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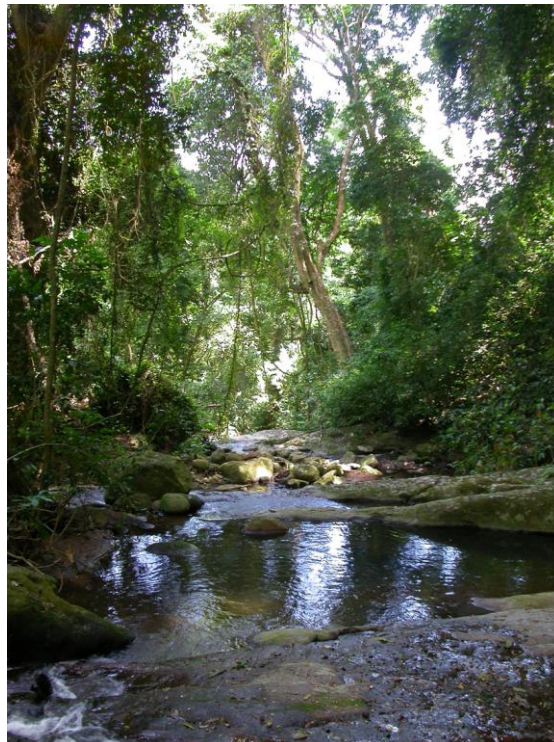
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A survey of stakeholders' knowledge, attitudes and practices in relation to the Eastern Arc Mountain and Coastal Forests of Tanzania, in 2012

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Cover photographs (from left to right): Small-scale farmer in Muheza District, Eastern Arc Mountain stream (South Nguru Mountains) by Andrew Perkin; Tree planting in a Muheza District primary school, Photo by Dorthe Lund.

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The Critical Ecosystem Partnership Fund is a joint initiative of l'Agence Française de Développement, Conservation International, the Global Environment Facility, the Government of Japan, the MacArthur Foundation and the World Bank. A fundamental goal is to ensure civil society is engaged in biodiversity conservation.

The study was a part of the 'Bridging the Knowledge Gap: Communicating Hotspot Conservation' Project which was implemented between 2012 and 2014.

Executive summary

Introduction

This report describes a Knowledge, Attitudes and Practices (KAP) survey about forest conservation in the Eastern Arc Mountain and Coastal Forests of Tanzania. The survey was conducted in 2012 amongst stakeholders at community, local government and national level. The report was prepared by a team from the Tanzania Forest Conservation Group with funding from the Critical Ecosystem Partnership Fund as part of the project 'Bridging the Knowledge Gap: Communicating Hotspot Conservation'.

Objectives of the Survey

The survey objectives were:

- To assess stakeholder knowledge, attitudes and practices (KAP) in relation to forest values, threats and conservation in the Eastern Arc Mountains and Coastal Forests.
- To identify changes in knowledge, attitudes and practices since the 2004 Conservation and Management of the Eastern Arc Mountain Forests Project KAP baseline.
- To update the list of Eastern Arc Mountain stakeholders by identifying changes in the role of stakeholders identified by the 2004 stakeholder analysis and to identify new and emerging stakeholders.
- To identify current information sharing, education and communication processes.
- To get input from stakeholders on the kinds of information that they would like to receive; and on their preferred information / communication channels.

The survey is intended to inform environmental education and communication practitioners on the impact of a decade of investment in awareness raising activities about the Eastern Arc Mountain and Coastal forests; as well as to guide practitioners in designing future programmes.

Methods

The survey included interviews in 14 villages in seven Eastern Arc and Coastal Forests districts in six regions and with stakeholders based in Dar es Salaam. The Districts covered by the survey are: Kilindi, Kilolo, Kilombero, Lindi, Mpwapwa, Muheza and Same. Methods that were used include: Questionnaires, Focus Group Discussions, Semi-Structured Interviews and Personal Observations.

Results

Knowledge

In terms of awareness or knowledge the percentage of village respondents who were aware of the term Eastern Arc Mountains; the National Forest Policy (1998); the Forest Act (2002); and the concept of participatory forest management are presented in Table 1.

Table 1. % of respondents at village level in the 7 Districts with knowledge of key concepts and policy tools.

District	% of respondents at village level who have heard of:			
	Eastern Arc Mountains ¹	Forest Policy	Forest Act	Participatory Forest Management
Kilindi	25	13	25	41
Kilolo	53	39	0	19
Kilombero	32	47	47	53
Mpwapwa	47	5	40	74
Muheza	43	8	38	59
Same	28	11	0	33

District	% of respondents at village level who have heard of:			
	Eastern Arc Mountains ¹	Forest Policy	Forest Act	Participatory Forest Management
EAM All	38	21	25	47
Lindi / Coastal Forests	82	47	47	71

Awareness at local government and national level. At National, District and Ward level, the percentage of respondents aware of the term Eastern Arc Mountains was 79%, 62% and 74% respectively. This compares with 2004 when 72% of District respondents were aware of the term Eastern Arc Mountains. Overall, levels of awareness of the Eastern Arc Mountains have remained about the same amongst community and local government stakeholders over the last 10 years.

34% and 43% of the ward staff from the Eastern Arc Mountain Forests have heard of the Forest Policy 1998 and Forest Act 2002 respectively.

Awareness of forest values. Broad categories of forest values were understood by all stakeholders. The most commonly mentioned forest value was water followed by timber, fuel wood, biodiversity, mitigating climate change, building materials, food, traditional medicine, beekeeping, source of rain, tourism, wildlife and soil conservation. Forest values mentioned by stakeholders in 2014 that were not mentioned in 2004 include hydropower and REDD revenues. 21% of villagers, 29% of ward staff, 60% of district staff 50% of the ministry level and private sector staff had heard of REDD.

Attitudes

Attitude to forest conservation. Stakeholders at all levels were supportive of forest conservation with 86% of Village, 100% of Ward and 98% of District respondents stating that it was good to conserve forests.

Opinions of how government should conserve the forest. All stakeholders mentioned law enforcement, awareness raising, participatory forest management, tree planting and stopping corruption as strategies to conserve forests. Law enforcement was the most frequently cited strategy by community members (44%).

Attitude to environmental education. 76% of community respondents stated that they would like environmental education to be provided in their schools although only 23% of teachers said that they were providing this.

Cultural values. Whereas in 2004, 11 out of 12 villages mentioned that forests have cultural values, only 29% of the Eastern Arc Mountain community-level respondents mentioned cultural values in 2012. The rate was much higher in the Coastal Forest District i.e. Lindi at 61%.

Practices

Forest management activities that were mentioned include participatory forest management, fire control, conservation of water sources, patrolling against encroachment into forest reserves, reporting to district officials when illegal incidents occur, maintaining forest boundaries and establishing and running of tree nurseries.

75% of the Ward-level respondents mentioned that there were fire prevention and / or control initiatives active in their wards. This compares with 89% of the village-level focus groups interviewed in 2004, who mentioned active fire management strategies in their villages.

Environmental education. Between 2004 - 2012 environmental education in primary schools appears to have increased and broadened. In 2012, 12% of the teachers mentioned that they had been trained to provide environmental education whilst 23% of the teachers stated that they practice environmental education in their schools. In contrast in 2004, 71% mentioned tree nurseries, 5 % mentioned environmental clubs (Same and Kilombero Districts only) and 0% mentioned teaching about the environment in the classroom.

Stakeholders analysis

Some new stakeholders have emerged including the Eastern Mountains Conservation Endowment Fund and the Udzungwa Ecological Monitoring Centre. None of the respondents mentioned pastoralists or SAGCOT as stakeholders despite their growing importance.

When we asked 56 focus groups at community level to describe the stakeholders who 'in your opinion play an important role in promoting forest conservation' the most frequently cited stakeholders (in order of frequency) were: local government, TFCG and TANAPA. Neither the Tanzania Forest Services Agency nor the Forestry and Beekeeping Division were mentioned by a single group. Similarly only 27% of Ward and Community respondents said that they had ever heard of TFS.

Ongoing communication initiatives

The survey indicates that there is widespread participation in awareness raising events on forest conservation with 52%, 58% and 36% of District, Ward and Village level respondents stating that they had participated in forest conservation awareness raising events over the last 5 years.

84% of the 56 groups who were interviewed stated that they had heard radio programs about forests and forest conservation. This compares with only 4% of the groups interviewed in 2004 who had heard forest-related programmes. The most frequently mentioned radio station was TBC.

Communication preferences

Eastern Arc Mountain and Coastal Forests stakeholders would like to receive information about: Tree planting, Participatory Forest Management, Environment/Forest policies and Laws, Income Generating Activities, Beekeeping, Water Conservation and Village Land Use Planning.

Radio programmes followed by meetings were cited as the preferred means of communication.

Conclusions

Recognition of the term Eastern Arc Mountains has remained fairly constant between 2004 and 2012 with around one third of community members familiar with the term and around two thirds of District and Ward staff. Given the awareness raising work on the Eastern Arc Mountains that has been implemented by TFCG, the Eastern Arc Strategy, the Eastern Arc Mountains Conservation Endowment Fund and others, it is quite surprising that rates of awareness have not increased more. In general, poorer households and women have lower awareness than wealthier households and men.

Knowledge and perceptions of forest values and threats also remained quite similar between 2004 and 2012 although there are some signs that the forests' value as a supply of water is increasing; whilst bush-meat appears to less important than in 2004.

Awareness about forest threats is very general and published data on deforestation rates in the Eastern Arc Mountains and Coastal Forests has not been widely communicated. Access to such information would allow stakeholders to have a much better understanding of the scale and distribution of threats and the actual (rather than perceived) deforestation drivers thereby making it easier to respond in a coordinated and effective way.

At community level more people are aware of participatory forest management as a policy tool than are aware of the Forest Policy and Forest Act. Meanwhile, awareness of the link between governance issues and deforestation remains low although many respondents are clearly eager for there to be more law enforcement by the Government.

In terms of attitudes, respondents at all level want to see forests being conserved; and whilst there may be signs that forests are becoming less culturally important in some areas, it is clear that they remain a vital resource for rural communities. At community level, many people are eager for the government to enforce forest laws; and for more environmental education to be introduced in schools.

Many of the stakeholders who were active in 2004 are still relevant today with local government still playing a pivotal role in forest management. The Tanzania Forest Services Agency appears to be quite unknown at local level.

Recommendations

- 1) Raise awareness amongst communities, local government, Central Government and other stakeholders at local and national level about the location of the EACF, their values including their unique biodiversity values and water catchment role
- 2) Reach out to stakeholders directly linked to deforestation including those who have not been targeted in previous awareness raising campaigns such as charcoal producers, SAGCOT and pastoralists.
- 3) Support more environmental education in primary and secondary schools in the EACF.
- 4) Build the capacity of local government staff at Ward and District Level to promote forest conservation and to lead forest conservation activities. This will require some changes to forestry sector finance in order to channel more funding to the local level.
- 5) Encourage cooperation and coordination between different parts government as well as with civil society and the media in awareness raising activities about the EACF.
- 6) Support forest conservation action at all levels including those actions recommended by stakeholders including law enforcement, participatory forest management, conservation agriculture and tree planting.
- 7) Raise the profile of the Tanzania Forest Services Agency and publish timely and accurate data on deforestation rates in government reserves so that stakeholders have a better understanding of the scale and distribution of deforestation.

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Acronyms

CBFM	Community Based Forest Management
CBO	Community Based Organization
CEPF	Critical Ecosystem Partnership Fund
CF	Coastal Forests
CI	Conservation International
CMEAMF	Conservation and Management of the Eastern Arc Mountain Forests Project
DFO	District Forest Officer
DLENRO	District Land, Environment and Natural Resources Officer
EACF	Eastern Arc and Coastal Forests
EAM	Eastern Arc Mountains
EE	Environmental Education
FBD	Forest and Beekeeping Division
FR	Forest Reserve
HH	Households
HIMA	Hifadhi Mazingira
ITV	Independent Television
KAP	Knowledge Attitudes and Practices
KVTC	Kilombero Valley Teak Company
LSM	Learning Support Materials
MEMA	Matumizi Endelevu ya Maliasili
NGO	Non Governmental Organization
PFM	Participatory Forest Management
TFS	Tanzania Forest Services Agency
TFCG	Tanzania Forest Conservation Group
WCST	Wildlife Conservation Society of Tanzania
WWF	World Wide Fund

1 Introduction

1.1 What is this report about?

This report describes a survey of knowledge, attitudes and practices amongst different stakeholder groups with an influence on the conservation of the Eastern Arc Mountain and Coastal Forests.

The survey objectives were:

- To assess stakeholder knowledge, attitudes and practice (KAP) in relation to forest values, threats and conservation in the Eastern Arc Mountains and Coastal Forests.
- To identify changes in knowledge, attitudes and practices since the 2004 Conservation and Management of the Eastern Arc Mountain Forests Project KAP baseline.
- To update the list of Eastern Arc Mountain stakeholders by identifying changes in the role of stakeholders identified by the 2004 stakeholder analysis and to identify new and emerging stakeholders.
- To identify current information sharing, education and communication processes.
- To get input from stakeholders on the kinds of information that they would like to receive; and on their preferred information / communication channels.

The survey is intended to inform environmental education and communication practitioners on the impact of a decade of investment in awareness raising activities about the Eastern Arc Mountain and Coastal forests; as well as to guide practitioners in designing future programmes.

The survey included interviews in 14 villages in seven Eastern Arc and Coastal Forests districts and with stakeholders based in Dar es Salaam. The report was prepared by a team from the Tanzania Forest Conservation Group.

1.2 A brief history of environmental education and communication in the Eastern Arc Mountains and Coastal Forests

Conservation and Management of the Eastern Arc Mountain Forests project (2004 – 2008)

The Conservation and Management of the Eastern Arc Mountain Forests (CMEAMF) was a project of the Ministry of Natural Resource and Tourism, Forestry and Beekeeping Division. TFCG was invited to be a partner in the project. The project developed a holistic conservation strategy for the Eastern Arc Mountains. The overall strategy included various thematic strategies including an information, education and communication (IEC) strategy and action plan.

The IEC strategy had three objectives:

1. To increase key stakeholder's understanding of the value of Eastern Arc Mountain forests, the threats that they currently face and the importance of investing in their sustainable management.
2. To raise awareness on the National Forest Policy and Forest Act and to encourage feedback and participation from Eastern Arc Mountain stakeholders.
3. To guide stakeholders to implement formal and informal environmental education and information sharing activities in a more effective and coordinated way within the Eastern Arc Mountains.

The strategy identifies ten 'communication partner' groups including: central government, local government, Eastern Arc Mountain communities, civil society organisations, development partners, environmental education practitioners, politicians, general public, media and international conservation organisations.

As part of the IEC strategy development process a baseline KAP survey and stakeholder consultation process was carried out in 2004. The CMEAMF KAP survey provides the baseline for the survey documented in this report. Having developed the strategy, the CMEAMF project then supported TFCG to implement parts of the action plan between 2005 – 6. TFCG implemented a series of activities including meetings, radio programmes and distribution of informative printed materials targeting the objectives outlined above and with a particular focus on the Uluguru and Rubeho Mountains.

TALK (Training, Awareness, Learning, and Knowledge) about the Eastern Arc and Coastal Forests of Kenya and Tanzania (2006 – 2009)

Between February 2006 and June 2009, the Critical Ecosystem Partnership Fund provided funding to TFCG for the TALK project as part of CEPF's broader investment in biodiversity conservation in the Eastern Arc Mountains and Coastal forests of Kenya and Tanzania. The TALK project implemented a series of awareness activities that had been highlighted in the CMEAMF Communication strategy and extended the geographical scope to include the East African coastal forests. The TALK project succeeded in raising awareness amongst millions of people with regard to the importance of conserving the Eastern Arc Mountains and Coastal Forests. Using a variety of media including television, radio, printed materials, newspapers, meetings, drama, music, poetry and art the project raised awareness amongst local, national and international stakeholders. Resources supported by the project including the Teachers environmental education guide and the Coastal Forest website have continued to provide information about the region's biodiversity and related conservation issues long after the close of the project.

Bridging the Knowledge Gap: Communicating Hotspot Conservation (2011 – 2014)

CEPF then provided funding as a consolidation grant in order to 'consolidate communication networks, raise awareness and solidify the education achievements for the long term benefits of civil society.' The project was implemented by TFCG and succeeded in communicating the results and data from the biodiversity surveys that CEPF had financed; scaled-up primary school environmental education using the teacher's manual developed through TALK; and raised public awareness through media and distribution of various printed materials.

Alongside these TFCG-led projects there have been other initiatives that have also contributed to increased environmental awareness amongst stakeholders in the Eastern Arc Mountains and Coastal Forests, particularly through the REDD Pilot Projects that were financed by Norway between 2009 - 2014; by the Participatory Forest Management programme within the Ministry of Natural Resources and Tourism; as well as various other initiatives financed by the EU, DfID, Finland and Germany involving Government and Civil Society Organisations.

Given these and other sources of information it is not possible to attribute shifts in knowledge, attitudes and practices to any single initiative, only to consider their contribution.

1.3 Who is this report for?

The report provides information relevant to different stakeholders with an interest in conserving the Eastern Arc Mountain and Coastal Forests. For Government stakeholders, it provides information on people's understanding of policies and laws; their attitude towards conservation; and their knowledge on the values that forests provide. The conclusions and recommendations are intended for consideration by all stakeholders in planning future initiatives.

1.4 How is the report organized

The report is organized in four sections. The first section describes the methods used during the data collection and analysis. The second section summarizes the main results. The third section presents a summary and discussion of the findings of the report, followed by the main conclusions and recommendations.

1.5 Description of the Eastern Arc Mountain and Coastal Forests of Tanzania

1.5.1 The Eastern Arc Mountain Forests of Tanzania

The Eastern Arc Mountains are one of the world's most important areas for biodiversity conservation. The Eastern Arc Mountain forests have 136 endemic vertebrate species of which 79 are restricted to only one mountain block (Rovero *et al.* 2014). By 2014 there were 756 globally threatened taxa in the EACF of Kenya and Tanzania (Gereau *et al.* 2014). The Eastern Arc Mountain Forests provide the water catchments for major cities including Dar es Salaam, Tanga, Iringa and Morogoro and over 60% of all electricity in the country is generated in hydropower using the water from these mountains.

The Eastern Arc Mountains are found in the districts of Mwanza, Same, Lushoto, Korogwe, Mkinga, Muheza, Kilindi, Mpwapwa, Mvomero, Morogoro, Kilosa, Kilombero, Kilolo, Mufindi and Ulanga. 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 Mountains has been cleared. Threats to the biodiversity of the Eastern Arc Mountains include fire, timber extraction, expansion of agricultural land, charcoal making, illegal hunting, mining and building materials. Between 2004 – 2013 the population in Tanzania increased by 32 % from 37 million to 49 million people; whilst Kenya's population has increased from 34 million to 44 million people.

For more information about the Eastern Arc Mountains: www.easternarc.org

1.5.2 The Coastal Forest of Tanzania and Kenya

The Coastal Forests of Eastern Africa also have high levels of species endemism. For example 44% of plants found in the Coastal Forests are endemic to the coastal forests. Forests only 100 km apart may have an 80% difference in their plant species.

The Coastal Forests are home to five endemic primates: Tana River red colobus, (*Procolobus ruifomitratus*, Critically Endangered), Tana River mangabey (*Cercocebus galeritus*), Zanzibar red colobus (*Procolobus kirkii*, endangered), Rondo galago (*Galagoides rondoensis*), Critically Endangered) and the Kenya coastal galago (*Galagoides cocos*). Coastal Forests together with the Eastern Arc Mountains, are home to the African violet (*Saintpaulia spp*) from which 40,000 varieties have been cultivated commercially from 3 species, with a retail trade of \$ 100 million per annum

For more information about the Coastal Forests: <http://cf.tfcg.org>

1.6 Tanzania Forest Conservation Group

The Tanzania Forest Conservation Group is a national non-governmental organization established in 1985 with the mission to conserve and restore the biodiversity of globally important forests in Tanzania for the benefit of the present and future generations. TFCG achieves its mission through five inter-related strategies: environmental education, participatory forest management, research, community development and advocacy. TFCG's activities are focused on the Eastern Arc Mountain and Coastal Forests of Kenya and Tanzania. Please visit www.tfcg.org for more information.

2. Methods

2.1 Sampling strategy

TFCG conducted the KAP survey in six regions, seven districts and fourteen villages. The survey involved government staff, elected representatives, businessmen and community members. Wealth and gender categories were considered during the selection of interviewees.

Table 2. Survey regions, districts and villages

Region	District	Village
Dodoma	Mpwapwa	Mbuga
		Mwanawotta
Kilimanjaro	Same	Vumari
		Muhero
Iringa	Kilolo	Udekwa
		Kidabaga
Tanga	Kilindi	Kilindi
		Lulago
Tanga	Muheza	Kisiwani
		Misozwe
Morogoro	Kilombero	Namwawala
		Signal
Lindi	Lindi	Kinyope
		Ntene

The villages in the Eastern Arc Mountains are the same villagers as were included in the CMEAMF baseline study in 2004. By re-visiting the same villages as were included in the 2004 survey, the survey aimed to measure the changes in knowledge, attitudes and practice that have taken place over the last 8 years whilst holding other geographical factors constant. In 2004, the six districts were selected to include three districts that were receiving a high level of external support for participatory forest management: Muheza, Same and Kilolo; and three districts receiving low levels of external support: Mpwapwa, Handeni and Kilombero.

2.2 Questionnaire

Questionnaires were used to interview the following stakeholders:

District level: Six staffs from each district were interviewed. At least two were from each of the three categories of staff listed below of whom two were women:

Group 1: District Land Natural Resources and Environment Officer, District Forest Officer, District Beekeeping Officer, District Catchment Forest Officer.

Group 2: District Executive Director, District Community Development Officer, District Agriculture and Livestock Officer, District Water Officer

Group 3: District Party Secretary, District Health Officer, District Education Officer, District Administrative Officer and District Planning Officer.

Village / Ward level

From each sample ward from the sample districts we interviewed the Ward Executive Officer and a Ward Councilor, a primary school teacher and an agricultural extension officer. Village Executive Officers in all sample villages were interviewed.

Elected Representatives

Village level: Village Chairpersons and 4 members of the village natural resources committees (2 women, 2 men) in all sample villages were interviewed.

Private sector

District level: Two private sector representatives per district with a preference for those involved in forest-related industries or agriculture were interviewed.

Village level: One trader, shop owners or other private sector.

Religious leaders

Village level: one religious leader per village was interviewed.

Civil society organizations and community based organizations

District level: Two NGO representatives involved in forest conservation or agriculture from every sample district were interviewed.

Village level: One MJUMITA representative per village.

General public

National level: 5 women and 5 men from Regional capitals

District level: 2 women and 2 men from the District capitals.

Village level: 5 women and 5 men including people from the poorest wealth category in all villages.

2.3 Focus Group discussions

Stakeholders interviewed through focus group discussions were all from the village level. Four groups were formed and interviewed. The groups were:

1 group of 6 - 10 young men (16 – 25 years) per village

1 group of 6 - 10 young women (16 – 25 years) per village

1 group of 6 – 10 older women (40+ years) per village

1 group of 6 – 10 men (mixed age group) per village

2.4 Semi-structured interviews

Stakeholders who were interviewed using semi-structured interviews were:

Government Staff and other local level civil servants including: Tanzania Forest Service, Ministry of Education, Ministry of Agriculture, Department of Environment and Prime Ministers Office Regional Administration and Local Government. From the private sector we interviewed Vodacom, Selous Safari Company, Tanzania Farmers Association, BJM Furniture and Aqua Well Drilling Co. Ltd.

From civil society organizations we interviewed the Mkapa Foundation, CARE Tanzania and WWF.

For the elected representatives we had an interview with one Member of Parliament.

2.5 Personal Observations

The KAP survey team was made up of two members and each member was responsible for taking notes about his/her personal observations about the district/village and people met. Things which were being observed included signs of environmentally friendly / unfriendly activities; and perceptions of people's attitude towards forest management: were people positive, interested, don't seem to care or resentful? We also observed on how the district staff/villagers were able to share information and data, about their motivation and contribution towards forest conservation.

2.6 Secondary information

Collection and analysis of secondary information such as reports, historical data, and materials was done. Copies were obtained from some few places for future reference.

The questionnaire, FGC and SSI questions are available in the online version of this report.

3. Results

3.1 Questionnaire

3.1.1 Village level

Knowledge

Q. Have you ever heard of the Coastal Forests?

Lindi district - Village level

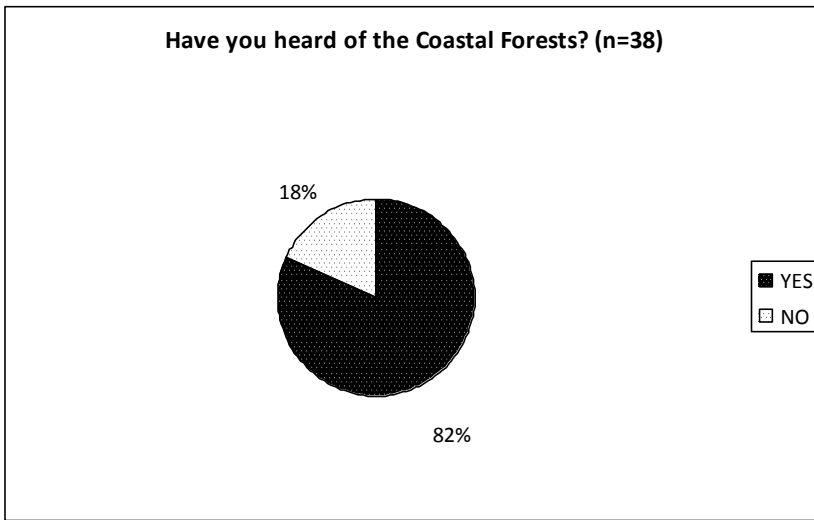


Figure 1 Have you ever heard of the Coastal Forests?

Figure 1 shows that 82% of the respondents have heard of the Coastal Forests.

B. Eastern Arc Mountain Forests

Q. Have you heard of the Eastern Arc Mountain Forests?

Kilindi District – Village level

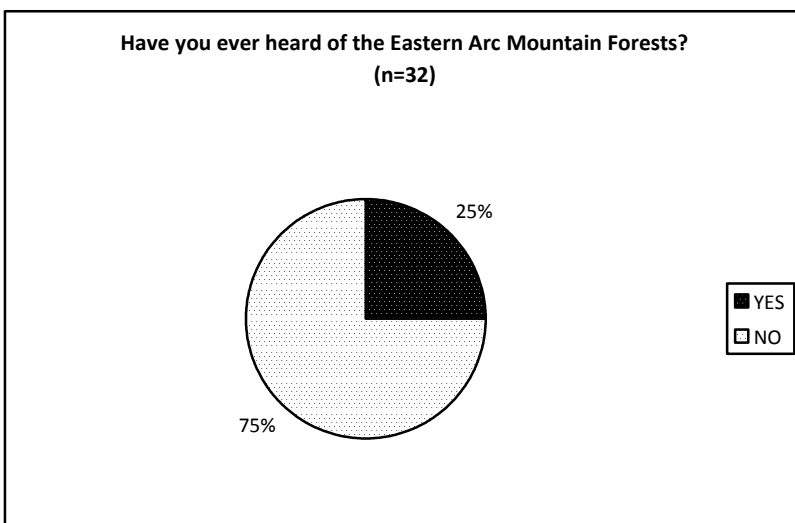


Figure 2 Kilindi - Have you ever heard of the Eastern Arc Mountain Forests?

Figure 2 shows that 25% of the respondents have heard of the Eastern Arc Mountain Forests.

Kilolo District – Village level

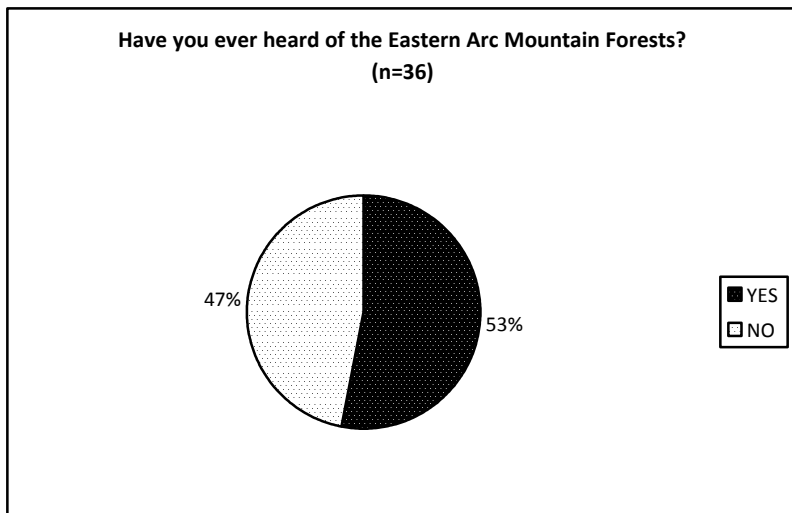


Figure 3 Kilolo - Have you ever heard of the Eastern Arc Mountain Forests?

Figure 3 shows that 53% of the respondents have heard of the Eastern Arc Mountain Forests while 47% have not heard of the Eastern Arc Mountain Forests.

Kilombero District – Village level

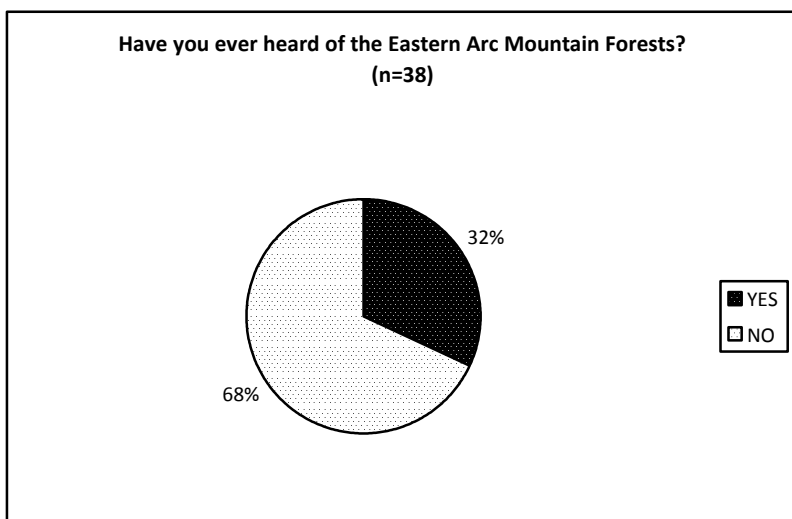


Figure 4 Kilombero - Have you ever heard of the Eastern Arc Mountain Forests?

Figure 4 shows that only 32% of the respondents have heard of the Eastern Arc Mountain Forests while 68% have not heard of the Eastern Arc Mountain Forests.

Mpwapwa district - Village level

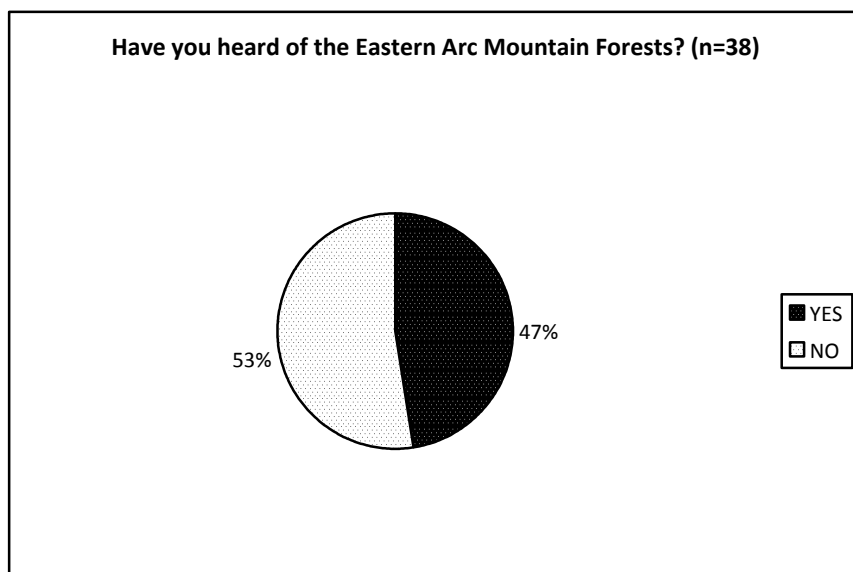


Figure 5 Mpwapwa - Have you ever heard of the Eastern Arc Mountain Forests?

Figure 5 shows that 47% of the respondents have heard of the Eastern Arc Mountain Forests whereas 53% of the respondents have not heard of the Eastern Arc Mountain Forests.

Muheza district - Village level

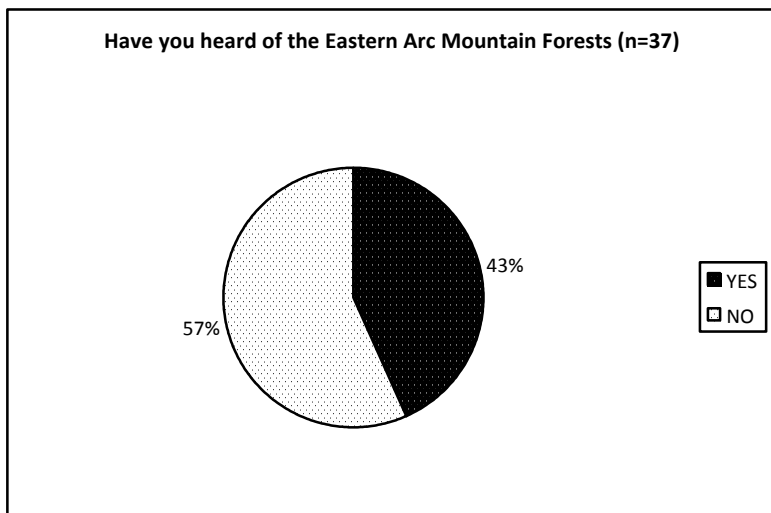


Figure 6 Muheza - Have you ever heard of the Eastern Arc Mountain Forests?

Figure 6 shows that only 43% of the respondents have heard of the Eastern Arc Mountain Forests whereas 57% of the respondents have not heard of the Eastern Arc Mountain Forests.

Same District – Village level

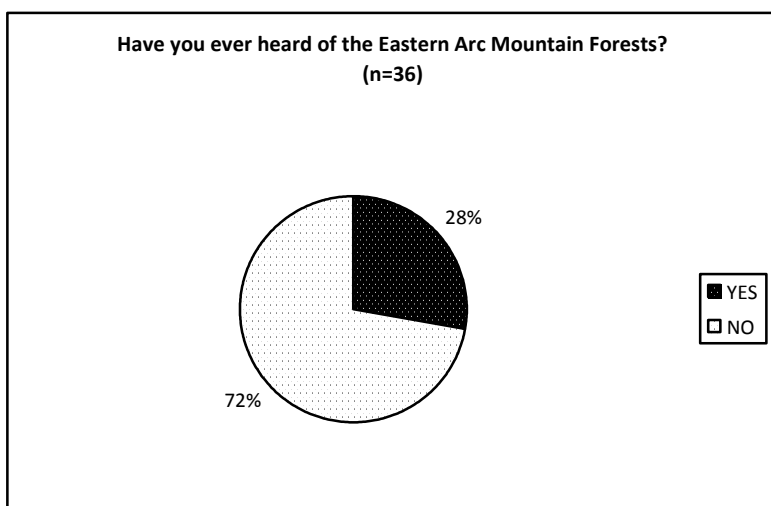


Figure 7 Same - Have you ever heard of the Eastern Arc Mountain Forests?

Figure 7 shows that only 28% of the respondents have heard of the Eastern Arc Mountain Forests while 72% have not heard of the Eastern Arc Mountain Forests.

EAM Districts (Kilindi, Kilolo, Kilombero, Mpwapwa, Muheza, Same) – Village level

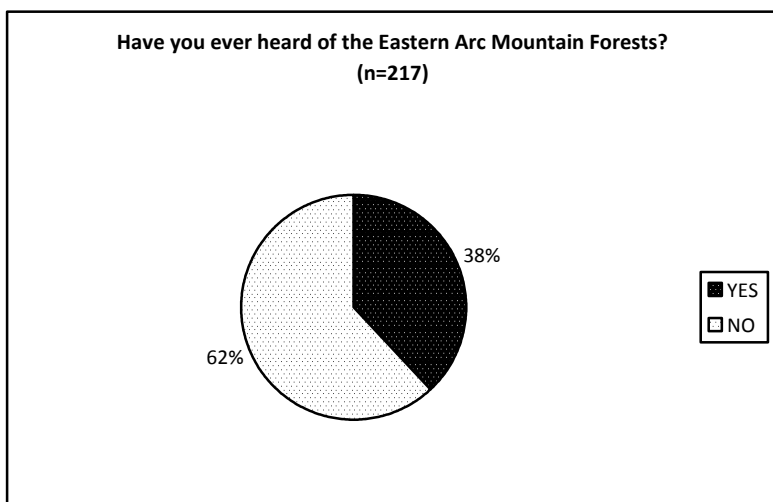


Figure 8 Have you ever heard of the Eastern Arc Mountain Forests?

Figure 8 shows that 38% of the respondents have heard of the Eastern Arc Mountain Forests. The 2004 survey showed that 30% of the community members had heard of the Eastern Arc Mountains. There is an improvement of knowledge as compared with the 2004 survey.

Results disaggregated by wealth rank

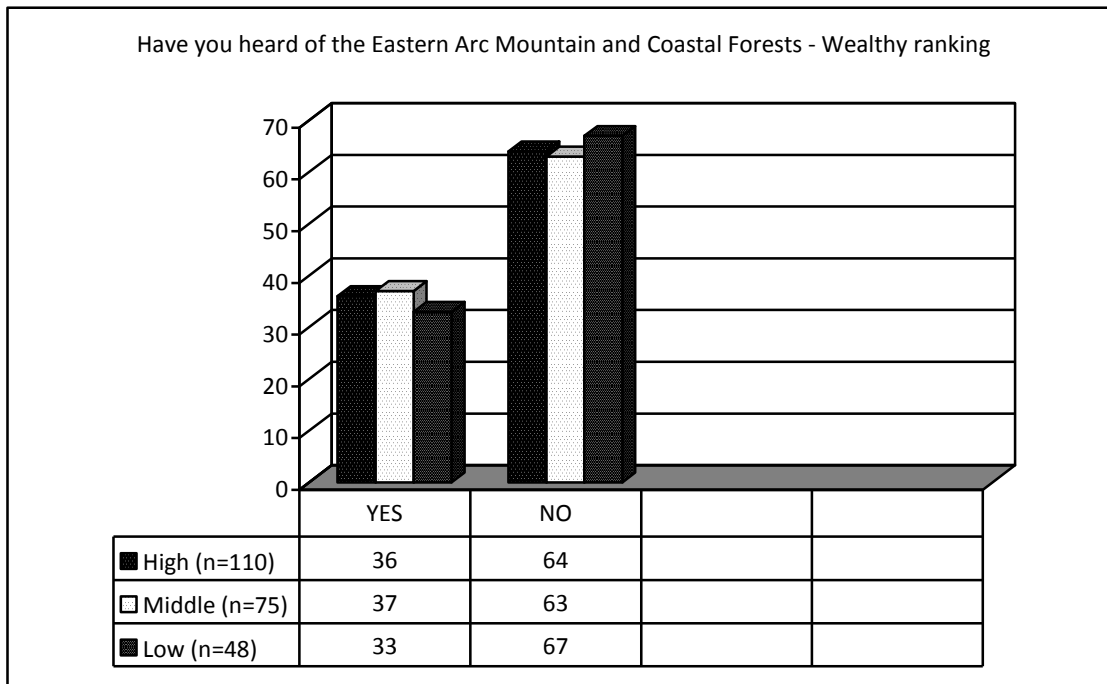


Figure 9. Wealth Rank - Have you heard of the EACF?

Figure 9 shows that 33% of the poorest, 37% of the middle ranked and 36 % of the wealthiest respondents have heard of the Eastern Arc Mountain and Coastal forests.

Results disaggregated by gender

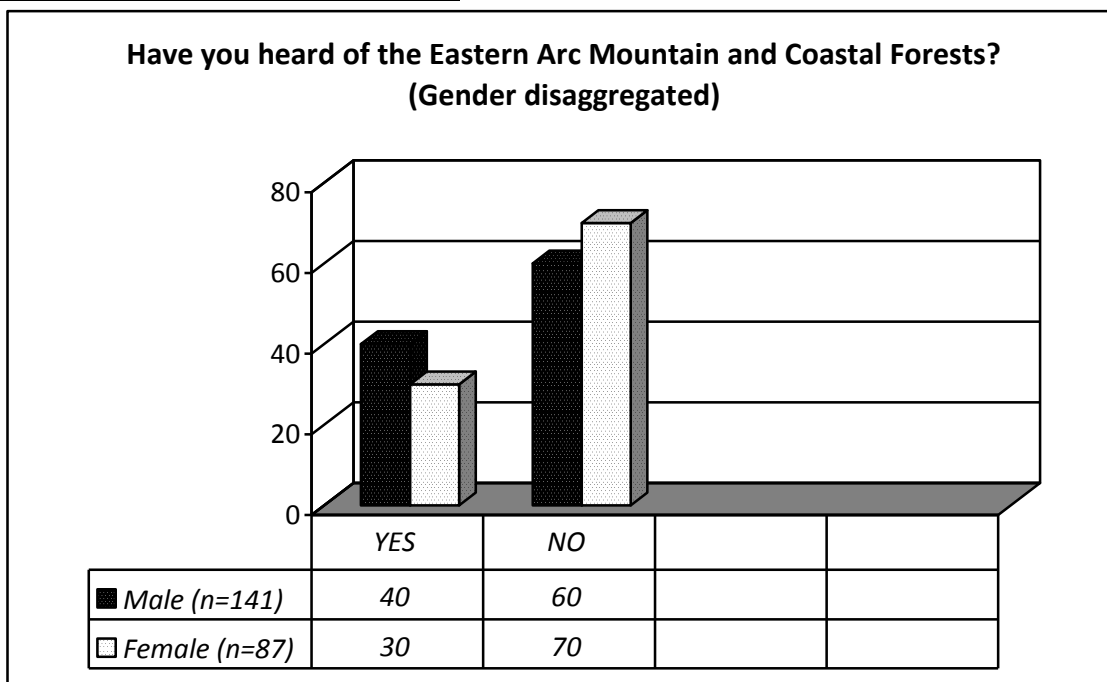


Figure 10 Gender - Have you heard of the EACF?

