tapes and Drama, in all twelve villages’ radio was the most preferred form of audio – visual communication.

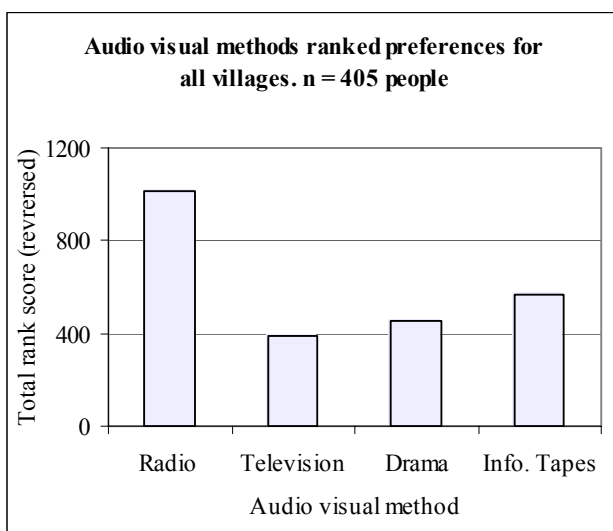


Chart 85 shows that for all villages combined radio were ranked first, followed by information tapes, drama and television.

Charts 87 and b below show this pattern is the same for men and women.

Reasons governing these preferences are thought to reflect the socio - economic status of people. More expensive TV’s and cassette players are scarce in the villages visited whilst radios are relatively common.

Chart 85: Summary of Audio visual preferences in all 12 villages visited

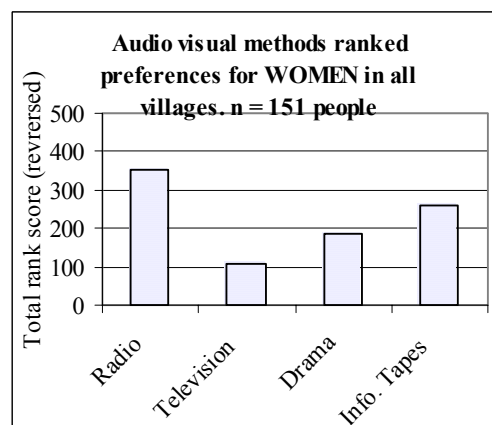
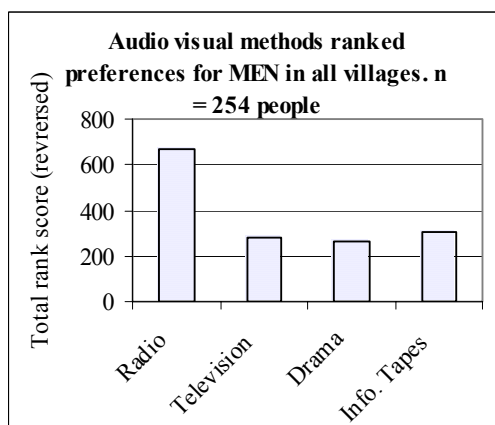


Chart 86 a and b: Audio visual preferences of men (a) and women (b) in all 12 villages visited

Table 20 shows that for all 12 villages, radio was ranked first (most preferred), while TV was the lowest for six villages (50% of villages), drama was lowest for five villages (42% of villages), and Information tapes were last in one village (Mwanawotta).

Village	Highest Audio Visual Preference	Lowest Audio Visual Preference
Mwanawotta	Radio	Information tapes
Mbuga	Radio	TV
Signali	Radio	Drama
Namawala	Radio	Drama
Kilindi	Radio	Drama
Lulago	Radio	TV
Kisiwani	Radio	TV
Misozwe	Radio	TV
Muhero	Radio	Drama
Vumari	Radio	Drama
Udekwa	Radio	TV
Kidabaga	Radio	TV

In general there is limited access to TV’s in the villages visited, where there is a TV in the village it is usually in a central location and one pays a small amount to enter and watch. They are not widely available in individual’s houses. Television was ranked the least favourite form of audio visual communication in 6 of the twelve villages.

Information tapes depend upon having a cassette player, our data shows that only 21% of households (Village mapping) had a cassette player, where-as 69% of households have a radio. In addition the availability and distribution of cassette tapes is more difficult at the local level than receiving radio programmes. Information tapes were ranked the least favourite form of audio visual communication in 1 of the twelve villages.

In addition TV and tape cassettes are relatively expensive.

Unexpectedly drama was ranked the least favourite audio-visual method of communication in five out of the twelve villages. Reasons for this are not fully known, but perhaps the lack of good drama groups accounts for this.

Interestingly there is a link to the information trust ranking which shows that radio journalists on average are the 'most trusted sources of information.

4.9 Forest Walks

4.9.1 Communities' Perception of Forest Values

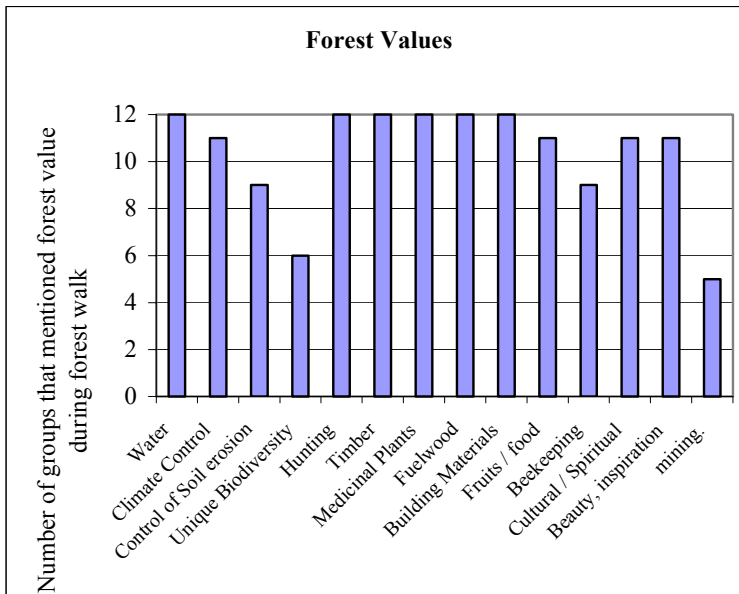


Chart 87: Communities' Perception of Forest Values

Chart 87 and Table 21 show that there was a broad appreciation of the values of forests across all the villages.

Practical forest values such as providing water, areas for hunting, timber, Medicinal Plants, Fuel wood, Building Poles were mentioned by each village.

The least mentioned forest values were mineral prospecting mentioned in only five villages (although this may be a reflection of local geology rather than peoples' knowledge) and Unique Biodiversity.

Only half (6) of the villages mentioned that the forests were valuable for the unique biodiversity found within them.

Three quarters (9) of the villages mentioned control of soil erosion and beekeeping. Cultural values, Climate control, Cultural/ Spiritual values and other values (such as beauty) were mentioned by almost all villages (11).

Table 21: Communities' Perception of Forest Values

Number of villages that mentioned.	Forest Value Mentioned
12	Water
12	Hunting (incl. animal trade and food)
12	Timber
12	Medicinal Plants
12	Fuelwood
12	Building Poles / Materials
11	Climate Control
11	Fruits / leaves / berries / mushrooms
11	Cultural / Spiritual Values
11	Other Values mentioned e.g. beauty, inspiration, peace
9	Control of Soil erosion
9	Beekeeping
6	Unique Biodiversity
5	Mineral Prospecting or mining.

4.9.2 Detailed Knowledge

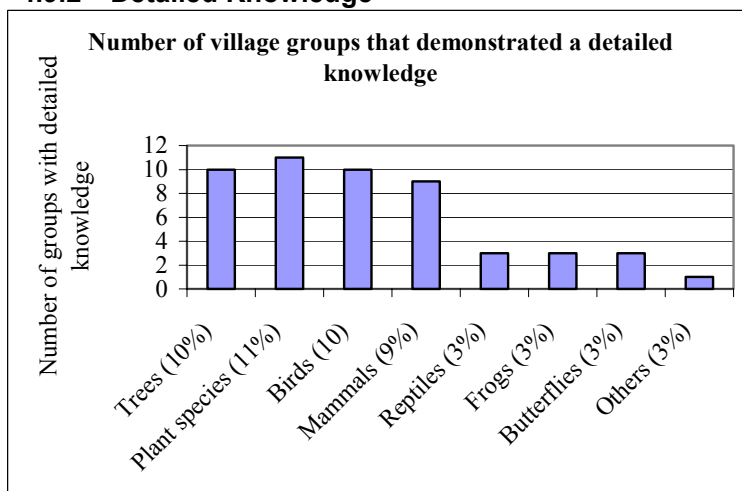


Chart 89 shows that more than three quarters of the groups had at least one person who demonstrated a detailed knowledge about tree species, other plant species, birds and mammals.

Less than a quarter of villages had anyone with a detailed knowledge of reptiles, frogs and butterflies.

Chart 88: Number of village groups that demonstrated a detailed knowledge about selected topics

4.9.3 Community link to forest

All the communities in the villages visited demonstrated a strong link to their associated forests. Often there were stories, tales about the forest, details of the history of the forest were provided and there seemed a sense of responsibility towards the forest.

These stories are often related to getting lost in the forest, in several villages there were reports of plant that if trod on would leave the traveller confused and unable to find his/her way home. Bad spirits are also blamed for people disappearing. Reports of large snakes were also common. In Udekwa there are detailed stories and tradition relating to the caves in the Ndundulu Mountains which is a sacred site. Several of the villages reported that traditionally elders would go to a certain place in the forest and ‘pray’ for rain. In Kilindi the odd shape mountain had special significance in many peoples mind even appearing as a prominent feature in children’s drawings.

A positive attitude towards the forest was demonstrated by the community in every village, although the need for more farm land was mentioned in Lulago. Anger was expressed towards the destruction caused by mining activities in Amani Nature Reserve. In Vumari it was felt it was their responsibility to protect and manage the forest. All the communities seemed to ‘like’ the forest, people were happy to go walking in the forest and enthusiastic to show their forests to the team. People expressed admiration for the beauty and coolness of the forest and appreciation of the direct values the forest offers. However all villages expressed concern that the forest harbour animals that destroy crops, principally primates. All the communities expressed appreciation of the forest for more than its direct uses, values such as attracting tourism, bringing rainfall and working as a water catchment. Communities in Kisiwani, Misozwe, Lulago, Vumari and Muhero expressed appreciation of the forest for itself (a more aesthetic appreciation) in addition to its practical uses.