Figure 10 shows that 40% of men respondents had heard of the Eastern Arc Mountain and Coastal forests whereas only 30% of women had heard of the Eastern Arc Mountain and Coastal forests.

Q. Can you tell why the Eastern Arc Mountain Forests are important?

Village level

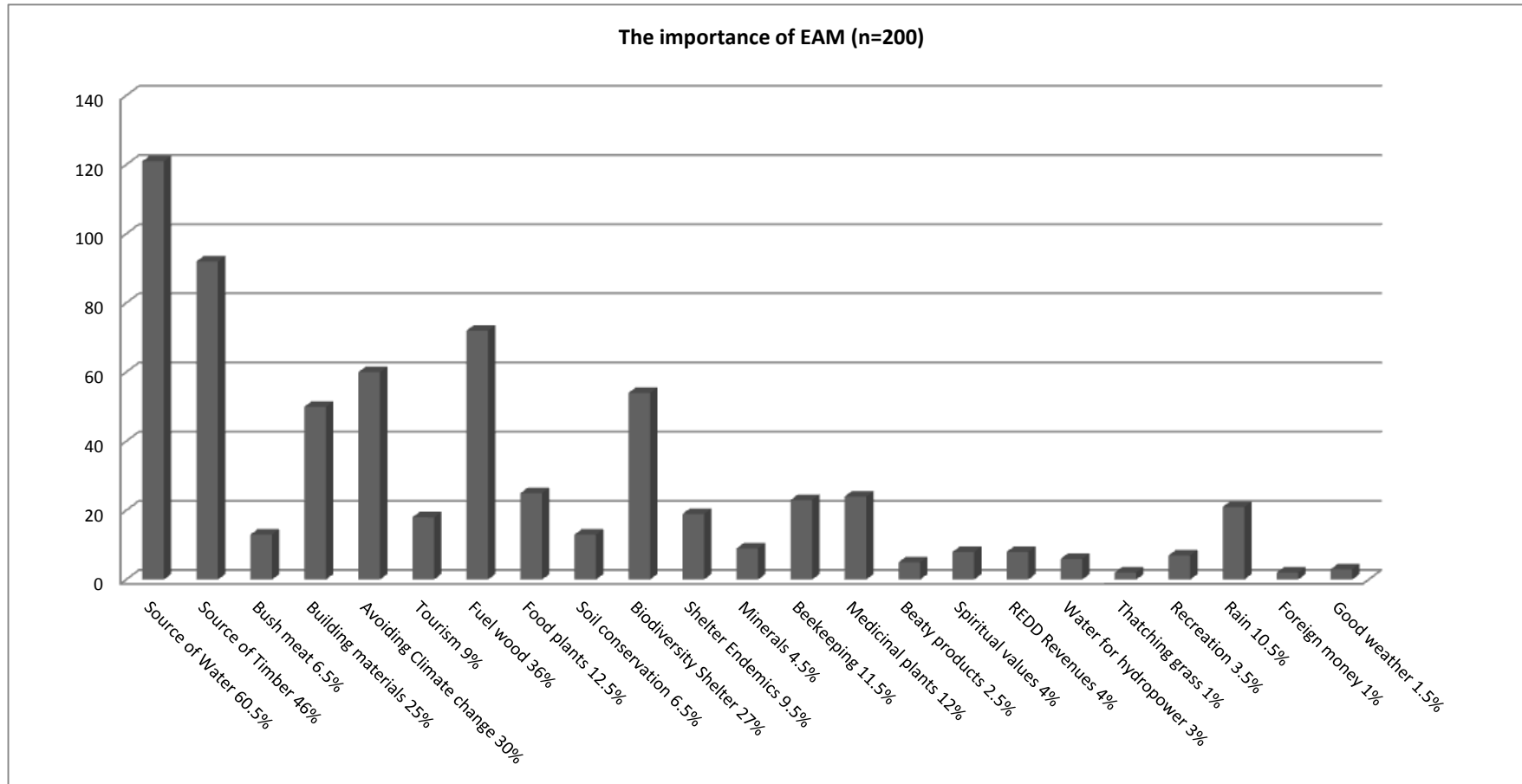


Figure 11 Forest values cited by respondents in the EAM

Figure 11 shows that the most commonly mentioned value was source of water which was mentioned by 60.5% of respondents followed by timber by 46%; fuel wood by 36%, building materials by 25%, avoiding climate change by 30%, biodiversity shelter 27%, food plants 12.5%, bush meat and soil conservation by 6.5%, medicinal plants by 12%, rain 10.5%, tourism 9%, beekeeping 11.5%, beauty products 2.5%, shelter endemics 9.5%, Water for hydropower 3%, REDD revenues and spiritual values 4%, recreation 3.5% minerals 4.5%, thatching grass 1% and 1% for good weather.

Q. Can you tell why the Coastal Forests are important?

Village level

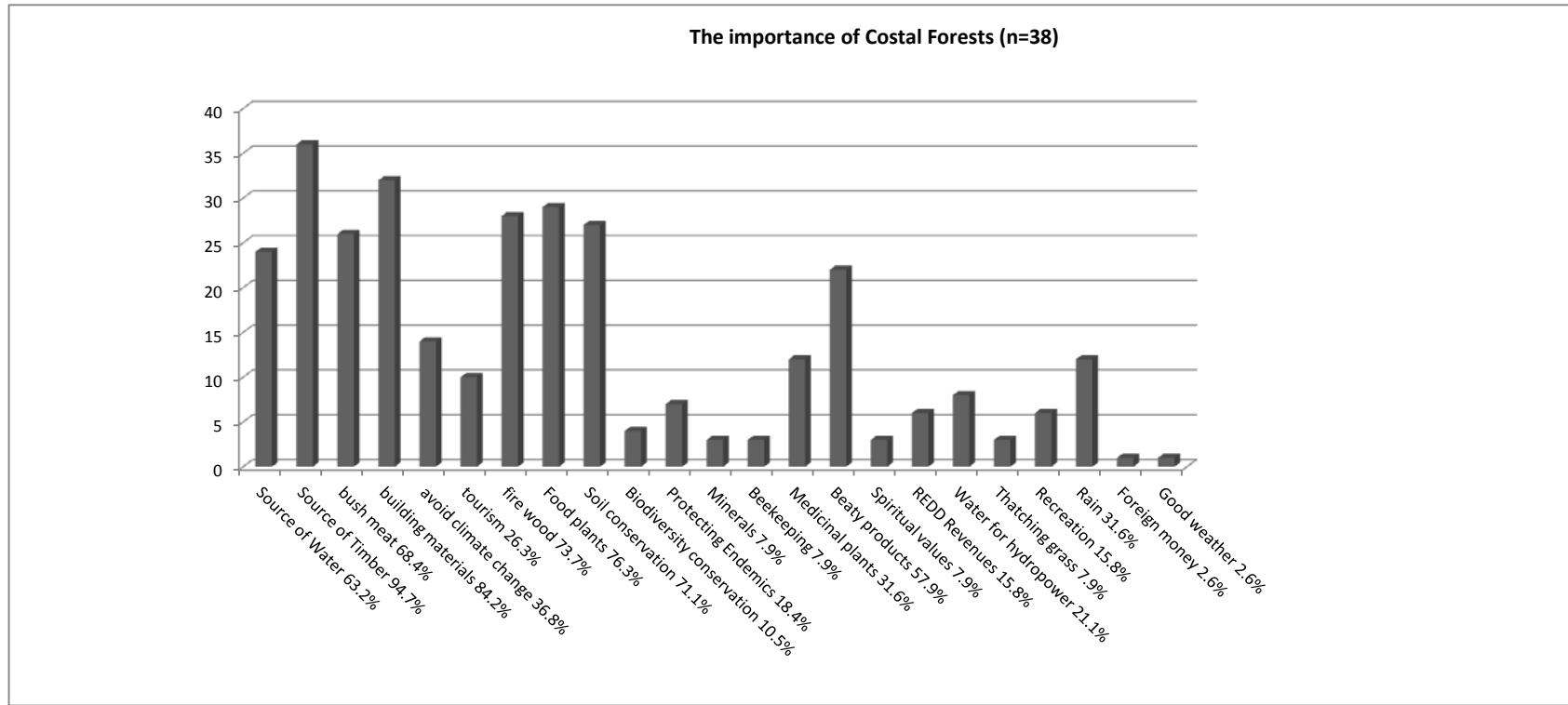


Figure 12 Forest values cited by respondents in the Coastal Forests

Figure 12 shows that the most commonly mentioned value was timber which was mentioned by 94.7% of respondents followed by building materials by 84.2%. Food plants 76.3%, Fuel wood by 73.7%, soil conservation by 71.1%, water 63.2%, avoiding climate change by 36.8%, biodiversity conservation 10.5%, bush meat 68.4%, medicinal plants 31.6%, rain 31.6%, tourism 26.3%, beekeeping 7.9%, beauty products 57.9%, protecting endemics 18.4%, Water for hydropower 21.1%, REDD revenues 15.8%, recreation 15.8%, minerals 7.9%, spiritual values 7.9%, thatching grass 7.9%, Foreign money and good weather 2.6%.

Q. Can you tell why the Eastern Arc Mountain and Coastal Forests are important?

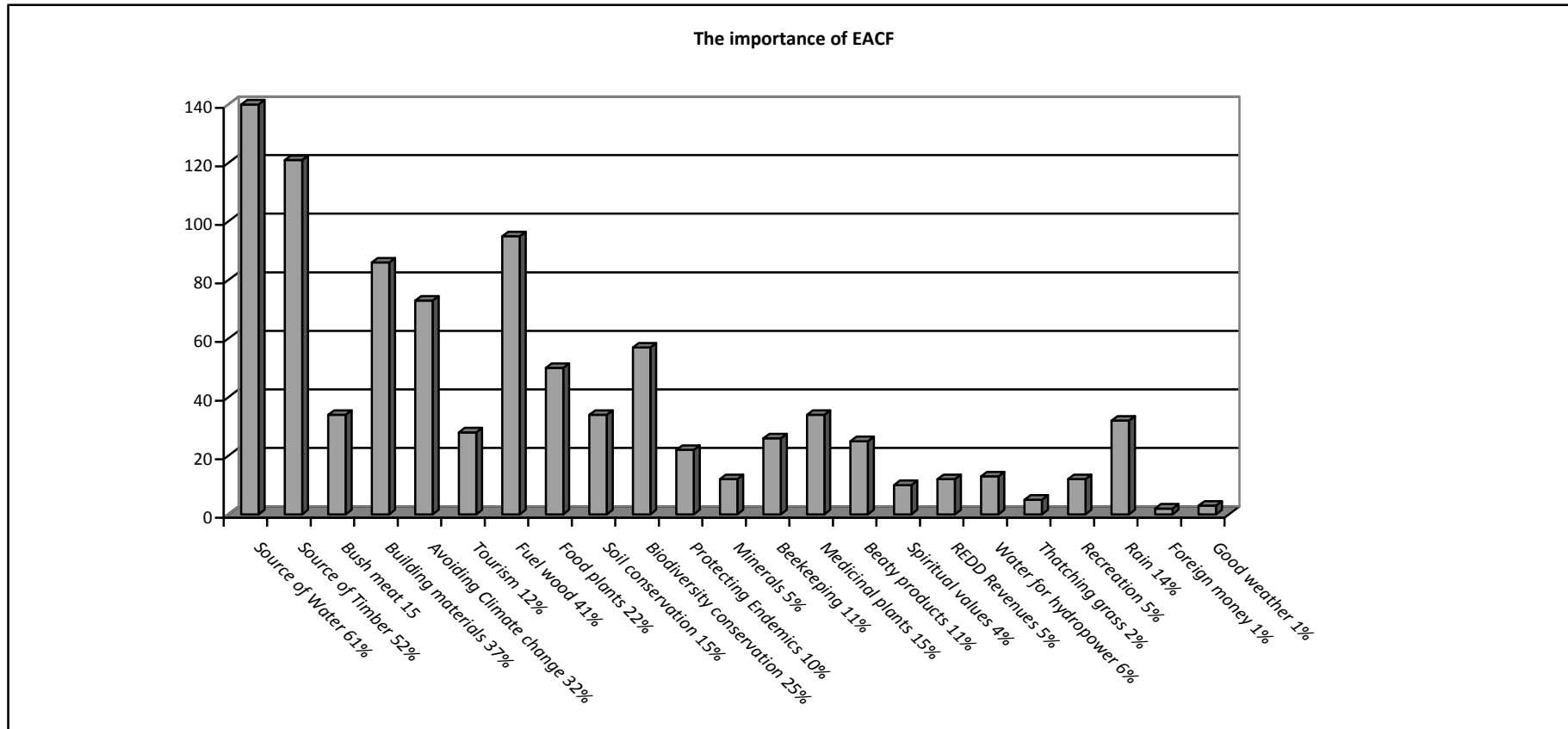


Figure 13 Can you tell why the EACF are important?

Figure 13 shows that the most commonly mentioned value was source of water which was mentioned by 61% of respondents followed by timber by 52%. Fuel wood by 41%, building materials by 37%, avoiding climate change by 32%, biodiversity conservation 25%, food plants 22%, bush meat, medicinal plants and soil conservation by 15%, rain 14%, tourism 12%, beekeeping and beauty products 11%, protecting endemics 10%, Water for hydropower 6%, REDD revenues, recreation and minerals 5%, spiritual values 4%, thatching grass 2% and 1% for good weather.

However in the baseline done in 2004, the most commonly mentioned was timber 84%, followed by water 63%, food 53%, healthy environment 53%, fire wood 42%, medicines 37%, animals habitat 21%, building materials 16%, tourism 11% charcoal 11%, biodiversity areas 11% and soil conservation 5%.

Results disaggregated by wealth rank

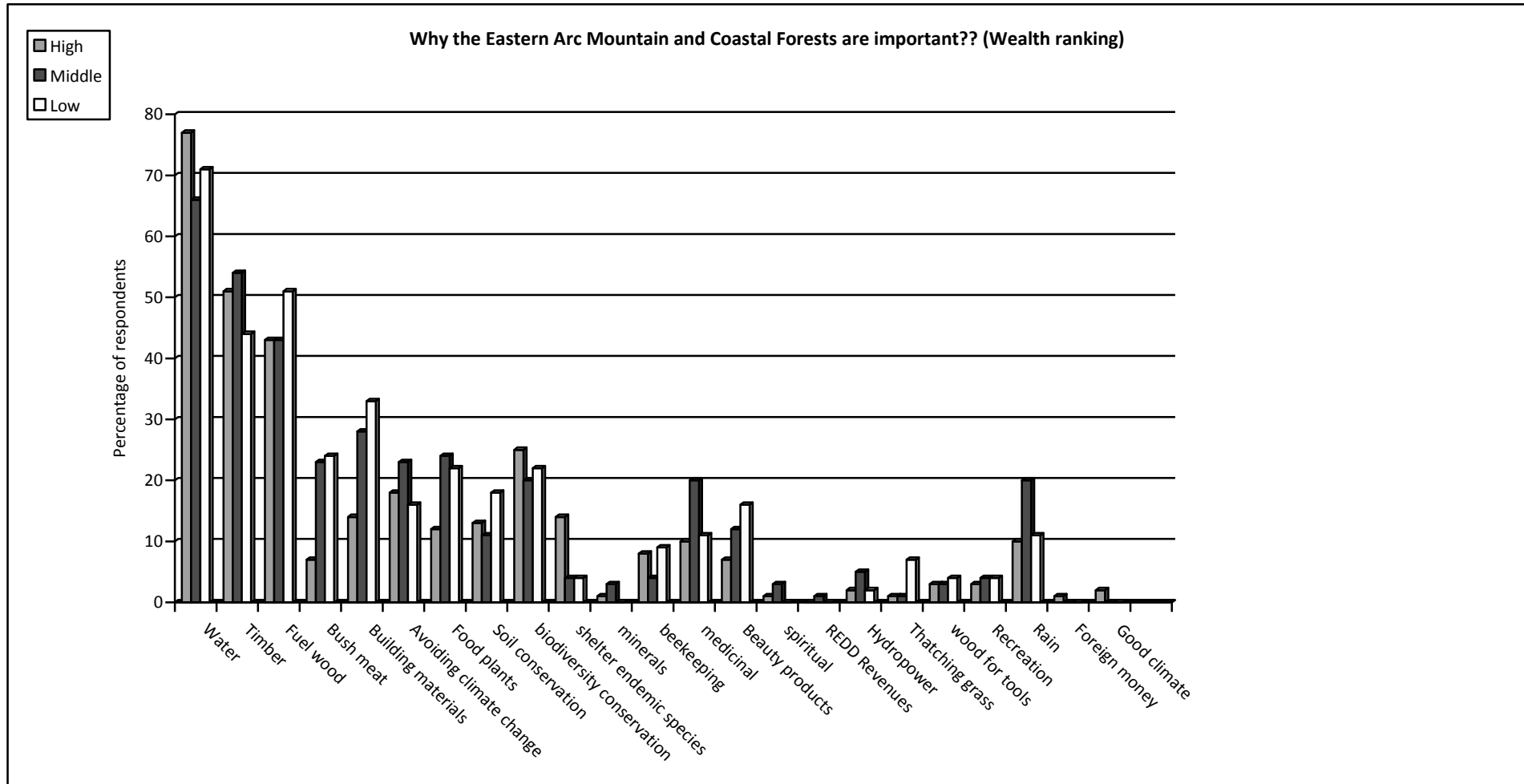


Figure 14 Importance of the EACF disaggregated by wealth rank

Figure 14 shows no clear pattern regarding relative awareness on forest values between respondents in different wealth ranks.

Q. What do you think are the main threats to the EAM and their biodiversity?

Village level - All

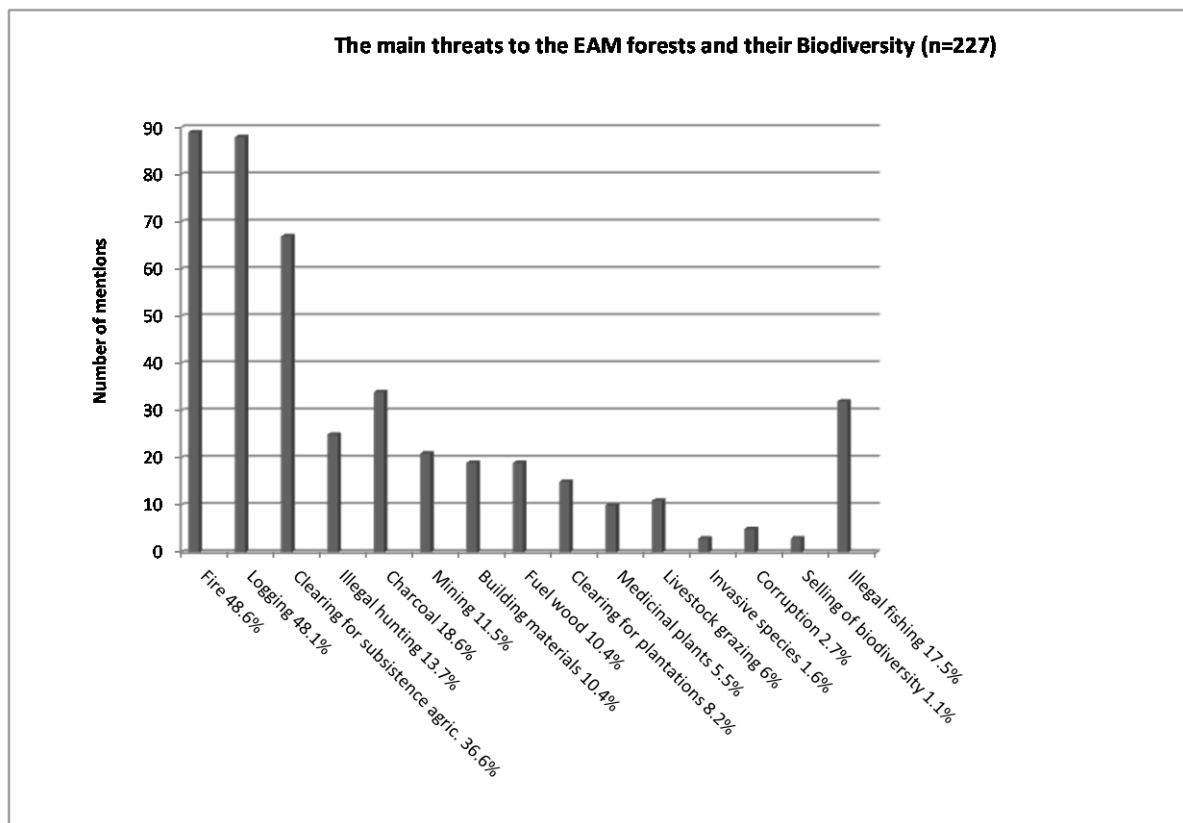


Figure 15 The main threats to the EAM forests and their biodiversity

Figure 15 shows that the most commonly mentioned threat was fire by 48.6% of the correspondents followed by timber by 48.1%. Clearing for subsistence agriculture was 36.6%, illegal hunting 13.7%, charcoal 18.6%, mining 11.5%, building materials 10.5%, fuel wood 10.5%. Clearing for plantations was mentioned by 8.2% of the correspondents, livestock grazing 6%, medicinal plants 5.5% corruption 2.7, invasive species 1.6% whereas illegal fishing 17.5% and selling of biodiversity was mentioned by 1.1% of the respondents.

In 2004 the most commonly mentioned threat was fire followed by logging, illegal hunting, poor agricultural practices, human settlements and charcoal. Fire has remained the most commonly mentioned threat followed by logging. Agricultural clearance and charcoal were mentioned more frequently than illegal hunting in this survey.

Q. What do you think are the main threats to the Coastal Forests and their biodiversity?

Village level – Lindi

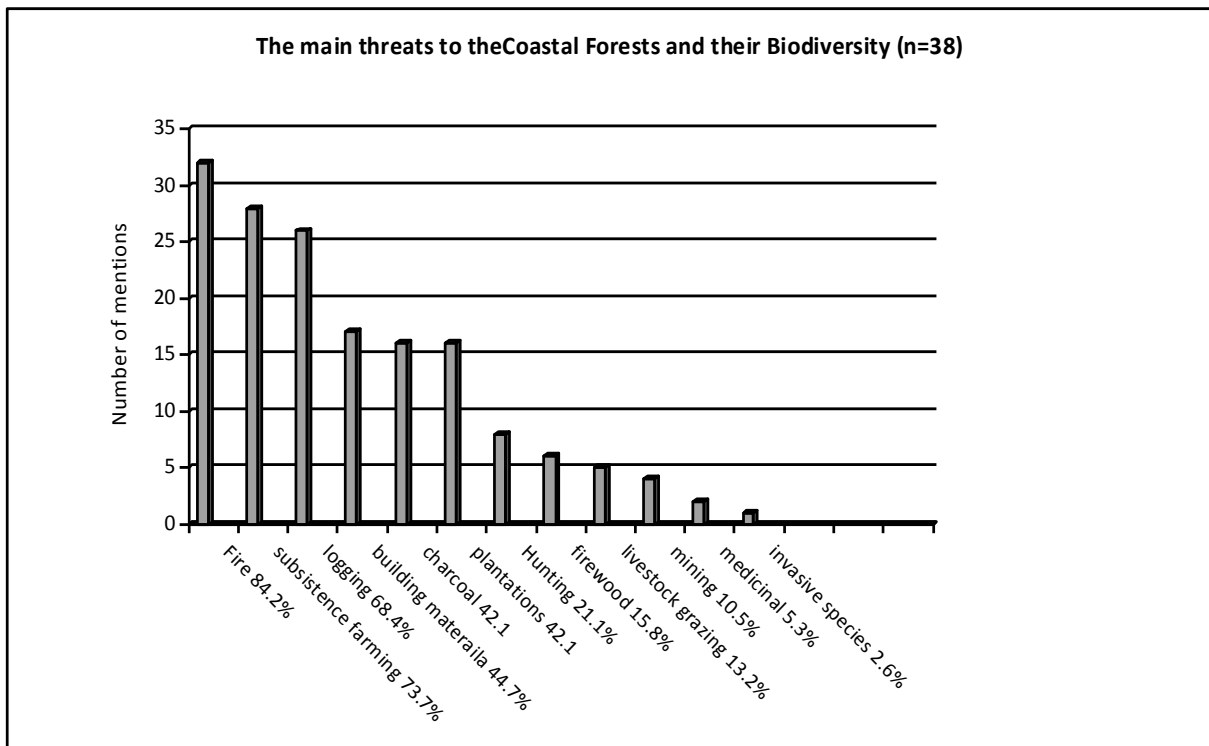


Figure 16 The main threat to the Coastal Forests and their biodiversity

Figure 16 shows that the most commonly mentioned threat was fire by 84.2% of the correspondents followed clearing for subsistence agriculture was 73.7%, logging/timber by 68.4%. Illegal hunting 21%, building materials 44.7%, charcoal and plantations 42.1%, mining 10.5%, fuel wood 15.8%. Livestock grazing 13.2%, medicinal plants 5.3% corruption and invasive species 2.6%.

Q. What do you think are the main threats to the EACF and their biodiversity?

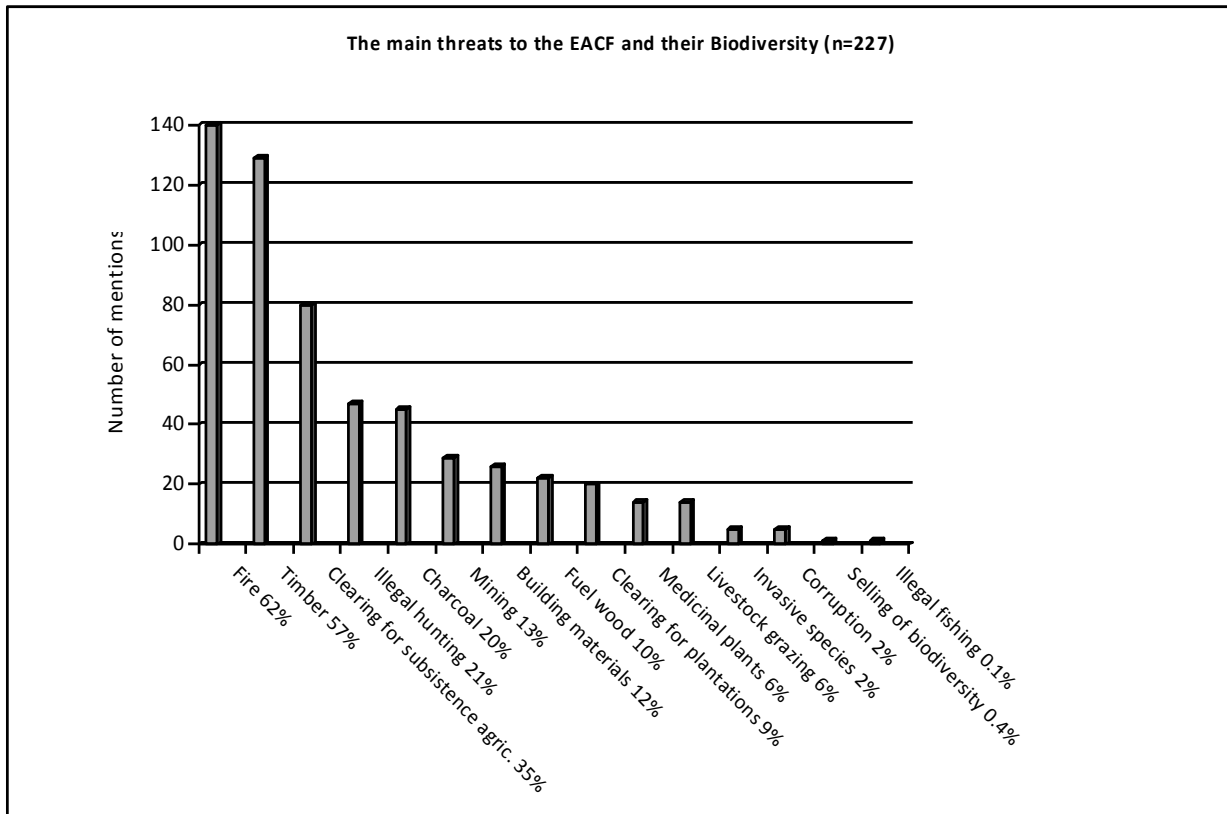


Figure 17 The main threats to the EACF and their biodiversity

Figure 17 shows that the most commonly mentioned threat was fire by 62% of the correspondents followed by timber by 57%. Clearing for subsistence agriculture was 35%, illegal hunting 21%, charcoal 20%, mining 13%, building materials 12%, fuel wood 10%. Clearing for plantations was mentioned by 9% of the correspondents, livestock grazing and medicinal plants 6% corruption and invasive species 2% whereas illegal fishing and selling of biodiversity were mentioned by 0.4% of the respondents.

In 2004 the most commonly mentioned threat was fire followed by logging, illegal hunting, poor agricultural practices, human settlements, and charcoal. It still shows that fire is perceived to be the main forest threat.

Threat perceptions disaggregated by wealth rank

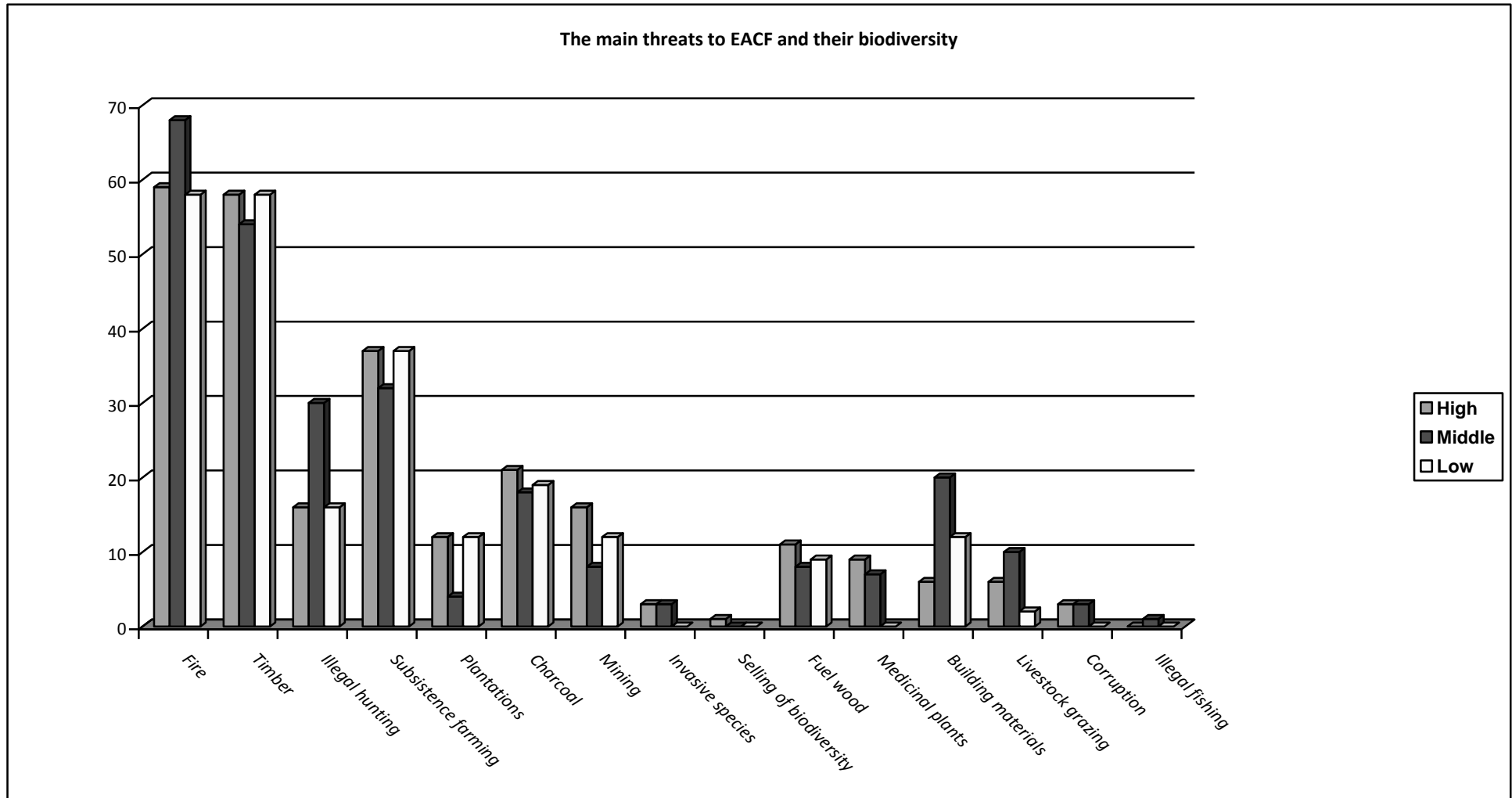


Figure 18 The main threats to EACF and their biodiversity according to wealth ranking.

Figure 18 shows that the wealthiest and poorest groups have a common perception regarding threats whilst the middle ranked groups tend to see things differently. All three groups agree that fire, timber and subsistence farming are the three most significant threats. Very few people in any group linked corruption with deforestation.

Q. Have you heard of the Tanzania Forest Services Agency?

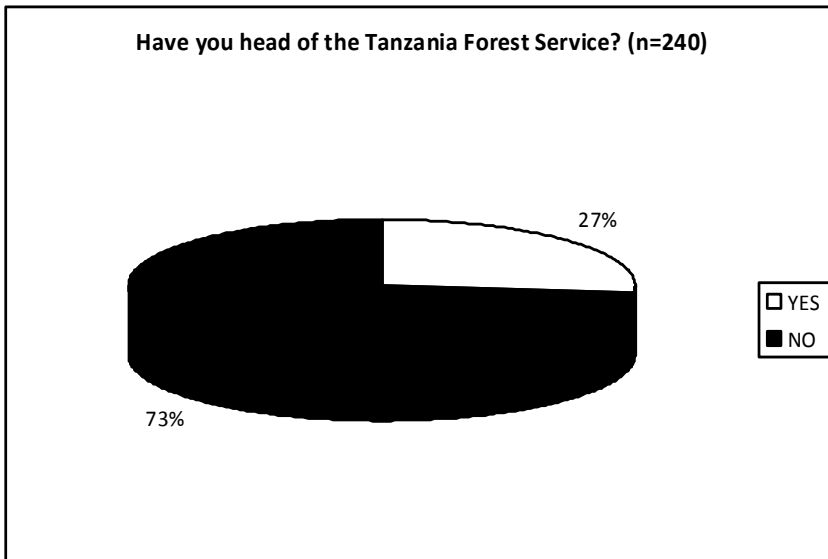


Figure 19 If ever heard of the Tanzania Forest Service
 Figure 19 shows that 27% of the respondents have heard of the Tanzania Forest Service whereas 73% had not.

Results disaggregated by wealth rank

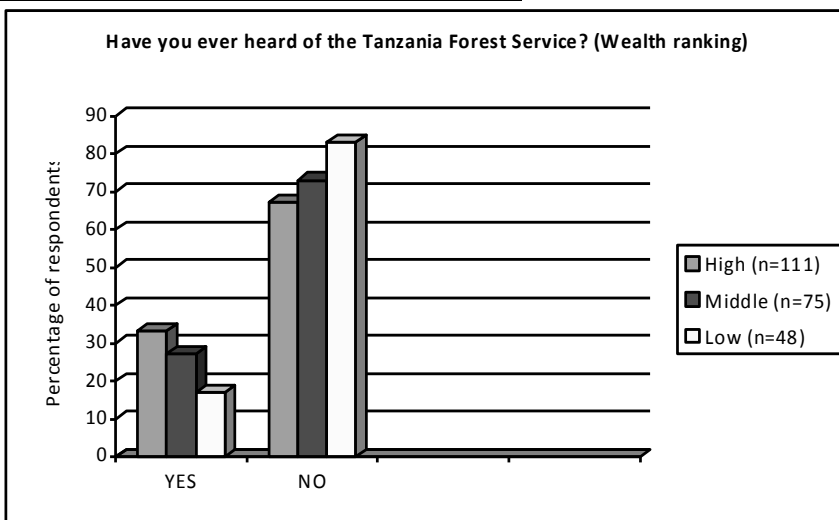


Figure 20 Wealth ranking - Have you ever heard of the Tanzania Forest Service?

Figure 20 shows that the majority of respondents in all wealth ranks had not heard of the Tanzania Forest Service ranging from 83% for the poorest respondents to 67% in the wealthiest group. Rates of awareness appear to be positively correlated with wealth.

Results disaggregated by gender

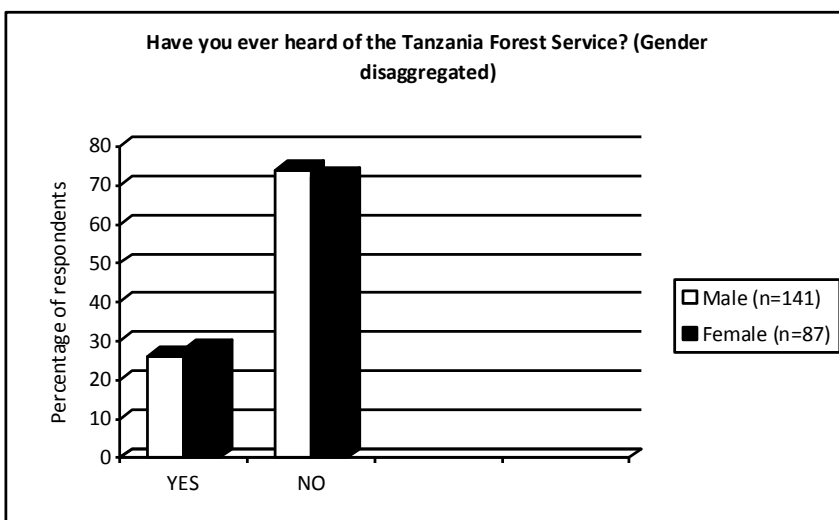


Figure 21 Gender - Have you ever heard of the Tanzania Forest Service?

Figure 21 shows that there is little difference in the % of women and the % of men who have heard of the Tanzania Forest Service (women = 28%, men = 26%).

Q. Have you heard of the Forest Policy 1998?

Kilindi District – Village level

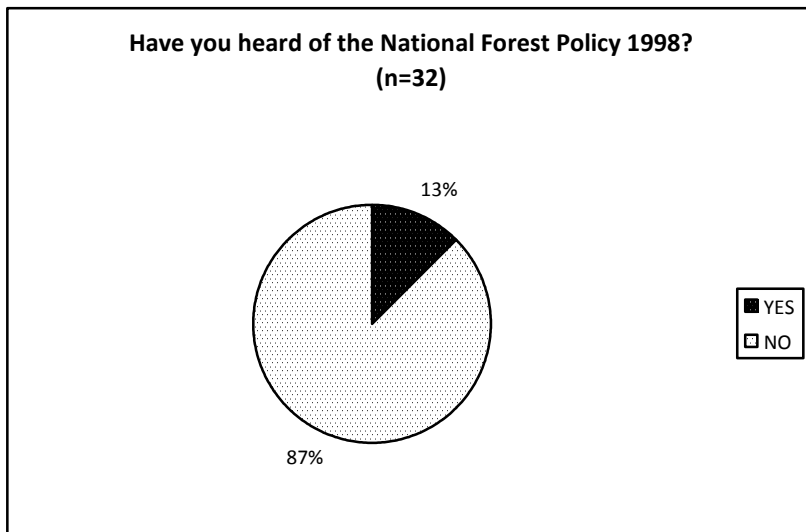


Figure 22 Kilindi - Have you ever heard of the National Forest Policy 1998?

Figure 22 shows that 13% of the respondents have heard of the National Forest Policy while 87% have not.

Kilolo District – Village level

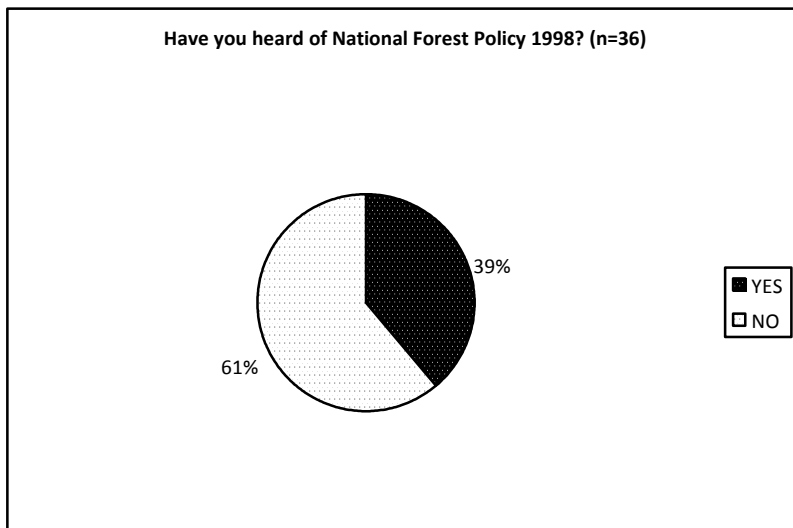


Figure 23 Kilolo - Have you ever heard of the National Forest Policy?

Figure 23 shows that 39% of the respondents have heard of the National Forest Policy while 61% have not.

Kilombero District – Village level

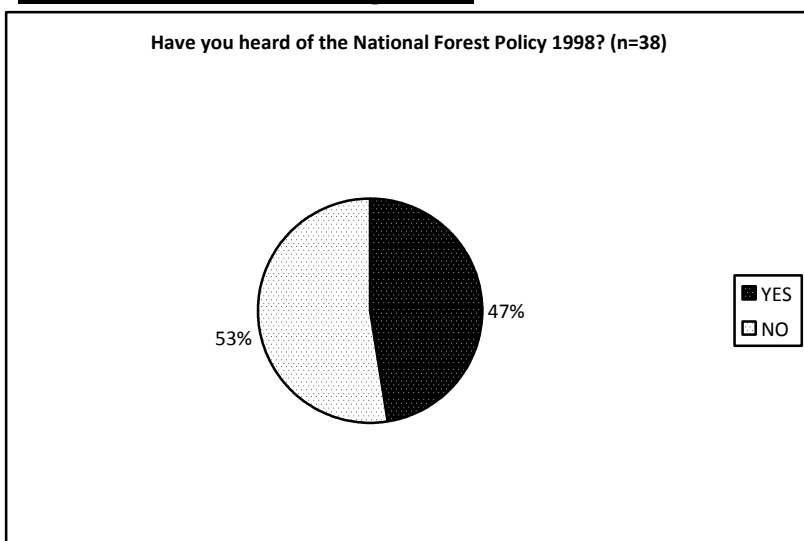


Figure 24 Kilombero - Have you ever heard of the National Forest Policy (1998)?