4.9.4 Rights to forest

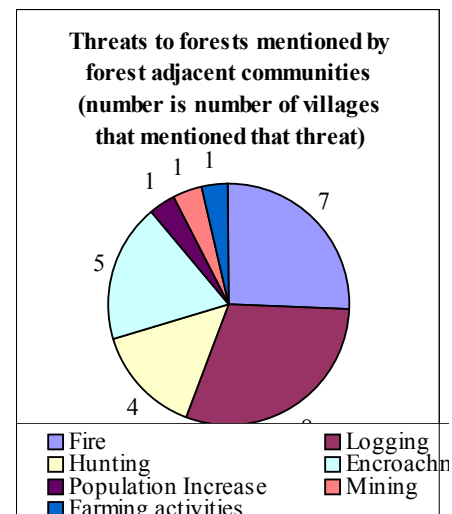
Communities generally felt they rights and responsibility to the forest. Rights included firewood collection which in some places is formalised and allowed on specific days. The responsibility of protecting the forest by fighting fires and reporting illegal logging was commonly mentioned. In Lulago there was a mixed reaction; Men felt they had rights to the forest whilst the women felt it belonged to the government. Udekwa has formalised the rights and responsibilities with the government as they have a current JFM agreement.

4.9.5 Catchphrases

Whilst walking in the forest and chatting with participants the following phrases that might be incorporated into a slogan were heard.

- “Sasa tunatoka kwenye fridge” / a/c. (Now we leave the fridge/ air conditioning)
- Misitu ni Uhai- Forests are life
- Misitu ni Mali , Tunza ikutunze Forests are wealth, look after them and they will look after you
- Forest for Sustainable development. (interested in finding out about other energy sources)
- Mazingira endelevu kwa vizazi vijavyo – (Sustainable environment for future generations)
- Kata mti panda mti - Cut a tree, plant a tree

Chart 89: Threats to forest



4.9.6 Threats to forest

Chart 90 shows that Logging, Fire, Encroachment and Hunting were the commonly mentioned threats to forests. Also of concern to communities is mining in forests, farming activities and population increase.

4.10 Personal Observations of twelve villages visited

Table 22: Personal observation summary of all villages.

District Village	Participation – good or not, women or not?	State of forests	Status of villages – wealth, facilities etc.	Communication difficulties /opportunities	Environmental activities
Governance					
Mwanawotta – Mpwapwa District		Wotta Forest Reserve			
<p>Leaders were present in the village upon our 'surprise' arrival.</p> <p>The leaders of Mwanawotta village were all middle to elderly men. The leadership appeared to be very traditional with few women leaders.</p>	<p>The village was very welcoming and all efforts were made to accommodate us and our work plan. Participation by men was good. Many people came to see what was happening although starting early in the morning was not possible as the village was very quiet until about 9 am / 10 am when the sun started to warm things up. There were one or two vocal women but in general women were quiet and not very willing to discuss issues or contribute opinions even in women only groups.</p>	<p>The forest boundary near Mwanawotta village was clearly marked by huge Eucalyptus trees. The first km or so inside the boundary was stunted dry woodland that gave way to high closed canopy forest. We did not venture far into the closed forest although a clear well –trodden path was available. Evidence of mining of coloured chalky soil inside the reserve was seen. Village leaders reported illegal harvesting of Camphor wood from woodlands inside the reserve.</p>	<p>Mwanawotta is a ward centre and thus is a relatively large village. It has two primary schools and a government secondary school. Some of the houses were built with cement. Government offices were in need of renovation.</p>	<p>The mountainous road to reach Mwanawotta is in a poor state of repair. This makes it difficult for vehicles to reach the village.</p> <p>Most people are travelling by foot to Kibakwe at the bottom of the mountain. People and donkeys carry goods to be bought and sold. Occasional lorries visit the village to purchase crops. Telephones do not work in the village.</p>	<p>There is a village forest reserve that people are using to collect firewood, relieving pressure on the forest reserve. There are many huge Eucalyptus trees in the village, showing signs that investment in tree planting was made in the past.</p> <p>The church is involved in tree planting and has a tree seedling nursery.</p>
Mbuga – Mpwapwa District					
<p>Leaders were present in the village upon our 'surprise' arrival..</p> <p>The leaders of Mbuga village</p>	<p>The village was very welcoming and assisted us with accommodation and carrying out our work plan. Participation by all was good. Many people were involved in the discussions and meetings. A very knowledgeable lady joined</p>	<p>Mbuga Forest is several hours walk from the village and women were complaining of the distance they had to walk to collect firewood. Village leaders were clear they had role in managing the forest, principally reporting illegal</p>	<p>Mbuga village seems very active, cash crops such as beans and peas are grown. There are signs of relative wealth such as tin roves on houses, a smart 'bar' shops selling a range of goods. The village has</p>	<p>The road to Mbuga is long but passable. Vehicles visit the village to buy cash crops and Mission vehicles are using the road regularly.</p>	<p>No obvious signs of environmental management activities except from the forest reserve.</p> <p>Women expressed interest in the idea of planting woodlots close to the</p>

Information, Education and Communication Strategy - Data Report –Personal Observation of IEC Team

District Village	Participation – good or not, women or not?	State of forests	Status of villages – wealth, facilities etc.	Communication difficulties /opportunities	Environmental activities
Governance					
are young - middle aged and seem to have a positive approach to leadership.	us on the forest walk and told us about medicinal plants. Most women contributed freely except for the shyer younger girls. There was a general sense of interest in our activities.	activities and trying to deal with fire. During the visit to the forest a fire was seen in the distance (in a sub-village) on the forest boundary.	a primary school and the Mbuga mission. There is also a newly built government clinic in the village.	Telephones do not work in the village. There is a television at the Mission but it is not widely used by the public. The village had a 'busy' feel to it.	village.
Signalali –Kilombero District					
Leaders were present in the village upon our 'surprise' arrival. Village leadership is good, with strong environmental committee and women organization	We had a good number of people through out our all activities (men and women)	Nanganje forest reserve is very close to the Signalali village demarcated by teak tree species. Village government is working closely with TANAPA on conservation issues of the forest. Firewood collection in the forest is done twice a week on Fridays and Sundays. The forest is good with closed canopy.	Signalali village is located along the main road, 40 km from Ifakara township, thereby allowing fast movement to and from the village. They are engaging on rice farming as food and cash crop. The village has a primary school and a secondary school own by parents. There are TV's and generator electricity.	Good road transport and close to railway station. Mobile phones (Celtel) do work in the village. Radio reception is good	The village has a lot of trees both fruit trees and non fruit trees such as teak trees.
Namwawala-Kilombero Village					
Village organization was not good. The chairman had resigned,	It was difficult to gather people for the meeting, and most of them were busy doing business in the market at the village.	The village is near to Matundu forest reserve. From the village it's about 5km to the forest. The forest has closed canopy.	Namwawala village is located 45 km from Ifakara township. The village is busy with	Radio, TV and mobile phone reception is good.	They are women beekeeping groups in the village. Tree planting activities were

Information, Education and Communication Strategy - Data Report –Personal Observation of IEC Team

District Village	Participation – good or not, women or not?	State of forests	Status of villages – wealth, facilities etc.	Communication difficulties /opportunities	Environmental activities
Governance and they were in the process of choosing another.	Few women participated to the end.		business men and women, farmers and pastoralist (Masai). The village has social services such as primary school, dispensary shops, market, road and railway station. There are TV's and generator electricity.	Railway station and road in good condition. Pastoralists are expanding areas for there livestock leading to mis-understandings and conflicts with farmers.	said to be important to be known to them.
Udekwa-Kilolo District					
Leaders were present in the village upon our 'surprise' arrival. VEO is a woman very powerful in influencing decision making and there were signs of conflict between her and the Environmental committee. Environmental	All the people were keen to participate; we had all age groups in large numbers.	The village is near to Nyumbanitu forest reserve TANAPA is working closely with the village on The forest has closed canopy with no signs of fires. They are caves in the forest which are used by traditional leaders and tourists do visit the site. Ecotourism is also practiced.	The village has social services such as primary school and dispensary own by government. MEMA built nice offices and lodge installed with solar power in the village which after phasing out of the programme, the offices and lodge house are under village forest committee Villagers are total depending on agriculture.	The road to Udekwa was graded by TANAPA making it possible to go in out the village. No mobile phone, TV. A radio call was installed by MEMA project in there offices, however last year it was stolen	Environmental activities such as fire control to the forest has been done to the great extend, by MEMA and TANAPA, thus fire incidences have decreased. Very few trees are planted around village and house premises

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District Village	Participation – good or not, women or not?	State of forests	Status of villages – wealth, facilities etc.	Communication difficulties /opportunities	Environmental activities
Governance					
committee were arranging how and were the meeting will take place.					
Kidabaga-Kilolo District					
Village leadership was not very cooperative, the first day of our visit it was difficult to gather villagers for the meeting. We had to go to Udekwa and then come back.	Meeting started around 0900am with very few people. However with time, many people (men and women) attended. We visited a near by secondary school and a good number of students participated in activities.	New Kidabaga-Ulongambi Forest reserve is near the village and seems well managed. It has a high closed canopy. The pressure on the forest for firewood and building materials is minimal due to the presence of woodlots around the village. Frontier reports indicate a high hunting pressure of mammals in this forest.	The village has social services such as primary school, two secondary schools and a dispensary owned by the government. The village is advanced in terms of businesses; there are a lot of shops, guest houses, cash crops such as tea and fruits. There is solar power electricity thus TV's are present.	The road to Kidabaga is well graded. There is no mobile phone network coverage. Buses service the village regularly.	Many houses have wood lots around the premises. This reduces pressure on the forest reserve.
Kilindi-Kilindi District					
Village leadership, is	Many people attended the meeting. Children drew nice pictures of	Kilindi forest reserve near the village has a closed canopy with	The village has a lot of houses built in old and	The road to Kilindi village is very rough.	They are beekeeping groups.

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District Village	Participation – good or not, women or not?	State of forests	Status of villages – wealth, facilities etc.	Communication difficulties /opportunities	Environmental activities
Governance					
a Lady VEO and a young man WEO with other leaders. All were very cooperative.	Kilindi mountain. All age groups were keen to participate to all activities as per work plan.	tall and big trees. Forest has a lot to do with traditional beliefs. Kilindi caves found in the forest are believed to host spirits. This reduces pressure to the forest for the firewood, hunting and building.	traditional fashion, 'Makuti houses'. Very few houses are modern houses with iron sheet roof. A lot of women food vendors are found in the village. They are shops and a market.	There is no access to mobile phone networks. There is a business man who installed a satellite dish so sometimes they are accessing TVs.	Nursery establishment and tree planting techniques were the main environmental practices they would like to learn.
Vumari Village Same district		Vumari Forest Reserve			
Good village leadership well coordinated with sub villages. Village leaders were quick to organize people to attend even though we arrived late in the evening. Village has its unique ways of information channels which allow messages to be received faster. Vumari village has a well organized environmental Committee	Most villages, young and old were interested in taking us to their adjacent forest reserve. They told us many stories regarding the forest reserve which used to have a good number of large mammals in the past twenty years. Some of the animals commonly seen coming close to the village includes buffalos, rhinos, elephants and a good number hondo hondo birds. Women participation was good,. Some of the women were school teachers, and they showed to have an added knowledge in forest conservation issues.	Upper forest good, closed canopy, though lower areas shows signs of encroachment. There is a water catchment inside the forest which is the source of a river supplying water to the village downhill. The forest shows signs of fire, logging, and encroachment. Most people depend on medicinal plants available in the forest, and shows to have good knowledge on rare biodiversity available in the forest.	Vumari village has moderate life. The people are farmers, and keep livestock including diary goats and practices beekeeping. There is no electricity at the village and no tap water. There is one primary school owned by the government and one private secondary school. Many villagers have radios, no TVs	Good road transport, accessible all year around although it is gravel. There are no buses plying the village except few pickups and some lorries which transport people and their goods. No telephone accessibility, normally people walks to Same township to obtain daily necessities, visits to hospital and government offices.	All villagers participate in PFM processes including patrolling, controlling encroachment into the forest for agriculture. Logging and charcoal making is always reported to the village authorities, and the villagers are quite aware of bylaws.