Figure 24 shows that 47% of the respondents have heard of the National Forest Policy. Together with Lindi District, Kilombero have the highest rate of awareness of the surveyed Districts.

Mpwapwa District – Village level

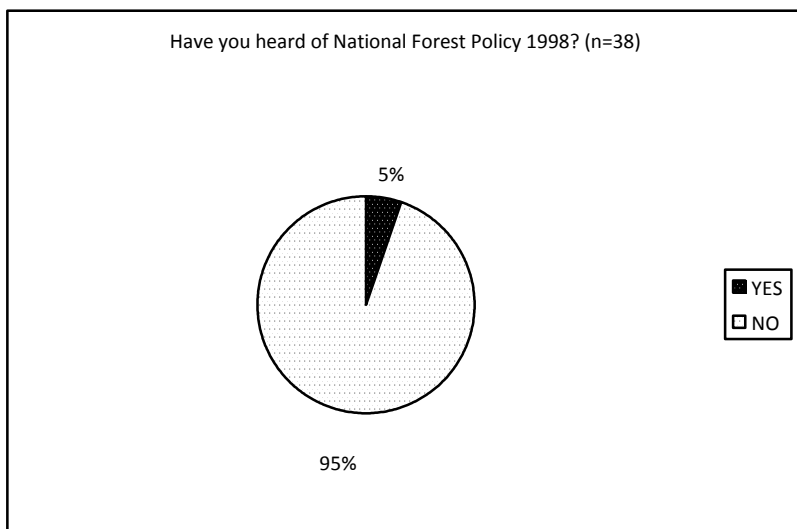


Figure 25 Mpwapwa - Have you ever heard of the National Forest Policy?

Figure 25 shows that only 5% of the respondents have heard of the National Forest Policy while 95% have not. Respondents in Mpwapwa District appear to be the least aware of the National Forest Policy.

Muheza District – Village level

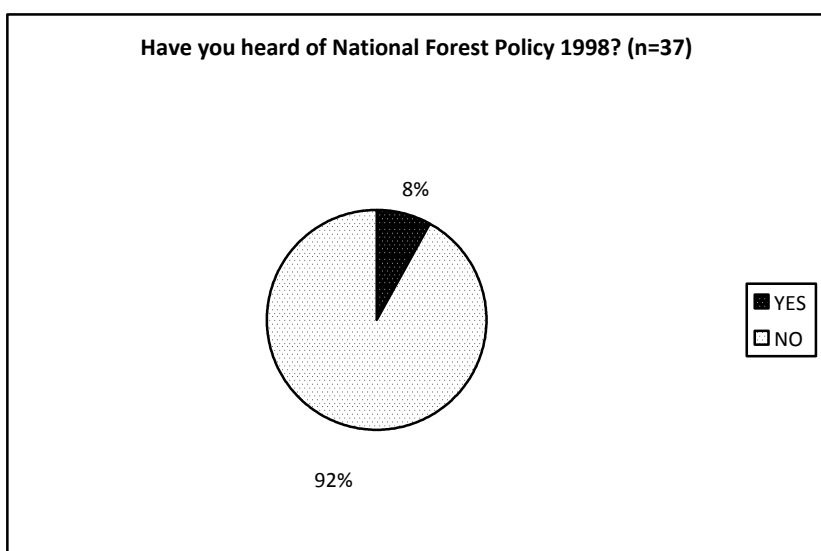


Figure 26 Muheza - Have you ever heard of the National Forest Policy 1998?

Figure 26 shows that only 8% of the respondents have heard of the National Forest Policy while 92% have not.

Same District – Village level

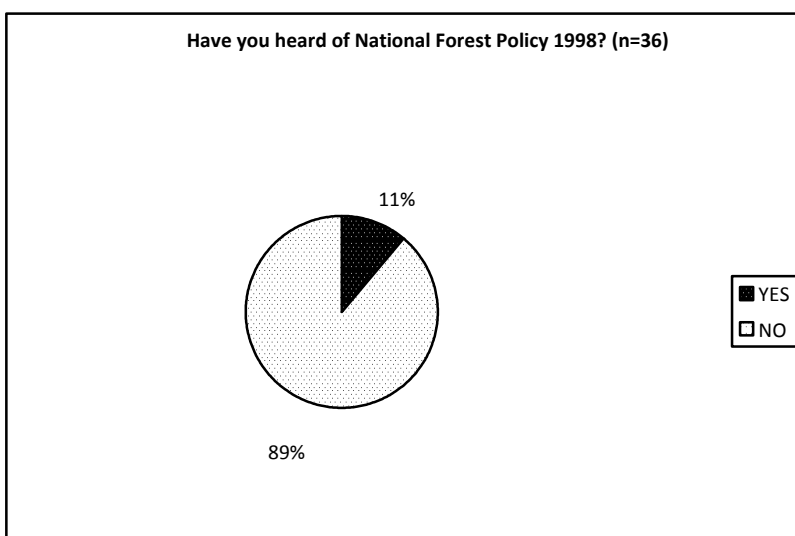


Figure 27 Same - Have you ever heard of the National Forest Policy 1998?

Figure 27 shows that only 11% of the respondents have heard of the National Forest Policy.

Lindi District – Village level

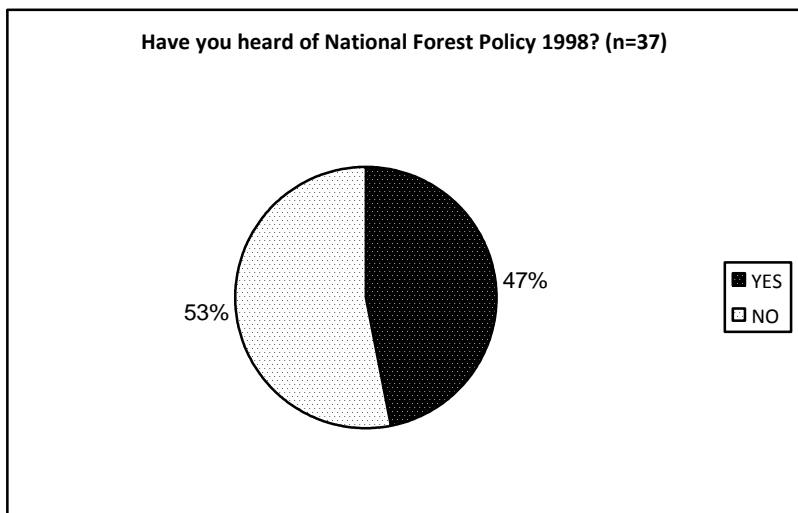


Figure 28 Lindi - Have you ever heard of the National Forest Policy 1998?

Figure 28 shows that 47% of the respondents have heard of the National Forest Policy.

Districts (EAM) – Have you ever heard of the National Forest Policy 1998? - Village level

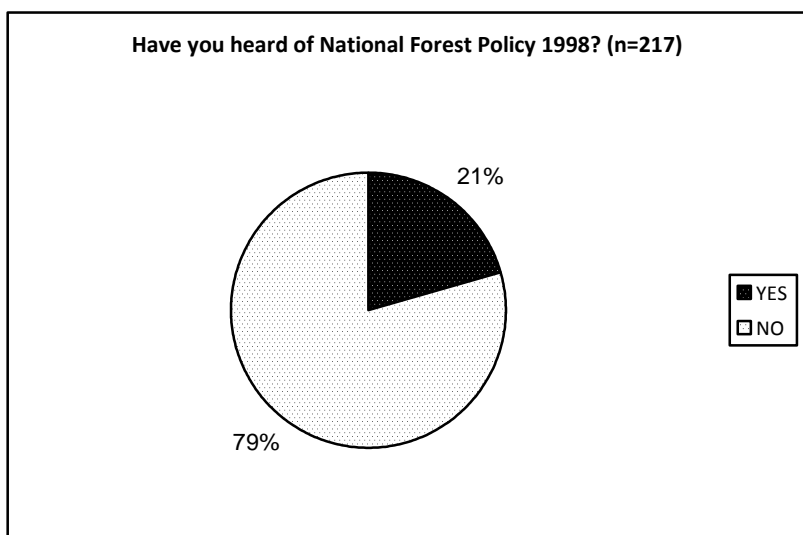


Figure 29 All Districts - Have you ever heard of the National Forest Policy 1998?

Figure 29 shows that 21% of the respondents have heard of the National Forest Policy 1998. In 2004 about 9% of the respondents had heard of the National Forest Policy 1998. That the % of respondents aware of the policy has more than doubled suggests that there is increased awareness of the National Forest Policy 1998.

Results disaggregated by wealth rank

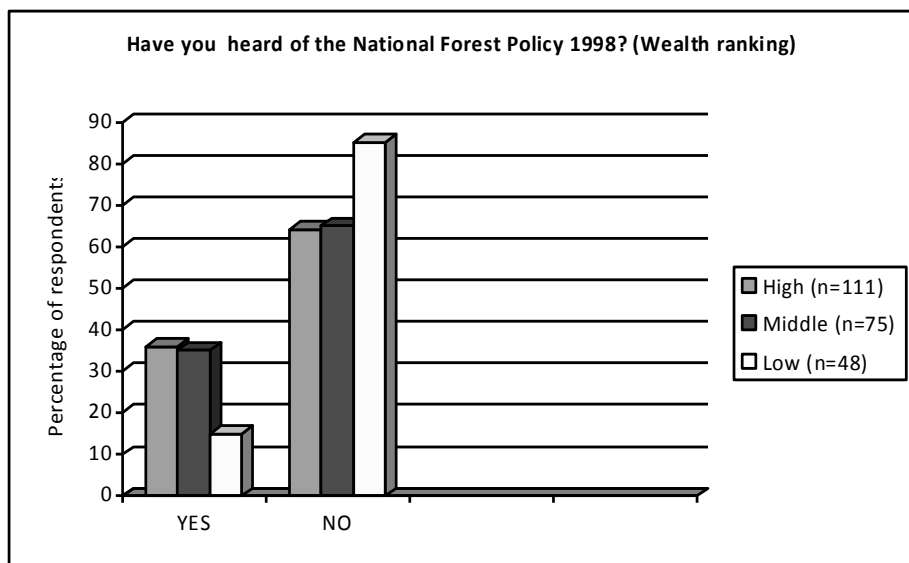


Figure 30 Disaggregated by wealth rank - Have you ever heard of the National Forest Policy 1998?

Figure 30 shows that significantly less people in the poorest category have heard of the National Forest Policy (15%) compared with the middle (35%) and highest (36 %) wealth rank category.

Q. Have you heard of the Forest Act 2002?

Kilindi level District - Village

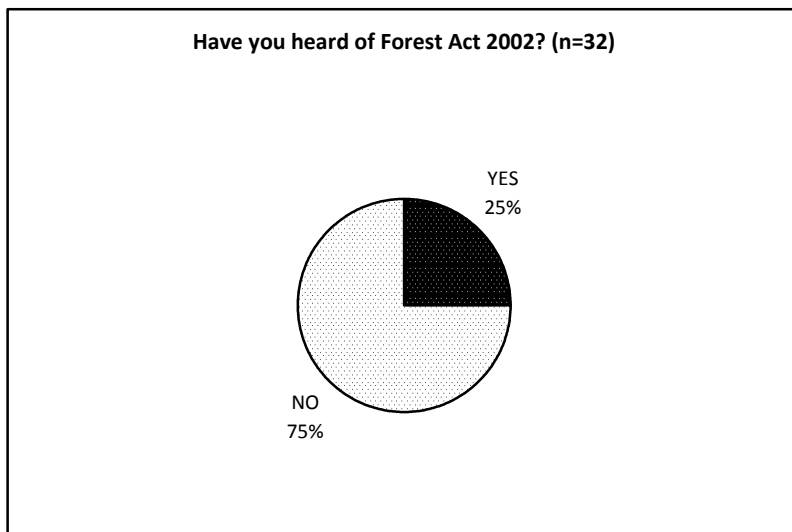


Figure 31 Kilindi - Have you ever heard of the Forest Act?

Figure 31 shows that 25% of the respondents have heard of the Forest Act while 75% have not.

Kilolo District – Village level

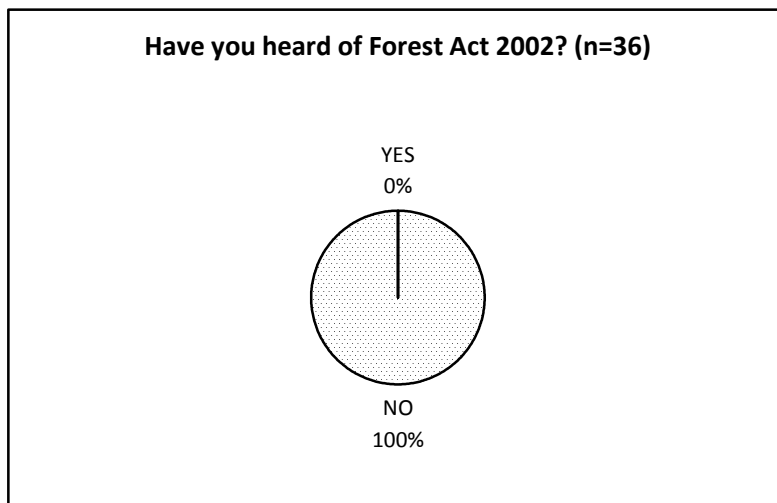


Figure 32 Kilolo - Have you ever heard of the Forest Act?

Figure 32 shows that none of the respondents in Kilolo District had heard of the Forest Act. Kilolo District has the lowest % of respondents aware of the Forest Act together with Same District.

Kilombero District – Village level

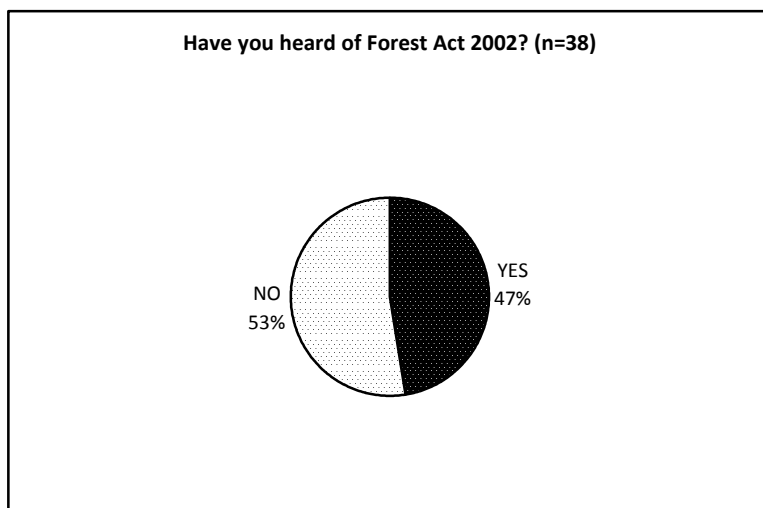


Figure 33 Kilombero Have you ever heard of the Forest Act?

Figure 33 shows that 47% of the respondents have heard of the Forest Act 2002 while 53% have not. Kilombero District has the highest % of respondents aware of the Forest Act together with Lindi District.

Mpwapwa District – Village level

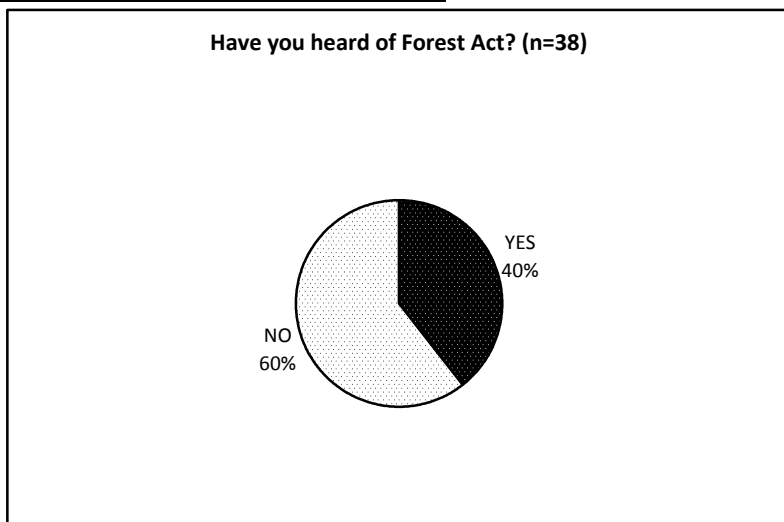


Figure 34 Mpwapwa - Have you ever heard of the Forest Act?

Figure 34 shows that 40% of the respondents have heard of the Forest Act 2002 while 60% have not.

Muheza District – Village level

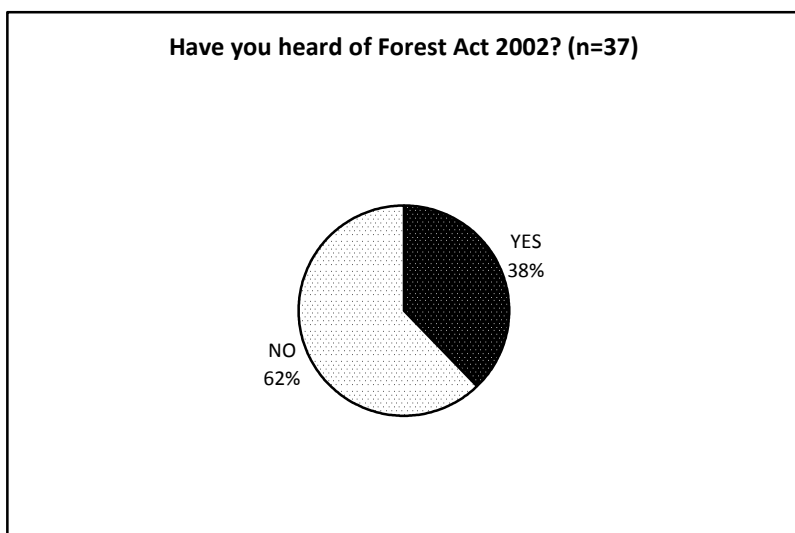


Figure 35 Muheza - Have you ever heard of the Forest Act?

Figure 35 shows that 38% of the respondents have heard of the Forest Act 2002 whereas 62% had never.

Same District – Village level

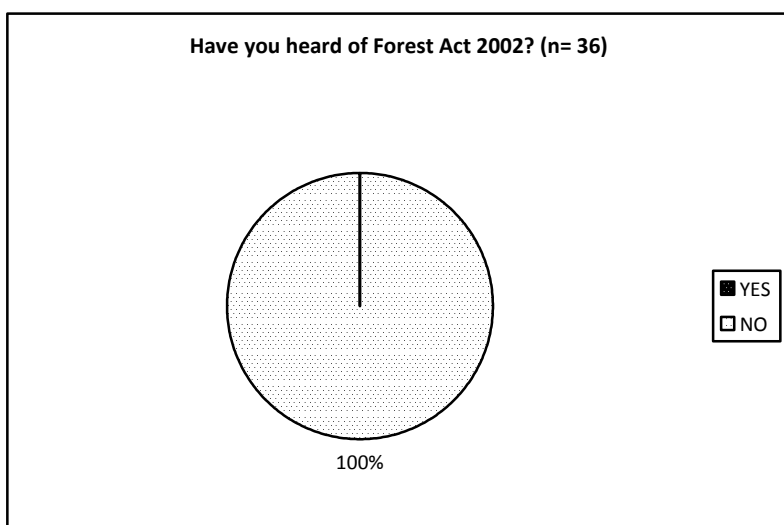


Figure 36 Same - Have you ever heard of the Forest Act?

Figure 36 shows that none (about 0%) of the respondents have heard of the Forest Act 2002. Same District has the lowest % of respondents aware of the Forest Act together with Kilolo District.

Lindi District – Village level

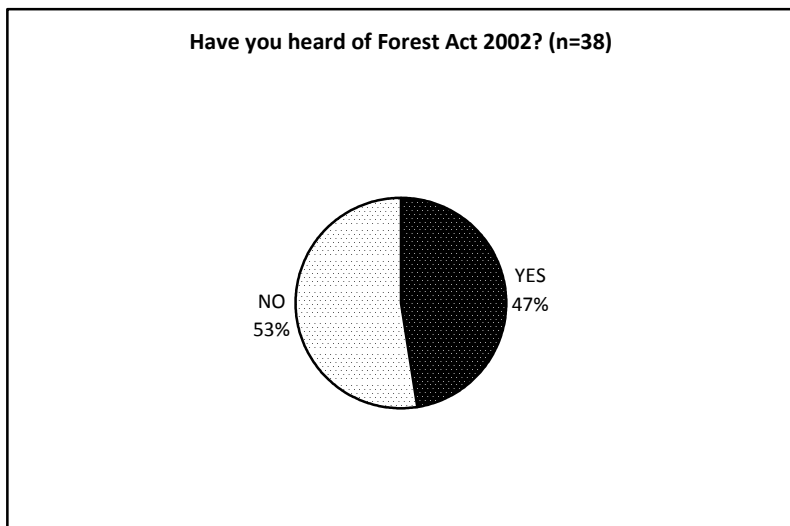


Figure 37 Lindi - Have you ever heard of the Forest Act?

Figure 37 shows that only 47% of the respondents have heard of the Forest Act 2002 while 53% have not heard of the Forest Act 2002. Lindi District has the highest % of respondents aware of the Forest Act together with Kilombero District.

Districts (EAM) – Village level - Have you heard of the Forest Act 2002?

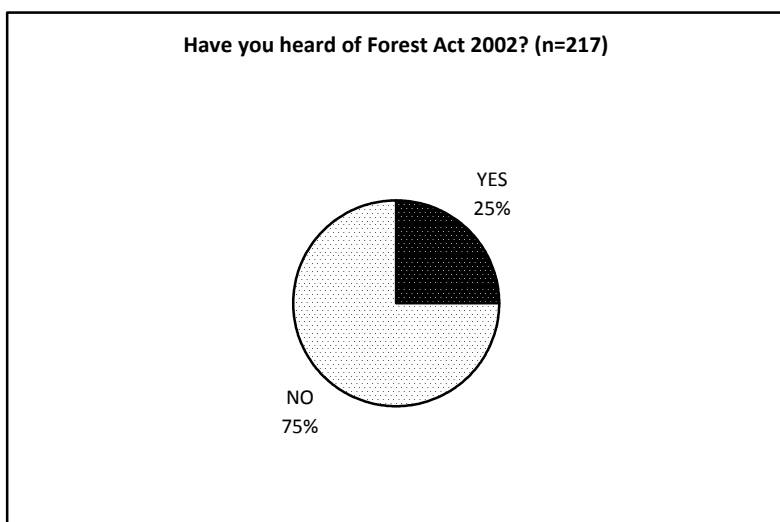


Figure 38 EAM - Have you ever heard of Forest Act 2002?

Figure 38 shows that 25% of the respondents have heard of the Forest Act 2002 while 75% have not heard of the Forest Act 2002. However in 2004 about 9% of the respondents had heard of the Forest Act 2002. This shows that there is increased awareness of the Forest Act 2002. However more awareness raising is required because still the majority have not heard of the act yet.

Results disaggregated by wealth rank

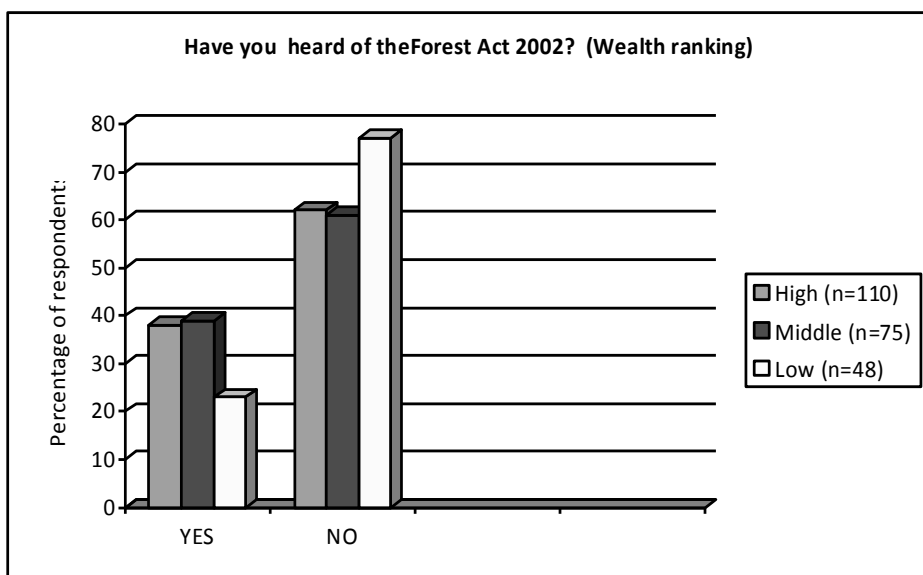


Figure 39 Wealth rank - Have you ever heard of Forest Act 2002?

Figure 39 shows that significantly less people in the poorest category have heard of the Forest Act (23%) compared with the middle (39%) and highest (38%) wealth rank category.

Results disaggregated by gender results

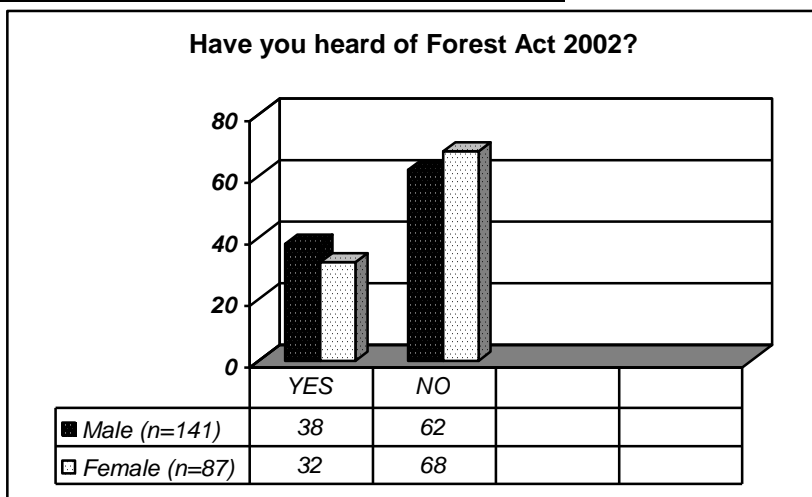


Figure 40 Gender - Have you ever heard of Forest Act 2002?

Figure 40 shows that shows that there is a 6% difference in the % of women and the % of men who have heard of the Tanzania Forest Service (women = 32%, men = 38%).

Q. Have you heard of Participatory Forest Management?

Lindi district - Village level

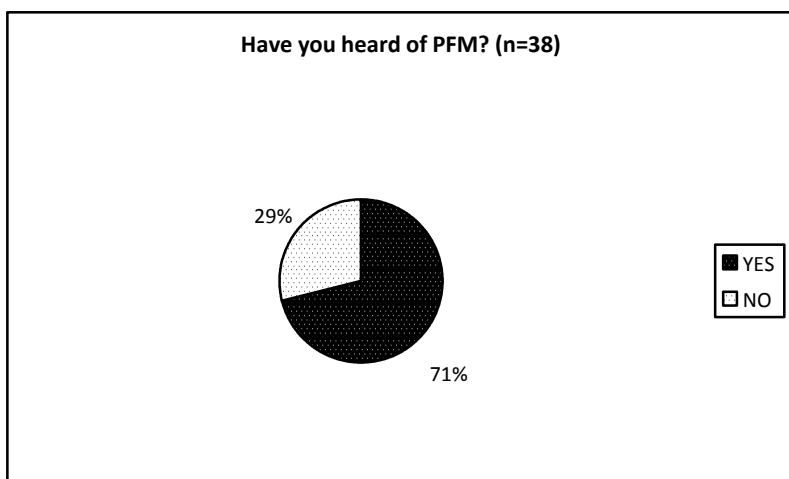


Figure 41 Lindi - Have you heard of Participatory Forest Management?

Figure 41 shows that 71% of the respondents have heard of the Participatory Forest Management (PFM). Lindi has the 2nd highest % of respondents aware of PFM.

Kilindi District – Village level

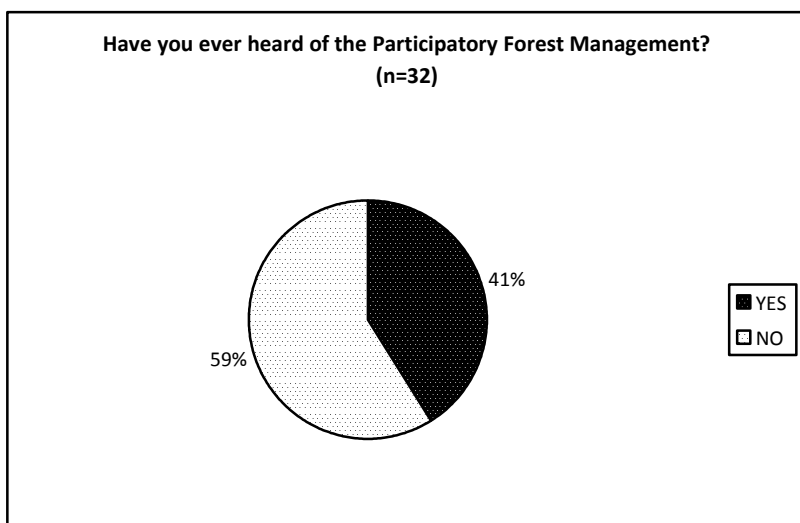


Figure 42 Kilindi - Have you heard of Participatory Forest Management?

Figure 42 shows that 41% of the respondents have heard of the PFM while 59% have not heard of the PFM

Kilolo District – Village level

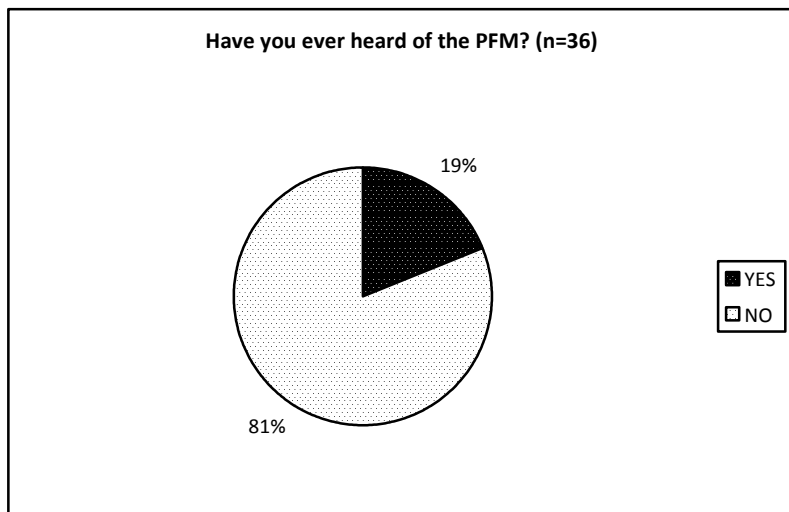


Figure 43 Kilolo - Have you heard of Participatory Forest Management?

Figure 43 shows that 19% of the respondents have heard of Participatory Forest Management.

Kilombero District – Village level

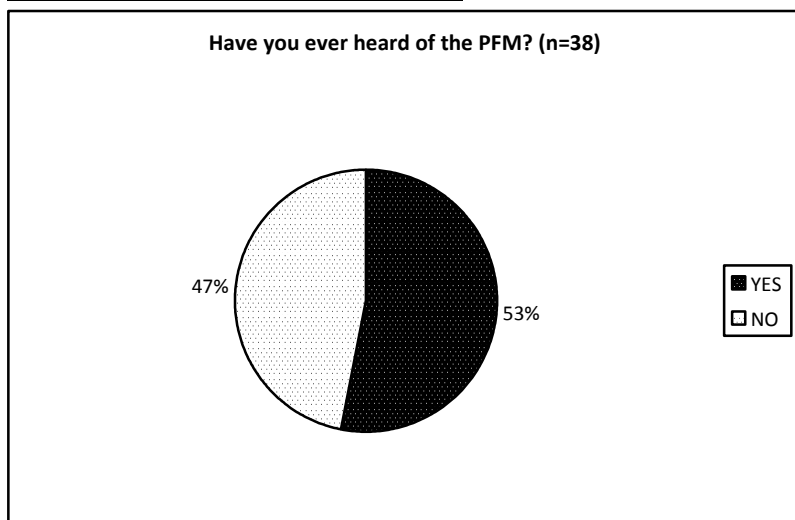


Figure 44 Kilombero - Have you heard of Participatory Forest Management?

Figure 44 shows that 53% of the respondents have heard of Participatory Forest Management.

Mpwapwa district - Village level

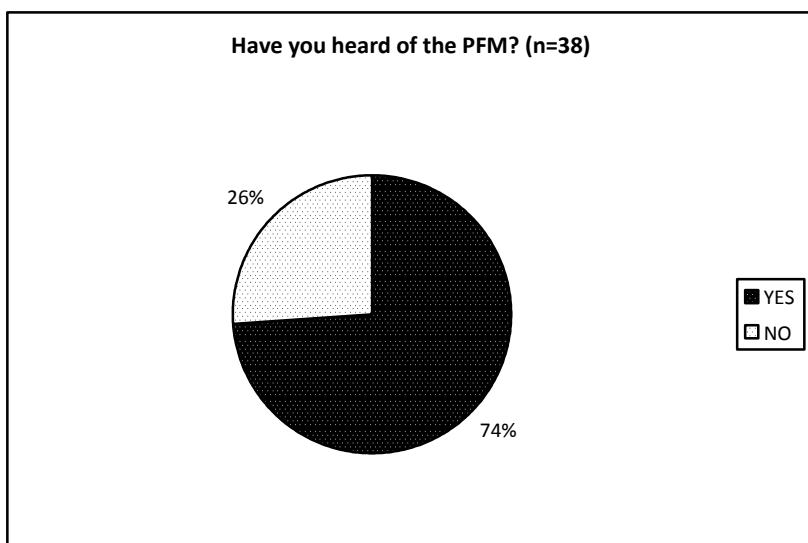


Figure 45 Mpwapwa - Have you heard of Participatory Forest Management?

Figure 45 shows that 74% of the respondents have heard of PFM whereas about 26% of the respondents have not heard of the PFM. Mpwapwa has the highest % of respondents aware of PFM.

Muheza district - Village level

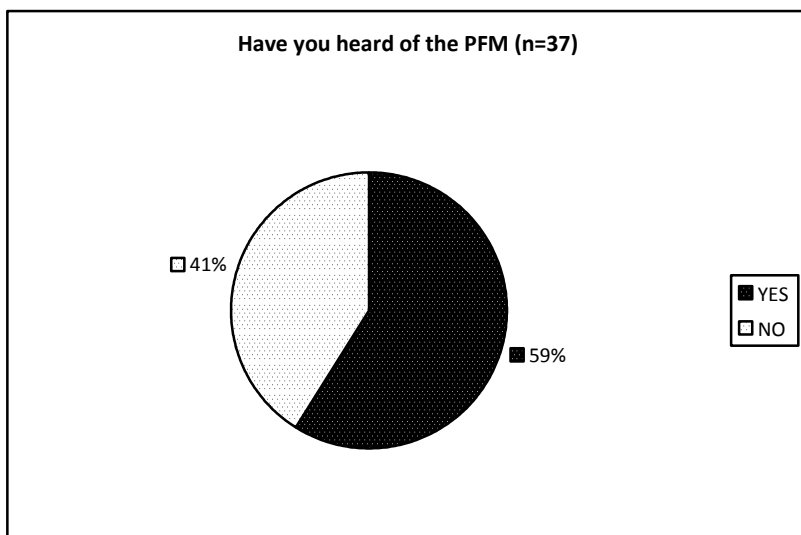


Figure 46 Muheza - Have you heard of Participatory Forest Management?

Figure 46 shows that 59% of the respondents have heard of the PFM whereas 41% of the respondents have not heard of the PFM.

Same District – Village level

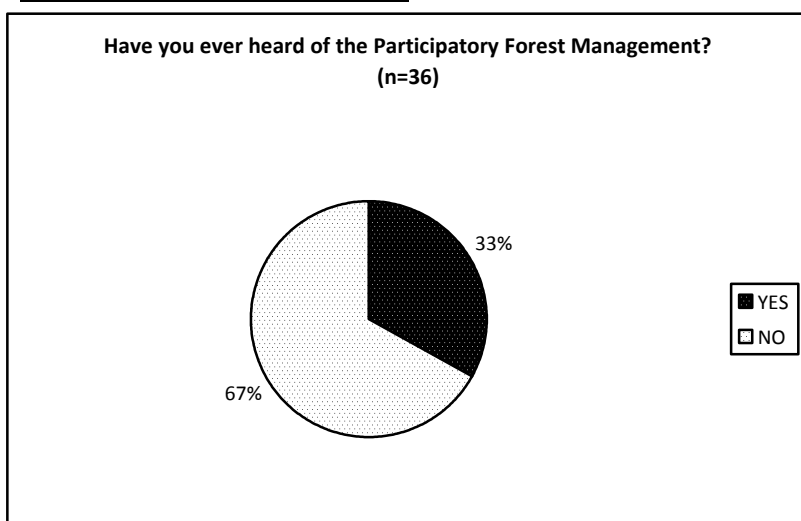


Figure 47 Same - Have you heard of Participatory Forest Management?

Figure 47 shows that 33% of the respondents have heard of Participatory Forest Management while 67% have not.

EAM Districts (Kilindi, Kilolo, Kilombero, Mpwapwa, Muheza, Same) – Village level

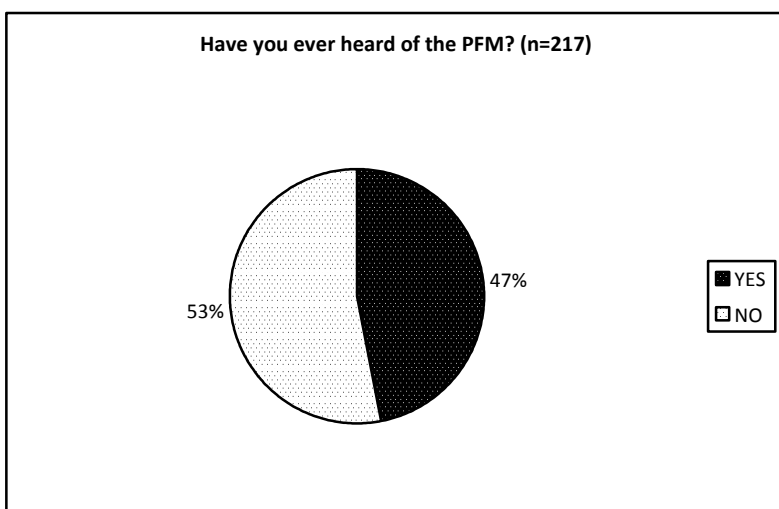


Figure 48 EAM – Have you heard of Participatory Forest Management?

Figure 48 shows that 47% of the EAM respondents have heard of Participatory Forest Management.

Q. Have you heard of Village Forest Reserves?

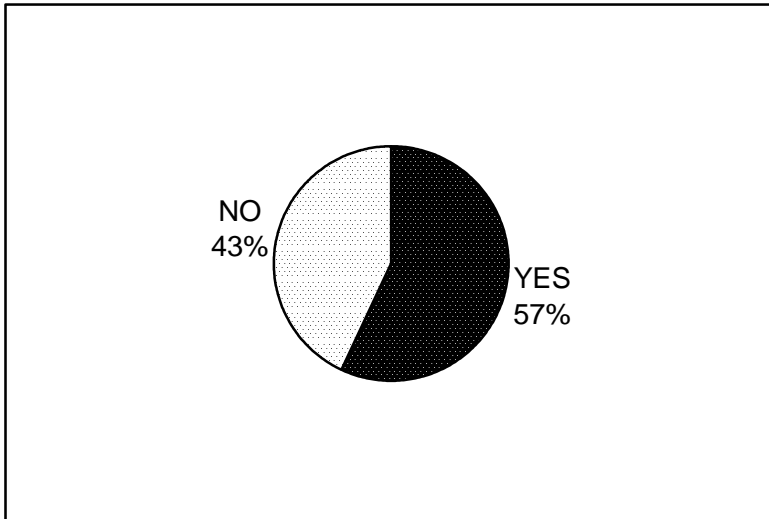


Figure 49 All – Have you heard of Village Forest Reserves?

Figure 49 shows that 57% of the respondents have heard of Village Forest Reserves

Q. Have you heard of Climate change?

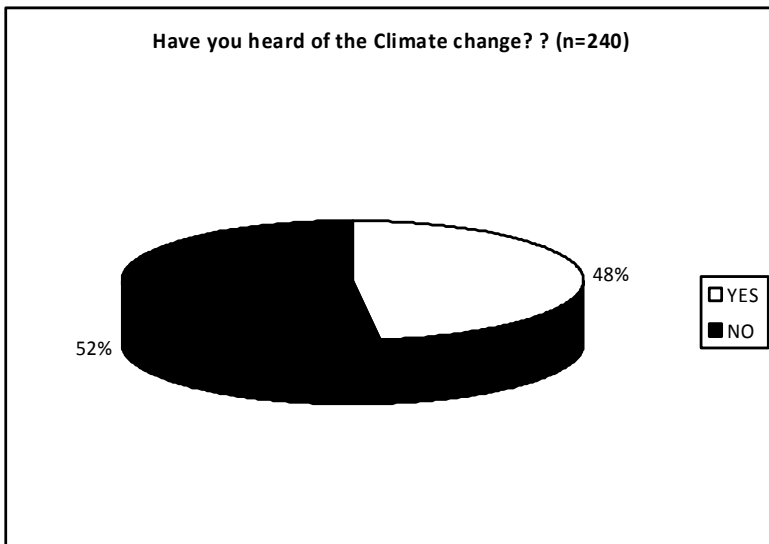


Figure 50 All – Have you heard of Climate change.

Figure 50 shows that 48% of the respondents have heard of climate change.