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District Village	Participation – good or not, women or not?	State of forests	Status of villages – wealth, facilities etc.	Communication difficulties /opportunities	Environmental activities
<p>Governance which collaborates well with district Natural resources offices which provides the villager training in beekeeping and maintaining diary cattle.</p>					
Mhero Village – Same District		Chome Forest Reserve			
<p>Good leadership, female Ward Executive Officer (Chome Ward). Ward Officers at Chome collaborates with villagers in awareness campaigns</p>	<p>All villagers participated. Good participation of Chome Ward Officers PFM processes are carried out and were initiated there by the phased Cross Boarder Biodiversity project which was funded by UNDP. Good women participation, and showed keen interest in a number of medicinal plants found in the forest. Usually women obtain mushrooms and vegetable from the forest.</p>	<p>The forest has a good closed canopy in the upper parts of the forest, and there is a high mountain peak usually visited by tourists. The forest has resent signs of fire, logging and mining. Fires are usually caused by people crossing the forest which has a road passing through it to another village. Illegal logging is done in the forest reserve and is usually organized by traders in Same Town. Species of <i>Ocotea usambarensis</i> is a speciality and in resent years many tall and matured trees have been extracted. The forest has a good number of rare birds which are hunted by traders. There is a problem of vermin. (Monkeys) from the forest that</p>	<p>Villages at Mhero leads moderate life, mostly are farmers, and livestock keepers. They produce vegetables and fruits, and practices traditional irrigation methods, with assistance from TIP (Traditional Irrigation Project) which is under district council. The village has Electricity, tap water, primary and a private secondary school. Many people own radios, and those who have electricity owns TVs. Ecotourism is practised as many tourists visits the famous Shengena Peak. This brings income to youths as tour guides and</p>	<p>The village is on steep mountains, poor roads, and difficult accessibility by all types of vehicles. The road was built more than 100 years ago., through cutting across rocks hence its covered by stones and this makes accessibility difficult.</p>	<p>The village owns a bylaw pamphlet regarding conservation of the adjacent Chome forest reserve. Each month there is a village meeting in which the village leaders reads the bylaws to the villages. Every Thursday all villages meet to carry conservation activities inside the forest reserve including boarder clearing and maintaining water Catchment areas. Most households owns private woodlots and do not depend solely on the forest for the supply of firewood. The village is a ward centre hence most extension officers are available. Tree seedlings are distributed to villages by the</p>

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District Village	Participation – good or not, women or not?	State of forests	Status of villages – wealth, facilities etc.	Communication difficulties /opportunities	Environmental activities
Governance					
		usually attacks nearby sbambas and steal maize cobs. This is major a problem to villagers living cloze the forest.	also to the village government.		Catchment office every Monday, so as to plant in their shamba.
Misozwe Village- Muheza District					
		Manka Forest Reserve			
The village has good and well coordinated leadership with sub villages. There are PFM processes carried out at the village which has already produced a management plan.	Many villages participated, PFM processes Women (Old, Middle aged and young girls) participation was good, very talkative, and contributing freely.	Forest is good Evidence of fire, logging, encroachment.	Villages leads Moderate life, They are ,farmers, traders Good reception TVs, radios. There is tap water, hospital, electricity, secondary schools and other social amenities.	The place has good road transport, easily accessible and is near Muheza Township.	There are environmental committees and the villagers are involved in environmental activities including tree planting, improved agriculture which is supported by the district council extension officers.
Kisiwani Village-Muheza District					
		Amani Nature Reserve			
Kisiwani village has good and well organized, young leaders. Also has a well established environmental	Most of the villagers showed good participation, in all research methodologies. Also village is involved in PFM processes Many women participated in our research methodologies. They were happy during forest walk; one old lady was showing many plant species which are used as medicines.	Good forest, closed canopy. There are reported problems of encroachment, logging, mining and fires. Mining for alluvial gold has destroyed most streams supplying water in some parts of the village.	Villagers lead moderate life, mostly farming. There is neither electricity nor tap water. The village have one primary school and do not have a secondary school. Many villagers own radios, but do not have TVs. At the village there is	There is a good road to the village which is maintained by the Amani Tea Estates. There are a good number of buses plying to and from the village ferrying people and their agricultural produce.	Amani nature Reserve Authority is involving forest adjacent villages in PFM processes. The village government have already prepared a village management plan which is in the processes of approval by the district council.

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District Village	Participation – good or not, women or not?	State of forests	Status of villages – wealth, facilities etc.	Communication difficulties /opportunities	Environmental activities
Governance					
committee which is involved in planning of all activities.			Butterfly farming project which is supported by TFCG. The project provides income to the villagers.		
Lulago Village- Kilindi District		Kilindi Forest Reserve			
The village has well organised, strong env. Committee. Also the village is lead by a Female VEO, whose leadership is well coordinated.	All villagers participated, old and young, Women participation was good, though they were quite and shy to talk and contribute to our methodologies. Most of them they are illiterate. No PFM processes in the village.	Good, closed canopy The forest showed signs of Logging. No fires have ever seen in this forest.	The village is located high up the mountain, and the roads to the village is in a very poor condition so no cars are moving to the village at all. The villagers had to take there crops down the hill. Villagers depend on cultivation of cardamom as a cash crop. They are still doing traditional ngomas called Unyago and Jando. Most of them have finished standard four. There is one old Primary school; however a new one is now built by the support from MMEM, no secondary school, no electricity, no tap water.	The roads are quite poor, and quite inaccessible. There are no buses except some pickups during dry seasons.	The village area is evergreen; hence tree planting and related activities are not emphasized, as the tree grows naturally.

4.11 Communication Mapping

The communication mapping exercises revealed the following points:

- Main sources of information are the radio, clinics, village government meetings, children bringing news home from school and church/mosque.
- People, who have radios, tend to listen to them in the mornings and later in the evening. Not all households have a radio.
- Christian church goers mentioned frequently that priests will discuss environmental issues in their sermons e.g. tree planting. When asked Muslims attending Mosques said the Imam do not discuss environment issues directly.
- Main points of information exchange in a village are the water point, the shop/market and church.
- Concerns about the environment were not common topics of conversation in most households, or with friends.
- Many people do not go further than the nearest town on a regular basis. Reasons for visiting towns include visiting friends and family, selling goods and going to clinics or hospitals.
- Women commonly mentioned going to clinics or hospitals (often taking children), rather than men.
- In more easily accessible villages women and men frequently visit the near-by towns. If the village is more remote it is harder for women to leave the village, so most journeys are undertaken by men selling goods etc.
- Only two of the 45 people interviewed mentioned listening to radio programmes about forests, these were the Radio Tz programmes aired once a week.
- When asked which radio stations they listen to, people mentioned the following stations and programmes (in order of preference) Radio Free Africa, RTD, Sauti ya Injili, Radio 1, Radio Tz, Radio Abood, Harakati.

Examples of communication maps drawn are given in appendix 8.6

4.12 Knowledge, Altitude and Practices (KAP)

4.12.1 Knowledge

Observation	Source	Result	Recommendation
<p>Criteria 1: Knowledge about the Eastern Arc Mountains.</p> <p>Indicator: Increased level of knowledge about the Eastern Arc Mountains</p>			
There is a lack of knowledge about the Eastern Arc Mountains among Eastern Arc Communities particularly when compared to the District and Ward staff in the same areas.	Focus Group Discussion	70% had not heard of the term 'Eastern Arc Mountain Forests' (Compared to 72% of District and Ward staff who do know the term Eastern Arc Mountains).	The IEC strategy suggests several activities to raise the level of knowledge about the Eastern Arc Mountains in terms of what and where they are and why they are important. Action: After these activities have been piloted in specific locations repeat the focus group discussions methodology in pilot areas and non-pilot areas (control groups). Look at whether there is an increase in the number of groups who are aware of the Eastern Arc Mountains.
<p>Criteria 2: Awareness of the importance of Eastern Arc biodiversity and its uniqueness.</p> <p>Indicator: Increased awareness of the importance of Eastern Arc biodiversity and its uniqueness.</p>			
There is a generally low level of knowledge about the unique biodiversity value of the Eastern Arc Mountains.	Questionnaire	11% of District Staff mentioned biodiversity as a forest value	The IEC strategy suggests several activities to raise the level of knowledge about the unique of Eastern Arc Mountains biodiversity. Action: After these activities have been piloted in specific locations repeat the Questionnaire section about forest values and Forest walks in pilot areas and non-pilot areas (control groups). Look at whether there is an increase in the awareness of the importance of Eastern Arc Mountains biodiversity.
	Forest Walks	The unique biodiversity was mentioned by 50% of groups.	

Criteria 3: Knowledge of new forest policy			
Indicator: More people have seen and know about the new forest policy and laws.			
Detailed knowledge of the new forest policies and laws was generally low due to low levels of dissemination of technical materials.	Focus Groups Discussions	91% of Eastern Arc Community groups have not seen a copy of the forest policy and laws or summaries of the same.	The IEC strategy recommends several activities to increase the dissemination of the new forest policy and laws by: i. the production of a simplified Swahili summary of the forest policy and laws to be widely distributed to Eastern Arc Communities ii. Distribute the new forest Policy and Laws to all relevant district offices in the Eastern Arc, particularly planning, agriculture and DED. iii. To hold a series of workshops with stakeholders explaining the new forest policy and laws. Action: Once these activities have been completed in the pilot area repeat the Questionnaire and Focus Groups Discussions in pilot areas and non-pilot areas (control groups). Look at whether there is an increase in knowledge of the new forest policy and laws, specifically an increase in people who have seen and or read the documents.
	Questionnaire	50% of district staff were aware of the new forest policy and laws, but many of these (50%) had not seen a hard copy.	

During our study we asked several questions relating to people’s knowledge about the Eastern Arc Mountain forests. Results show that different stakeholders have different levels of knowledge about different aspects of the Eastern Arc.

- **The term ‘Eastern Arc Mountains Forests’**
 - ▶ 70% of focus discussion groups (Eastern Arc community representatives) **had not** heard of the term ‘Tao la Milima Ya Mashariki’.
 - ▶ 72% of semi-structured interviewees (government staff, traders and NGO representatives) **had** heard of the term ‘Tao la Milima Ya Mashariki’.

The term ‘Eastern Arc Mountain Forests’ was coined by scientists in the 1970’s and is widely used in academic circles. This study shows that the phrase is widely understood by district government staff, but communities are generally unaware of the term, relating more to the individual mountain block in which they live. This has great implications for any information materials produced, for example, if a radio programme talks about the importance of the Eastern Arc Mountains without explaining what and where they are many of the key ‘target audience’ will not associate what they hear with the mountains in which live.

- **Forest Values**

Practical values of forests were well understood by all parties questioned, with only slight variation between stakeholders in the values mentioned. The most commonly mentioned

forest value was timber, followed by hunting, water conservation, environmental/ climate amelioration, fuel wood, food, animal habitat, tourist's attraction, building materials, soil conservation, mineral prospects, cultural/ spiritual, unique biodiversity, beekeeping, beauty and medicinal plants values.

Some indirect forest values were not as well understood. For example none of the stakeholders within the Eastern Arc mentioned hydropower production as a value of forests, this not that surprising given the low level of electrification in the rural sites.

People in forest adjacent communities demonstrated a detailed of some their natural resources, they were able to mention and (during Forest walks) sometimes give detailed explanations about tree species, other plant species, birds and mammals. Knowledge about less obvious forest species such as reptiles and insects was not seen.

Knowledge about the unique biodiversity of the Eastern Arc forests was generally very low among most stakeholders and biodiversity as a forest value was not mentioned by very groups/individuals.

- Only 11% of District Staff mentioned biodiversity as a forest value (Questionnaire)
- The unique biodiversity was mentioned by 50% of groups that took part in the Forest Walks.

Detailed biological knowledge was mostly limited to a very practical use of resources. District staff identified 'unique biodiversity' as a value less than forest adjacent communities.

There is a need for 'uniqueness' of the Eastern arc biodiversity to widely communicated. It is hoped that raising the status of these forests as being the only place on earth we have these species a sense of pride and recognition of the mountains as a national treasure will be developed. This cannot happen in isolation however, it must be accompanied with practical measures to improve forest management. The theme of '**unique biodiversity**' also needs to be disseminated to a wider national and global audience, this will hopefully generate more interest in the Eastern Arc Mountains and contribute to increasing tourism and budgets for management.

• **Education**

- ▶ 82% of 4789 households had at least one person who had completed primary school and is therefore able to read and write. (Village mapping)
- ▶ 18% of 4789 households did not have one person who had completed primary school, and therefore can probably not read and write well. (Village mapping)

Relatively high levels of education make the use of written materials in the communication strategy both relevant and appropriate. However this comes with a special note. There is a gender bias in education, with female headed households likely to have lower education levels and less likely to have a literate person in the household. Also literate and non-literate individuals can benefit from non written materials. Thus the communication strategy should not depend entirely on written materials, but must include a range of other methods appropriate for all stakeholders.

• **Knowledge of new forest policy**

- ▶ 91% of focus discussion groups that answered the question (Eastern Arc Communities) had not seen a copy of the forest policy and laws or summaries of the same.
- ▶ 50% of district staff were aware of the new forest policy and laws, but many of these (50%) had not seen a hard copy.

Detailed knowledge of the new forest policies and laws was generally low due to low levels of dissemination of technical materials, although there were differences between different stakeholder groups.

91% of focus discussion groups had not seen a copy of the forest policy and laws or summaries of the same. Among district staff more people were aware of the new forest policy and laws, but many of these (50%) had not seen a copy. Worryingly key offices such as district planning officers were not familiar with the new forest policy.

Similarly at the national level key ministries did not have copies of the new forest policy and act and were thus unfamiliar with its contents.

There is a need for wider dissemination of the new forest policy and laws to all stakeholders. A simplified version distributed widely within the Eastern Arc would be very beneficial. Some form of training outlining the principles and key points of the new forest policy and laws for national level stakeholders would also be of use particularly for ministries such as Water and Livestock and Energy and Minerals.

- **Demand for knowledge**

- ▶ Eastern Arc Communities would like information / training in: tree planting, nursery establishment and various income generating activities.

There was a widespread demand for knowledge and training in all the field sites visited. The study tried to identify what people would like to know about in relation to the environment.

The results show there is a demand for practical skills in tree planting and nursery establishment but also a high demand for training in activities that can generate an income such as bee-keeping, animal husbandry, 'business', fish farming, tourism and even road construction. Whilst this strategy cannot provide training in all these areas, it is important that what people want to increase their knowledge about is reflected in activities. It is suggested that links and collaboration are developed with other organisations / individuals / village groups able to provide such training.

4.12.2 Attitudes

Observation	Methodology	Result	Recommendation
Criteria 4: Perception of threats to forest – fire			
Indicator: Stakeholders have a realistic idea of the threat of fire to Eastern Arc Mountain Forests.			
Fire was mentioned as a key threat to Eastern Arc forests by all stakeholders in the Eastern Arc.	Questionnaire	57% of District Staff said that the incidence of forest fire is decreasing.	Fire is a key threat highlighted for in the IEC strategy as a key theme. This will need to take place in conjunction with fire control strategies. Action: Repeat the Questionnaire, Focus Group Discussions and Semi-structured Interviews in areas where pilot activities have and have not taken place.
The majority of people in the Eastern Arc said they thought the	Focus Group Discussions	85% of Eastern Arc Community discussion groups said the incidence of forest fires is decreasing.	

number of fires is decreasing. This is false. Fires are increasing across the Eastern Arc, implying that people are not aware how important the threat of fire is.	Semi-structured interviews.	83% of local government staff said the incidence of forest fire is decreasing.	Look at whether increased information disseminated about the threat of fire alters peoples' attitudes about the real and current threat that fires poses.
<p>Criteria 5: Perception of threat of loss of forest area</p> <p>Indicator: Stakeholders have a realistic idea of the amount of forest that has been lost in recent years.</p>			
There is a difference in the attitude towards forest loss between Eastern Arc Communities and Government staff.	Semi-structured Interview	90% of government staff said there is less forest than 10 years ago.	<p>Key threats such as forest area loss are highlighted for in the IEC strategy as a key theme for dissemination.</p> <p>Action: Repeat the Focus Group Discussions and Semi-structured Interviews in areas where pilot activities have and have not taken place. Look at whether stakeholders are in agreement there is less forest than 10 years ago.</p>
	Focus group discussion	62% of Eastern Arc Communities said there is less forest than 10 years ago, 27% said there is more and 11% said there is no change.	

- **Relation to forest**

- ▶ Eastern Arc Communities (forest adjacent) have a strong cultural link to forests.

This study shows that forest adjacent communities have a strong cultural link to the forests. This was displayed by a wealth of information, stories, customs and traditional practices involving or about the forest. The extent to which this was translated into protection of forest resources varied. In Same 'sacred' forests remain in an otherwise agricultural or built-up area, the existence of these often small forest patches outside the forest reserves is due to strong cultural beliefs. In other mountain blocks particular areas within the forest reserve (often associated with large rocks) have special significance for traditional ceremonies. It was commented by some people that many of the traditional spiritual beliefs associated with forests are being replaced by Christian beliefs. No particular animal species were identified as taboo but in places a particular tree or place had special significance that offered protection.

As communities expand and more 'outsiders' move to the Eastern Arc to utilise the good agricultural opportunities offered by the climate and soils these traditional management practices will be put under pressure. The need for more agricultural land was clearly identified as a problem in Signali village.

This 'link' to forests was emphasised during focus group discussions in which it was clear that many of the forest adjacent communities see themselves as joint owners of forest resources and responsible for managing forest resources. In one of the villages visited this responsibility had been formalised into an official participatory forestry agreement.

There was a clear feeling in many villages that incentives to manage the forests were lacking at the community level. This was expressed in many of the forest adjacent communities who commented that 'they' are responsible for managing the forests and they suffer the negative impacts of being near the forest (in particular increased crop raiding by vermin) but that they are not compensated for their losses.

- ▶ 62% of Semi-structured Interview respondents (government staff) said there is not enough forests.
- ▶ 19% of Focus discussion groups (Eastern Arc Communities) that answered said there is not enough forests, with 81% saying there is enough.
- ▶ 90% of Semi-structured Interview respondents (government staff) said there is less forest than 10 years ago.
- ▶ 62% of Focus discussion groups (Eastern Arc Communities) that answered said there is less forest than 10 years ago, 27% said there is more and 11% said there is no change.

There is a difference in the attitude towards forest loss and whether there are adequate forest resources between Eastern Arc Communities and Government staff.

It is clear that communities living close to forests are feel that there are adequate forest resources and generally fewer people aware of forest loss.

Government staff however who are more distant from forests and have the benefit of an overview of the situation are more likely to say there is not enough forest resources and less forest than 10 years ago.

These differences in attitude reflect the different stand points each of the stakeholder is coming from. Concerns of forest adjacent Eastern Arc Communities (crop damage, lack of land for agricultural expansion) may be very different to the concerns of government staff (diminishing forest resources, need to protect and expand protected areas). Promoting an understanding of the real situation and the harmonising of these different attitudes is a challenge for the IEC strategy.

• **Threats**

- ▶ Eastern Arc Communities, District and Ward staff, traders, NGO representatives all said the greatest threats to Eastern Arc Forests are:
 - Fire
 - Illegal Logging
 - Illegal Hunting
 - Poor agricultural practices and encroachment

All stakeholders were asked their opinion on what constitutes the most important threats to forests in the Eastern Arc Mountains. There was broad agreement between stakeholders on forest threats. Fire, illegal logging, hunting and poor agricultural practices were the principle threats.

- ▶ 85% of Focus discussion groups (Eastern Arc Communities) that answered this question said the incidence of forest fires is decreasing (5% said increasing, 10% said no change).
- ▶ 57% of Questionnaire respondents (District Staff) said that the incidence of forest fire is decreasing, (29% said increasing, 14% said no change)

- ▶ 83% of Semi structured interview respondents (District and Ward government staff) said the incidence of forest fire is decreasing (17% said increasing).

The majority of stakeholders believed that the number of fires is decreasing. They are wrong. Evidence from satellite data shows that the number of fires in the forests is increasing. The belief that fires are decreasing is probably due to the fact that these stakeholders have activities to limit fires and there is natural tendency unless presented evidence to the contrary to believe ones actions are having an effect.

There is a need for all stakeholders to be informed about the increasing and continued threat of fire to forest resources. The IEC strategy should contribute significantly to the activities to control fire outbreaks but needs to be combined with other practical steps to limit fire damage.

The threat of Fire should be a key theme in the IEC strategy.

- **Trusting information sources**

- ▶ Radio Journalists and School Teachers are generally well trusted sources of information.
- ▶ In some areas, District Commissioners, MP's and Video are very highly trusted sources of information in some areas and in other others are not trusted.

Identifying the sources of information that people 'trust' or do not trust is important so that suitable channels of communication are used in the area.

For example depending on MP's that do not have a close link to particular areas to disseminate conservation messages is unlikely to work well. An MP with an excellent relationship with a community however may have a greater impact than other means of sharing information. Tapping into positive communication channels will increase the impact of any information dissemination activities.

Using radio as means of dissemination is recommended as it is used by many of the different stakeholder groups and is 'trusted' by Eastern Arc Communities.

Teachers are seen reliable sources of information, often reaching a large proportion of a community through their students. Supporting environmental education in schools is recommended, not only for educating the students but also for spreading ideas to the wider community.