Results disaggregated by wealth rank

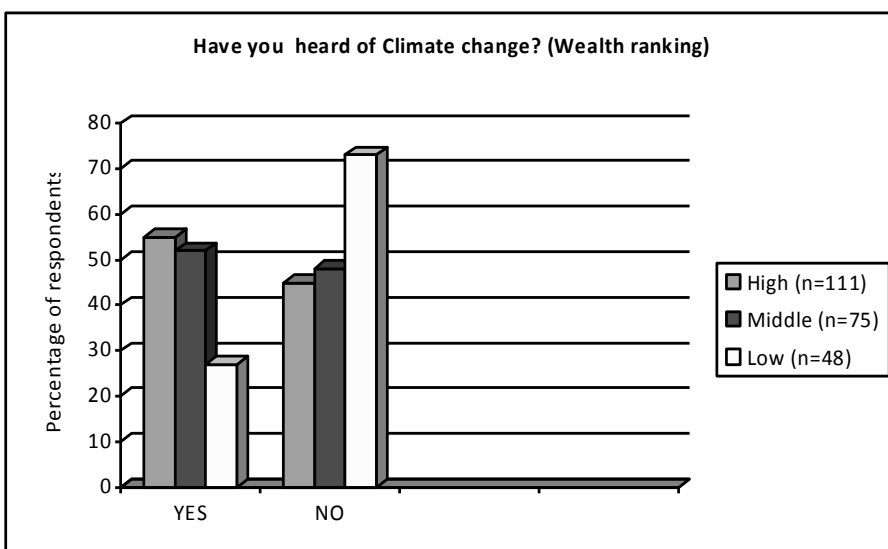


Figure 51 Wealth Rank - Have you heard of Climate Change?

Figure 51 shows that significantly less people in the poorest category have heard of Climate Change (27%) compared with the middle (52%) and highest (55%) wealth rank category.

Results disaggregated by gender

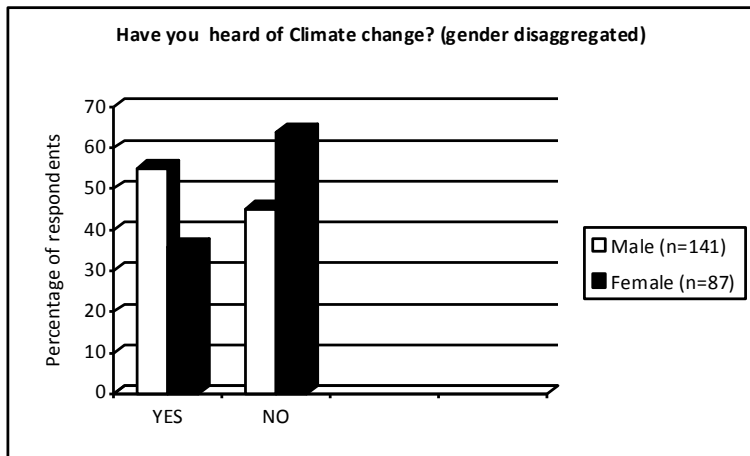


Figure 52 Gender - Have you heard of Climate change?

Figure 52 shows that there is a 19% difference between the % of men (55%) who have heard of climate change compared with women (36%).

Q. Have you heard of REDD?

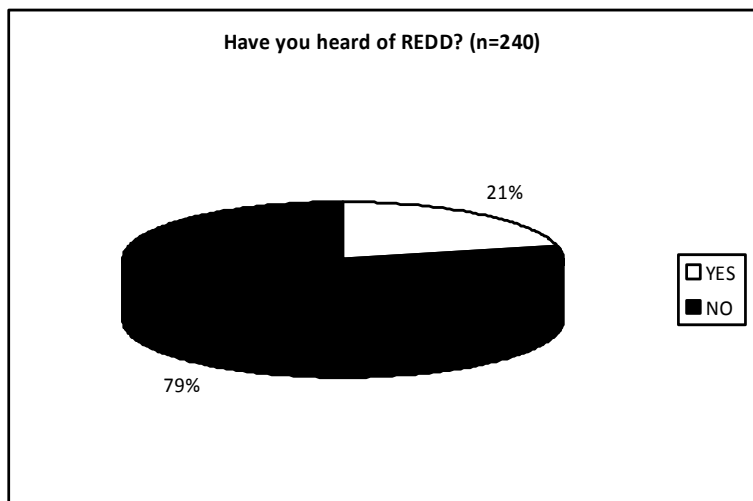


Figure 53 All – Have you heard of REDD?

Figure 53 shows that 21% of the respondents have heard of REDD whereas 79% have not.

Results disaggregated by wealth rank

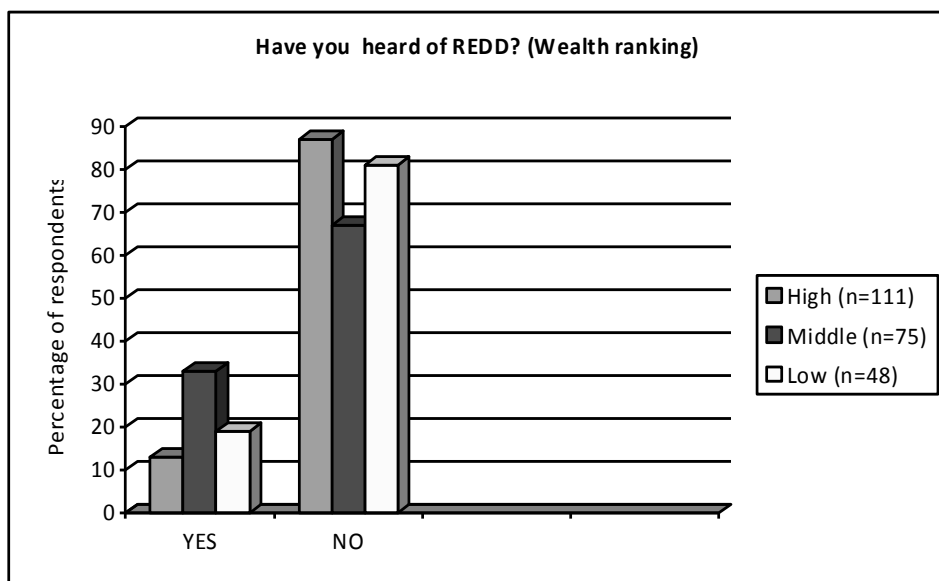


Figure 54 Wealth Rank - Have you heard of REDD?

Figure 54 shows that there is no clear correlation between wealth and REDD awareness with less respondents in the wealthiest and poorest categories being aware of REDD relative to the middle-ranked category. The wealthiest were the least aware.

Results disaggregated by gender results

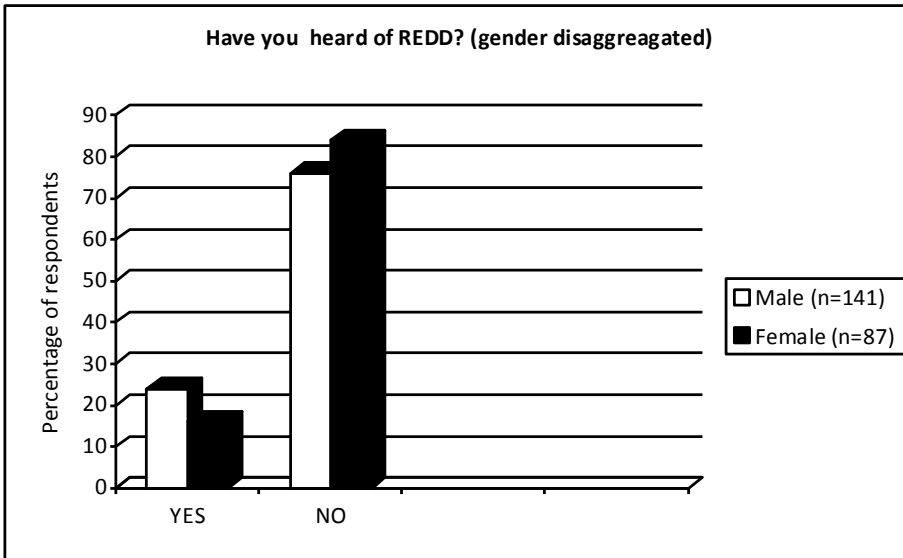


Figure 55 Gender - Have you heard of REDD?

Figure 55 shows that there is an 8% difference in the % of women (16%) and men (24%) who have heard of REDD with more men being aware than women.

Attitudes

Q. Are there any areas of forest that have cultural values for you?

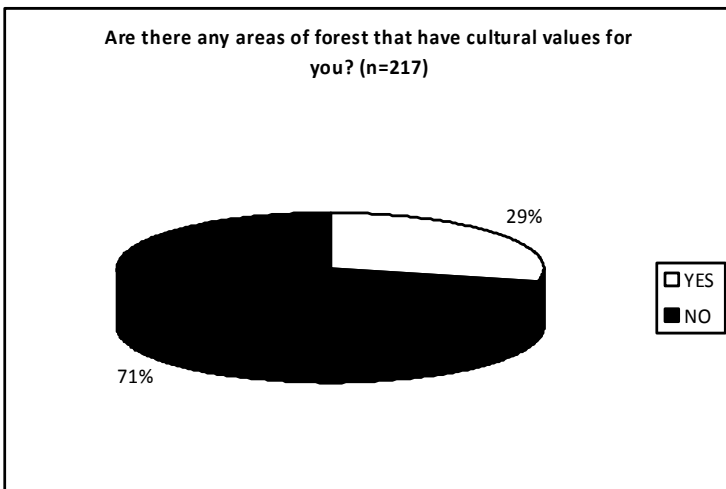


Figure 56 Are there any areas of forest in the EAM that have cultural values for you?

Figure 56 shows that 29% of the respondents from the **Eastern Arc Mountains** stated that there are areas of forest that have cultural values for them whereas 71% said there are no such areas. The areas of forest mentioned include burial sites, special rocks or historical values and ceremonial forests.

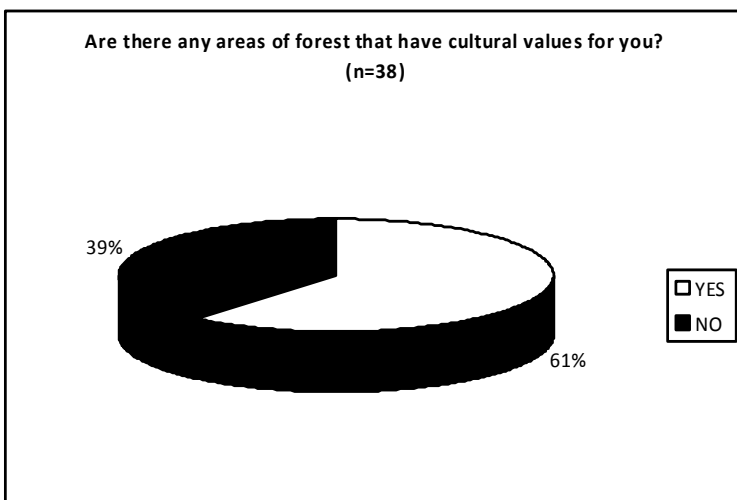


Figure 57 Are there any areas of forest in the Coastal Forest that have cultural values for you?

Figure 57 shows that 61% of the respondents from the **Coastal Forests** agreed that there are areas of forest that have cultural values for them whereas 39% said there are no such areas.

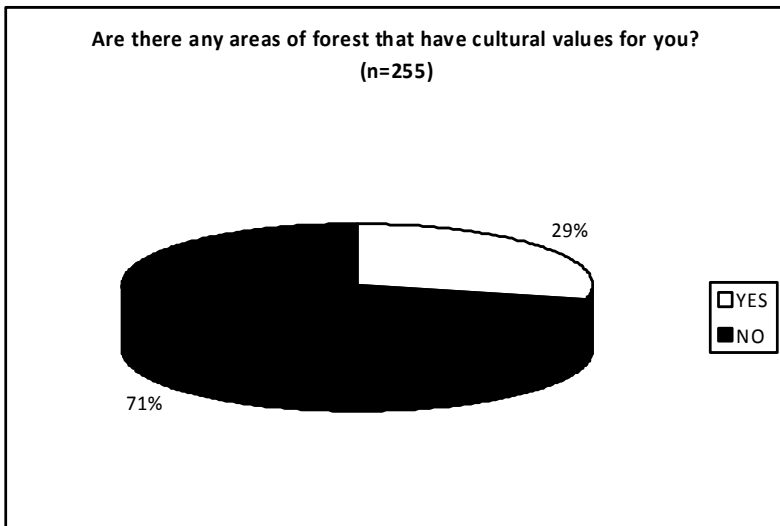


Figure 58 Are there any areas of forest in the EACF that have cultural values for you?

Figure 58 shows that 34% of the respondents from the **Eastern Arc Mountains and Coastal Forests** agreed that there are areas of forest that have cultural values for them whereas 66% said there are no such areas. The % was higher for respondents from the Coastal Forests (61%) than in the EAM (29%).

Q. Are there any forest animals that have cultural values for you?

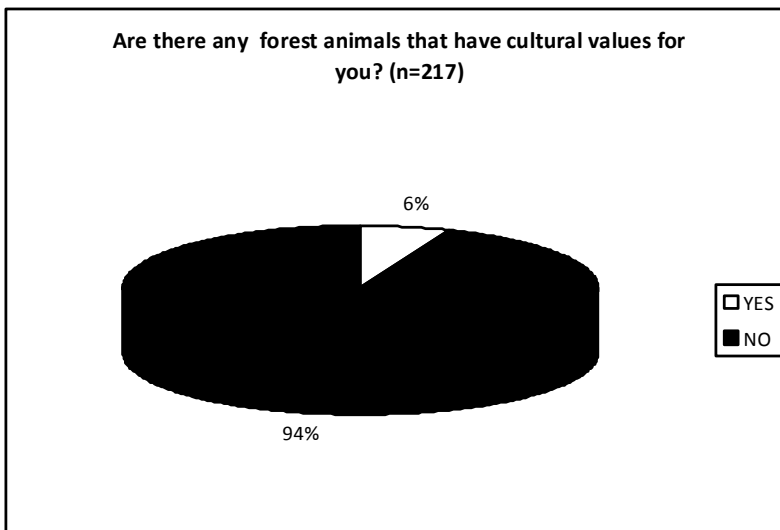


Figure 59 Are there any forest animals in the EAM that have cultural values for you?

Figure 59 shows that 6% of the respondents from the **Eastern Arc Mountains** stated that there are forest animals that have cultural values for them whereas 94% said there are no such forest animals. Of those who responded that there are animals with cultural values 33 % mentioned pangolins; 14 % mentioned lions; 3% mentioned cobras, squirrels, birds, tortoises, snakes or hyenas; and 2 % mentioned elephants. Pangolins are

considered omens of good or bad events. When people see a pangolin, they offer the animal different items in order to determine what kind of omen it is. If the pangolin selects a food item, it is believed that there will be a bumper harvest. If it selects water, there will be rainfall. If it selects a knife, it is believed that there will be violence.

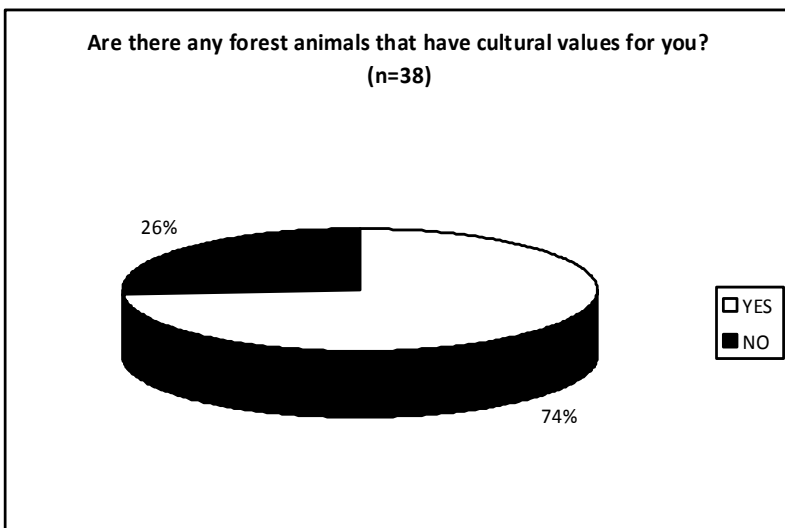


Figure 60 Are there any forest animals in the Coastal Forests that have cultural values for you?

Figure 60 shows that 74% of the respondents from the **Coastal Forests** agreed that there are forest animals that have cultural values for them whereas 26% said there are no such animals.

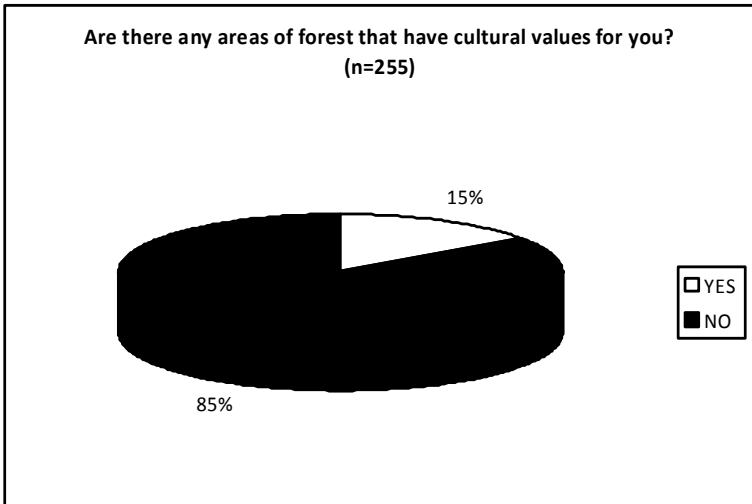


Figure 61 Are there any forest animals that have cultural values for you?

Figure 61 shows that 15% of the respondents from the **Eastern Arc Mountains and Coastal Forests** stated that there are forest animals that have cultural values for them whereas 85% said there are no such forest animals.

Q. Do you think that it is a good thing to conserve forests?

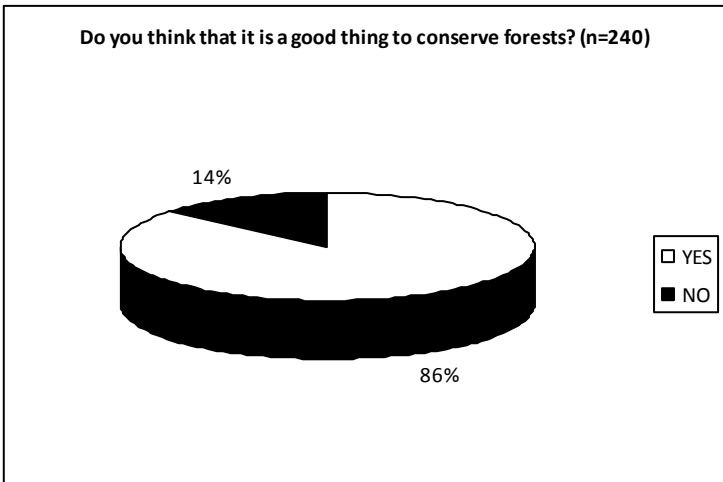


Figure 62 Do you think that it is a good thing to conserve forests?

Figure 62 shows that 86% of the respondents agreed that it is a good thing to conserve forests whereas 14% said that it was not.

Q. What do you think the government should do to improve forest conservation?

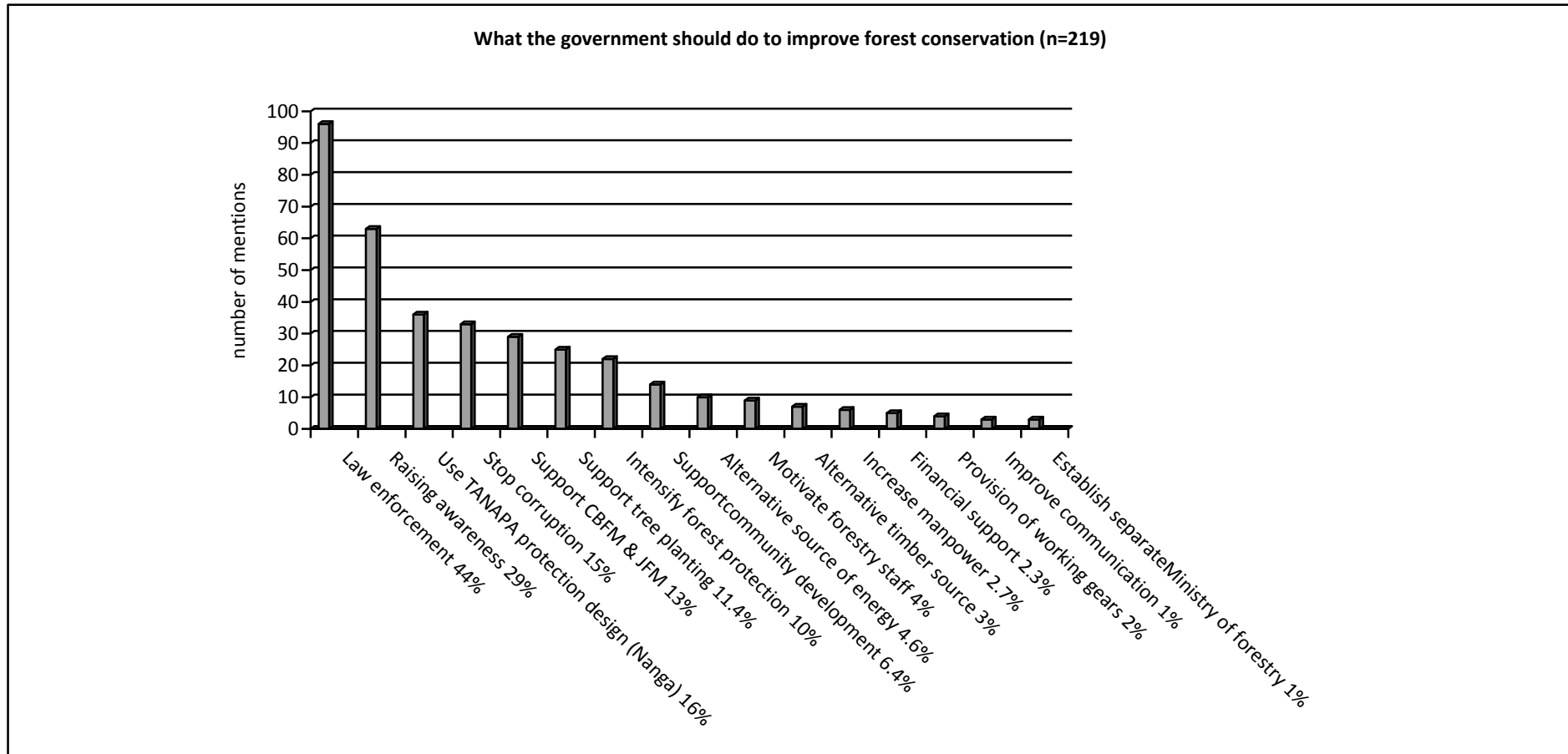


Figure 63 What do you think the government should do to improve forest conservation?

Figure 63 shows that the most commonly mentioned action that respondents felt that the Government should take is law enforcement (44%) followed by raising awareness (29%). 16% mentioned TANAPA system (Nanga), 15% of the respondents mentioned stopping corruption, 13% supporting communities to implement CBFM and JFM, 11% mentioned support tree planting. Intensify forest protection 10%, 6.4% mentioned support community development, 4.6% other source of energy. Motivating forestry staff 4%, alternative source of timber 3%, increased personnel 2.7%, financial support 2.3%, provision of working gears 2%; improving communication 1% and establishing a separate forest Ministry 1%.

Practice

Q. Has Participatory Forest Management been introduced in any forest near you?

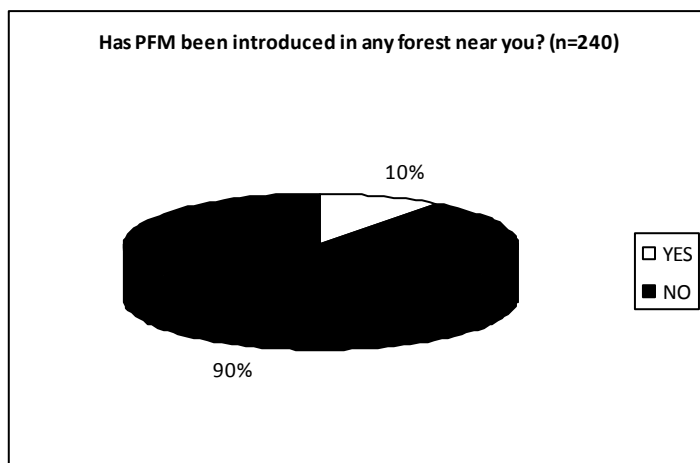


Figure 64 All - Has Participatory Forest Management been introduced in any forest near you?

Figure 64 shows that 10% of the respondents said there had been PFM introduced in some of the forests near them.

Q. Have you or any one in your household used any medicinal plants from the forest over the last 12 months?

Kilindi District – Village level

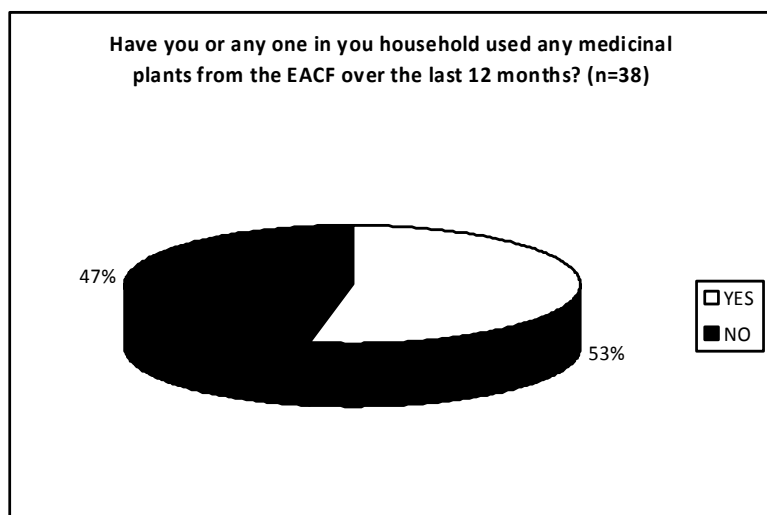


Figure 65 Kilindi - Have you or any one in your household used any medicinal plants from the forest over the last 12 months?

Figure 65 shows that 53% of the respondents have used medicinal plants from the forest over the last 12 months

Kilolo District – Village level

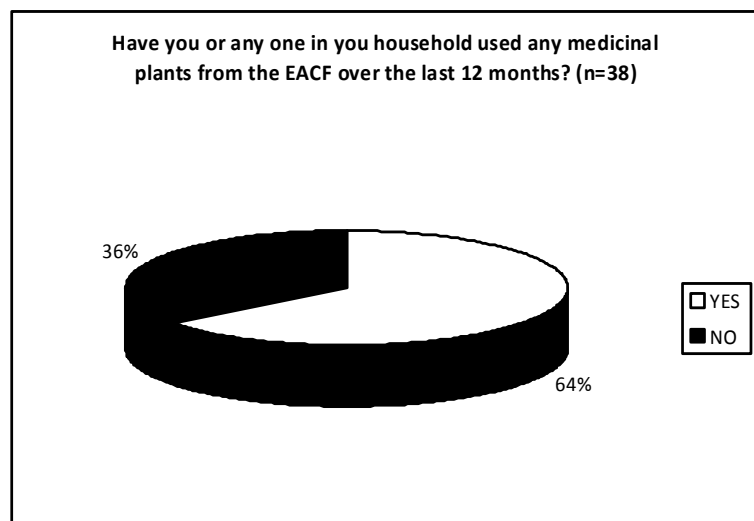


Figure 66 Kilolo - Have you or any one in your household used any medicinal plants from the forest over the last 12 months?

Figure 66 shows that 64% of the respondents have used medicinal plants from the forest over the last 12 months.

Kilombero District – Village level

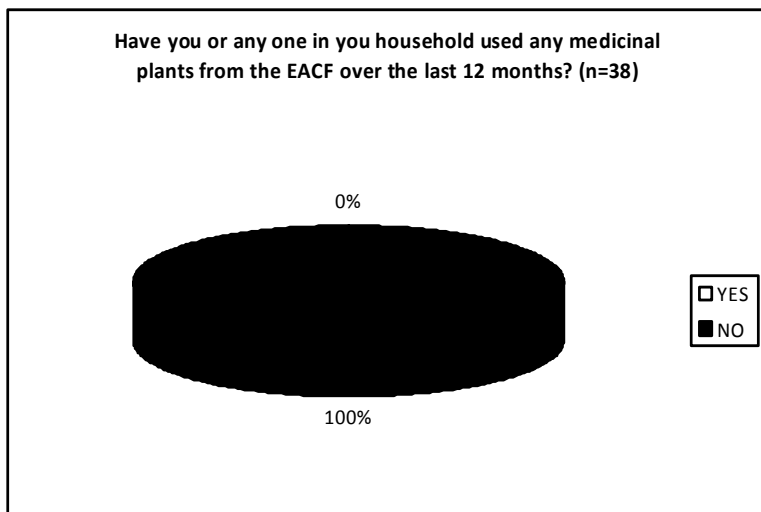


Figure 67 Kilombero - Have you or any one in your household used any medicinal plants from the forest over the last 12 months?

Figure 67 shows that none (0%) of the respondents have used medicinal plants from the forest over the last 12 months.

Mpwapwa District – Village level

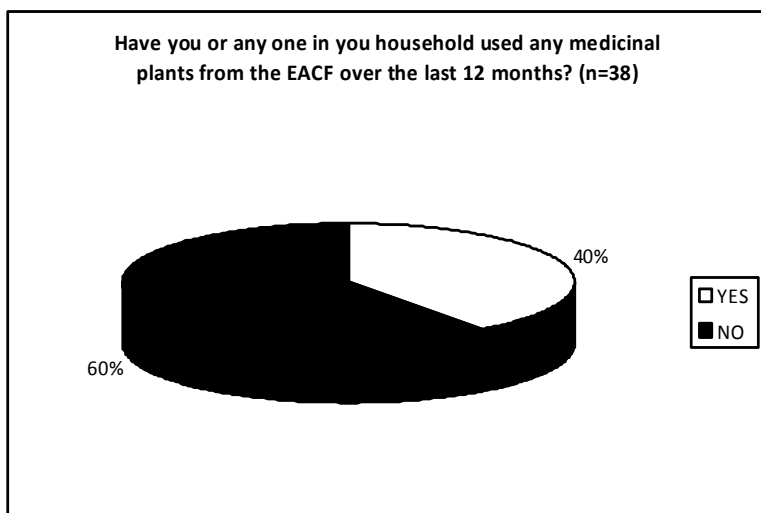


Figure 68 Mpwapwa - Have you or any one in your household used any medicinal plants from the forest over the last 12 months?

Figure 68 shows that 40% of the respondents have used medicinal plants from the forest over the last 12 months

Muheza District – Village level

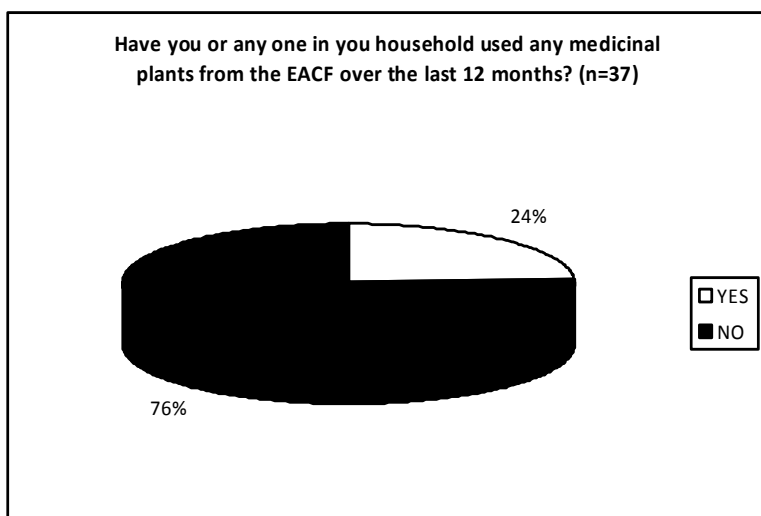


Figure 69 Muheza - Have you or any one in your household used any medicinal plants from the forest over the last 12 months?

Figure 69 shows that 24% of the respondents have used medicinal plants from the forest over the last 12 months

Same District – Village level

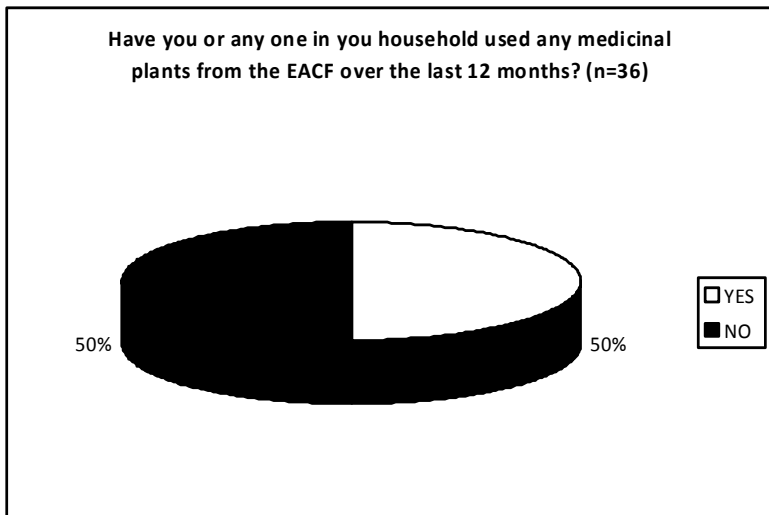


Figure 70 Same - Have you or any one in your household used any medicinal plants from the forest over the last 12 months?

Figure 70 shows that 50% of the respondents have used medicinal plants from the forest over the last 12 months

EAM districts – Village level

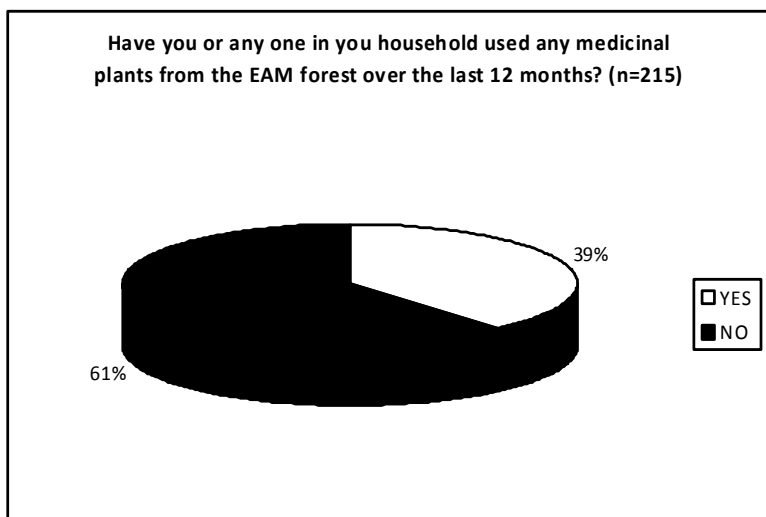


Figure 71 EAM - Have you or any one in your household used any medicinal plants from the forest over the last 12 months?

Figure 71 shows that 39% of the EAM respondents have used medicinal plants from the forest over the last 12 months whereas 61% did not.

Lindi district – Village level

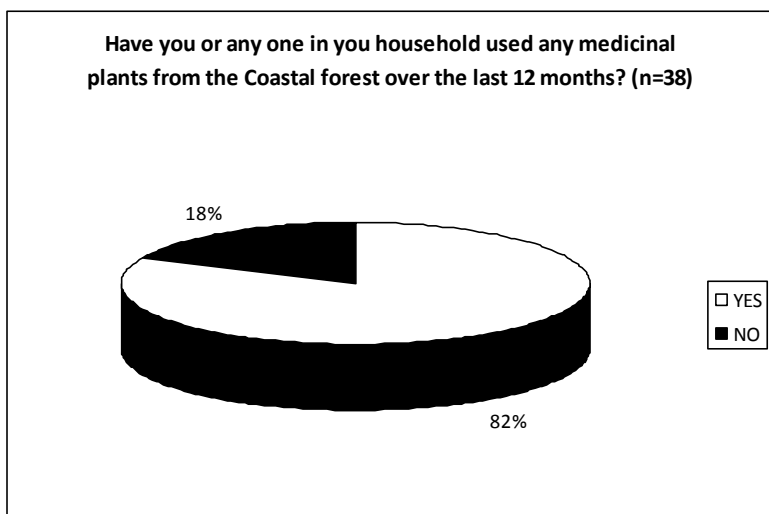


Figure 72 Lindi - Have you or any one in your household used any medicinal plants from the forest over the last 12 months?

Figure 72 shows that 82% of the CF respondents have used medicinal plants from the coastal forest over the last 12 months whereas 18% did not. 43 % more respondents from the coastal forests reported using medicinal plants from forests than from the EAM.

Q. Have you participated in any awareness raising events or training sessions related to forest conservation in the last 5 years?

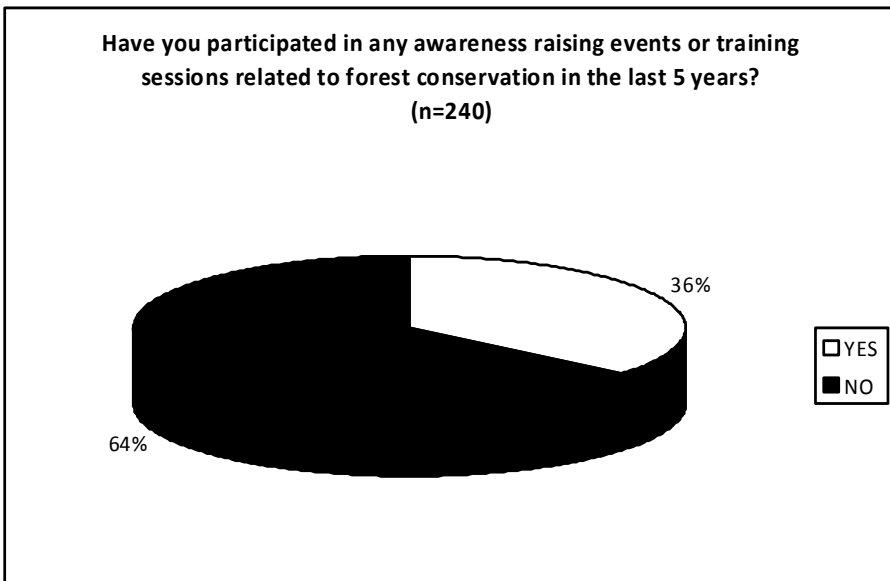


Figure 73 All - Have you participated in any awareness raising events or training sessions related to forest conservation in the last 5 years?

Figure 73 shows that 36% of the respondents have participated in at least one awareness raising or training sessions related to forest conservation in the last five years.

Results disaggregated by wealth rank

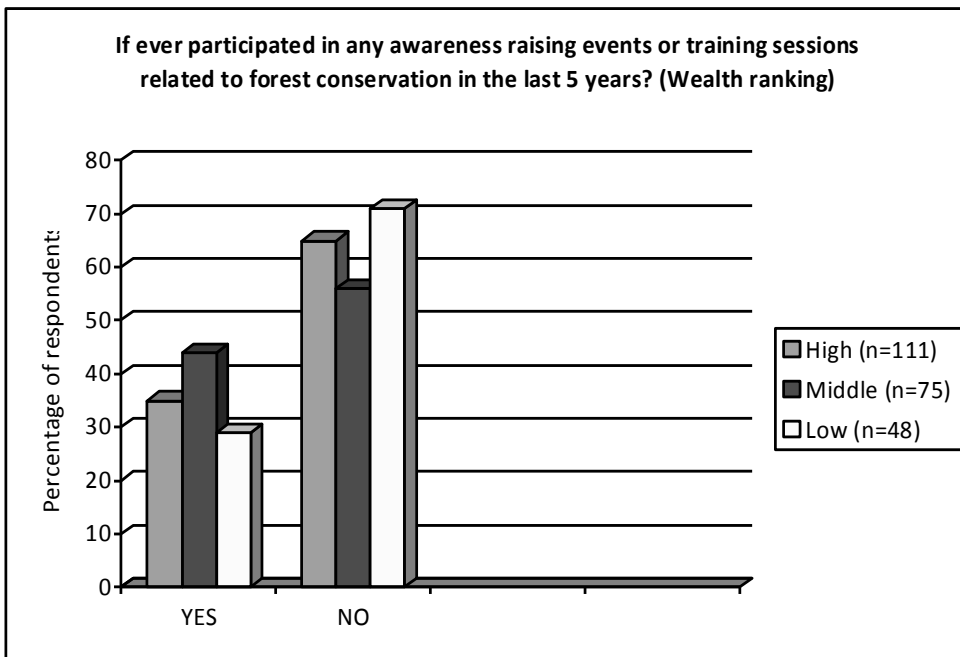


Figure 74 Wealth Rank - Have you participated in any awareness raising events or training sessions related to forest conservation in the last 5 years?

Figure 74 shows that the respondents from the middle wealth rank (44% -yes) category were more likely to have participated in a an awareness raising or training event than those in the wealthiest (35% - yes) or poorest (29% - yes) wealth rank categories.

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

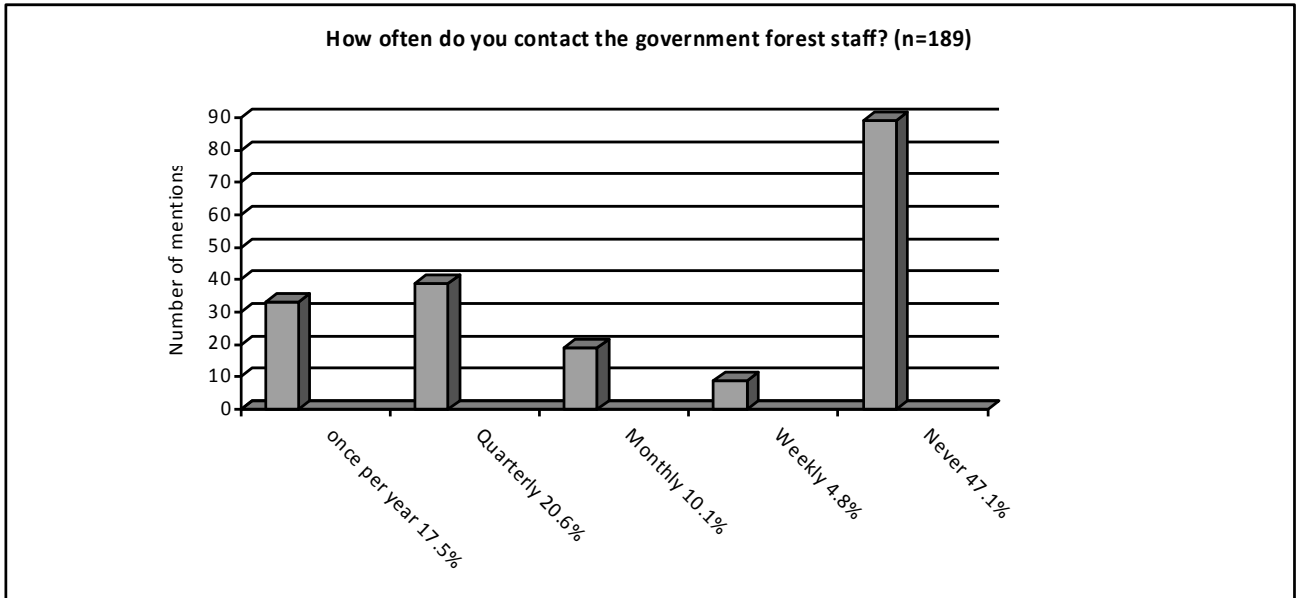


Figure 75 All - How often do you have contact with government forest staff?

Figure 75 shows that 47% of the respondents said they never have contact with government forest staff. 17.5% said they have contact once per year. 20.5% of the respondents said they have contact quarterly. 10.1% said they have contact monthly and 4.8% said weekly.

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

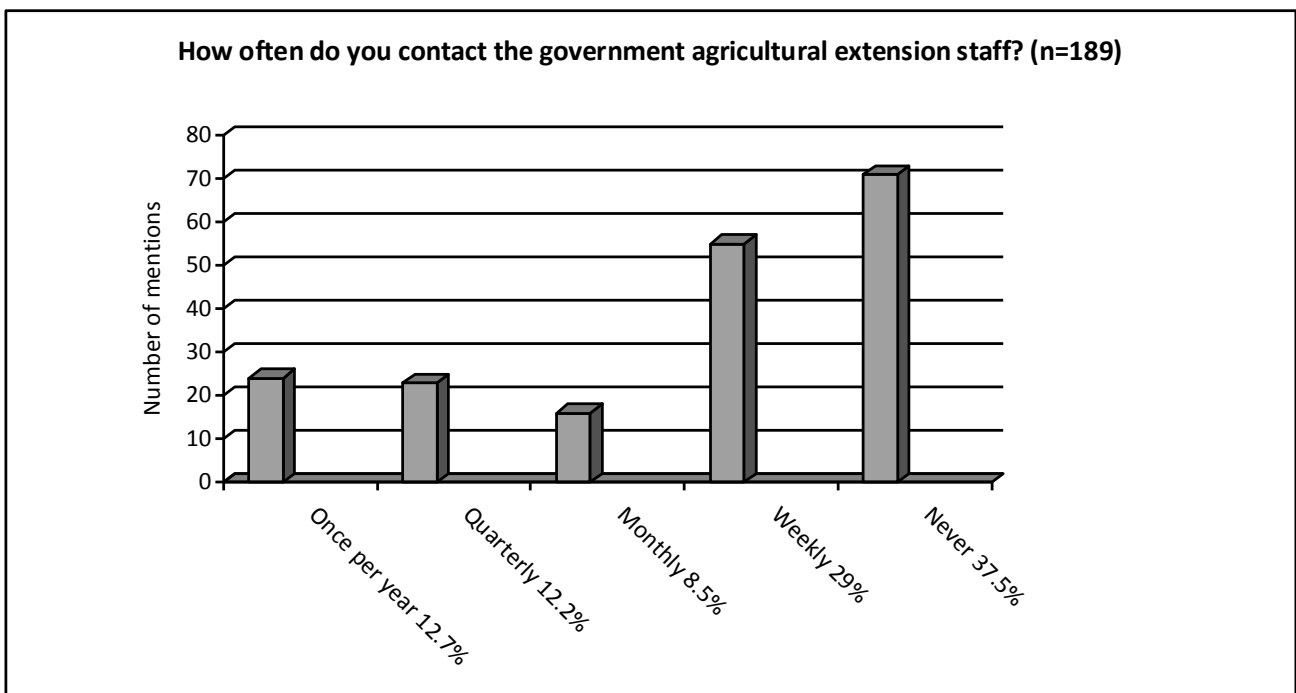


Figure 76 How often do you have contact with government agricultural extension staff?

Figure 76 shows that 12.7% said they have contact once per year; 12.2% of the respondents said they have contact quarterly; 8.5% said they have contact monthly and 29% said weekly. 37.5% of the respondents said they never have contact with government agricultural extension staff.

Results disaggregated by wealth rank

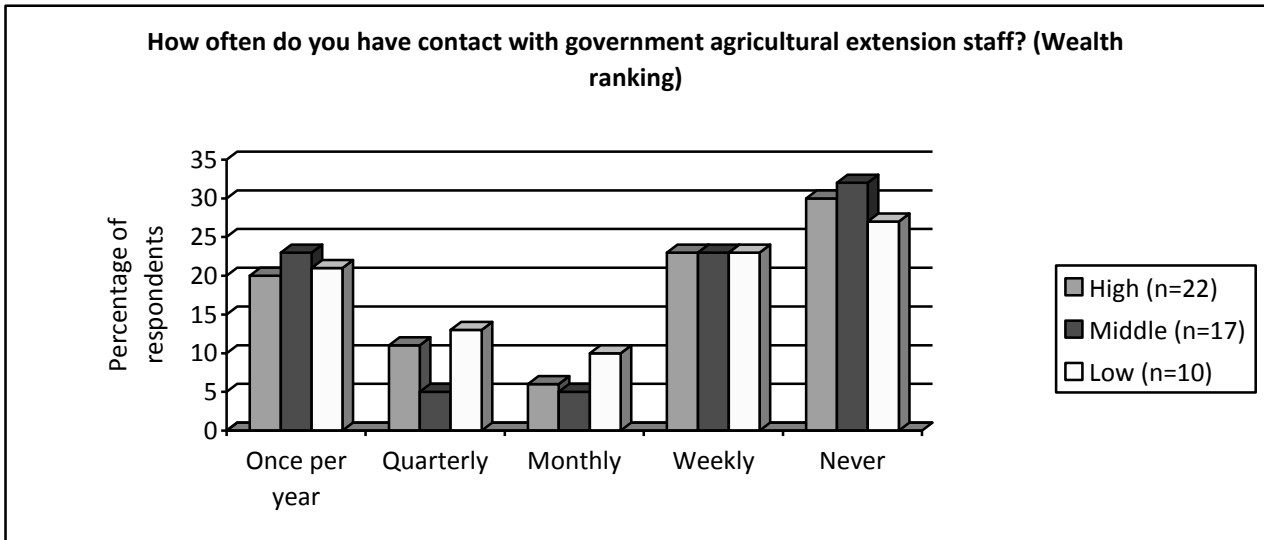


Figure 77 How often do you have contact with government agricultural extension staff?

Figure 77 shows that 30% of the high ranked, 32% of the middle ranked and 27% of the poorest respondents stated that they never have contact with government agricultural extension staff. 23% of the middle ranked, 21% of the low ranked and 20% of the high ranked respondents have contact with government agricultural extension staff once per year. 11% of high ranked, 5% of middle ranked and 13% of low ranked do contact the government agricultural extension staff quarterly. 6% of the high ranked, 5% of middle ranked and 10% of the low ranked have contact with government agricultural extension staff monthly. 23% of the high ranked, 23% of the middle ranked and 23% of the low ranked respondents had contact with the government agricultural extension staff weekly. Overall most respondents have contact with agricultural staff at least once per year.

Q. Do you think that children should learn about the environment at school?

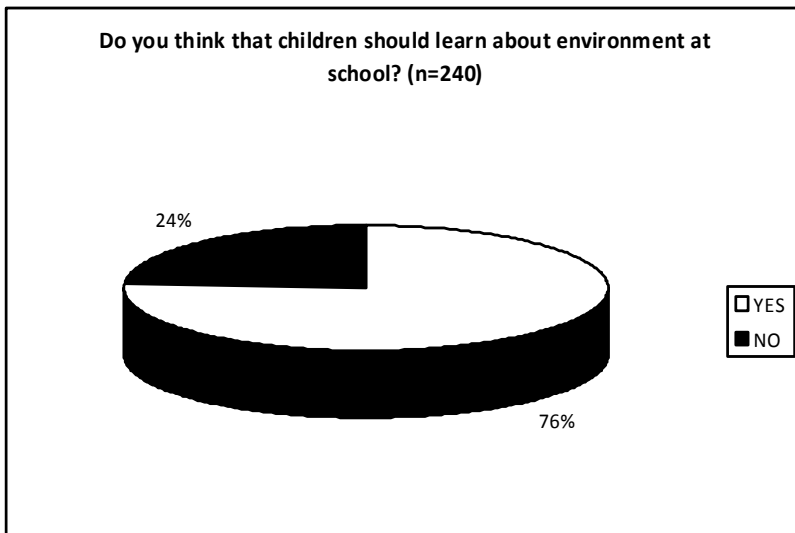


Figure 78 All - Do you think that children should learn about the environment at school?

Figure 78 shows that 76% of the respondents agreed that children should learn about the environment at school.

Results disaggregated by wealth rank

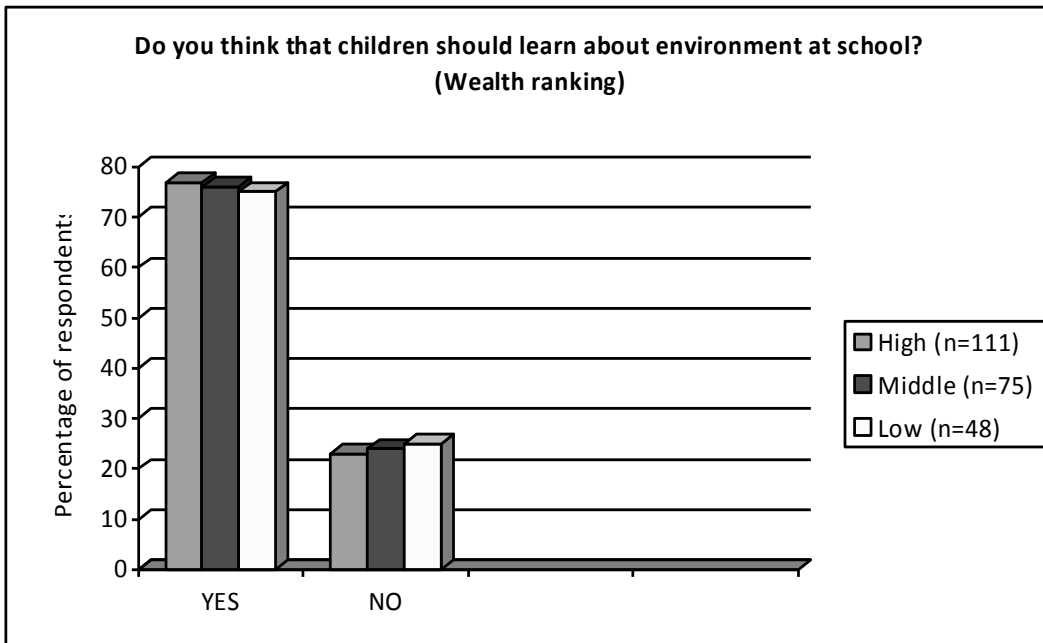


Figure 79 Wealth Rank - Do you think that children should learn about the environment at school?

Figure 79 shows that 77% of the wealthiest, 76% of the middle ranking and 75% of the poorest respondents thought that children should learn about the environment at school. This indicates that across all wealth ranks around $\frac{3}{4}$ of respondents agree that children should learn about environment at school.

Q. Do you have any access to a mobile phone?

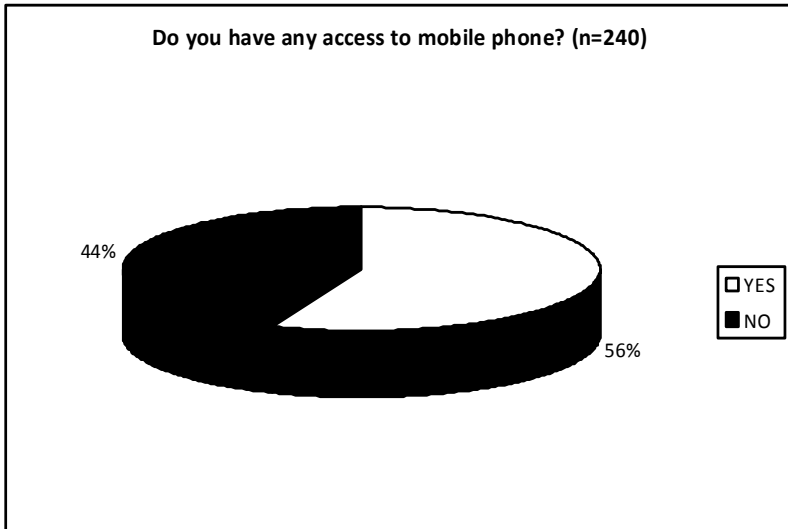


Figure 80 Do you have any access to a mobile phone?

Figure 80 shows that 56% of the respondents said yes they had access to mobile phones whereas 44% had no access.

Results disaggregated by wealth rank

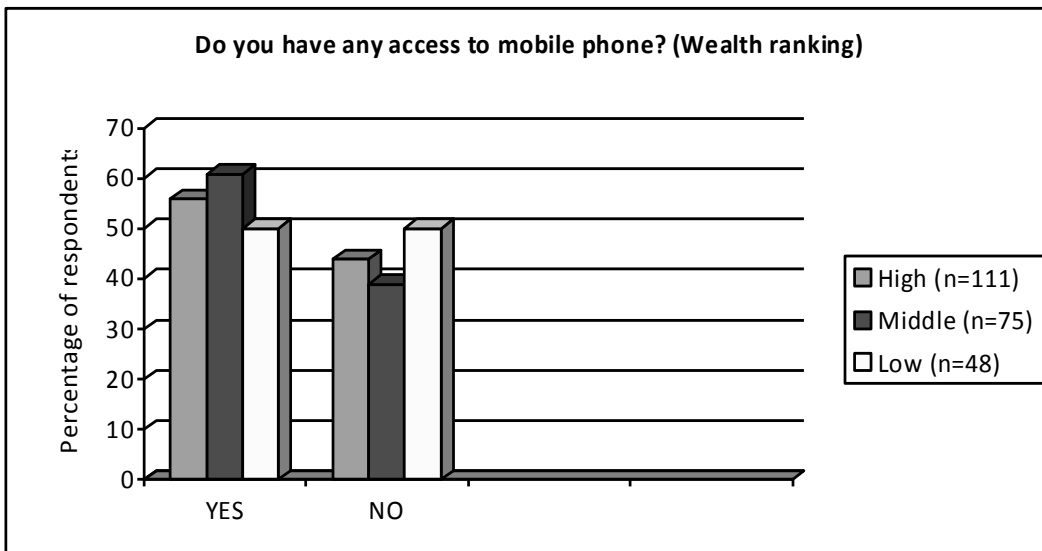


Figure 81 Do you have any access to a mobile phone? (wealth ranking)

Figure 81 shows that 56% of the high ranked respondents, 61% of the middle ranking and 50% of the low ranked respondents had access to a mobile phone.

Q. Have you ever used internet?

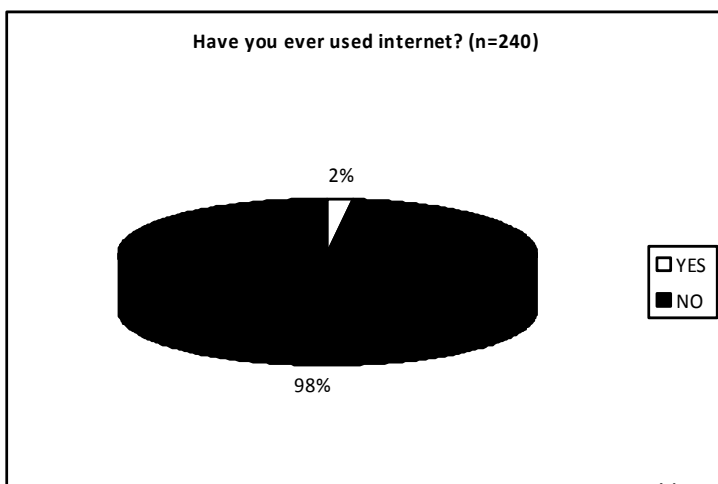


Figure 82 All - Have you ever used internet?

Figure 82 shows that only 2% of the respondents said yes they had used the internet whereas 98% had not.

Results disaggregated by wealth rank

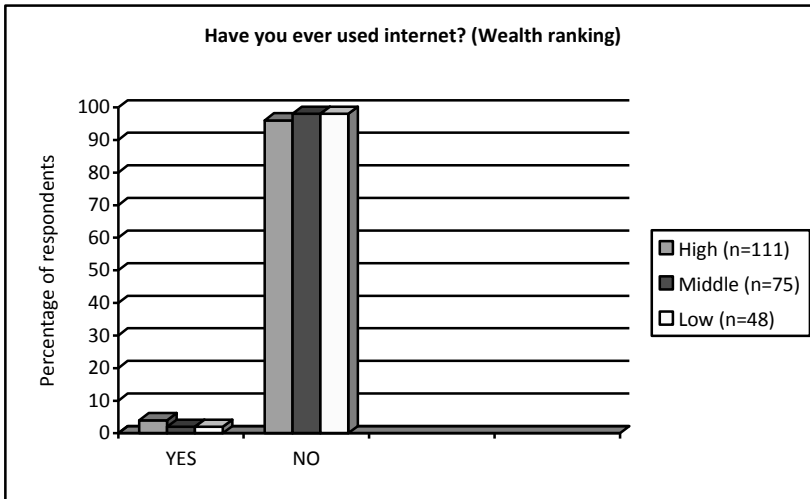


Figure 83 Wealth Rank - Have you ever used internet?

Figure 83 shows that 4% of the high ranked, 2% of both low and middle ranked respondents had used internet, whereas the majority 98% of both middle and low ranked and 96% of high ranked respondents had not used internet.

Q. What kind of information would you like to receive in relation to environment/forest conservation?

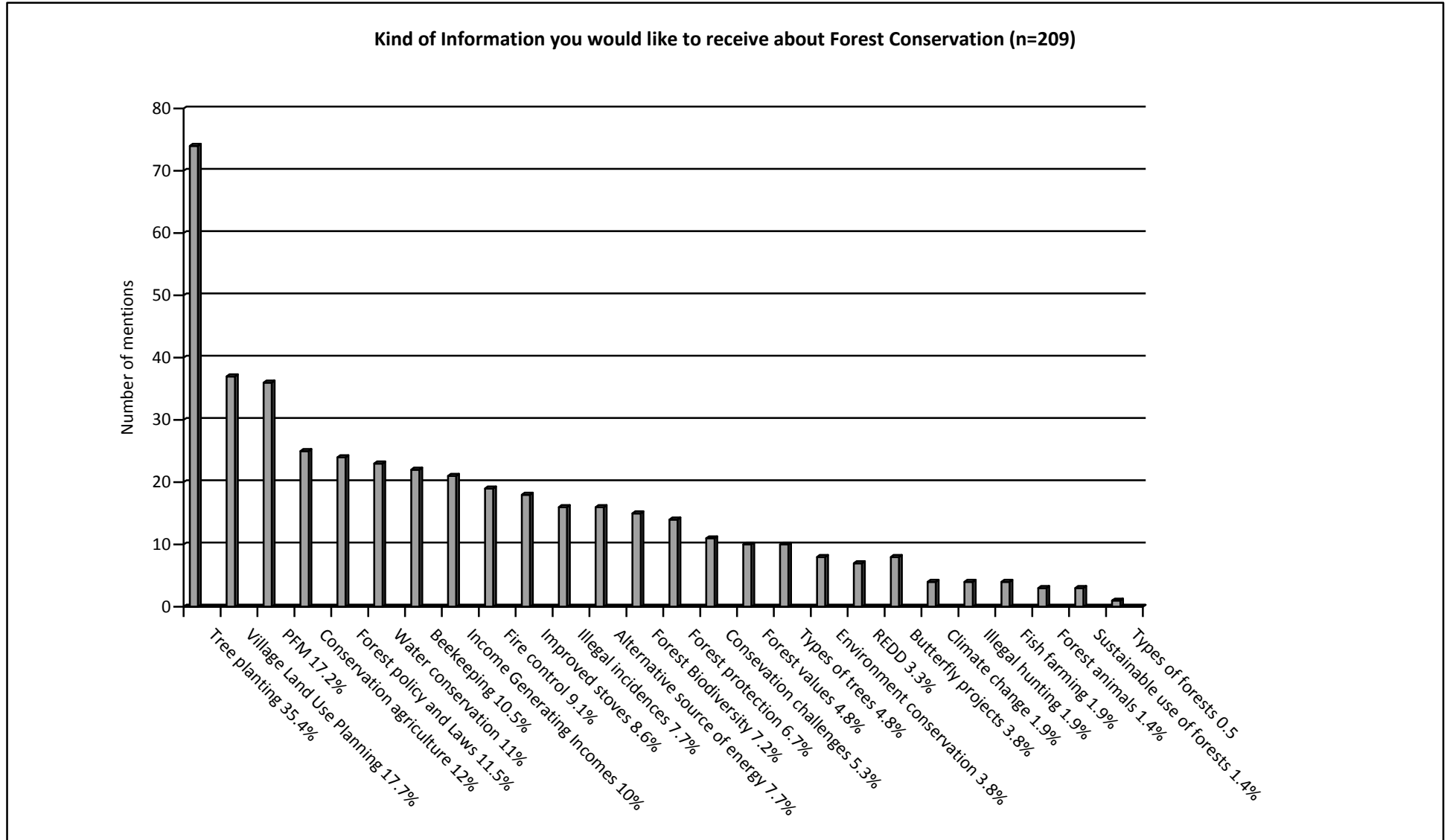


Figure 84 What kind of information would you like to receive in relation to environment/forest conservation?

Figure 84 shows that tree planting was the most commonly mentioned kind of information that people would like to receive. This was cited by 35.4% of the respondents followed by village land use planning 17.7%, PFM 17.2%, conservation agriculture 12%, Policy and laws 11.5%, Water conservation 11%, Beekeeping 10.5%, IGAs 10%, fire control 9.1%, Improved stoves 8.6%, Alternative source of energy and Illegal incidences 7.7%, forest biodiversity 7.2%, forest protection 6.7%, conservation challenges 5.3%, forest values and types of trees 4.8%, environmental conservation and butterfly projects 3.8%, REDD 3.3%. Climate change, illegal hunting and fish farming were mentioned by 1.9%. Sustainable use of forests 1.4% whereas types of forests was mentioned by only 0.5% of the respondents.

In 2004 the Eastern Arc community members most commonly mentioned tree planting as the required information followed by forest law and protection, improved agriculture, nursery establishment, beekeeping, protection of water sources and forest education. The district and ward staff, NGOs and business persons commonly mentioned tree planting, followed by PFM, forest and environment policies, alternative sources of energy, forest protection, environmental conservation, beekeeping, agriculture, water conservation, fire control, economic stoves and IGAs.

Q. How would you like to receive information about these issues?

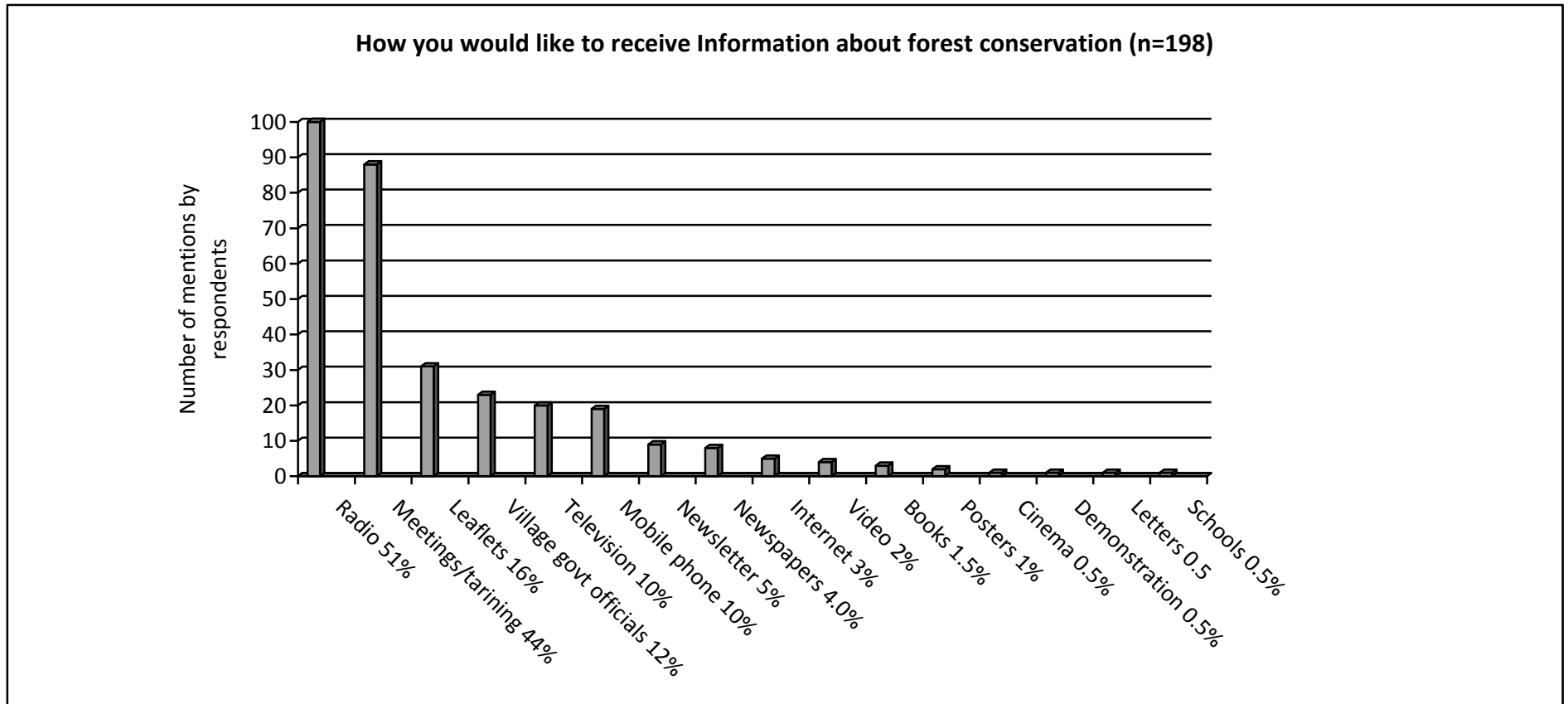


Figure 85 How would you like to receive information about these issues?

Figure 85 shows that Radio was most commonly mentioned (51% of the respondents). Meetings/training was mentioned by 44%, leaflets 16%, village government officials 12%. TV by 10%, mobile phone 10%, newsletter was mentioned by 5%, newspapers 4%, internet 3%, Video 2%, Books 1.5%, Posters by 1%, Schools, cinema, letters and demonstration were mentioned by 0.5% of the respondents.

In 2004 radio was also the preferred source of information.

Questionnaire

3.12 Ward level

Knowledge

Q. Have you heard of the Eastern Arc Mountains?

Kilindi District – Ward level

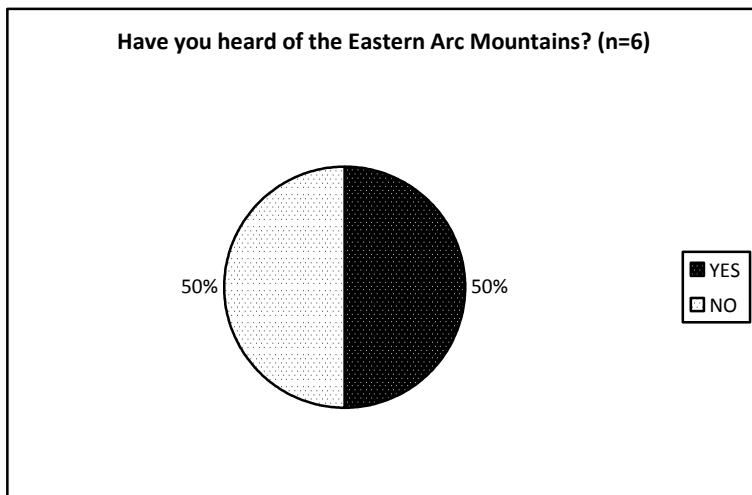


Figure 86 Kilindi - Have you heard of the Eastern Arc Mountains?

Figure 86 shows that 50% of the respondents have heard of the Eastern Arc Mountains.

Kilolo District – Ward level

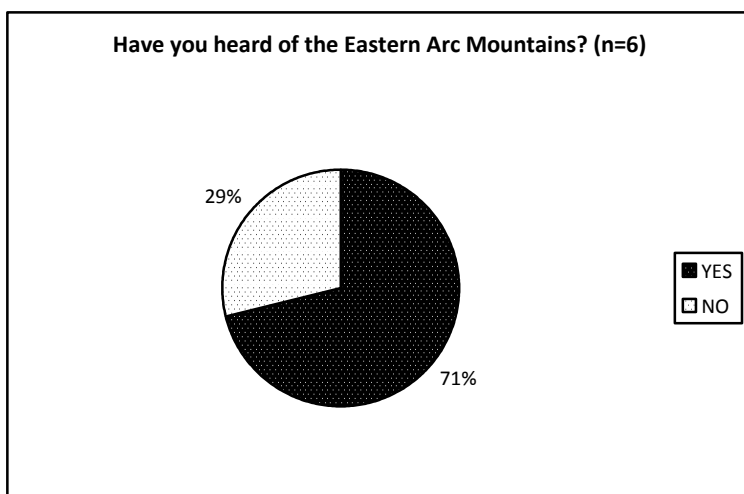


Figure 87 Kilolo - Have you heard of the Eastern Arc Mountains?

Figure 87 shows that 71% of the respondents have heard of the Eastern Arc Mountains while 29% have not.

Kilombero District – Ward level

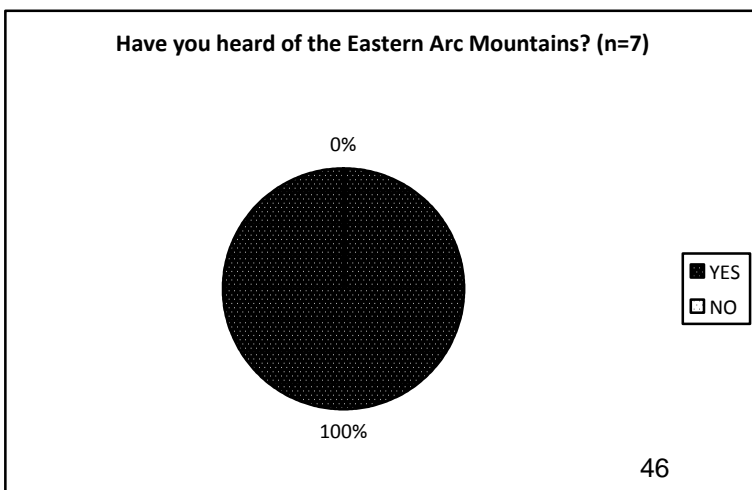


Figure 88 Kilombero - Have you heard of the Eastern Arc Mountains?

Figure 88 shows that all the respondents (100%) have heard of the Eastern Arc Mountains.

Mpwapwa District – Ward level

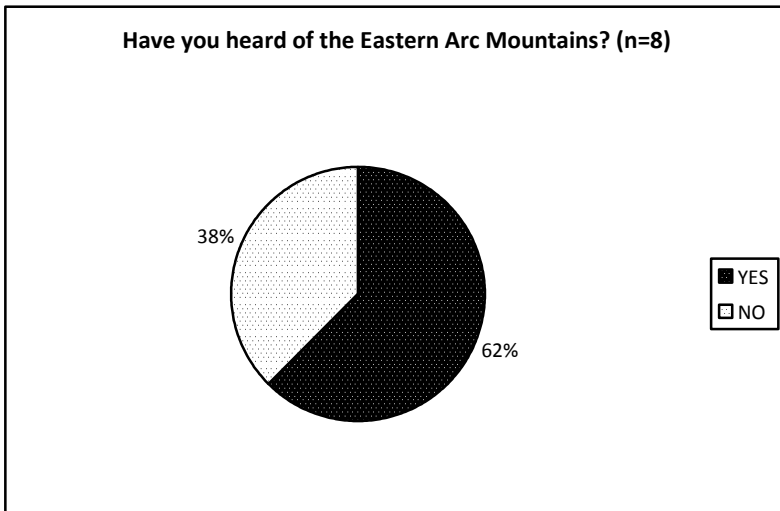


Figure 89 Mpwapwa - Have you heard of the Eastern Arc Mountains?

Figure 89 shows that 62% of the respondents have heard of the Eastern Arc Mountains.

Muheza District – Ward level

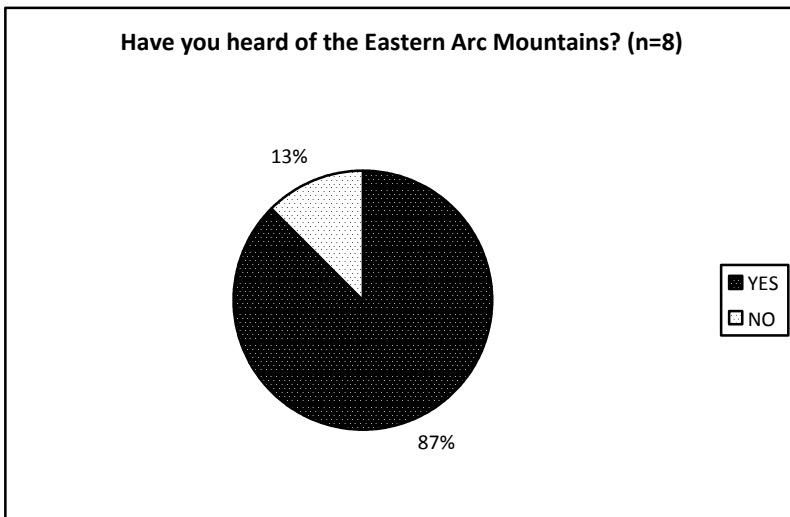


Figure 90 Have you ever heard of the Eastern Arc Mountains?

Figure 90 shows that 87% of the respondents have heard of the Eastern Arc Mountains.

Same District – Ward level

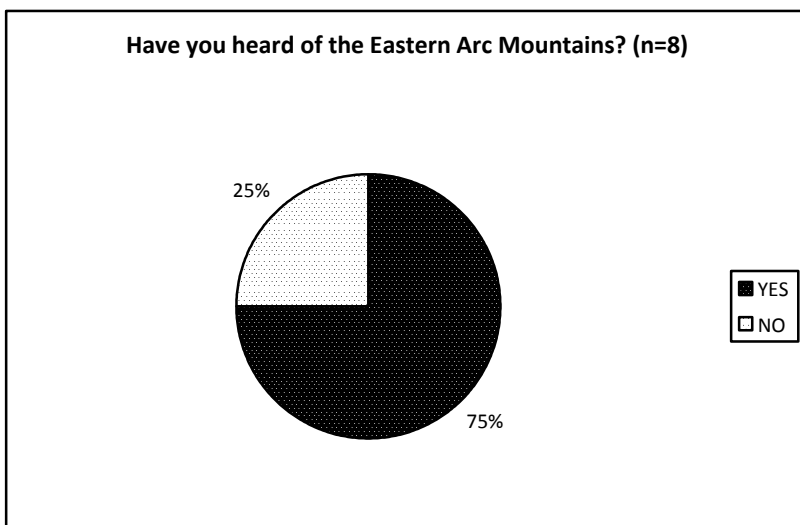


Figure 91 Have you ever heard of the Eastern Arc Mountains?

Figure 91 shows that 75% of the respondents have heard of the Eastern Arc Mountains.

Q. Have you heard of the Coastal Forests?

Lindi District – Ward level

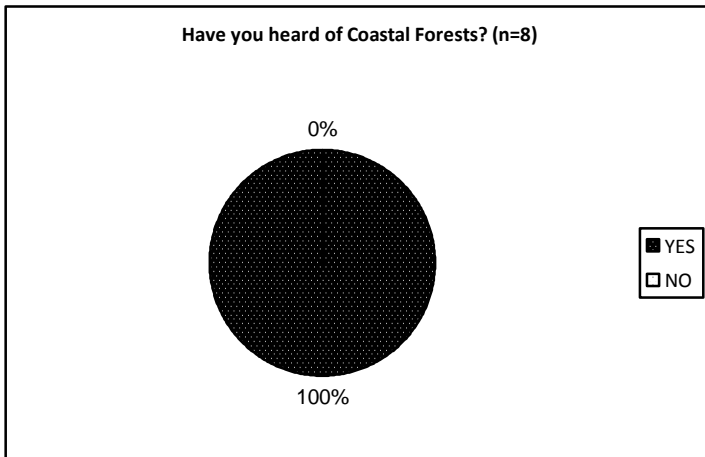


Figure 92 Have you heard of the Coastal Forests?

Figure 92 shows that 100% of the respondents have heard of the Coastal Forests.

EAM - Ward level

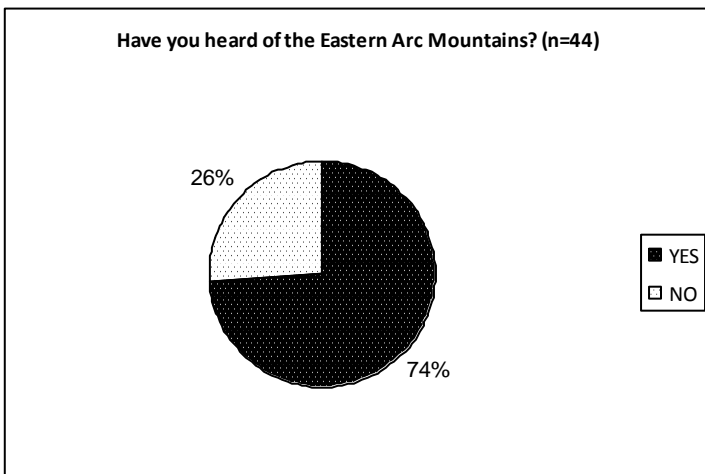


Figure 93 EAM - Have you heard of the Eastern Arc Mountains?

Figure 93 shows that 74% of the respondents from the EAM at ward level have heard of the Eastern Arc Mountains.

Q. Can you tell why the Eastern Arc Mountain and Coastal Forests are important?

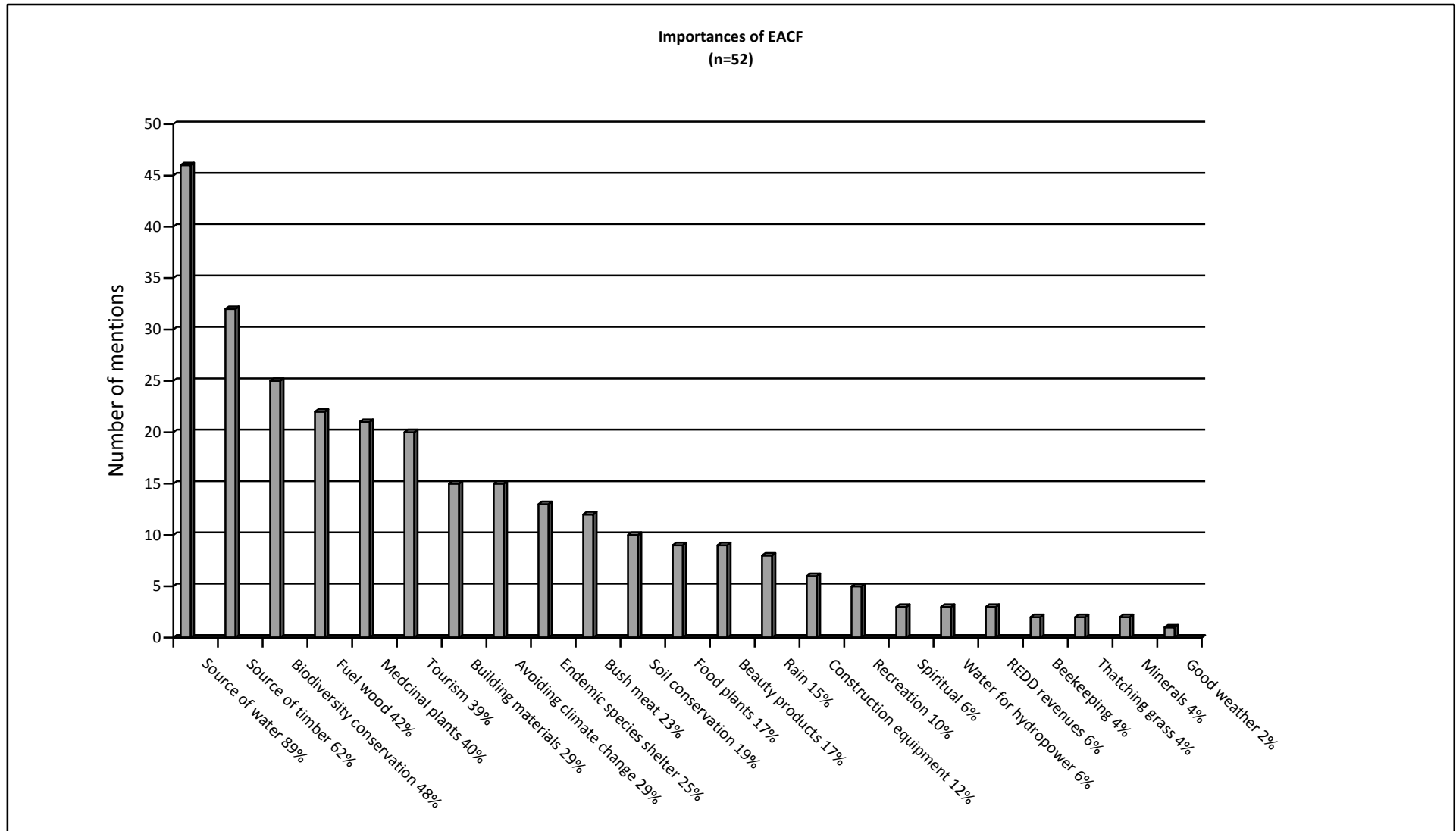


Figure 94 Why are the EACF important?

Figure 94 shows that the most commonly mentioned value was as a source of water which was mentioned by 89% of respondents followed by timber by 62%. Biodiversity conservation 48%, fuel wood by 42%, medicinal plants 40%, tourism 39%, building materials and avoiding climate change by 29%, protecting endemics 25%, Bush meat 23%, soil conservation by 19%, food plants and beauty products 17%, rain 15%, construction equipment 12%, recreation 10%, spiritual values, REDD revenues and water for hydropower 6%, Beekeeping, thatching grass and minerals 4% and 2% for good weather.