- **Preferences in communication methods**

- ▶ When asked which audio visual communication method was preferred, overall all villages ranked radio in first place.
- ▶ Written materials with detailed content are preferred.

This study looked what forms of communication methods Eastern Arc Communities prefer. Radio was by far the most popular form of audio visual communication. Written materials with more detailed content were preferred over less detailed written materials. Suggesting that any investment in producing summarised versions of forest policy and laws, or factual information will be well received and utilised. If this could be backed up with some form of radio programme the impact would be greater and more widespread.

4.12.3 Practices

Observation	Methodology	Result	Recommendation
<p>Criteria 6: Access to environmental education materials.</p> <p>Indicator: More stakeholders receive environmental education materials.</p>			
<p>At all levels in the Eastern Arc there is a lack environmental education or awareness raising materials.</p>	<p>Focus Group Discussion</p>	<p>78% of Eastern Arc Community groups do not receive any environmental newsletters, magazines or other written materials.</p>	<p>The IEC strategy recommends investing in the production of a range of education materials.</p> <p>Action: Once these materials have been piloted repeat the Questionnaire, Focus Group Discussions and Semi-structured Interviews in areas where pilot activities have and have not taken place.</p> <p>Look at whether the increased production in environmental information materials has made it easier for people living and working in the Eastern Arc to access information about the environment.</p>
	<p>Questionnaire respondents</p>	<p>54% of District staff do not receive any environmental newsletters, magazines or other written materials.</p>	
	<p>Semi Structured Interview</p>	<p>82% of District and Ward staff do not receive any environmental newsletters, magazines or other written materials.</p>	
<p>Criteria 7: Informal and formal Environmental Education Activities</p> <p>Indicator: There is an increase in Informal and formal Environmental Education Activities</p>			
<p>There is limited investment in informal and formal Environmental Education resulting in low levels of activities for all stakeholders.</p>	<p>Questionnaire</p>	<p>Only six environmental clubs were known by district staff (three in Same and three in Kilombero).</p>	<p>The IEC strategy recommends many activities to boost environmental education activities, including supporting environmental clubs. This should bring about an increase in the number of environmental clubs in Eastern Arc Districts.</p> <p>Action: Once activities have been implemented repeat the questionnaire survey. Look at whether there is an increase in the reported number of environmental clubs in each district.</p>

• **Communication Practices**

Table 23: Summary of Village to National level communication practices

Practice	Village	Ward	District	National
Communication	-Face to face communication -Monthly Village meetings and other committee meetings -Cultural entertainments songs, drums	-Face to face -Letters -Meetings – monthly and ad hoc	-Face to face communication -Inter departmental meetings -Letters -Telephones -Transport vehicles	-Face to face communication -Inter- sectoral and inter ministerial communication though letters, internet, meetings, workshops -Telephones -Written materials
Who talks to who	-villagers and their villager leaders	-Meetings with all Village Executive Officers and district level	-Meetings with all ward councillors - Meetings With all district officers	-National media channels such as radio, TV, daily papers, rallies, public meetings -Ministerial and sectoral communications
Gaps	-Poor access to information from district level -Lack of access to TV and magazines -Due to poor transport to the villages- communication with the district is weak and inadequate. -Extension officers are not reliable as communicators to villagers.	-Weak communication link with villages -Weak communication link among ward officers.	-Inadequate vehicles -Telephones not reliable can lead to miss - communication	-Weak sectoral coordination of information Inadequate knowledge/information of activities of other sectors -Varied organizational/ministerial/donor interests and priorities regarding common issues -Weak link and inadequate distribution of written materials among major stakeholders such as institutions, ministries and also to the district level.
Recommendations	Meetings, letters, posters, radio	Meetings, radio announcements, letters, seminars and workshops	Meetings, radio announcements, seminars, workshops, telephones, internet	Inter ministerial communications, public addresses, radio announcements, TV programs, posters, letters, leaflets, internet,

Environmental Education (environmental education) in six districts

Limited materials for Environmental Education

- ▶ 78% of Focus Discussion Groups (Eastern Arc Communities) do not receive any environmental newsletters, magazines or other written materials.
- ▶ 54% of Questionnaire respondents (District staff) do not receive any environmental newsletters, magazines or other written materials.
- ▶ 82% of Semi Structured Interview respondents (District and Ward staff) do not receive any environmental newsletters, magazines or other written materials.

- ▶ 57% of Questionnaire respondents (District staff) said their district does not have the capacity to produce any environmental education materials. Those that do produce environmental education materials create pamphlets, booklets, videos, calendars and posters.

It is clear from the results of this study that there is a lack of environmental education materials on the ground. There is need for wider distribution of existing materials e.g. Komba, Arc Journal and Miombo and there is a need for investment in the production of materials that can be widely distributed such as newsletters, posters and leaflets. The IEC strategy should address both the need for more materials and the need for better distribution.

Limited investment in informal and formal Environmental Education

- ▶ Only 6 environmental clubs were reported by district staff.

In the six districts visited only two had environmental clubs, three in Same and three in Kilombero. It is noted that the district staff in other districts may simply be unaware of such activities.

In total 34 organisations were listed by district staff in six districts, these organisations are collaborating with the district councils in disseminating Environmental Education. Yet still only six environmental clubs are known by district staff and 78% of the focus discussion groups do not receive environmental based written materials.

In schools - environmental education activities includes tree nursery establishment, tree planting and management of trees in school compounds.

There is a lack of investment in environmental education with limited coordination of existing environmental activities in the area.

The IEC strategy needs to improve coordination and increase the investment in the environmental education activities both formally and informally and increase the production of materials. In order to this collaboration with interested organizations like WWF, WCST, UMADEP, CARE and all those involved in environmental education activities is required.

• Forest Management

Forest management activities across the six districts visits include: fire control, boarder clearing, management of water catchment areas, patrolling against illegal logging and encroachment into the forest reserves for agriculture. The implementation of these seems to vary with some areas actively forest threats.

In some districts large fines for causing wildfires are being used to good effect to encourage people to attend to fires properly thus reducing the number of wild fires. Clearing borders and firebreaks are other methods being used to limit the incidence of fire. Elsewhere fires are still large, and perhaps increasing, problem. Fire undoubtedly remains a major threat to the Eastern Arc Mountain forests.

There is a range of the level of involvement in forest management activities between forest adjacent communities. Some are actively involved in patrols for fires and illegal activities, marking forest boundaries and running tree nurseries. Other communities are involved in management by reporting to districts officials when illegal incidents occur, others still have little or no regular formal contact with forestry officials.

It is notable that very few forests in the Eastern Arc Mountains have an operational management plan. Management agreements exist in some places that clarify management

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roles and responsibilities and importantly establish mechanisms for benefit sharing. However examples of these are very few and their effectiveness for forest protection has not yet been reviewed.

Many of the forests are used by local communities for the collection of firewood, this use whilst strictly 'illegal' in catchment forests is recognised and authorised to a certain extent. Firewood collection is officially limited to the collection of dead wood only with no cutting of live trees.

Some villages used to own tree nurseries, but due to lack of funds they failed to maintain them. Once there was a certain person was doing mining inside Mwanawotta forest reserve using a fake license; the village authorities reported the matter to the district authorities which evicted him immediately.

TANAPA has been assisting the people of Signali village in starting and maintaining tree nurseries for planting along the forest borders. Signali village have a two km stretch as a buffer zone with the reserve whereby people have their beehives. This has helped in controlling fire to enter the forest.

5 Discussion

5.1 Problems and constraints

Three major constraints were identified during the field study.

- Lack of resources

Lack of resources is severely limiting forest management activities at all levels.

It is important that the strategy includes activities that show decision makers how important the Eastern Arc Forests are to the national economy and try to encourage resource mobilisation for their management.

There is a lack of investment in environmental education / communication in Tanzania with a resulting lack of skills. Environmental education in formal education is under-resourced in terms of training and materials for teachers to enable them to use interesting and innovative methods.

- Poor coordination – at all levels

During national level meetings it was clear that MNRT is not communicating an environmental agenda to other ministries. Conflicts between environment related policies and the activities of ministries exist, efforts are needed to harmonise these at the district and national level. Coordination between the different sectors at district level is especially important.

There is no organisation leading or coordinating environmental communication or education in Tanzania, so such activities are occurring in isolation of each other. Given the recent production of several environmental based communication strategies (two strategies in forestry alone) there is an opportunity for sharing of materials. It is essential that efforts are coordinated to avoid duplication of activities and waste of precious resources. It is hoped that when NEMC implements its environmental education and communication plan that issues relating of lack of coordination of environmental education will be resolved.

- Poverty

Poverty reduction is central to all activities and initiatives in Tanzania. The Eastern Arc Mountain Forests contribute to poverty alleviation in direct (forest products contribution to households) and indirect ways (environmental services such as climate control and water catchment providing water for hydropower). Proper management of the forest resources is essential to poverty reduction. However there is a need at the local level for practical and direct measures that will assist in alleviating poverty many of which are beyond the scope of this Information, Education and Communication strategy. A fine balance will be needed between disseminating key themes about forests economic values and providing links to organisations that can tackle poverty on an individual's level with practical actions.

5.2 Communication Methods to use in strategy

Communication difficulties and opportunities vary between the different groups of stakeholders. Table 24 summarise the findings and recommended forms of communication for each broad stakeholder groups.

Table 24: Summary of the findings and recommended forms of communication for each of broad stakeholder groups

Stakeholder group	Communication difficulties	Opportunities for communication	Appropriate methods
Eastern Arc communities.	<ul style="list-style-type: none"> Limited access to Television / newspapers. Poor road links making visits rare for meetings rare and difficult. Often isolated from district and regional authorities. Some villages have low levels of literacy Lack of resources for travel, e.g. to meetings / workshops 	<ul style="list-style-type: none"> Excellent Radio coverage in Eastern Arc Mountain villages. Drama, singing groups available at village level. High demand for information and materials / knowledge and training. Aware of the day to day threats, activities and status of the forest. Familiar with receiving information from Village government structures. 	<ul style="list-style-type: none"> Meetings to gather opinions and advice. Training seminars / workshops. Radio Leaflets / posters / information booklets delivered directly to the village. Environmental 'merchandise' to raise interest. Drama and song.
Female headed house-holds	<ul style="list-style-type: none"> Less likely to own a radio More likely not to have someone who can read in the households Less likely to have finished primary school 		
District Government /	<ul style="list-style-type: none"> Lack of resources for most activities - travel, producing materials, disseminating materials, visiting forests and forests adjacent villages. Occasionally communication links are limited, e.g. no email, difficult telephone and road access. 	<ul style="list-style-type: none"> Knowledgeable people able to conduct training Good access to radio and television and newspapers. Some with good access to telephone, internet and email. 	<ul style="list-style-type: none"> Meetings to gather opinions and advice Mass media such as newspapers, radio, television. Environmental 'merchandise' to raise interest.
General Public (in urban centres)	<ul style="list-style-type: none"> Limited time for environmental issues. 	<ul style="list-style-type: none"> Good access to radio, internet, email, newspapers, television. Drama and singing groups available. 	<ul style="list-style-type: none"> Mass media such as newspapers, radio, television. Environmental 'merchandise' to raise interest. Drama and song.
National level stakeholders / MP's	<ul style="list-style-type: none"> Often very busy and have little time for reading large documents and meeting with people. Based far from the Eastern Arc Mountains Forests and do not have information on the 	<ul style="list-style-type: none"> Knowledgeable people able to conduct training Good access to radio and television and newspapers. 	<ul style="list-style-type: none"> Letters Summary documents. Mass media such as newspapers, radio, television. Occasional meetings / discussions.