Q. What do you think are the main threats to the Eastern Arc Mountain and Coastal Forests and their biodiversity?

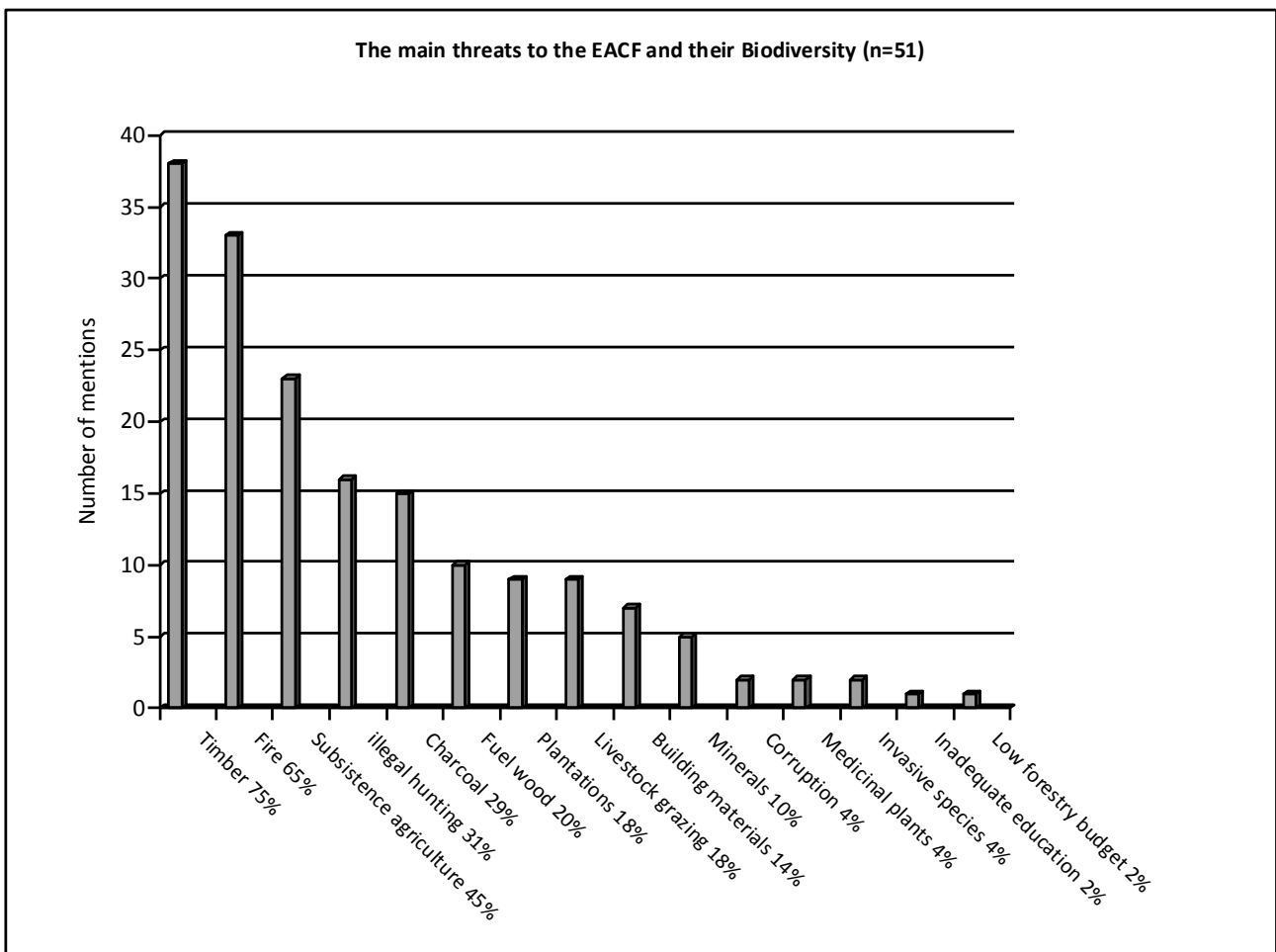


Figure 95 What do you think are the main threats to the EACF and their biodiversity?

Figure 95 shows that the most commonly mentioned threat was timber harvesting by 75% of the respondents followed by bush fire 65%. Subsistence agriculture 45%, Illegal hunting 31%, charcoal 29%, fuel wood 20%, clearing for plantations and livestock grazing 18%, building materials 14% and minerals 10%. Corruption, medicinal plants and invasive species were mentioned by 4% of the respondents. Inadequate education and low forestry budget were mentioned 2% of the respondents.

Q. Have you heard of the Tanzania Forest Service?

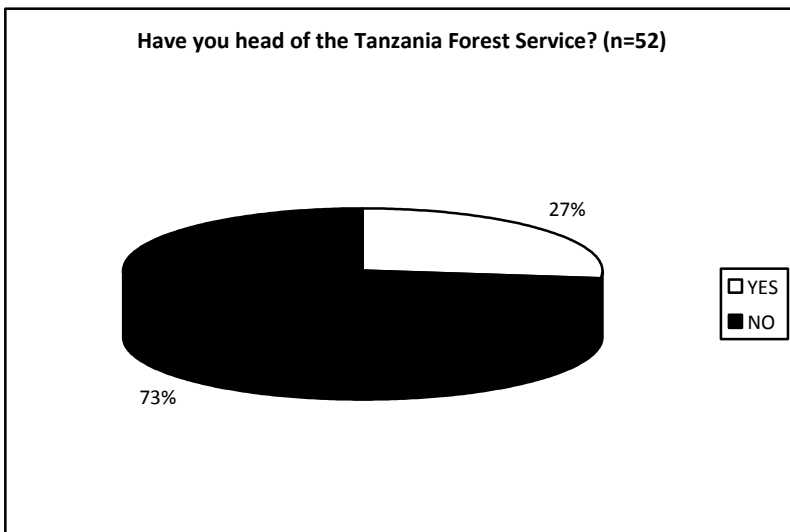


Figure 96 Have you heard of the Tanzania Forest Service?

Figure 96 shows that 27% of the respondents have heard of the Tanzania Forest Service whereas 73% had not.

Q. Have you heard of the Forest Policy 1998?

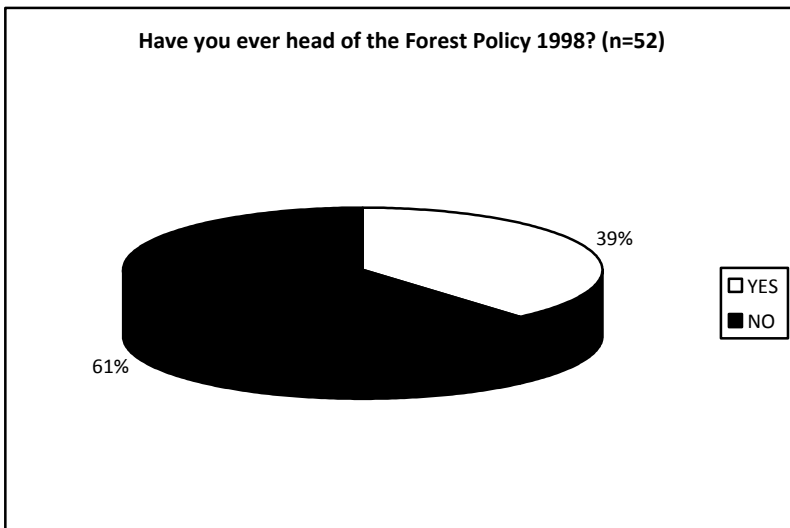


Figure 97 Have you heard of the Forest Policy 1998?

Figure 97 shows that 39% of the respondents have heard of the Forest Policy whereas 61% had not.

Q. Have you ever heard of the Forest Act 2002?

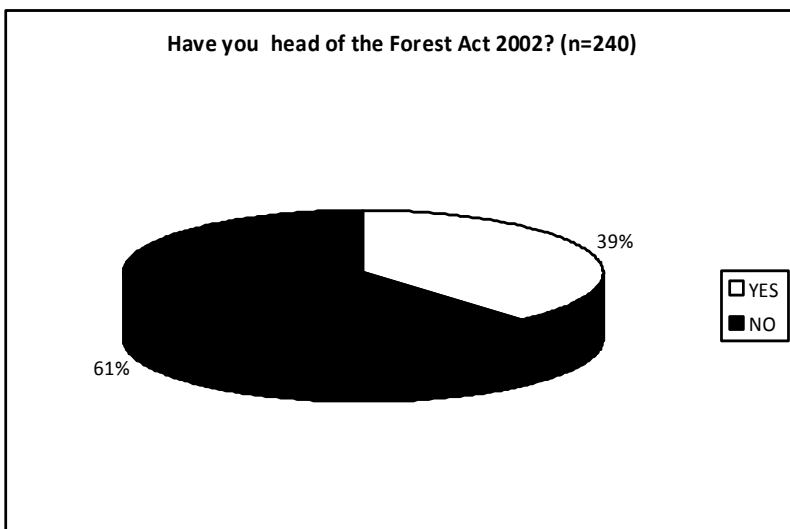


Figure 98 Have you heard of the Forest Act?

Figure 98 shows that 39% of the respondents have heard of the Forest Act 2002 whereas 61% had not.

Q. Have you heard of the Forest Policy 1998?

Kilindi District – Ward level

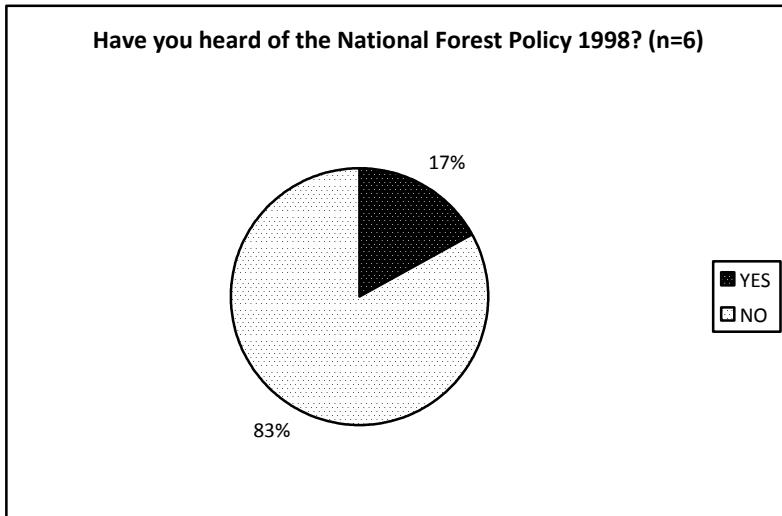


Figure 99 Kilindi - Have you ever heard of the National Forest Policy 1998?

Figure 99 shows that 17% of the respondents have heard of the National Forest Policy while 87% have not. The percentage of respondents aware of the Forest Act was lower in Kilindi District than in any of the other Districts surveyed.

Kilolo District – Ward level

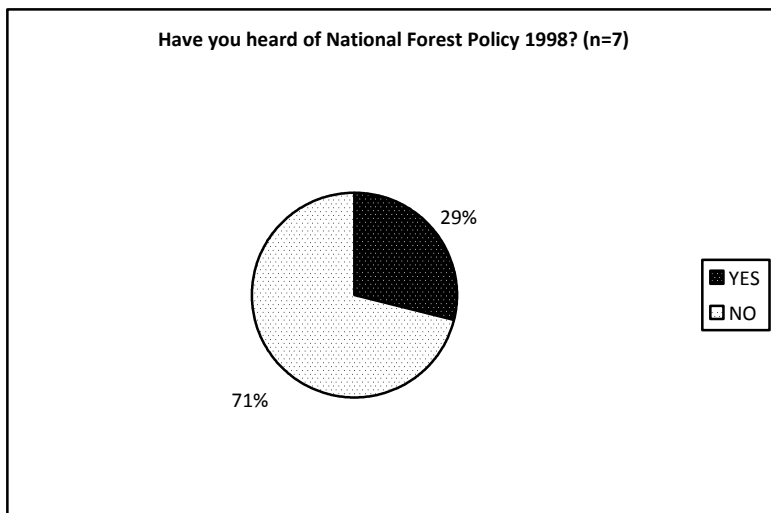


Figure 100 Kilolo - Have you heard of the National Forest Policy?

Figure 100 shows that 29% of the respondents have heard of the National Forest Policy while 71% have not.

Kilombero District – Ward level

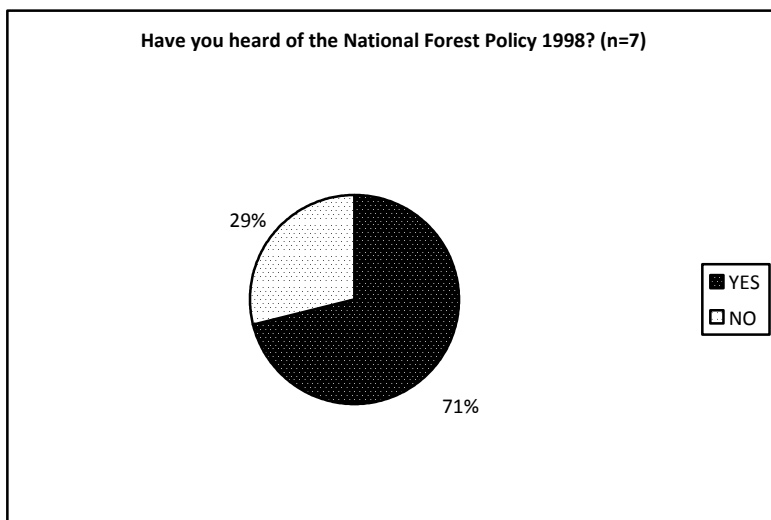


Figure 101 Kilombero - Have you ever heard of the National Forest Policy?

Figure 101 shows that 71% of the respondents have heard of the National Forest Policy while 29% have not. The percentage of respondents aware of the Forest Act was higher in Kilombero District than in any of the other Districts surveyed.

Mpwapwa District – Ward level

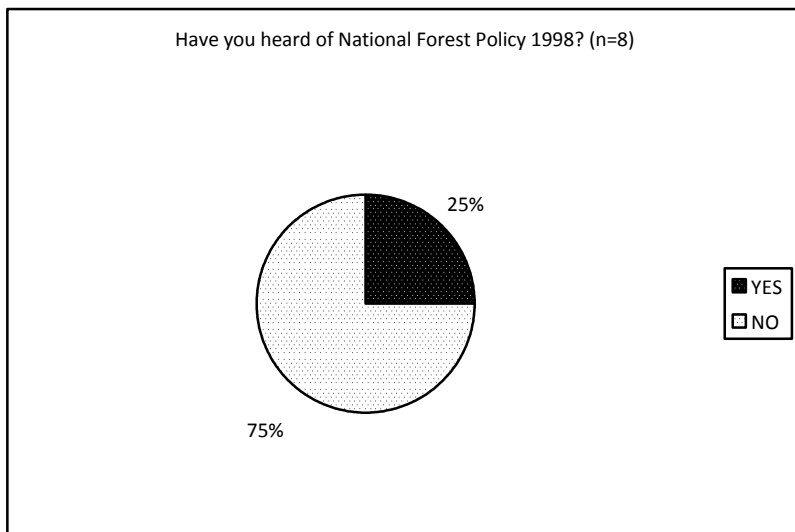


Figure 102 Mpwapwa - Have you heard of the National Forest Policy?

Figure 102 shows that 25% of the respondents have heard of the National Forest Policy while 75% have not.

Muheza District – Ward level

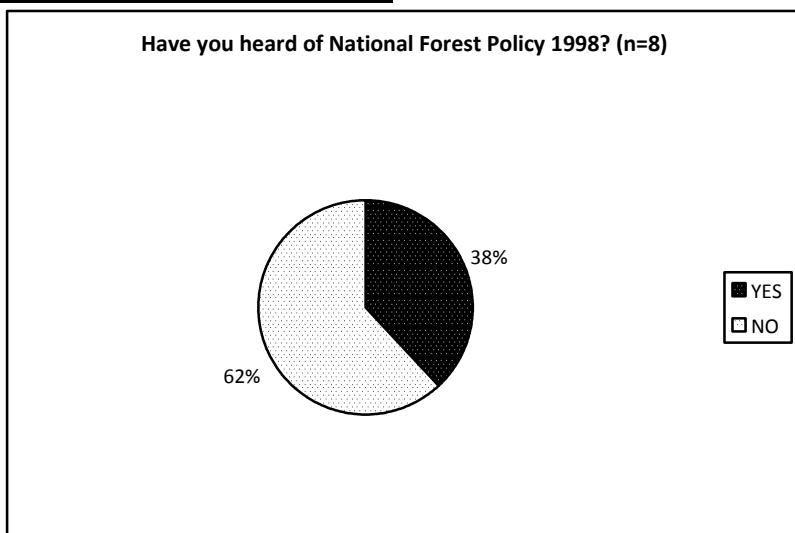


Figure 103 Have you heard of the National Forest Policy 1998?

Figure 103 shows that 38% of the respondents have heard of the National Forest Policy while 62% have not.

Same District – Ward level

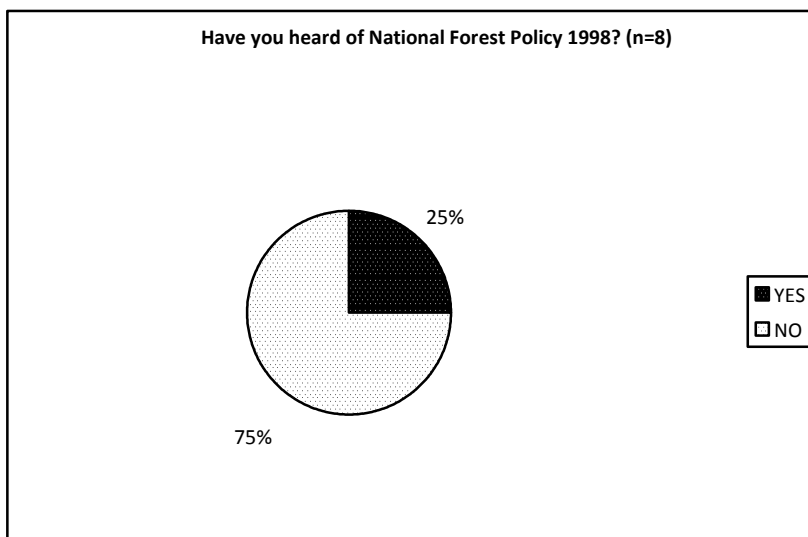


Figure 104 Same - Have you heard of the National Forest Policy 1998?

Figure 104 shows that 25% of the respondents have heard of the National Forest Policy while 75% have not.

Lindi District – Ward level

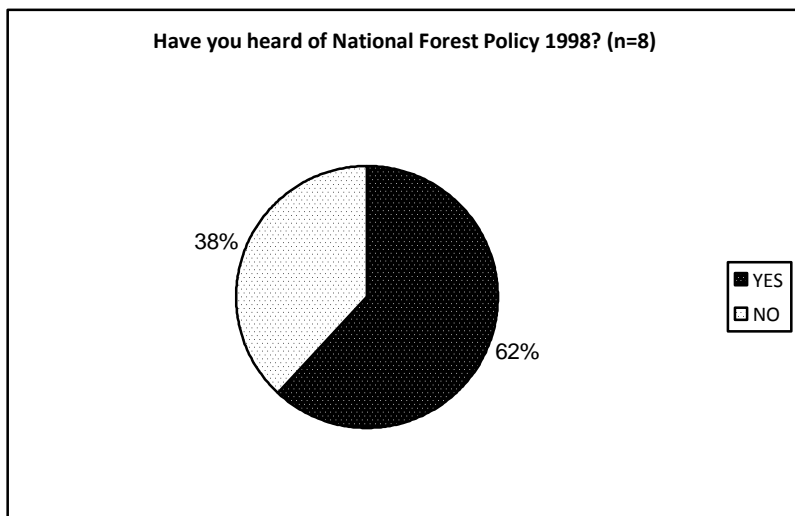


Figure 105 Have you ever heard of the National Forest Policy 1998?

Figure 105 shows that 62% of the respondents have heard of the National Forest Policy.

Districts (EAM) – Have you ever heard of the National Forest Policy 1998? - Ward level

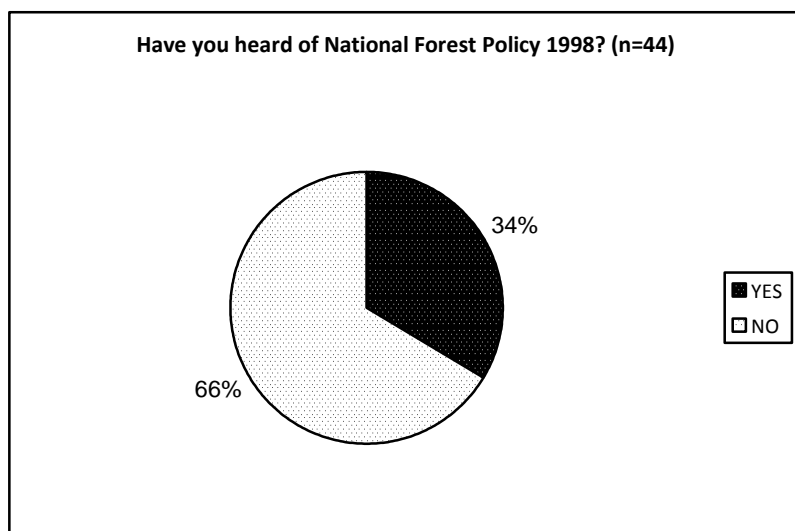


Figure 106 Have you heard of the National Forest Policy 1998?

Figure 106 shows that 34% of the respondents from the EAM at ward level have heard of the National Forest Policy 1998.

Q. Have you heard of the Forest Act 2002?

Kilindi District – Ward level

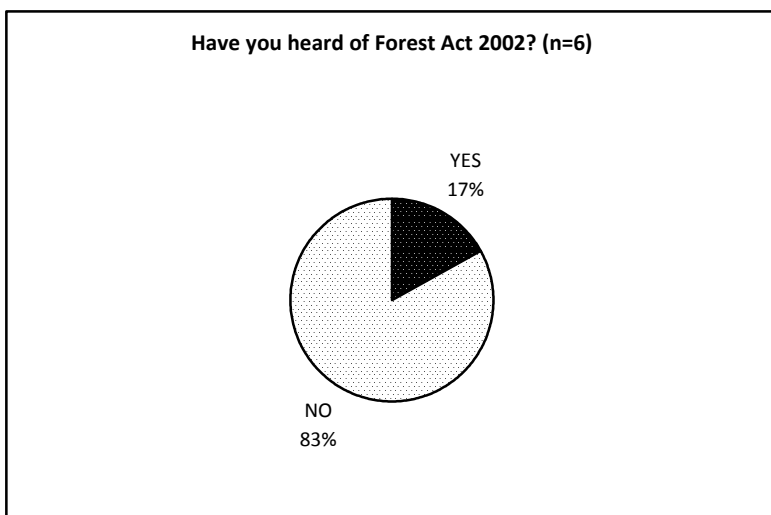


Figure 107 Kilindi - Have you heard of the Forest Act 2002?

Figure 107 shows that 17% of the respondents have heard of the Forest Act while 83% have not.

Kilolo District – Ward level

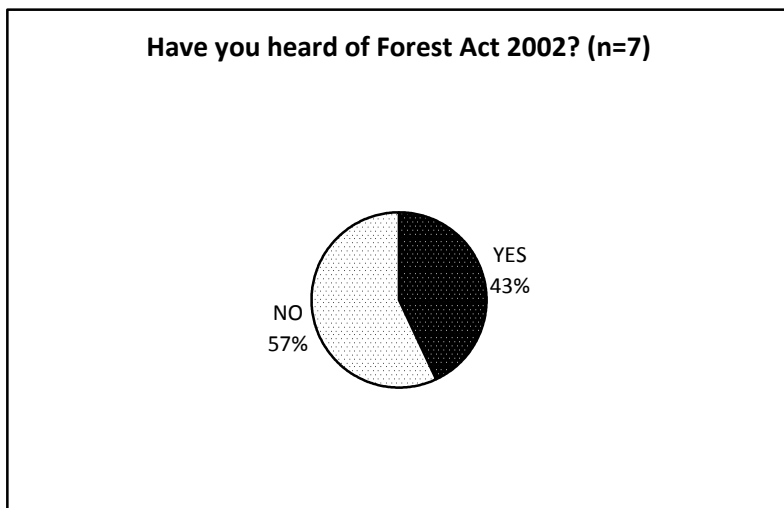


Figure 108 Kilolo - Have you heard of the Forest Act 2002?
Figure 108 shows that 43% of the respondents have heard of the Forest Act 2002.

Kilombero District – Ward level

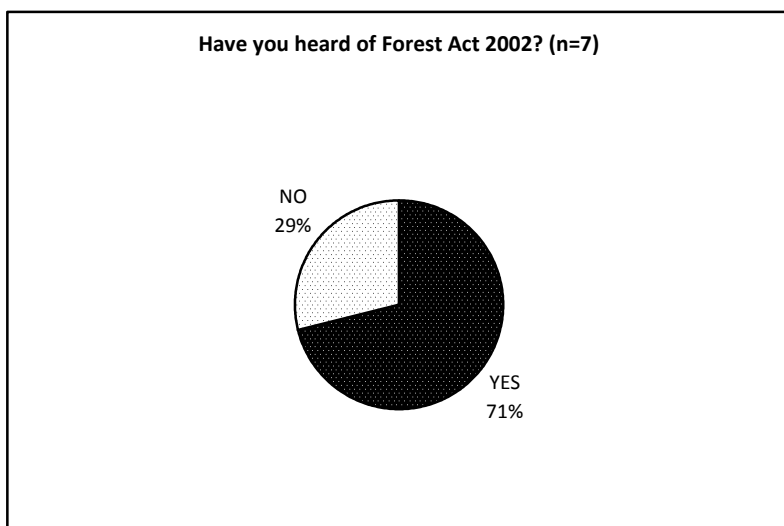


Figure 109 Kilombero - Have you heard of the Forest Act 2002?
Figure 109 shows that 71% of the respondents have heard of the Forest Act 2002 while 29% have not.

Mpwapwa District – Ward level

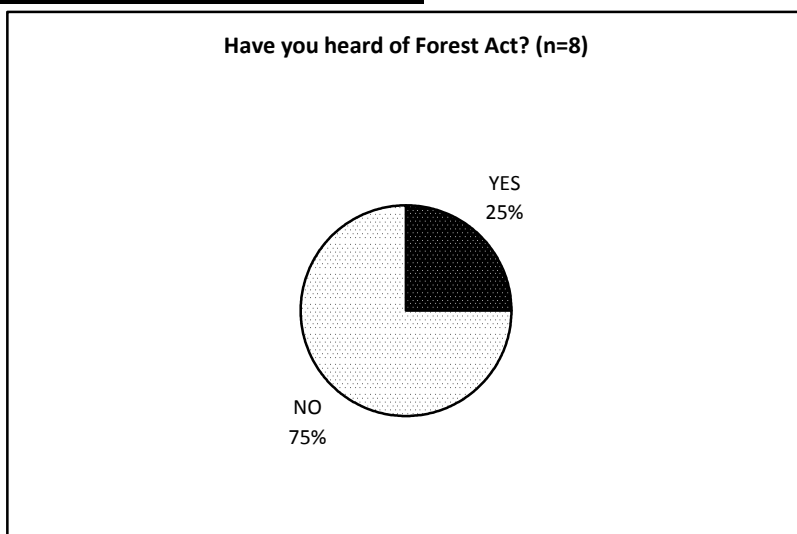


Figure 110 Mpwapwa - Have you heard of the Forest Act 2002?
Figure 110 shows that 25% of the respondents have heard of the Forest Act 2002 while 75% have not.

Same District – Ward level

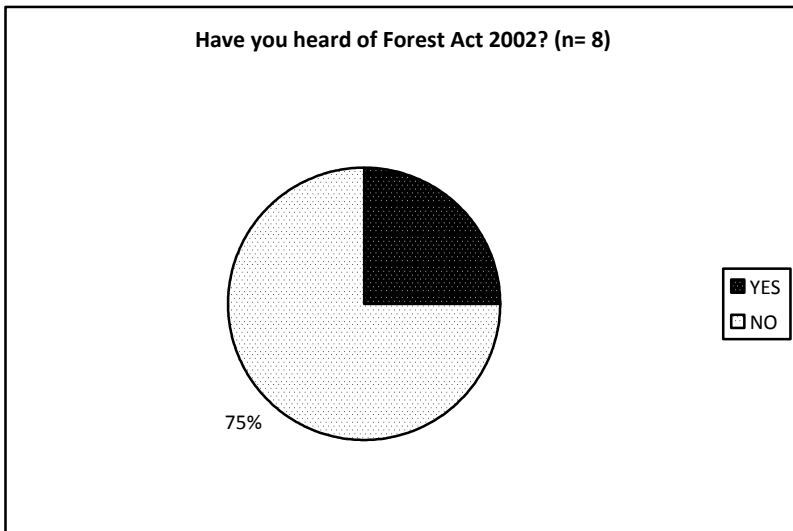


Figure 111 Have you heard of the Forest Act 2002?

Figure 111 shows that 25% of the respondents have heard of the Forest Act 2002.

Muheza District – Ward level

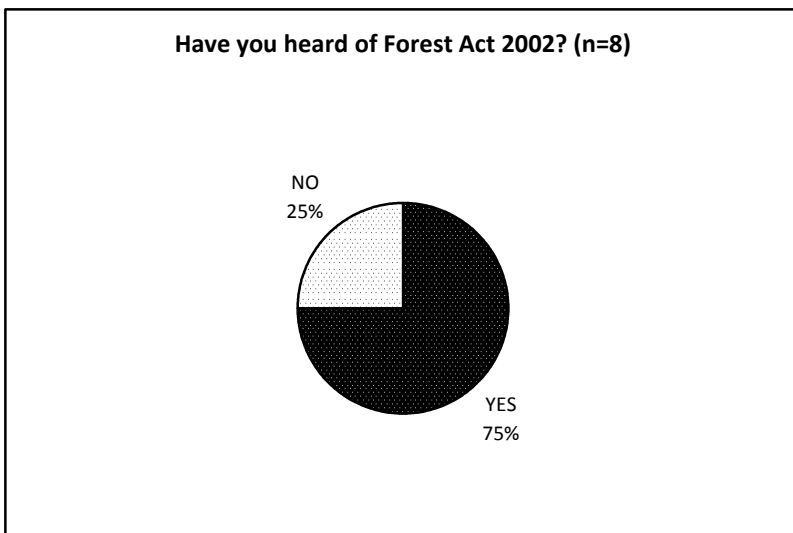


Figure 112 Have you heard of the Forest Act 2002?

Figure 112 shows that 75% of the respondents have heard of the Forest Act 2002 whereas 25% had not.

Lindi District – Ward level

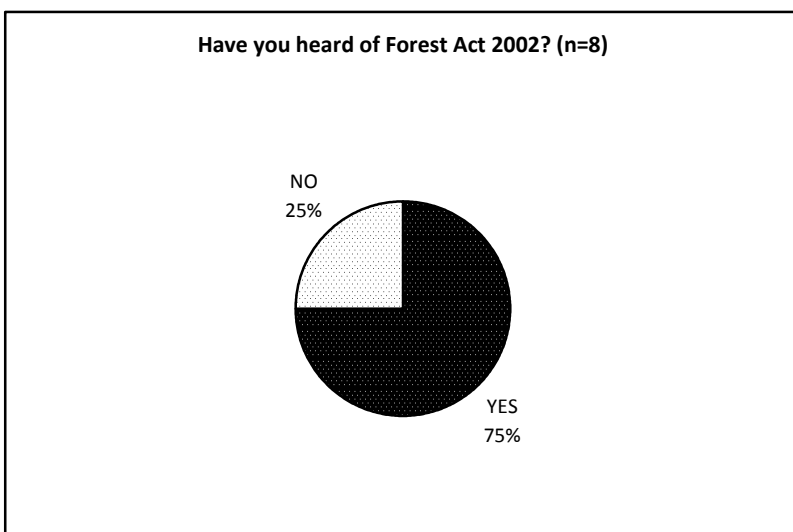


Figure 113 Have you heard of the Forest Act 2002?

Figure 113 shows that 75% of the respondents have heard of the Forest Act 2002

Districts (EAM) – ward level

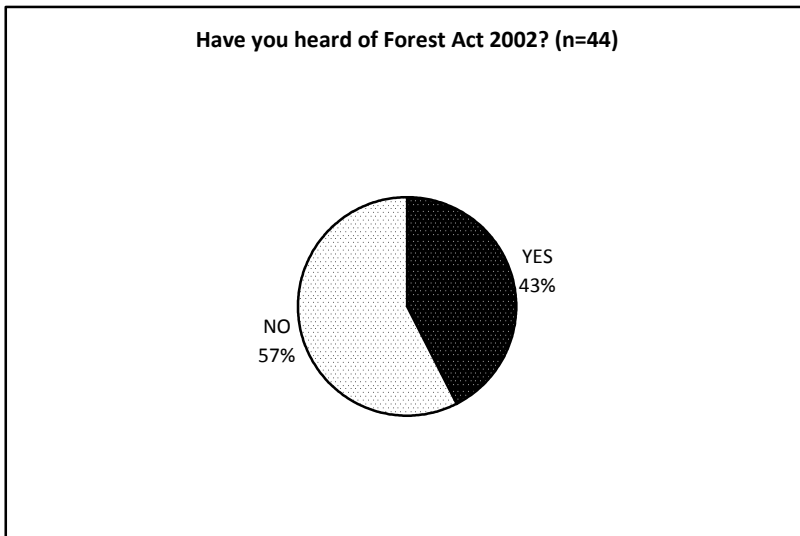


Figure 114 Have you heard of the Forest Act 2002?

Figure 114 shows that 43% of the ward level respondents in the EAM have heard of the Forest Act 2002 while 57% have not heard of the Forest Act 2002.

Q. Have you heard of Participatory Forest Management?

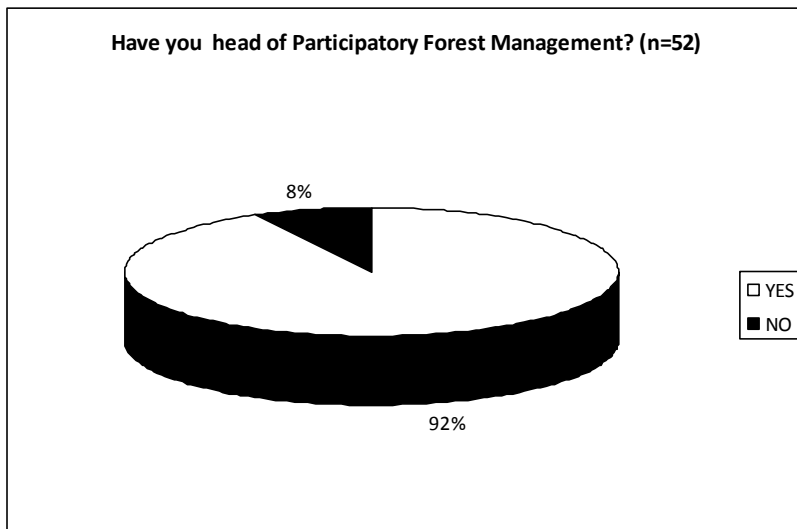


Figure 115 Have you ever heard of PFM?

Figure 115 shows that 92% of the Ward level respondents have heard of participatory forest management.

Q. Do you know what joint forest management is?

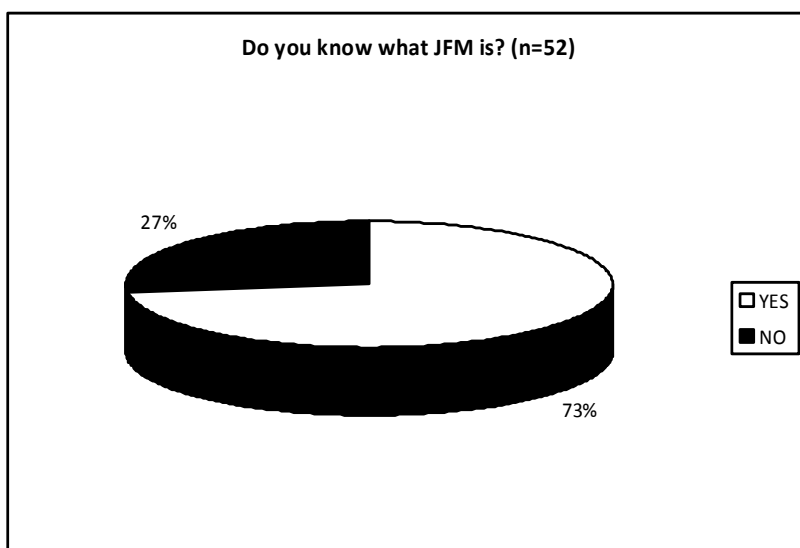


Figure 116 Do you know what joint forest management is?

Figure 116 shows that 73% of the respondents knew what JFM was.

Q. Have you ever heard of Village Forest Reserves?

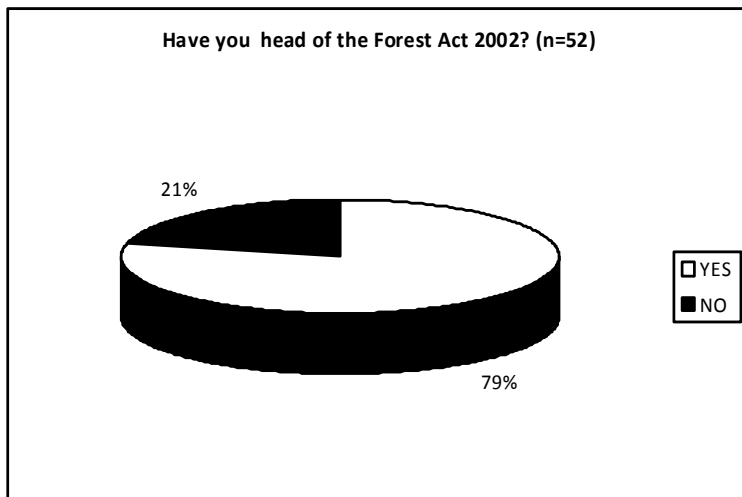


Figure 117 Have you heard of Village Forest Reserves?

Figure 117 shows that 79% of the respondents at ward level have heard of Village Forest Reserve whereas 21% had not.

Q. Have you heard of the Climate change?

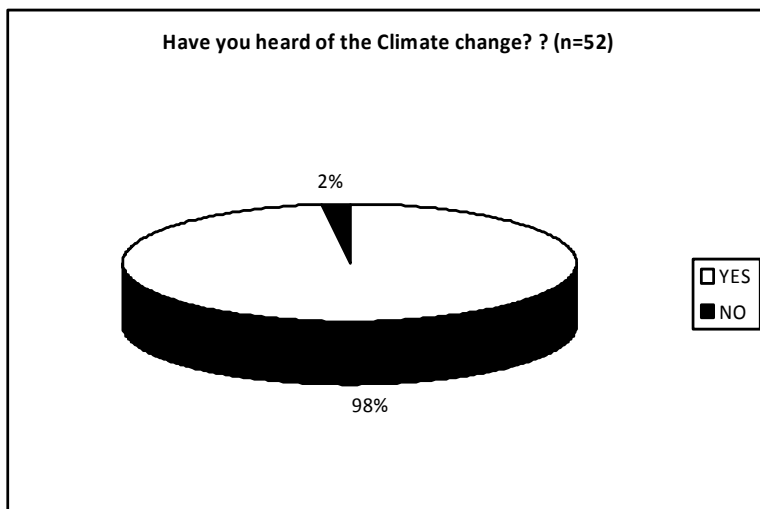


Figure 118 Have you heard of the Climate change?

Figure 118 shows that 98% of the respondents have heard of climate change whereas only 2% had not.

Q. Have you heard of REDD?

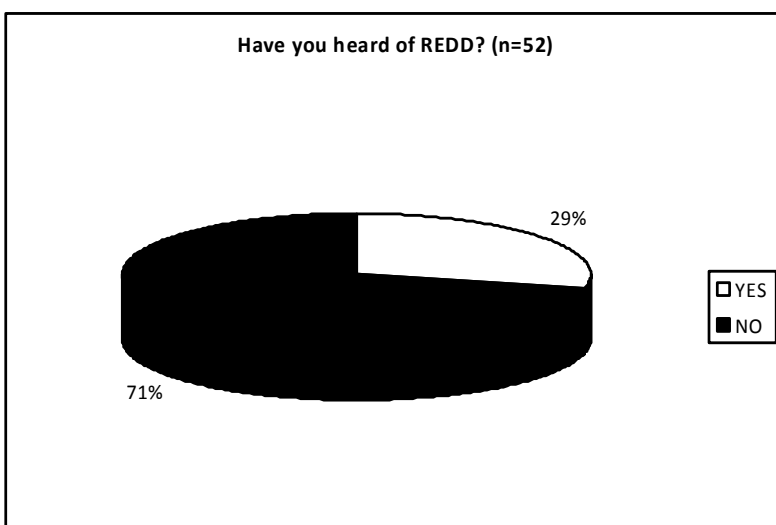


Figure 119 Have you heard of REDD?

Figure 119 shows that only 29% of the respondents have heard of REDD whereas 71% had not.

Attitude

Q. Do you think that it is a good thing to conserve forests?

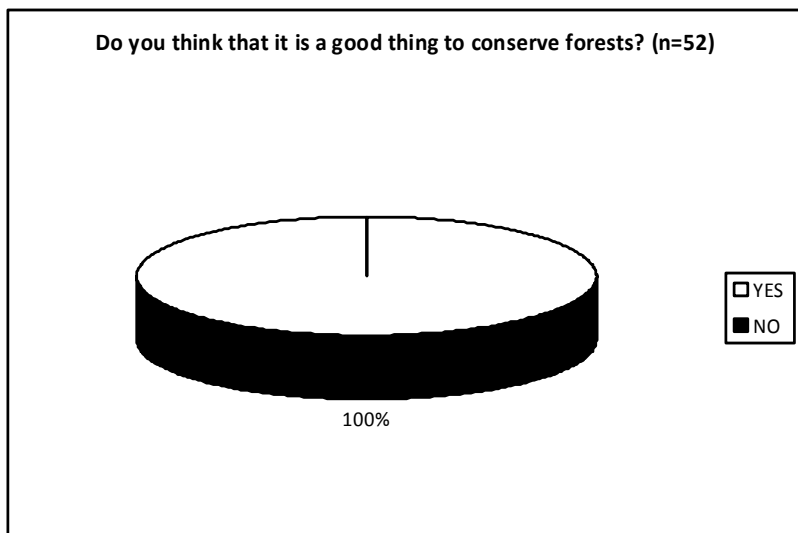


Figure 120 Do you think that it is a good thing to conserve forests?

Figure 120 shows that all the respondents (100%) agreed that it is a good thing to conserve forests.

Q. What do you think the government should do to improve forest conservation?

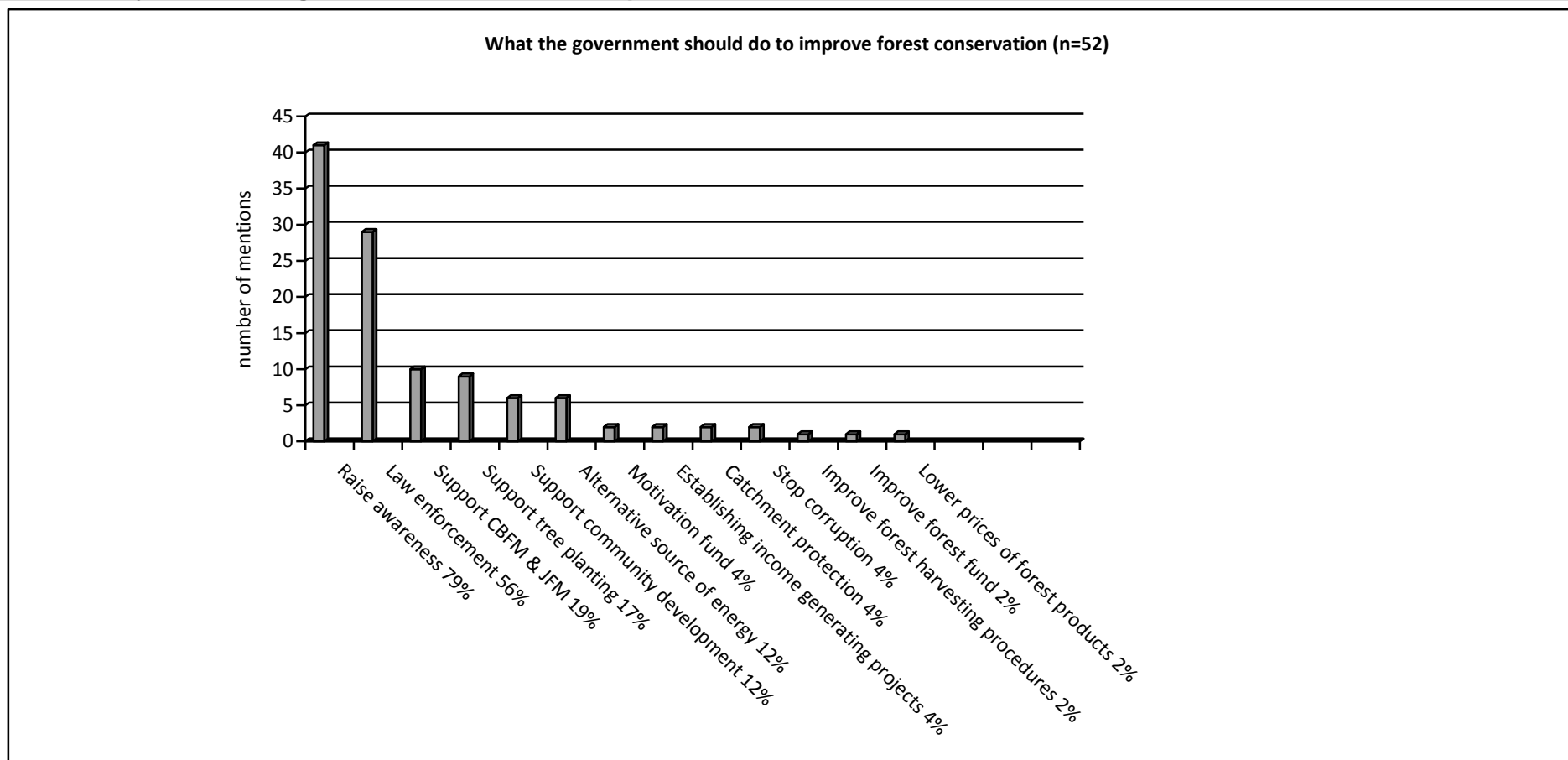


Figure 121 What do you think the government should do to improve forest conservation?

Figure 121 shows that the most commonly mentioned was awareness raising 79% followed by law enforcement 56% of the respondents. 19% of the respondents mentioned supporting communities to implement CBFM and JFM, 17% mentioned support tree planting, 12% mentioned support community development and other source of energy. Catchment protection, stopping corruption, establishment of income generating projects and motivation of forest staff were mentioned by 4%. Improvement of harvesting procedures, improve forest fund and lowering the forest products prices were mentioned by only 2%.

Q. What kind of information would you like to receive in relation to environment/forest conservation?

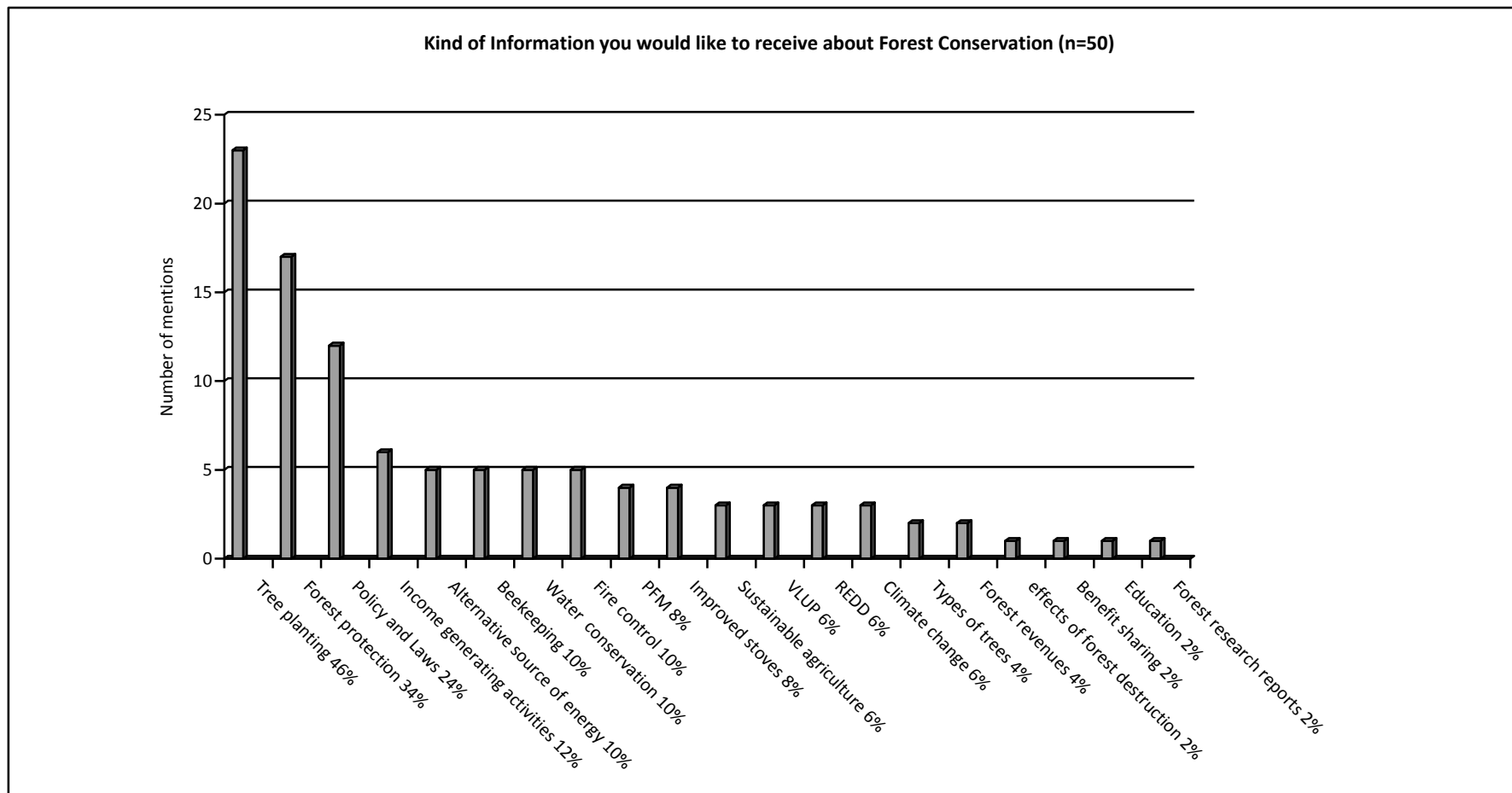


Figure 122 What Kind of Information would you like to receive in relation to Forest conservation?

Figure 122 shows that tree planting was commonly mentioned by about 46% of the respondents followed by forest protection 34%. Policy and laws 24%, IGAs 12%, alternative source of energy, Beekeeping, Water conservation and fire control 10%, Improved stoves and PFM 8%, village land use planning, sustainable agriculture, REDD, and climate change 6%. Types of trees and forest revenues 4%, effects of deforestation and forest degradation, benefit sharing, education and forest research reports were mentioned by 2% of the respondents.

Q. How would you like to receive information about these issues?

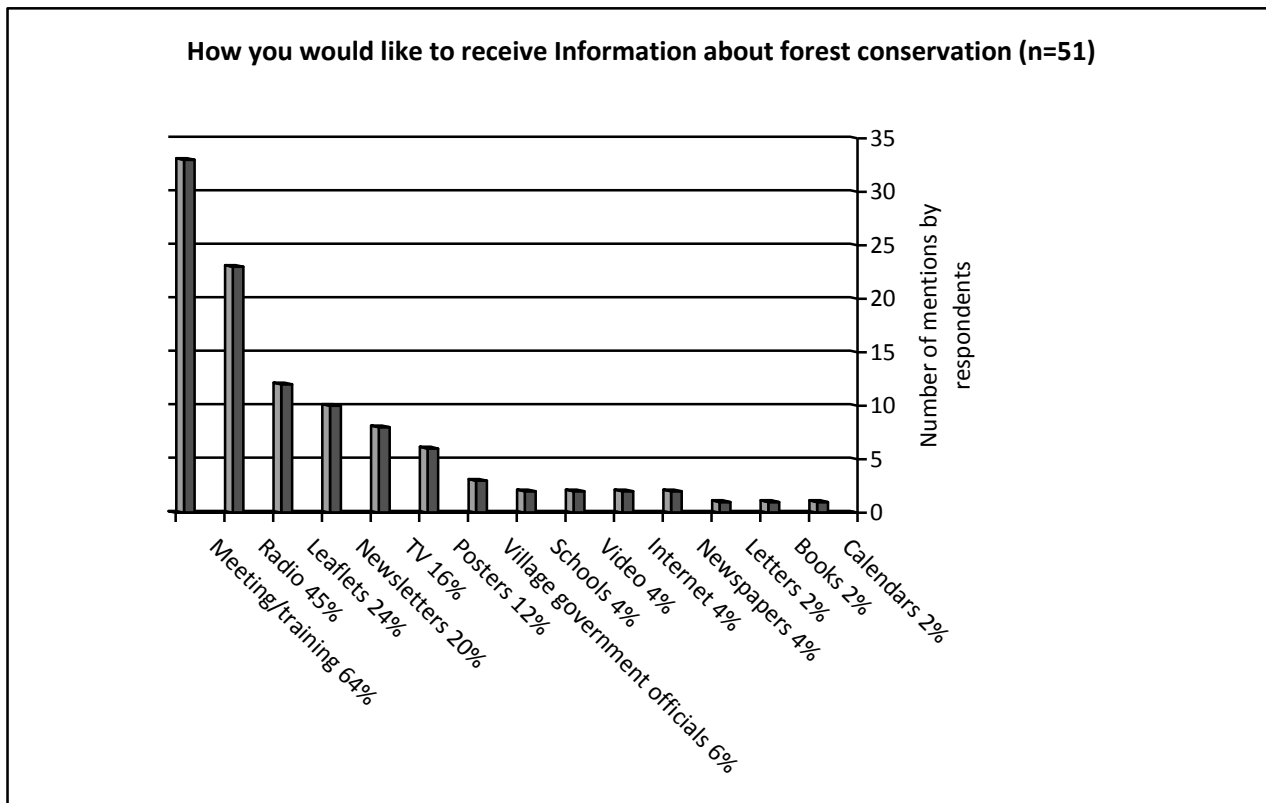


Figure 123 How you would like to receive information about these issues?

Figure 123 shows that meetings/training was the most commonly mentioned (mentioned by 64% of the respondents). Radio was mentioned by 45%, newsletters were mentioned by 20%, TV by 16%, Posters by 12%, village government officials 6%. Schools, Video, internet and newspapers were mentioned by 4%, Books, letters and calendars were mentioned by only 2% of the respondents.

Q. What are your preferred television stations?

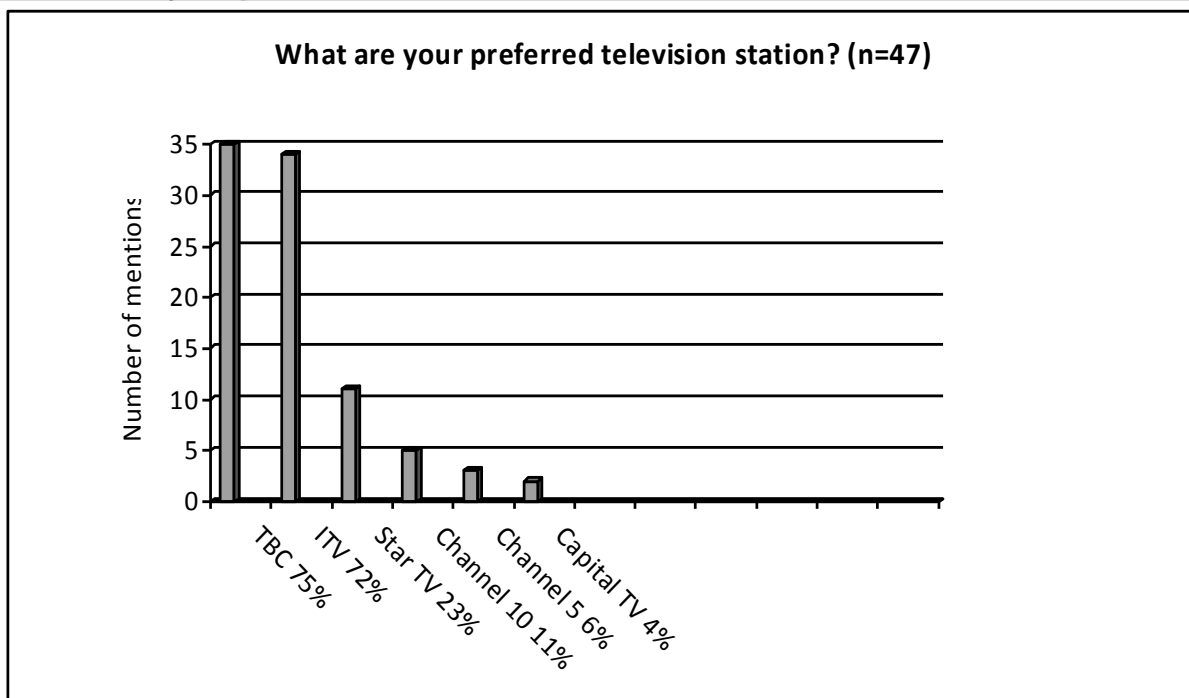


Figure 124 What are your preferred Television Stations?

Figure 124 shows that the most commonly mentioned television station was TBC by 75% of respondents followed by ITV by 72%. 23% mentioned S, 14% Star TV, Channel 10 mentioned by 11%, Channel 5 by 6% and Capital TV was mentioned by 4% of respondents. In 2004, the most commonly mentioned was Independent Television (ITV) by 100% followed by TVT 85%, Star TV 38%, Channel 10 by 31%, BBC 25% and CNN 25%

Practice

Q. Have you participated in any awareness raising events or training sessions related to forest conservation in the last 5 years?

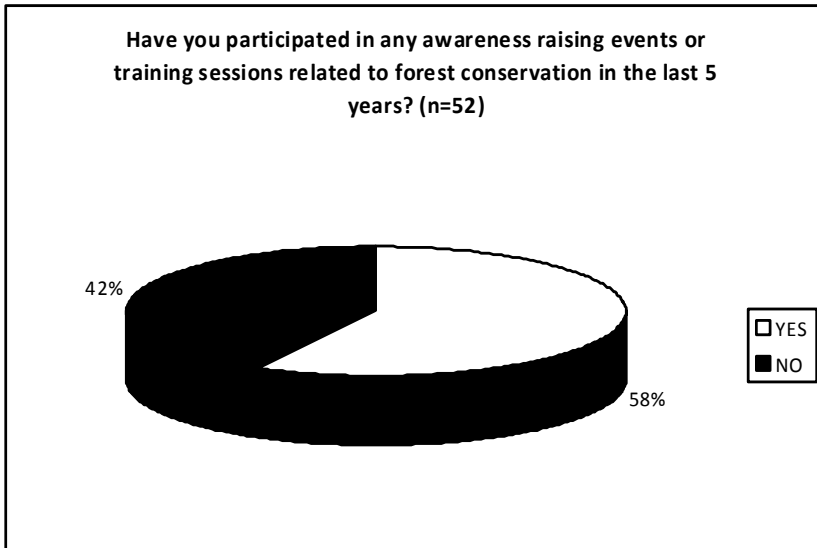


Figure 125 Have you participated in any awareness raising events or training sessions related to forest conservation in the last 5 years?

Figure 125 shows that 58% of the respondents have participated in the awareness raising or training sessions related to forest conservation in the last five years whereas about 42% said they had not.

Q. Are there any activities being undertaken in your area to prevent or organize control of forest fires?

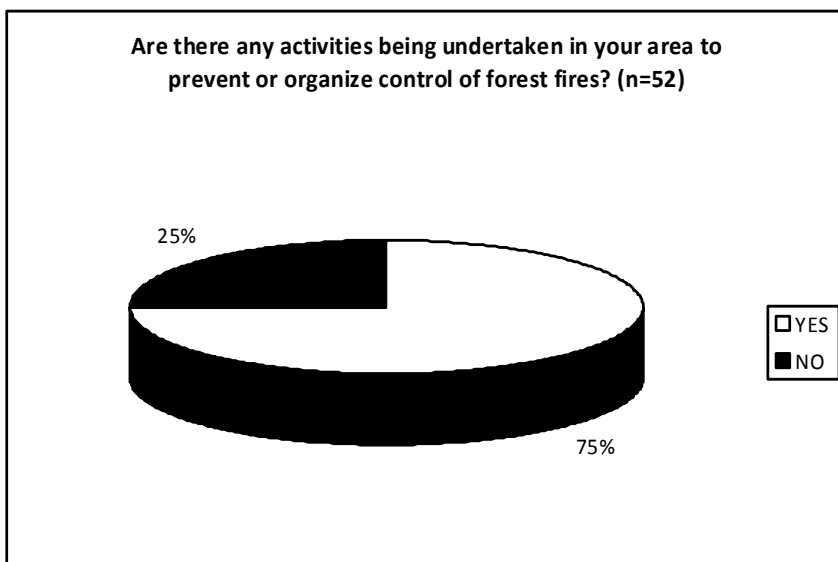


Figure 126 Are there any activities being undertaken in your area to prevent or organize control of forest fires?

Figure 126 shows that 75% of the respondents stated that there are activities being undertaken in their area to prevent or organize control of forest fires whereas 25% stated that no activities were being implemented.

QUESTIONS ON PRACTICE FOR TEACHERS

Q. Have you received any training on integrating environmental education into your teaching?

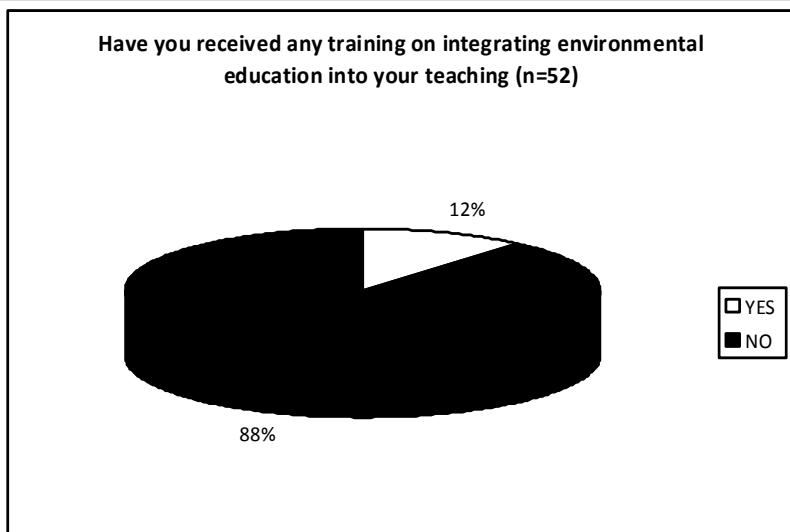


Figure 127 Have you received any training on integrating environmental education into your teaching?

Figure 127 shows that 12% of the respondents agreed that they have received training on integrating EE into their teaching whereas 88% said no.

Q. Does your school promote environmental education?

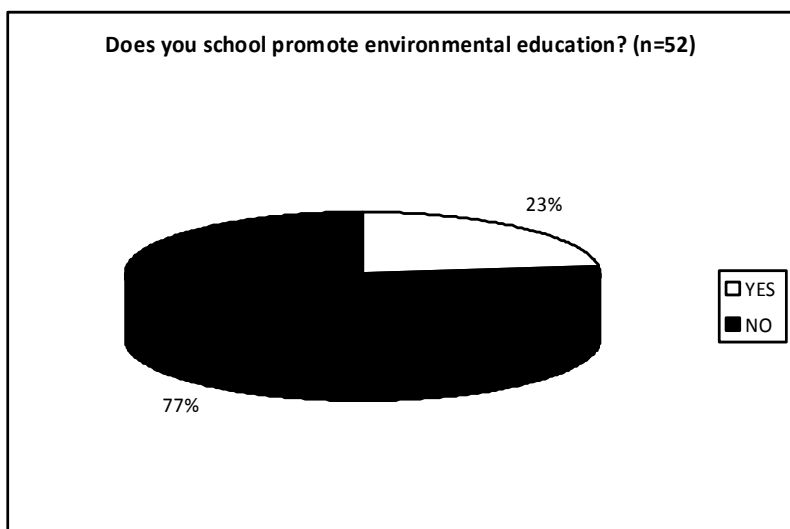


Figure 128 Does your school promote environmental education?

Figure 128 shows that 23% of the respondents were promoting environmental education in their school whereas 77% were not.

Q. What does this involve?

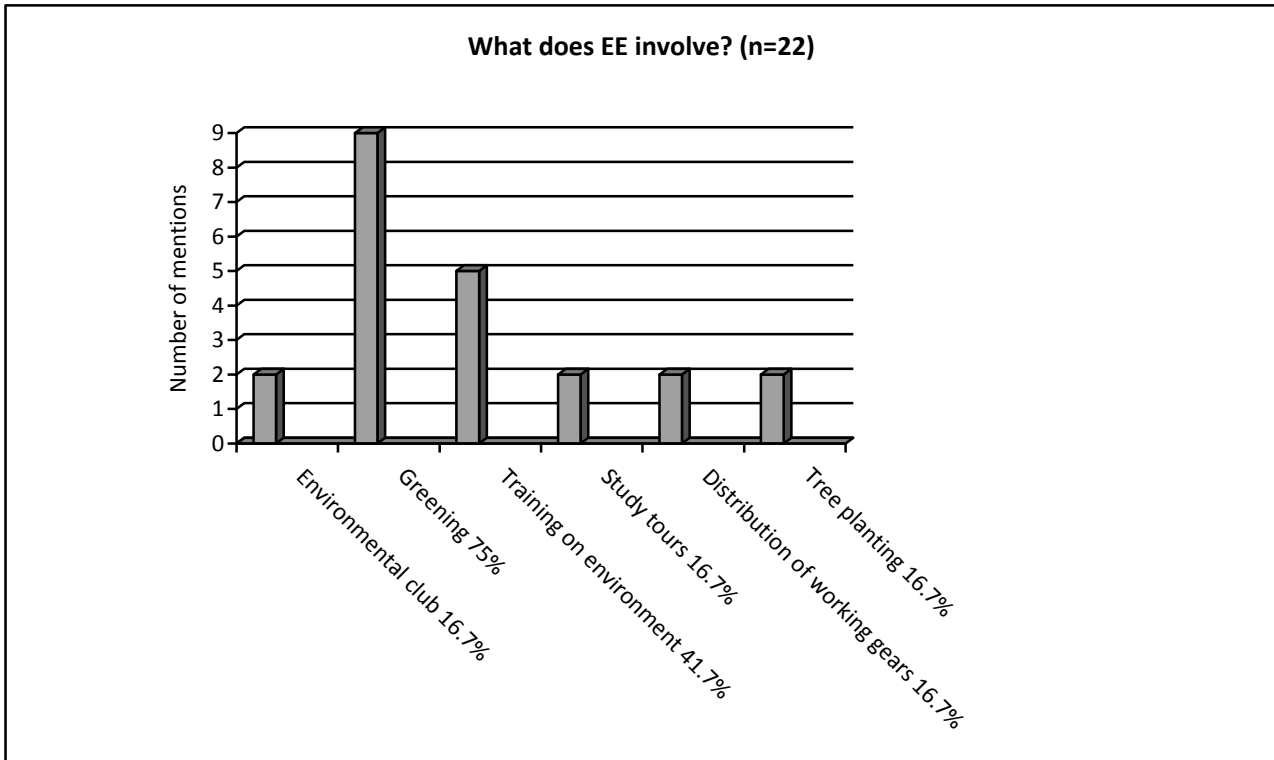


Figure 129 What environmental education activities does your school do?

Figure 129 shows that 75% of the respondents mentioned school greening activities, 41.7% mentioned Teaching about environment, whereas 16.7% mentioned environmental clubs, field visit to the forests or natural areas, distribution of awareness raising materials and tree planting

Questionnaire

3.13 District Staff level

Q. Have you heard of the Eastern Arc Mountains?

Kilindi District – District staff level

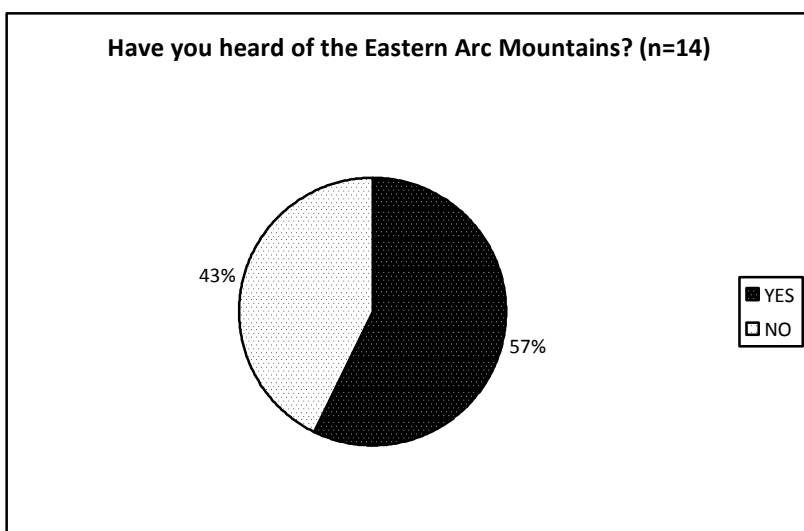


Figure 130 Kilindi - Have you heard of the Eastern Arc Mountains?

Figure 130 shows that 57% of the respondents have heard of the Eastern Arc Mountains.

Kilolo District – District staff level

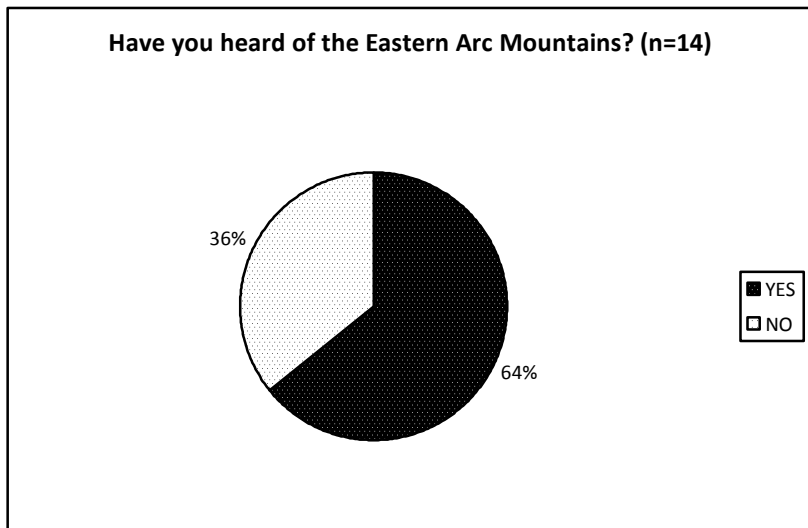


Figure 131 Kilolo - Have you heard of the Eastern Arc Mountains?

Figure 131 shows that 64% of the respondents have heard of the Eastern Arc Mountains while 36% have not.

Kilombero District – District staff level

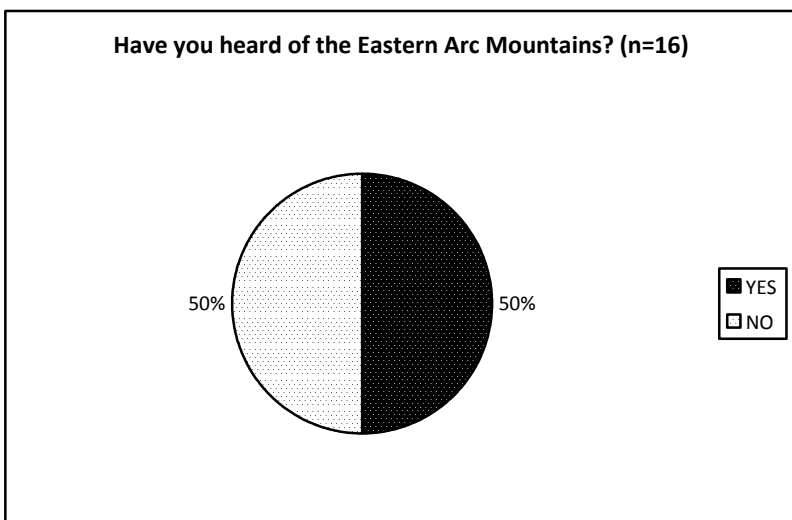


Figure 132 Kilombero - Have you heard of the Eastern Arc Mountains?

Figure 132 shows that 50% of the respondents have heard of the Eastern Arc Mountains.

Mpwapwa District – District staff level

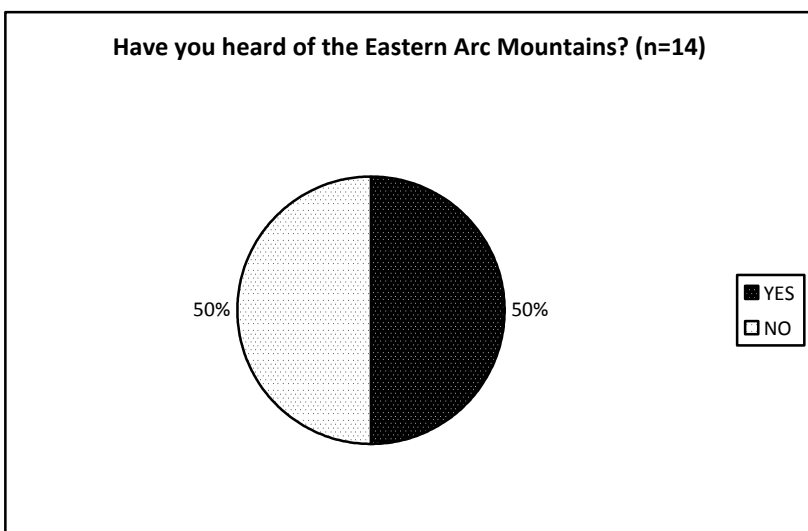


Figure 133 Mpwapwa - Have you heard of the Eastern Arc Mountains?

Figure 133 shows that 50% of the respondents have heard of the Eastern Arc Mountains.

Muheza District – District staff level

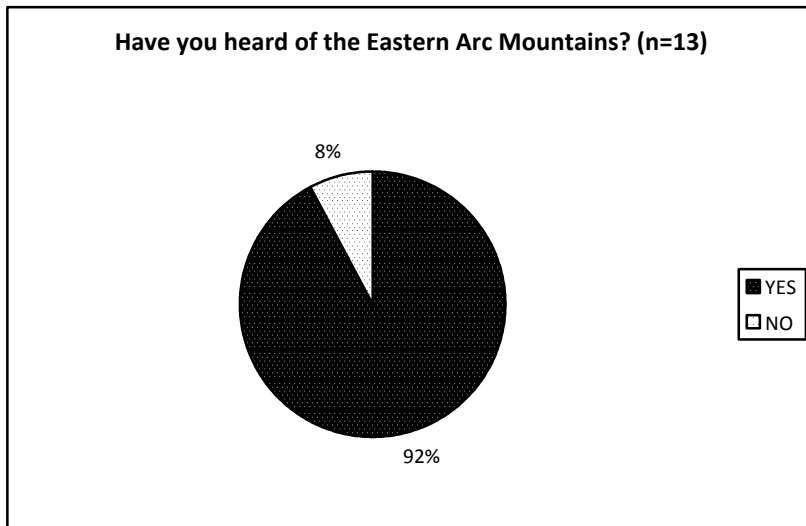


Figure 134 Muheza - Have you heard of the Eastern Arc Mountains?

Figure 134 shows that 92% of the respondents have heard of the Eastern Arc Mountains.

Same District – District staff level

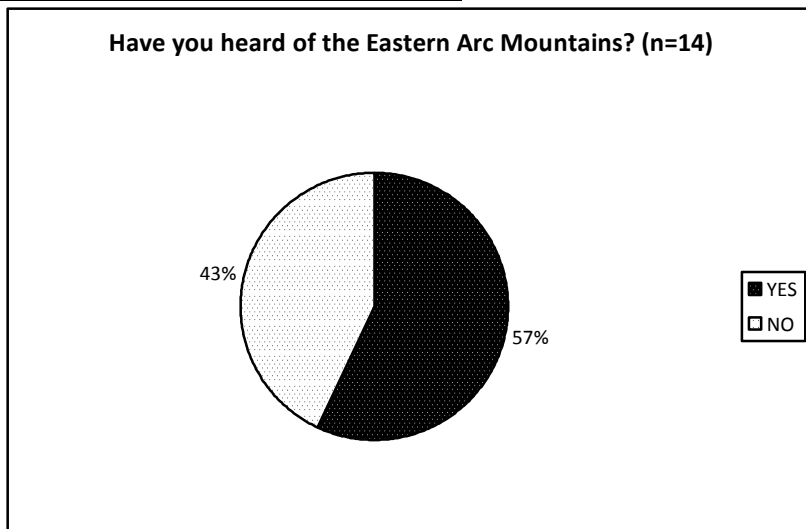


Figure 135 Same - Have you ever heard of the Eastern Arc Mountains?

Figure 135 shows that 57% of the respondents have heard of the Eastern Arc Mountains.

Lindi District – District staff level

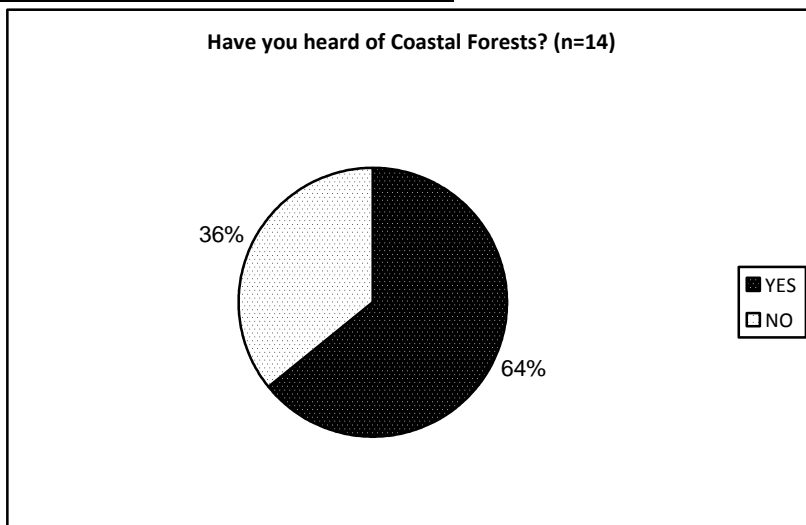


Figure 136 Lindi - Have you heard of the Coastal Forests?

Figure 136 shows that 64% of the respondents have heard of the Coastal Forests.

District staff level - EAM

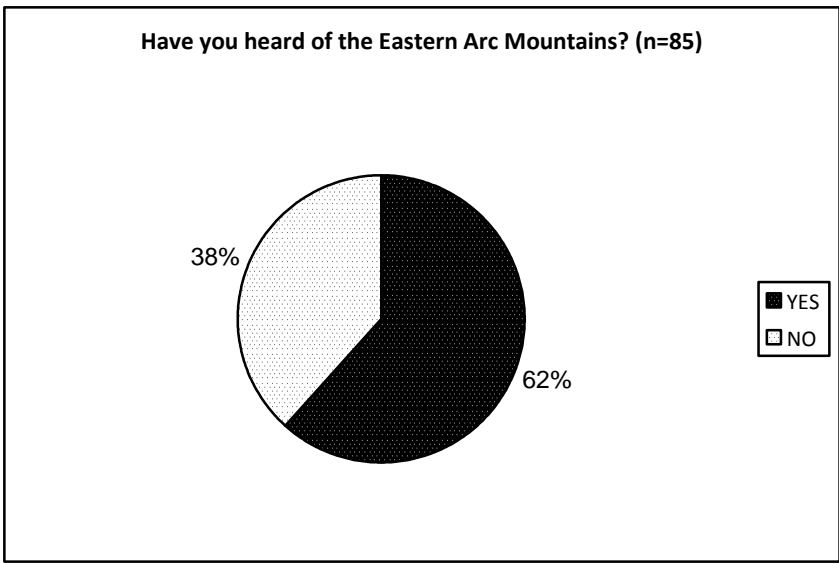


Figure 137 EAM - Have you heard of the Eastern Arc Mountains?

Figure 137 shows that 62% of the respondents from the EAM at district staff level have heard of the Eastern Arc Mountains.

Q. Why are the Eastern Arc Mountain and Coastal Forests important?

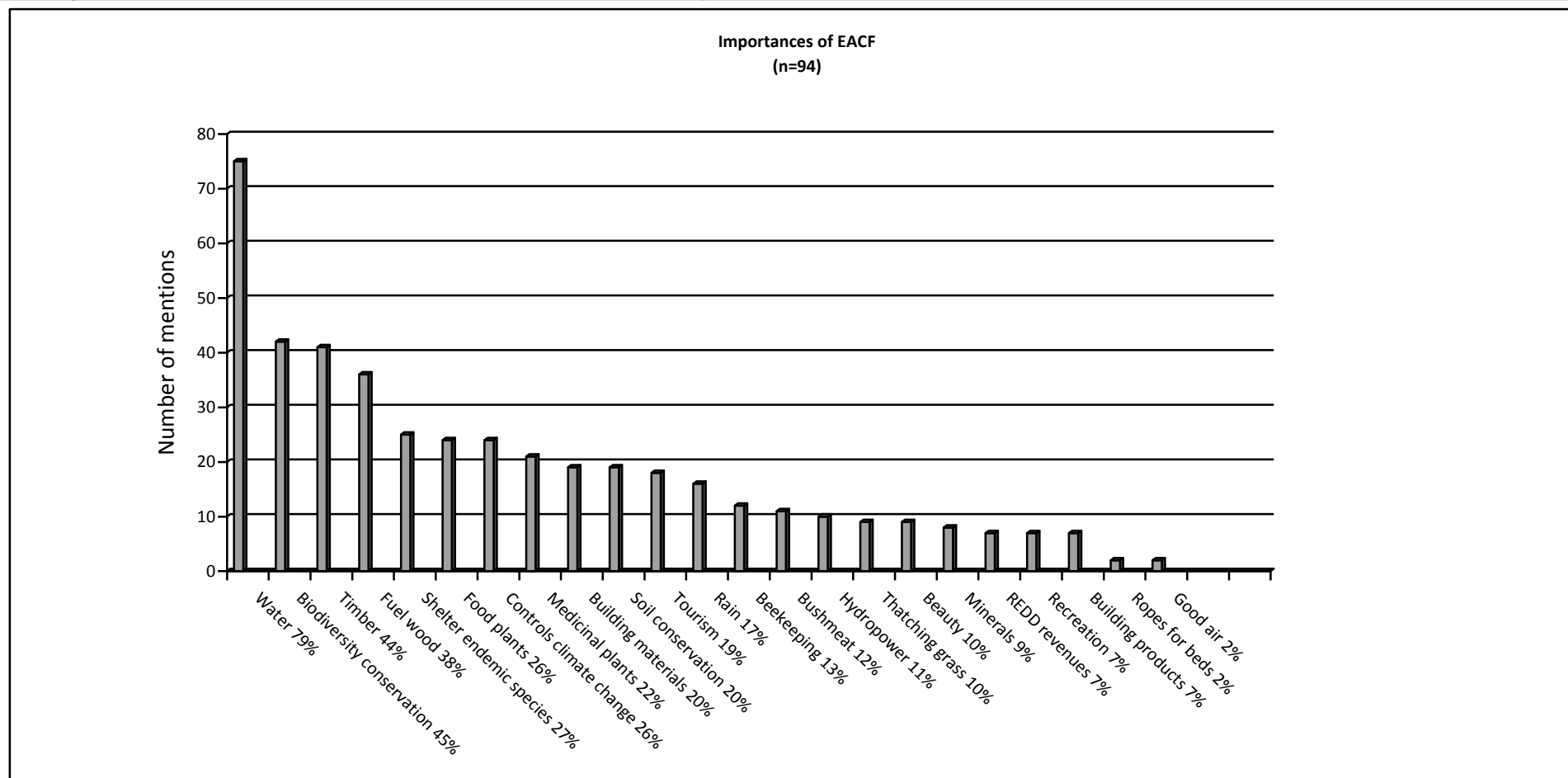


Figure 138 District level – Why are the EACF important?