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	<p>current situation.</p> <ul style="list-style-type: none"> Limited resources for large – scale activities. 		<ul style="list-style-type: none"> Environmental ‘merchandise’ to raise interest.
International Stakeholders	<ul style="list-style-type: none"> No access to national mass media/ written materials available in TZ. 	<ul style="list-style-type: none"> Good access to email and internet. Variety of international magazines and news stations 	<ul style="list-style-type: none"> Internet Publications aimed at international audience. International media.

It is recommended that the strategy make use of a wide range of communication approaches to reach the various stakeholders. Specific recommendations include:

- Do not depend entirely on written materials, use audio and visual communication methods also.
- Make written materials are attractive, include many pictures and use simple Swahili language.
- Air Radio programmes on a variety of stations at different times of day to ensure maximum coverage.
- Support local drama groups and singers to include key environmental themes into their routines.
- Invest in disseminating all materials, especially written ones – make sure they do not end up in a store!
- Make an effort to make all communication activities interactive, invite comment on written materials, make radio programmes that people can telephone to answer questions, or enter competitions. Seek to make all communication and exchange of ideas.

6 Areas to be addressed by IEC strategy

The issues and problems highlighted in this study have been summarised into seven main themes for action. These form the basis of the action plan for the strategy and are listed below.

- Inadequate knowledge about the Eastern Arc Mountain Forests among the general public / leaders / international community and communities living near the forests.
- Policy / Laws are unknown or are inadequately implemented
- There is a need to expand formal and informal environmental education activities and invest in information education and communication work.
- There are inadequate incentives to people who effectively manage the forests.
- There is poor accountability among forest managers.
- There is weak information sharing and inadequate coordination between ministries, natural resource staff and NGOS' etc.
- Environmental service of the Eastern Arc Mountains need to be advocated to the general public and decision makers with a view to increasing resources available to protect and manage Eastern Arc Forests.

These can be combined into three objectives that form the basis of the IEC strategy as follows:

Objective 1: To increase key stakeholders understanding of the value of Eastern Arc Mountain forests, the threats that they currently face and the importance of investing in their sustainable management.

Objective 2: To raise awareness on the National Forest Policy and Act and to encourage feedback and participation from Eastern Arc stakeholders.

Objective 3: To guide stakeholders to implement formal and informal environmental communication and information sharing activities in a more effective and coordinated way within the Eastern Arc.

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8 Appendices

8.1 List of stakeholders used in preliminary stakeholder analysis

Name of Stakeholders	Acronym	Organisation Type
TCZ & DP		?
Amani		CBO
Hifadhi		CBO
Hifadhi chanzo cha Maji Sakare	(HICHAM)	CBO
Hifadhi Mazingira Kata ya Dindira	(HIMADI)	CBO
Juhudi Msolwa Ujamaa		CBO
Kilimanjaro Village Forestry Project		CBO
Kwagunda Artist Group	KAG	CBO
Kwagunda Herbalist Group	KHG	CBO
MEUSTA		CBO
Ministry of Education and Culture Memkwa		CBO
Mtandao wa Hifadhi ya Mazingira Kata ya Kigongoi	MTAHIMAKI	CBO
Mtandao wa Ilondo	ILONDO	CBO
Mtandao wa Kilombero magharibi	Kilombero Magharibi	CBO
Mtandao wa Kitapilimwa	Kitapilimwa	CBO
Mtandao wa New Dabaga Ulongambi	NDU	CBO
Mtandao wa Nya'ngoro Kaskazini		CBO
Mtandao wa Nya'ngoro Kusini		CBO
Mtandao wa Wanamazingira Kata ya Zirai	MMIKAZI	CBO
Mtandao wa Udekwa		CBO
MUKEJA		CBO
Potwe Herbalist Group	PHG	CBO
Shirikisho la Wanamazingira Kata ya Bungu	SHIWABU	CBO
Shirikisho la Wanamazingira Kata ya Maramba	SHIWAMAMA	CBO
Tanga Youth Aids and En. Cons.		CBO
TUMAINI VUOIR		CBO
Tunza Mazingira Itete	TUMI	CBO
Tunza Mazingira Kata ya Mayo na Mgwashi	TUMAM	CBO
Tunza mazingira Kata ya Vugiri	(TUMAINI)	CBO
Umoja wa Wafuga Ngombe wa Maziwa Amani	UWAMA	CBO
Umoja wa Wanamazingira Kata ya Mhinduro	UMAKAM	CBO
Umoja wa wanamazingira Kata ya Zirai	(MMIKAZI)	CBO
Umoja wa wanamazingira Kwetango	(UMIKWA)	CBO
Umoja wa wanamazingira Misozwe	UTUMAM	CBO
Umoja wa wanamazingira Mkwajuni, Kwetango na Misozwe	UMIKWAM	CBO
Wamajukuu		CBO
Wami-Mbiki Project		CBO
Mgambo Conservation Group	MCG	CBO
Gezaulole Cultural Tourism Group		CBO - lowland
Jozani Environmental Conservation Association	JECA	CBO - lowland
Mkamba		CBO - lowland

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Mtandao wa Wanamazingira Pande	MWAPA	CBO - lowland
Shirikisho la Wakulima na Watetezi wa Mazingira wa Ruvu Kusini	SHIWAMARU	CBO - lowland
Shirikisho la Wanamazingira wa Amani Gomvu,	SHIWAWAMAGO	CBO - lowland
Watetezi wa Hifadhi ya Pugu na Kazimzumbwi	WAHIPUKA	CBO - lowland
District Natural Resources Office - Kilosa		District Government
District Natural Resources Office - Korogwe		District Government
District Natural Resources Office - Lushoto		District Government
District Natural Resources Office - Morogoro		District Government
District Natural Resources Office - Muheza		District Government
District Natural Resources Office - Same		District Government
Iringa District Council		District Government
Add other districts from the Eastern Arc		District Government
Mufindi District Council		District Government
Ulanga District Council		District Government
Global Environment Facility	GEF	DONOR
John D. and Catherine T. McAthur Foundation		Donor
PFM World Bank IDA		Donor
UNHCR	SAKARE	Donor
USAID Tanzania		Donor
World Bank	WB	Donor
Amani Butterfly Project	BUTTERFLY GROUP	Donor Funded Project
Cross Borders Project (GEF-UNDP)		Donor Funded Project
Green Com		Donor Funded Project
Hifadhi Mazingira	HIMA	Donor Funded Project
IUCN - Coastal Zone Project		Donor Funded Project
Matumizi Endelevu Ya Msitu Ya Asili	MEMA	Donor Funded Project
Participatory Environmental Management Programme	PEMA	Donor Funded Project
Rufiji Environment Management Project	REMP	Donor Funded Project
Uluguru Mountains Agricultural Development Project	UMADEP	Donor funded project
Uluguru Mountains Biodiversity Conservation Project DANIDA/DOF/Wildlife Conservation Society of Tanzania	UMBBCP-WCST	Donor funded project
DANIDA-SUMO		Government Aid Agency
Danish International Development Agency	DANIDA	Government Aid Agency
German Technical Corporation	GTZ	Government Aid Agency
NFP Support(from Finland)	FINNIDA	Government Aid Agency
Norwegian ??	NORAD	Government Aid Agency
SIDA	SIDA	Government Aid Agency
Department of Commercial Crops, Fruits, and Forestry	DCCFF	Government Dept.
Fisheries Division	FD	Government Division
Forestry and Beekeeping Division	FBD	Government Division
Forestry and Beekeeping Division (PFM Component)	FBD	Government Division
Tourism Division		Government Division
Wildlife Division	WD	Government Division

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Amani Nature Reserve		Government Institution
Coast Region Natural Resources Office	NRO	Government Institution
East Usambara Conservation Area Management Programme	EUCAMP	Government Institution
National Tree Seed Agency		Government Institution
Rufiji Basin Development Authority	RUBADA	Government Institution
Tanzania Coastal Management Project	TCMP	Government Institution
Ministry of Natural Resources and Tourism	MNRT	Government Ministry
Mining Ministry ?		Government Ministry
Agriculture Ministry?		Government Ministry
Water Ministry?		Government Ministry
UNDP/Vice Presidents Office		Government Office
African Conservation Centre	ACC	International NGO
African Wildlife Foundation	AWF	International NGO
Birdlife International		International NGO
Carbon Development Mechanism (CDM)		International NGO
Conservation International	CI	International NGO
Critical Ecosystem Partnership Fund	CEPF	International NGO
East Africa Natural History Society	EANHS	International NGO
East African Wildlife Society	EAWLS	International NGO
Environmental Liason Centre International		International NGO
Friends of Conservation	FoC	International NGO
IUCN EARPO	IUCN EARO	International NGO
TRAFFIC EARPO	TRAFFIC	International NGO
TRAFFIC Tz	TRAFFIC	International NGO
World Vision	WV	International NGO
World Wide Fund for Nature - UK	WWF - UK	International NGO
World Wide Fund for Nature - USA	WWF - USA	International NGO
University of Hawaii		International Research Institution
Ghent University, Department of Biology		International Research Organisation
International Centre of Insect Physiology & Ecology	ICIPE	International Research Organisation
Quentin Luke		International Researcher
Wildlife Clubs of Kenya		Kenya NGO
Local Communities using forest resources		Local resource users
MP for all constituencies in E Arc		MP's
Eastern Arc Mountains Conservation and Management Project (EAMCMP) UNDP/GEF		National Government Project
Udzungwa Mountains National Park	Tanapa	National Park Authority
Lawyers Environmental Action Team	LEAT	Not for profit company
Tanzania National Parks Authority	TANAPA	Parastatal
East Usambara Tea Company	EUTCo	Private enterprise
East Usambara Tea Estates		Private enterprise
Kihansi Hydro-Electric Project		Private enterprise
Kilombero Valley Teak Company	KVT	Private enterprise
Kwamtili Estates		Private enterprise
Mufindi Tea Estate		Private enterprise
Oil palm people - Magoroto		Private enterprise
P. Hiking Safari and T.		Private enterprise
Unilever Novella Project		Private enterprise
Businesses pushing logging		Private enterprise - logging
Loggers		Private enterprise - logging

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Sawmills		Private enterprise - logging
Timber companies		Private enterprise - logging
TANESCO (Hydro power)		Private Institution / Government
Tanzania Association of Foresters Morogoro	TAF-MOROGORO	Professional Association
Tanzania Association of Foresters Tanga	TAF-TANGA	Professional Association
Regional Administrative Secretary - Tanga		Regional Government
Morogoro Regional Natural Resources Officer	NRO	Regional Government
Ras Pwani Regional Natural Resources Officer	NRO	Regional Government
Religious groups		Religious groups
Tanzania Forestry Research Institute	TAFORI	Research Institution
Tanzania Wildlife Research Institute	TAWIRI	Research Institution
CACO University Dar es Salaam	CACO-UDSM	Research Institution
University of Dar es Salaam (Botany Dept.)	UDSM	Research Institution
Sokoine University of Agriculture	SUA	Research Institution
Mlingano Soil Research Centre		Research Institution Government
Frontier Tanzania		Research organisation
DIAF	DIAF	TZ Local NGO
Friends of Usambara		TZ Local NGO
Mazingira Institute	Mai Tanzania	TZ Local NGO
Morogoro Environmental Conservation Organisation	MOECO	TZ Local NGO
MVIWATA	MVIWATA	TZ Local NGO
Mufindi Escarpment Trust	(MUET)	TZ Local NGO
Journalist Environmental Association of Tanzania	JET	TZ Local NGO
4H		TZ Local NGO
AHI		TZ Local NGO
Association for Popular Development Services		TZ Local NGO
Tanzania Forest Conservation Group	TFCG	Tz National NGO
Wildlife Conservation Society of Tanzania	WCST	Tz National NGO
CARE-	UMEMCP	Tz National NGO
CARE Tanzania		Tz National NGO
CARE Tanzania - Zanzibar		Tz National NGO
Envirocare		Tz National NGO
Traditional Irrigation Programme	TIP	Tz National NGO
Universal Empowerment Trust Fund	UNET	Tz National NGO
World Wide Fund for Nature - TZ	WWF - TZ	Tz National NGO
WWF - EARPO		Tz National NGO
Village Governments		Village Government
List of forest adjacent villages		Village governments
SNV		Voluntary Aid Organisation
List of all wards		Ward Government
Rural Artisans		

8.2 Questionnaire used to gather data

	Name
	Position
	Department/Organization
	Region/District
	Question
1	About environmental education in your district
1.1	Do you undertake Environmental Education and communication activities? (or any other type of education/awareness raising)(Formal and non-formal education activities)
1.2	If yes please give details of which areas you are working in?
1.3	Which groups of people are you working with? Please specify
1.4	What are the key messages that you disseminate? Please specify
1.5	What means of communication do you use and which is most effective? Please list according to their importance
1.6	Do you collaborate on Education/communication/awareness activities with any other organisations? If yes please mention which organisations.
1.7	Has the district produced any environmental education materials? If yes please give examples.
1.8	Do the districts receive environmental education materials from external organisations? Please give examples and say where they are from.
1.9	Are the materials useful? Which kind are most useful? Please specify
1. 10	What are the key messages the above mentioned materials deliver?
2.	About Education/Awareness activities external to your office
2.1	Do you know of any other organisations (e.g. NGOs or CBO's) working in this District on environmental issues?)
2.2	Which groups of people are they working with?
2.3	What are the key messages these organisations disseminate?
2.4	What means of communication do they use and which is most effective?
2.5	Are there any groups undertaking effective awareness work on non-environment issues? Please mention the names
2.6	Are there any drama/song/poetry specialists (groups or individuals) working in your area?
3	About Environmental issues and campaigns in this district/area.
3.1	What are the major Environmental issues of concern in the district?
3.2	Does the District have any Env Action Campaign? Please give details. Who runs them? Is there any cooperation between departments? What themes/issues are emphasised?
3.3	What are the mechanisms used in your district to communicate with different stakeholder groups?
3.4	Which are most effective and why? If not very effective, why not?
3.5	How could communication mechanism be improved?
4.	Formal education sector involvement in environmental education
4.1	Are schools in this district /area involved in any environmental education activities? If yes please describe
4.2	How many Environmental Clubs are there in your schools in your area/district.
4.3	Are they monitored/supported by your office?
4.4	Do schools in your district /area celebrate any environment days (e.g. World Environment Day) or other environmental events?

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4.5	How many Secondary Schools are there in your district?Please say how many are private/ government
4.6	How many Primary Schools are there in your district?Please say how many are private/ government.
4.8a	Is there an established materials distribution system into which we could also use?
4.8b	How many Teachers Resource Centers are there in your district ? How many Teachers do they reach? Do they have opportunities to work on Environmental issues? Have got education resources on environmental?
4.8c	Is there a district library? Ward Library? Or Library Book distribution system of any kind? Where?
4.9	Is there a short fall in the number of teachers in the district?If yes how many?
5	Forests Values
5.1	Please list all the values of natural forests you can think of.
5.2	Do you have any forest related campaigns in this district?If yes please mention them.
5.3	Are external organisations involved in any forest campaigns e.g.International, national NGOs,bilateral Government projects and CBOs? Are CBOs useful internal?
5.4	What are the major threats to the forest biodiversity in your district /area?Please indicate which are the most important.
5.5	In your opinion are the general public aware of forests' ecological and economical importance?
5.6	Is fire an increasing or decreasing threat to forests in your area/district?(For District Forest Officer's / DCFO's - Please can you provide number of Forest fire incidences in the last five years)
5.7	What are the main causes of forest fires in your area/district.
5.8	How do you think these can be reduced?
5.9	Are there any gender specific forest conservation issues?If yes, what are they?
5.1 0	Where are the main forests in your district?
6	Key themes for an Information Education and Communication strategy
6.1	What, in your opinion should be the key themes for an IEC strategy in the Eastern Arc?
6.2	Do you have / Have there been any previous capacity building/advocacy programmes on environmental issues?If yes, when, where and what issues were covered.Provide reports if available please
6.3	Which groups would be a priority for advocacy training in order to foster environmental education?
7.	Human Resources (District Staff and Ward Staff)
7.1	Heads of departments only? How many staff/technical are there in your department?
7.2	Heads of departments only Please can you give a summary of the education qualifications of your department staff?
7.3	Does your department have functional motorbikes, photocopier, stenciling machine, cars, and computers? Please say how many
7.4	Would any of these equipment be available for use on an environment education programme? If yes which ones?

8.3 List of participants in questionnaires.

Name	Position	Department/Organisation	Region/District
George Mbega	D.F.O	Natural Resource	Morogoro/Kilombero
Moshi	DNRO	Natural resources	Dodoma Mpwapwa
LH Nsana	District Admin. .Secretary	Administration	Dodoma/Mpwapwa
RM Magessa	DPO	Planning	Dodoma/Mpwapwa
A.Mafuru	DWE	Water department	Dodoma/Mpwapwa
Hawa Msonga	Adult Education Officer	Education	Dodoma/Mpwapwa
John Ngwenyeji	Land officer	Lands	Dodoma/Mpwapwa
S.Matamba	WAMMA Coordinator	WAMMA	Dodoma/Mpwapwa
Yustina Munishi	Agric Officer	District Agric Office	Dodoma/Mpwapwa
No Name	Act District Community Development officer	Community Development	Kilolo/Iringa
Rose Mtawa			Kilolo/Iringa
J. Shengwando	CDO	Community Development	Kilolo/Iringa
G. M Manyimike	Crop officer	Agric	Kilolo/Iringa
No Name	District Forest Officer	Natural Resource	Kilolo/Iringa
No Name			Kilolo/Iringa
Victor	Agricultural Officer	Natural resources (Game)	Kilombero
Mnguu	DSMS Crops	Agriculture	Morogoro/ Kilombero
Mazingira Institute- MAI	Member	Forest Conservation	Morogoro/Kilombero
Mechtilis Abdalah	Community Development Officer	Community Development	Morogoro/Kilombero
S. Mizambwa	DNRO	District council	Morogoro/Kilombero
No Name		MAI	Morogoro/Kilombero
Mdalahela	Assistance District town planner	Land	Morogoro/Kilombero
No name	Water Tech II	Water Depart	Muheza
Gerson Kira	District Town planner	Land department	Same
Vicky Komba	Community Development Officer	Community Development	Same
Kissima gabriel	TIP manager	Traditional Irrigation Project	Same
E. Mkilameni	District Catchment forestry manager	Forestry and Beekeeping Division	Same
Kilonzo SS	Agriculturalist	Agriculture	Same
Mhando	District Beekeeping Officer	Natural Resources	Same
JM Kitururu	Agric Field officer-Chome	Agriculture	Same
A.Seth	Health Officer	Health	Same
Mchomvu RS	Facilitator Chome Teachers Resource Center	Education	Same
R. Mabula	District Forest Officer	Forestry	Tanga/ Muheza
A.Gabriel	Planning Officer	Planning Officer	Tanga/Handeni
Msuya T.K	District Agric and Livestock Development officer	Agric and Livestock	Tanga/Handeni
Mahenge FS	Assistant Catchment Forest Management	Catchment	Tanga/Handeni

8.4 List of participants in semi-structured interviews.

Name	Department	District
Not supplied	Planning	Kilolo/ Iringa rural
Annania Kikoti	Not supplied	Kilolo/ Iringa rural
Mary Kitori	Education	Kilolo/ Iringa rural
Mr. Patrick Golwike	Community Development	Kilolo/ Iringa rural
Mr. Temu	Planning	Kilolo/ Iringa rural
Mr Benedict Mtenga	Businessman	Kilolo/ Iringa rural
J Massao+ G.Anyumike	District Natural Resources Office	Kilolo/ Iringa rural
Juma shegwando	District Agricultural Office	Iringa rural
Rose Luvanga	District Agricultural Office	Iringa rural
Costa Nmhando	Natural Resources	Same
Vicky Komba	Community Development	Same
Heriel Mkuji	Water	Same
Gasper Kimbweleza	Not supplied	Same
Mr Mshana	District Natural Resources Office	Same
Mchomvu	District Catchment Office	Same
Gerson Kira	Land	Same
Josam Kipingu	Education	Same
Kamyemka Mbwana	District Land Office	Muheza
Seifu Shehina	District Agricultural Office	Muheza
Edwards, Lwawere,	District Natural Resources Officer	Muheza
Abdalah Konkoli	Not supplied	Muheza
Mr. Hassan Njama	Education	Muheza
Mr. Ramadhan Masula	Water	Muheza
Mr. Omary Mbwana	Timber Dealer	Muheza
Ms Kusaga	Education department	Muheza
Mrs Nyangusa	Community Development	Muheza
Mlowe	Timber dealer	Muheza
Kissick	Timber dealer	Muheza
Mrs Mshana	Community development	Handeni
Gablieli	Planning	Handeni
Dr Nevil Mlinga	Livestock	Handeni
I. Mmbwelwa	Lyakundi Investment Workshop	Handeni
M Tatala	District Natural Resources Office	Handeni
Hatibu Laay-	District Land Office	Handeni
Mr. Benon Tatala	Administration	Handeni
Mr. J. Mhando	Administration	Handeni
Mr. Ally Kibao	Politician/ CCM	Handeni
Mrs Mwajuma Pelemba	Handeni Energy Saving stove makers	Handeni
Mrs Lena Nsana	Acting District Administrative Officer	Mpwapwa
Mr. John Ngwenyeji	District Academic Officer	Mpwapwa
Mr. Mafuru	District Audio Visual Officer	Mpwapwa
Water Officer	Idete Ward Councillor	Mpwapwa
Assistant Adult Education Officer	District Catchment Forest Officer	Mpwapwa
Timber dealer	Land surveyor	Mpwapwa
Mr. Mbegu	KVTC Monitoring	Kilombero
Mr. C. Wangwe	Timber dealer	Kilombero
Mr. E. Mfinanga	Timber dealer	Kilombero
Mr. Eliud Nyaronga	District Agric and Livestock officer	Kilombero
Mussa Bereko, George Mbega and S Mizabwa	Acting District Community Development Officer	Kilombero

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	Staff from Anglican church	Kilombero
Felix Mkonyi	Kilombero Valley Teak Company	Kilombero
JJ msuva	Timber Dealer	Kilombero
Mrs (name not supplied)	Not supplied	Kilombero
Mrs Abdalah	Acting District Community Development officer	Kilombero
Mr I Nyakarashi	Anglican Church Officer (retired)	Kilombero
Mrs Kibatara	District Planning Officer	Kilombero

8.5 Average rank score for each information source in each village.

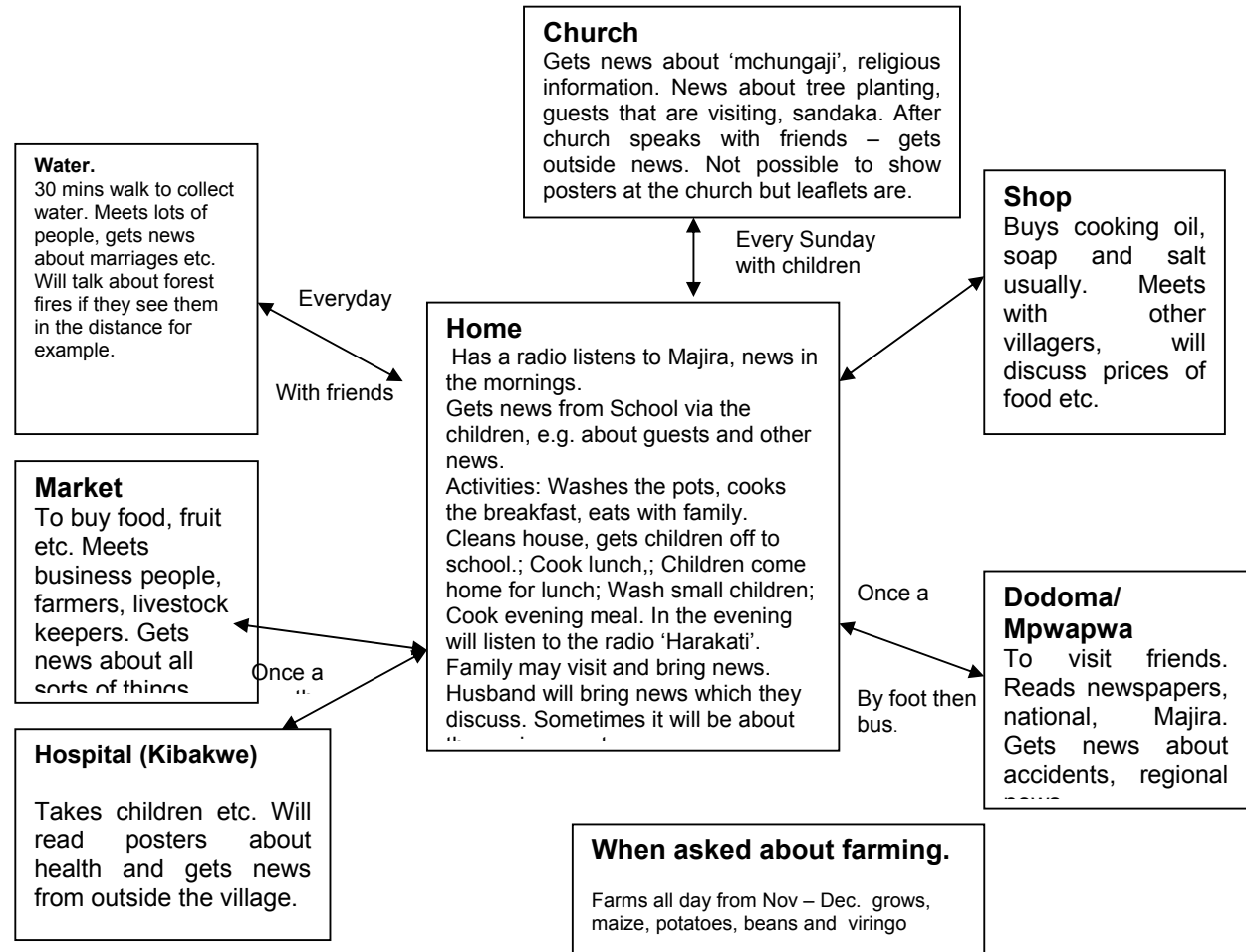
M'wotta	Mbuga	Signal	Namawala	Kilindi	Lulago	Kisiwani	Misozwe	Muhero	Vumari	Udekwa	Kidabaga												
Wengine	5.9	Wengine	4.3	Wengine	5.5	Video	3.4	Wengine	3.8	Wengine	3.0	Wengine	1.1	Wengine	1.8	Wengine	0.7	Wengine	0.9	Wengine	3.7	Wengine	1.9
Video	9.0	Video	8.0	Rafiki wa moyoni	5.8	Wengine	4.4	Imamu / Kasisi / Padri	6.5	Mbunge	5.2	Video	5.2	Video	6.2	Washauri wa nchi za nji / wafadhili	6.8	Washauri wa nchi za nji / wafadhili	4.7	Televisheni	5.0	Mtoto wa kwanza wa kiume	4.8
Televisheni	10.1	Televisheni	8.1	Jirani Wako	5.9	Mtoto wa kwanza wa kike	5.7	Mtoto wa kwanza wa kiume	8.3	Video	5.9	Jirani Wako	5.6	Jirani Wako	6.3	Walimu wa Chuo Kikuu / Watafiti	7.0	Walimu wa Chuo Kikuu / Watafiti	6.2	Video	6.6	Mtoto wa kwanza wa kike	5.6
Rafiki wa moyoni	10.3	Washauri wa nchi za nji / wafadhili	8.2	Mume / Mke Wako	7.3	Rafiki wa moyoni	6.6	Mkuu wa wilaya	8.7	Televisheni	7.1	Rafiki wa moyoni	6.1	Rafiki wa moyoni	7.0	Jirani Wako	7.4	Mkuu wa wilaya	8.3	Washauri wa nchi za nji / wafadhili	6.6	Washauri wa nchi za nji / wafadhili	6.3
Jirani Wako	10.5	wandishi wa Vitabu	8.2	Bibi / Bw shamba /afisa ya /Misitu /Maendeleo	8.1	Mtoto wa kwanza wa kiume	7.4	Mtoto wa kwanza wa kike	9.0	Vipeperushi / Mabango ya Serikali	8.0	Mtoto wa kwanza wa kiume	7.3	Televisheni	7.0	Mtoto wa kwanza wa kiume	7.6	Mtoto wa kwanza wa kike	8.4	Mbunge	7.2	Jirani Wako	7.6
Mtoto wa kwanza wa kike	10.5	Walimu wa Chuo Kikuu / Watafiti	8.5	Vipeperushi / Mabango ya Serikali	8.1	Walimu wa Chuo Kikuu / Watafiti	7.5	Mume / Mke Wako	9.0	wandishi wa Vitabu	9.0	Mtoto wa kwanza wa kike	7.8	Washauri wa nchi za nji / wafadhili	8.4	Rafiki wa moyoni	8.7	Televisheni	9.3	Mkuu wa wilaya	8.2	Mume / Mke Wako	7.8
Washauri wa nchi za nji / wafadhili	11.0	Vipeperushi / Mabango ya Serikali	9.0	wandishi wa Vitabu	8.8	Washauri wa nchi za nji / wafadhili	7.9	Bibi / Bw shamba /afisa ya /Misitu /Maendeleo	9.2	Washauri wa nchi za nji / wafadhili	9.5	wandishi wa Vitabu	8.7	Mtoto wa kwanza wa kiume	8.8	Televisheni	9.0	Vipeperushi / Mabango ya Serikali	9.3	wandishi wa Vitabu	8.3	Wazee wa busara	8.4
Mtoto wa kwanza wa kiume	11.0	Mkuu wa wilaya	9.1	Imamu / Kasisi / Padri	8.9	Jirani Wako	8.8	Walimu wa Chuo Kikuu / Watafiti	9.3	Bibi / Bw shamba /afisa ya /Misitu /Maendeleo	9.8	Televisheni	8.8	Mtoto wa kwanza wa kike	9.0	wandishi wa Vitabu	9.0	wandishi wa Vitabu	9.4	Walimu wa Chuo Kikuu / Watafiti	8.4	Walimu wa Chuo Kikuu / Watafiti	8.8
wandishi wa Vitabu	11.5	Jirani Wako	9.6	Washauri wa nchi za nji / wafadhili	8.9	Wazee wa busara	9.3	Wazee wa busara	9.9	Mume / Mke Wako	10.0	Mwalimu wa Shule	8.9	Walimu wa Chuo Kikuu / Watafiti	9.0	Mwalimu wa Shule	9.1	Mwalimu wa Shule	9.9	Rafiki wa moyoni	9.0	Rafiki wa moyoni	9.8
Mbunge	11.8	Imamu / Kasisi / Padri	9.7	Mtoto wa kwanza wa kike	9.1	wandishi wa Vitabu	9.4	Vipeperushi / Mabango ya Serikali	11.4	Jirani Wako	10.1	Mume / Mke Wako	9.0	Vipeperushi / Mabango ya Serikali	9.5	Vipeperushi / Mabango ya Serikali	9.2	Video	10.1	Imamu / Kasisi / Padri	9.3	Mbunge	10.0
Wazee wa busara	12.0	Rafiki wa moyoni	9.9	Wazee wa busara	10.5	Imamu / Kasisi / Padri	9.6	Mwalimu wa Shule	11.6	Walimu wa Chuo Kikuu / Watafiti	10.1	Mwandishi wa Habari - gazetti	9.6	wandishi wa Vitabu	9.8	Video	9.3	Jirani Wako	10.4	Bibi / Bw shamba /afisa ya /Misitu	9.9	Imamu / Kasisi / Padri	10.2

8.6 Examples of communication maps

Mwanawotta Village, Mpwapwa

Elizabeth 30 Years Old, from Mwanawotta Village, 4 children.

Asked about her day-to-day activities to see where she gets most of her information from.



Mwanawotta Village, Mpwapwa

Edgar, businessman (hotel) 23 yrs, from Mpwapwa, visiting Mwanawotta for work. Asked about his day-to-day activities to see where she gets most of her information from.

Communication problems: bad road, few vehicles come to the village. One vehicle belonging to business people visits maybe once a month.