Figure 138 shows that the most commonly mentioned value was source of water which was mentioned by 79% of respondents followed by biodiversity conservation 45% and timber by 44%. Fuel wood 38%, endemic species 27%, food plants and control of climate change 26%, medicinal plants 22%. Building materials and soil conservation 20%, tourism 19%, rain 17%, beekeeping 13%, bush meat 12%, water for hydropower 11%, thatching grass and beauty products 10%, minerals 9%. REDD revenues, recreation and building products 7% whereas ropes for beds and good air were mentioned by 2% of the respondent

Q. What do you think are the main threats to the EACF and their biodiversity?

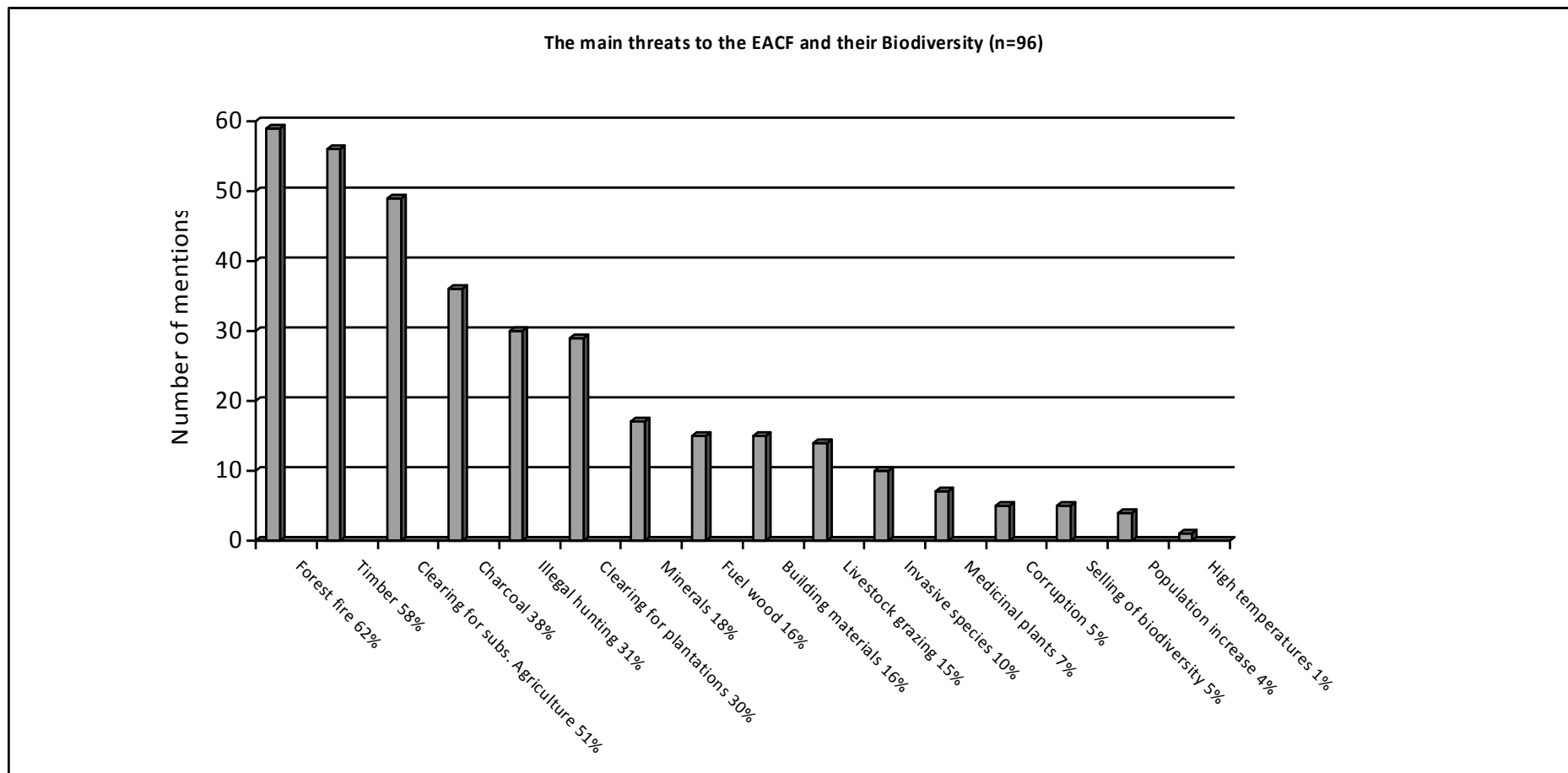


Figure 139 What do you think are the main threats to the EACF and their biodiversity?

Figure 139 shows that the most commonly mentioned threat to the forest and the biodiversity was forest fire by 62% followed by timber 58%. Clearing for subsistence agriculture was mentioned by 51%, charcoal 38%, illegal hunting 31% and clearing for plantations 30%. Minerals 18%, fuel wood and building materials 16%. Livestock grazing 15%, invasive species 10%, medicinal plants 7%, corruption and selling of biodiversity (forest plants and animals) 5%, population increase 4% and high temperatures 1%.

Q. Have you heard of Participatory Forest Management?

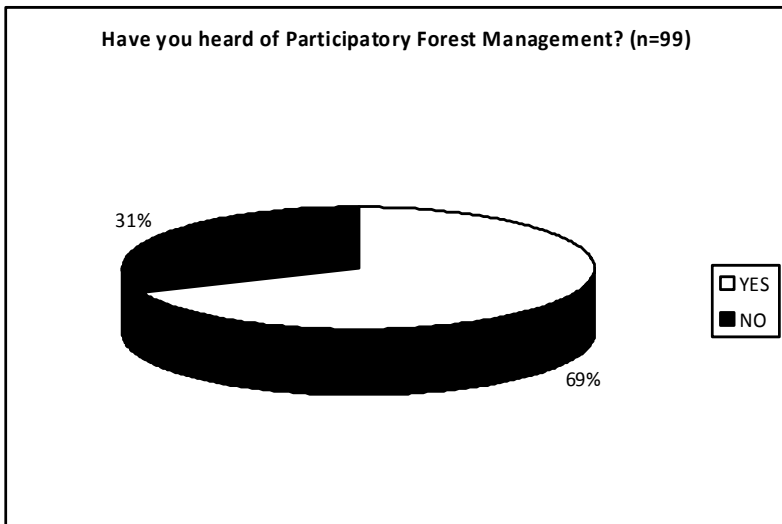


Figure 140 Have you heard of Participatory Forest Management?

Figure 140 shows that 69% of the respondents have heard of PFM whereas 31% had not.

Q. Do you know what Joint Forest Management is?

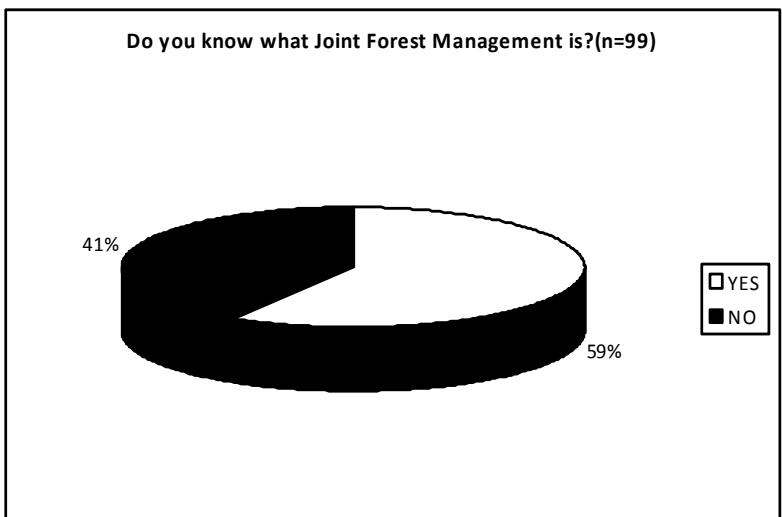


Figure 141 Do you know what Joint Forest Management is?

Figure 141 shows that 59% of the respondents knew the meaning of JFM whereas 41% did not.

Q. Have you heard of Village Forest Reserves?

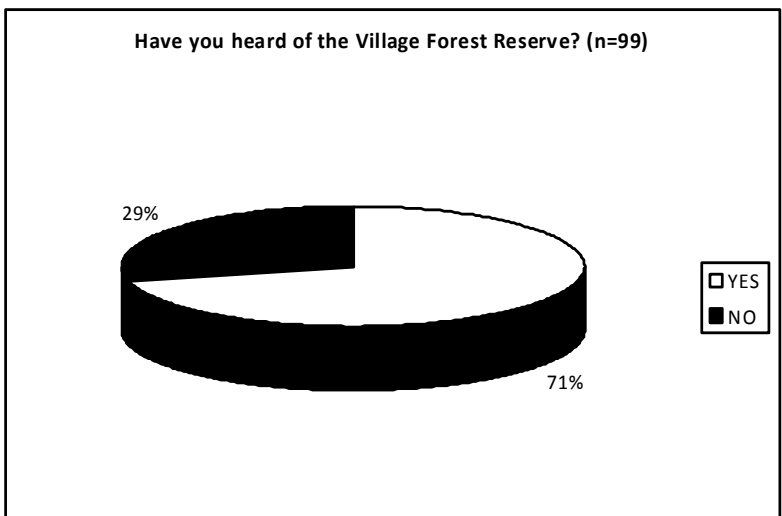


Figure 142 Have you heard of Village Forest Reserves?

Figure 142 shows that 71% of the respondents have heard of the Village Forest Reserve whereas 29% had not.

Q. Have you heard of Climate change?

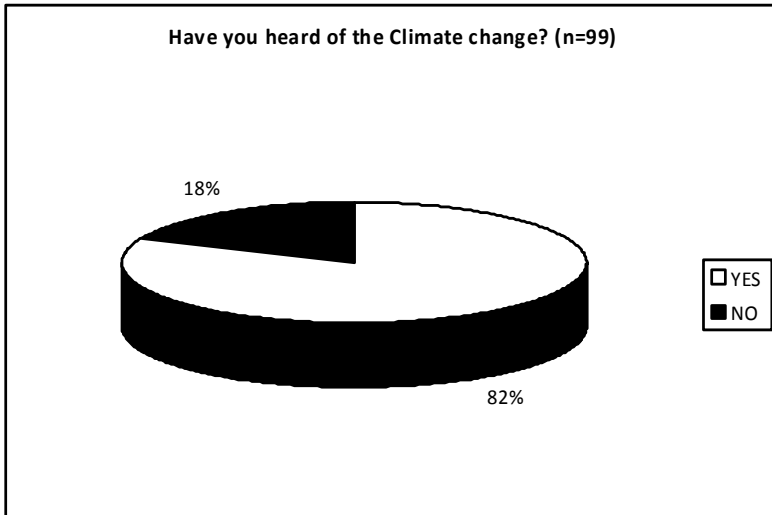


Figure 143 Have you heard of Climate change?

Figure 143 shows that 82% of the respondents have heard of the climate change whereas 18% had not.

Q. Have you heard of REDD?

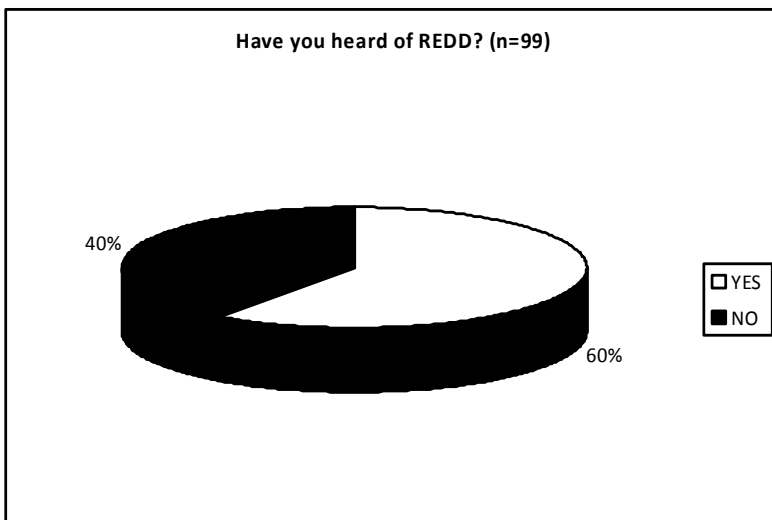


Figure 144 Have you heard of REDD?

Figure 144 shows that 60% of respondents have heard of the REDD whereas 40% had not.

Attitude

Q. Do you think that it is a good thing to conserve forests?

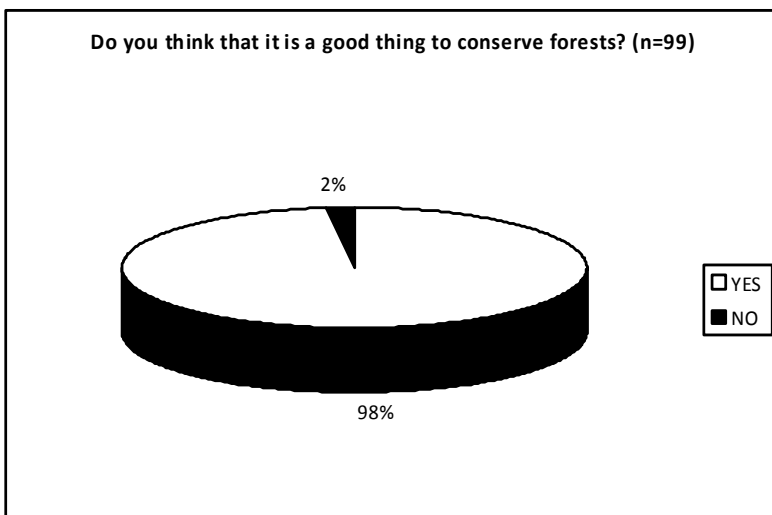


Figure 145 Do you think that it is a good thing to conserve forests?

Figure 145 shows that 98% of the respondents agreed that it is a good thing to conserve forests whereas 2% said no.

Q. What do you think the government should do to improve forest conservation?

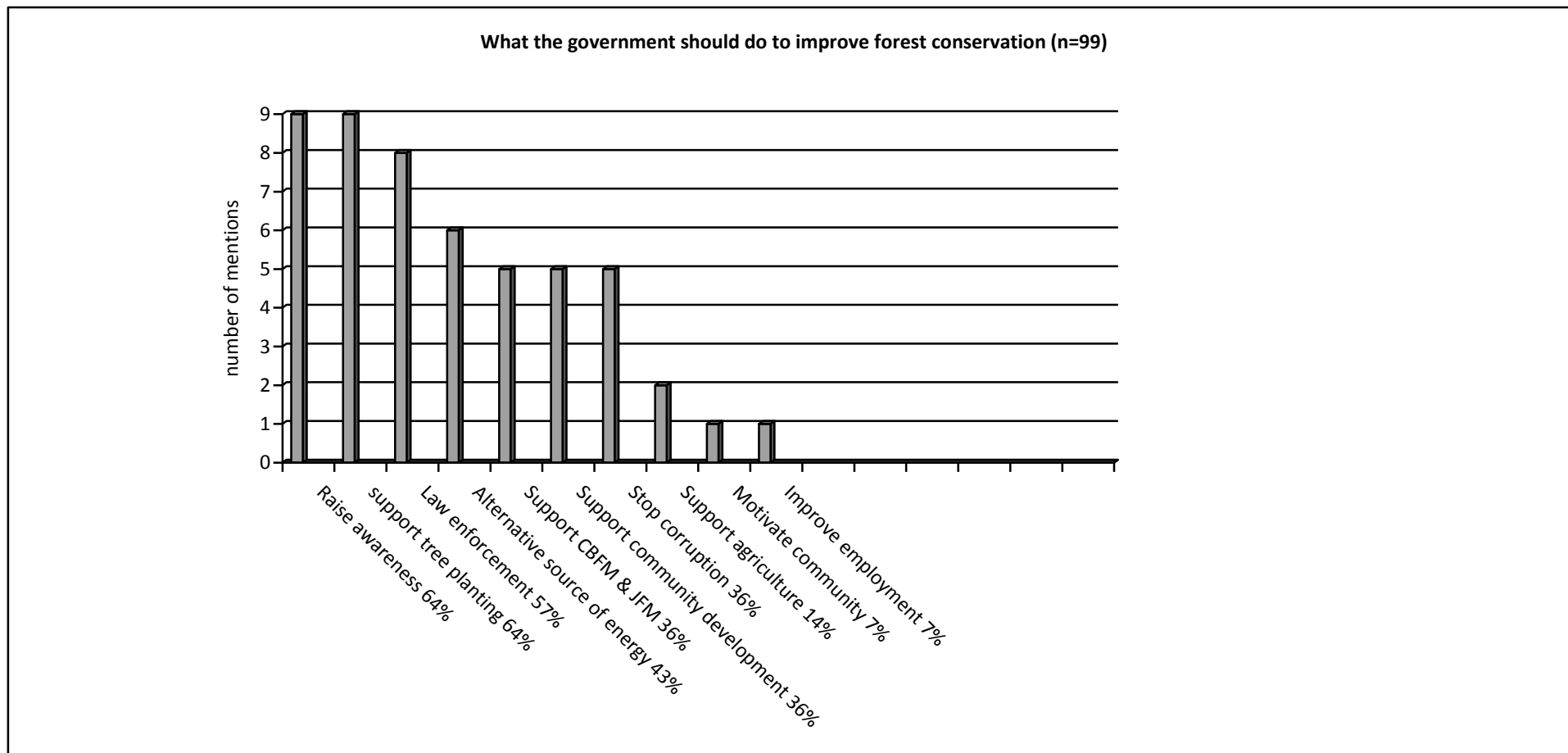


Figure 146 What do you think the government should do to improve forest conservation?

Figure 146 shows that the most commonly mentioned were awareness raising and tree planting 64% followed by law enforcement 57% of the respondents. Alternative source of energy 43%, 36% of the respondents mentioned supporting communities to implement CBFM and JFM, community development and stopping corruption. Supporting agriculture was mentioned by 14% whereas 7% of respondents mentioned improving employment and to motivate the communities involved in forest conservation.

Q. Have you participated in any awareness raising events or training sessions related to forest conservation in the last 5 years?

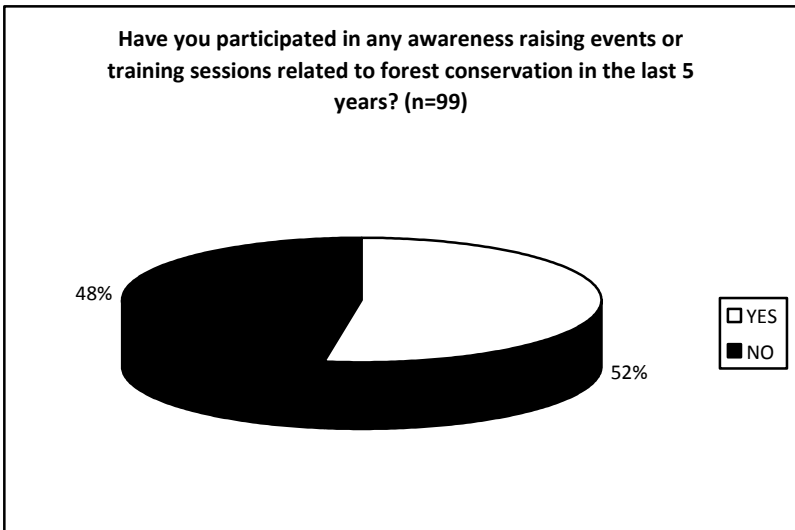


Figure 147 Have you participated in any awareness raising events or training sessions related to forest conservation in the last 5 years?

Figure 147 shows that only 52% of the respondents have participated in the awareness raising or training sessions related to forest conservation in the last five years and the majority about 48% said they had never participated

Q. What kind of information would you like to receive in relation to environment/forest conservation?

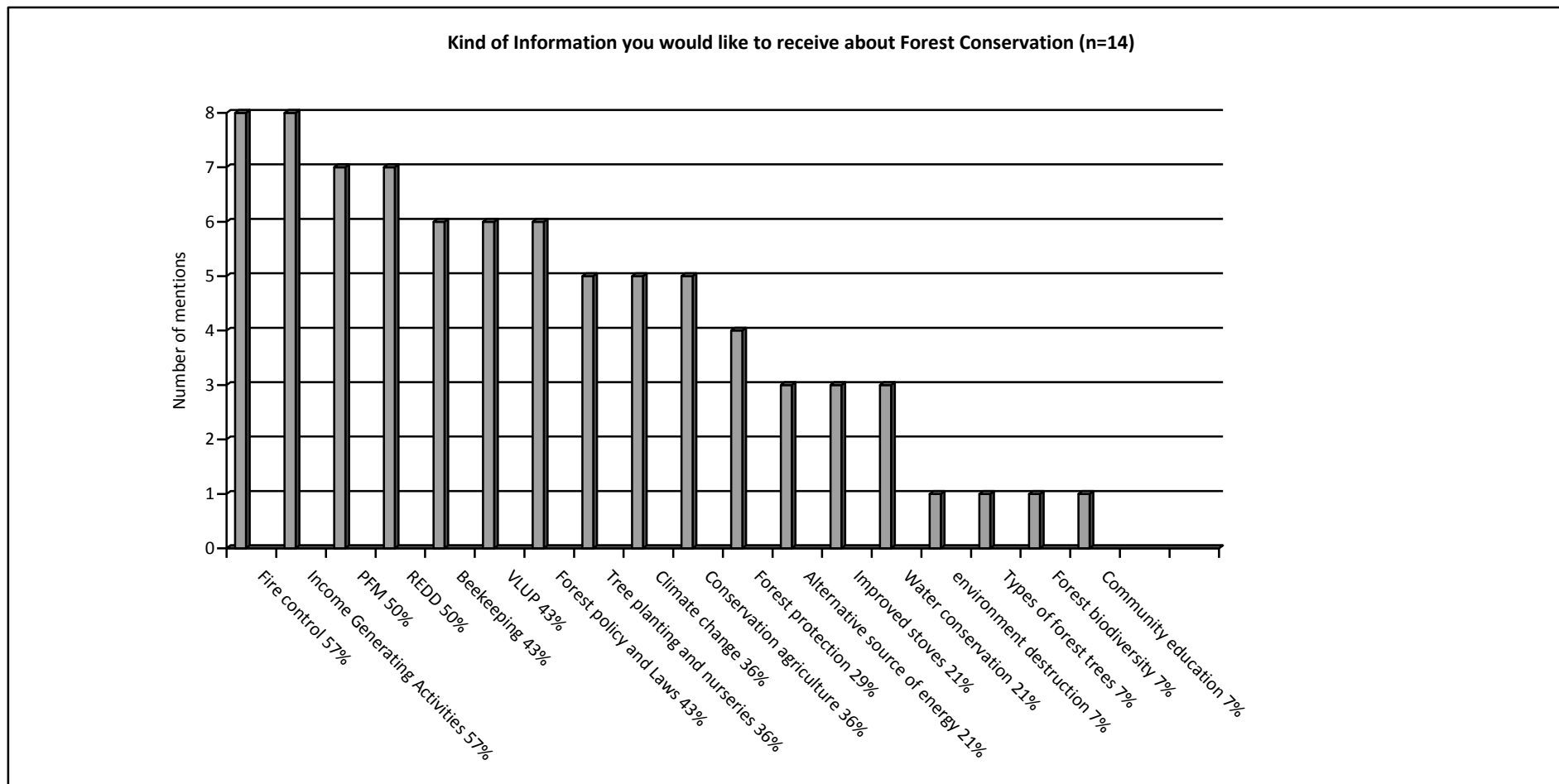


Figure 148 What kind of information would you like to receive in relation to environment/forest conservation?

Figure 148 shows that fire control and IGAs were commonly mentioned by about 57% of the respondents followed by PFM and REDD 50%. Beekeeping, VLUP and forest policy and laws were mentioned by 43%. Conservation agriculture, climate change and tree planting and tree nurseries 36%, forest protection 29%, 21% mentioned alternative source of energy, improved stoves, and water conservation. Community education, forest biodiversity, types of forest trees and environmental destruction effects 7%.

Q. How would you like to receive information about these issues?

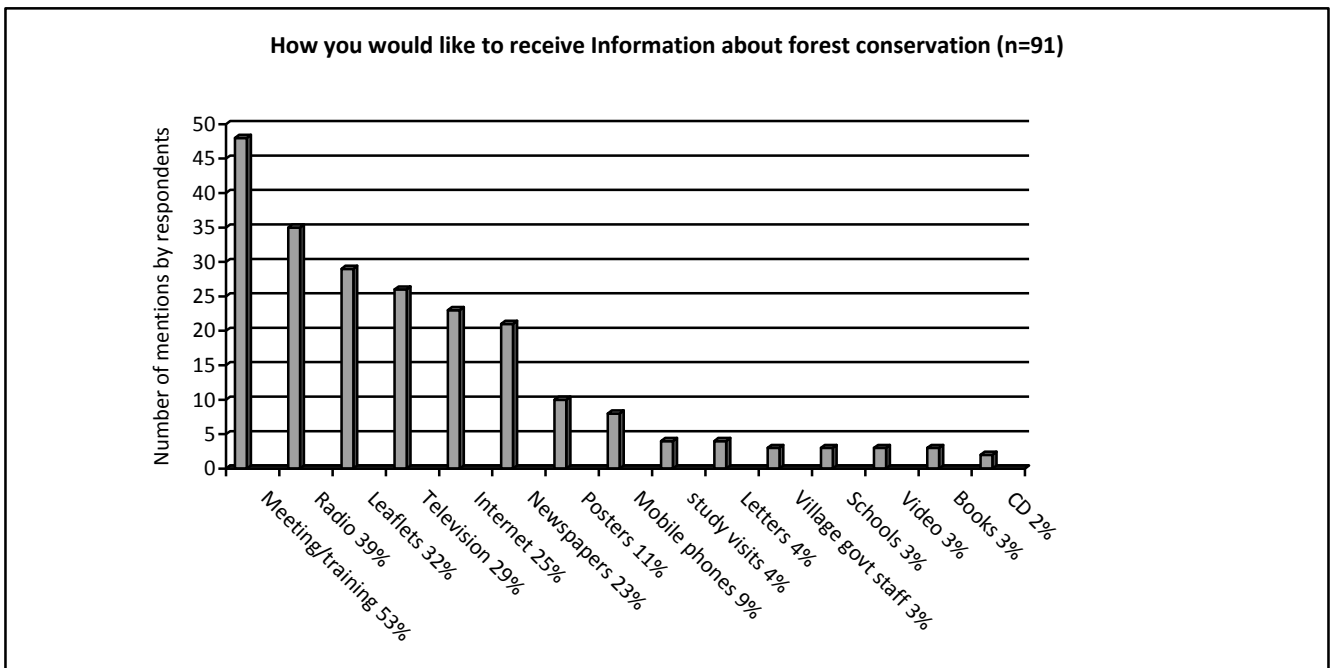


Figure 149 How you would like to receive information about forest conservation?

Figure 149 shows that meetings/training was most commonly mentioned by 53% of the respondents. Radio was mentioned by 39%, TV by 29%. Internet by 25%, newspapers 23%. Posters 11%. Mobile phone 9%. Study visits and letters by 4%. Village government officials, schools, Video and books were mentioned by 3%. CD was mentioned by 2% of respondents.

Q. What are your preferred television stations?

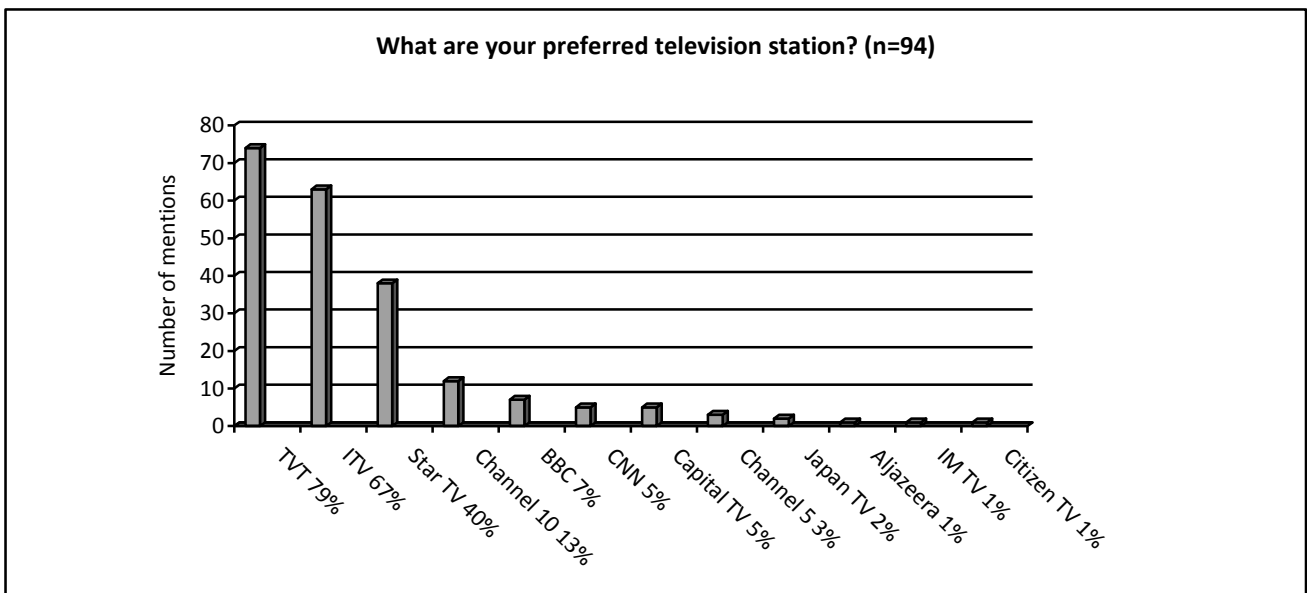


Figure 150. What are your preferred television stations?

Figure 150 shows that the most commonly mentioned television station was TBC by 79% of respondents followed by ITV by 67%. Star TV 40%, channel 10 by 13%, BBC 7%, CNN and Capital TV 5%, channel 5 by 3% Japan TV 2% whereas Aljazeera, IM TV and Citizen TV were mentioned by 1% of the respondents.

Practice

Q. Do you currently undertake any awareness raising activities on environmental issues?

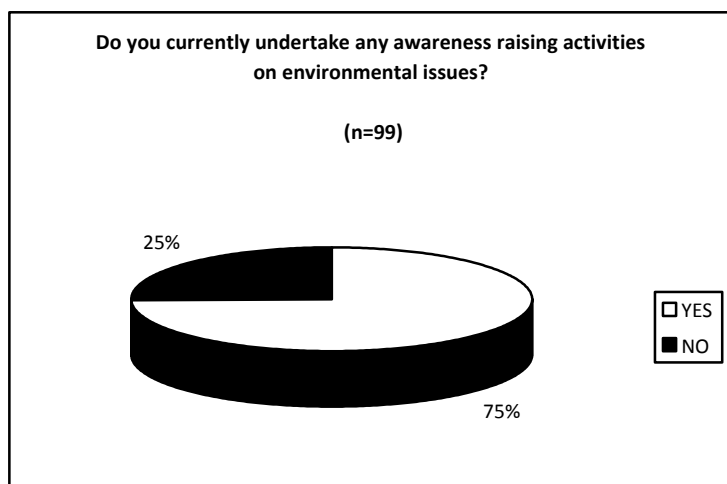


Figure 151 Do you currently undertake any awareness raising activities on environmental issues?

Figure 151 shows that 75% of the respondents were undertaking awareness raising activities whereas 25% are not.

Q. Can you name the NGOs or CBOs operating in your District on forest, water, environment or community development activities?

Table 3 List of NGOs and CBOs working in the district on forest, water, environment or Community development

	District	NGO/CBO
1	Same	CARE International CARITAS Same FLORISTA HEIFER International Ingeniera Sin Fronteras (ISF) / ONGAWA MAKINDUBE APD MAKOMBO ADP Ruvu Muungano DAP SAIPRO Seliani Arusha SEMICAO SUA – SWMRG UTAFITI West Kilimanjaro VECO
2	Mpwapwa	AMANI Group DONET (Dodoma Network) HEADCO KENET (Kiborian Environmental Network) MASHALAA Group MKIMAEG MPWAGRISO Mpwapwa Kiboriani Mazingira MUENET TFCG (Tanzania Forest Conservation Group) TUINUANE Group UPENDO UWAMAKI UYANJONASI

	District	NGO/CBO
		WAMMA
3	Muheza	CARE International EAMCEF JUHUDI Mali Hai Clubs TaTEDO TFCG Tujikwamue WWF
4	Kilombero	CAMFED CODET EAMCEF Green Resources IEGD (Ifakara Environment and Community Development) KIWAUKI KVRS KVTC Kilombero Valley Teak Company LKEMP MAI (Mazingira Institute) MSABI Plan International SHISHIMO SUA TFCG
5	Kilolo	CEFA CONCERN IDYDC KILOWASA MAWAKI New Forest TFCG WWF
6	Lindi	AGA KHAN CARE International CONCERN LINGONET LISAWA MJUMITA NYEDACO PEMWA TFCG WWF
7	Kilindi	EMAYO ENVIROCARE HAKIARDHI OXFARM TAYODEA World Vision

Q. Are there any activities being undertaken in your area to prevent or organize control of forest fires?

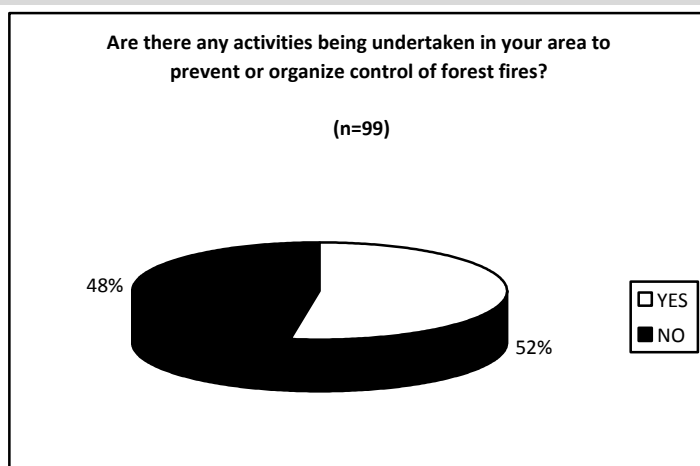


Figure 152 Are there any activities being undertaken in your area to prevent or organize control of forest fires?

Figure 152 shows that 52% of the respondents agreed that there are activities to control or prevent forest fires whereas 48% said there are no activities.

Q. Do you have any programs to promote environmental education in schools in your area?

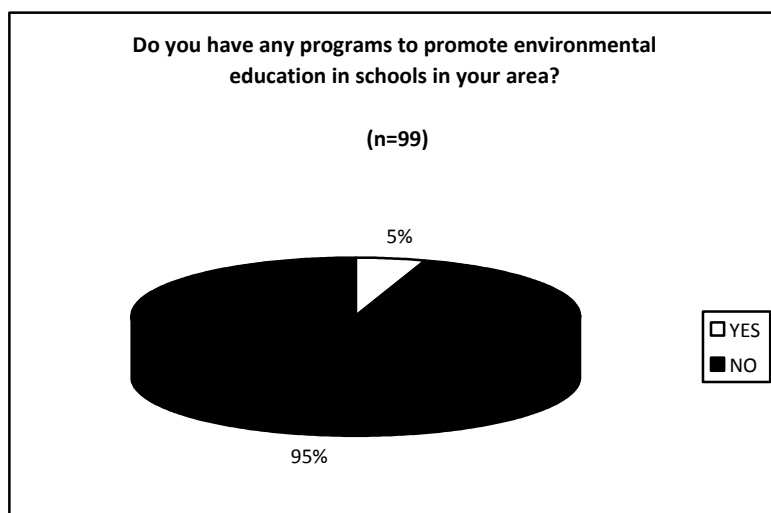


Figure 153 Do you have any programs to promote environmental education in schools in your area?

Figure 153 shows that only 5% of the respondents had programs to promote environmental education in schools, however 95% had no programs.

3.2 Focus Group Discussions

The following questions were discussed with groups of young and old women and men and a mixed age group of men separately in each of the 14 villages visited. The data given here summarizes the responses for each group that ranged from 6 to 10 people.

The result are not individual’s opinions but a group consensus. All the villages visited were adjacent to the Eastern Arc Mountain and Coastal forests.

Q. Can you list the stakeholders who live in or visit or work in your village?

Table 4 List of stakeholders living in, visiting or working in the villages of the seven districts

S/N	Name of the organization	Frequency
1	District Land, Environment and Natural Resources Office	27
2	Tanzania Forest Conservation Group	14
3	Tanzania National Parks	12

S/N	Name of the organization	Frequency
4	MJUMITA	6
5	Amani Nature Reserve	4
6	Delimundos	4
7	MSABI	4
8	Plan International	4
9	Aga Khan Foundation	3
10	AMSHA	3
11	CEFA	3
12	DALPS	3
13	Eastern Arc Mountains Conservation Endowment Fund	3
14	Kilombero Valley Teak Centre (KVTC)	3
15	MAWAKI	3
16	SIEMENS	3
17	World Vision	3
18	COEL	2
19	FINCA	2
20	HIAP	2
21	KIVEDO	2
22	New Forest	2
23	TASAF	2
24	TUNAJALI	2
25	Village Natural Resources Committee	2
26	WWF	2
27	AFRICARE	1
28	CAMFED	1
29	CARE International	1
30	CARITAS	1
31	District Agriculture	1
32	District Community development	1
33	District Education Office	1
34	District Health	1
35	District Water dept	1
36	FIDE	1
37	ICF	1
38	Ifakara Health Institute	1
39	KIHO	1
40	Kilombero Nature Reserve	1
41	KIWAKUKI	1
42	MATI Mlinagano	1
43	PADEP	1
44	Peace Corps Tanzania	1
45	RAMSAR	1
46	SHIDEFA	1
47	STEEF	1

S/N	Name of the organization	Frequency
48	TAFORI	1
49	TANROADS	1
50	TATeDO	1
51	Udzungwa Ecological Monitoring Centre	1
52	WFP	1

Q. Can you describe the stakeholders who in your opinion play an important role in promoting forest conservation and can you describe their role in supporting forest conservation?

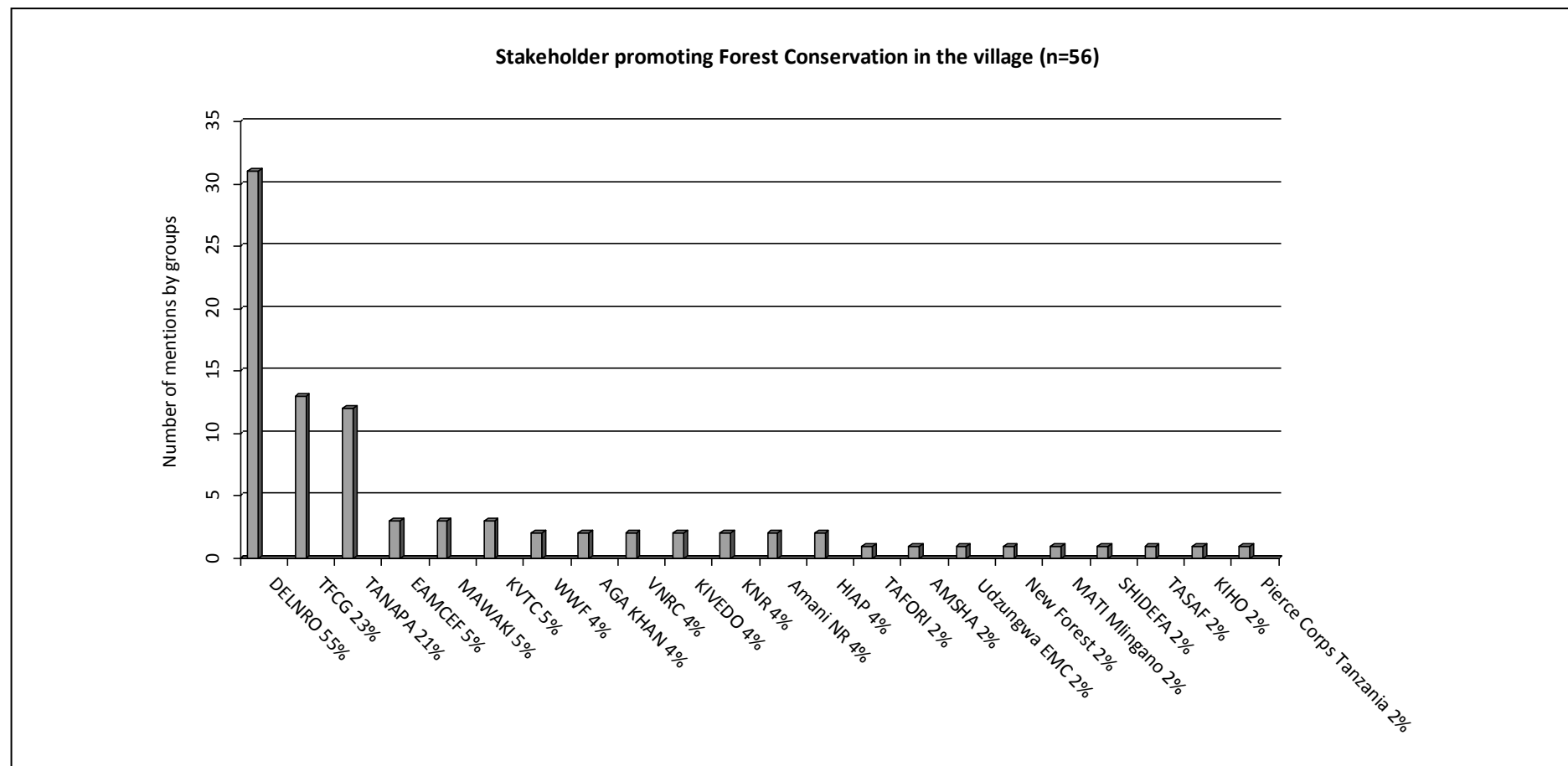


Figure 154 Can you describe the stakeholders who in your opinion play an important role in promoting forest conservation and can you describe their role in supporting forest conservation?

Figure 154 shows that the most commonly mentioned stakeholder promoting forest conservation was District Land, Environment and Natural Resources Office by 55% followed by TFCG 23%. TANAPA 21%, EAMCEF, KVTC and MAWAKI 5%. WWF, AGA KHAN, VNRC, KIVEDO, Kilombero Nature Reserve, Amani Nature Reserve and HIAP 4%. TAFORI, AMSHA, Udzungwa Ecological Monitoring Centre, New Forest, MATI Mlingano, SHIDEFA, TASAF, KIHO and Pierce Corps Tanzania were mentioned by 2% of the groups

Q. Can you describe the stakeholders who in your opinion are involved in deforestation or forest degradation?

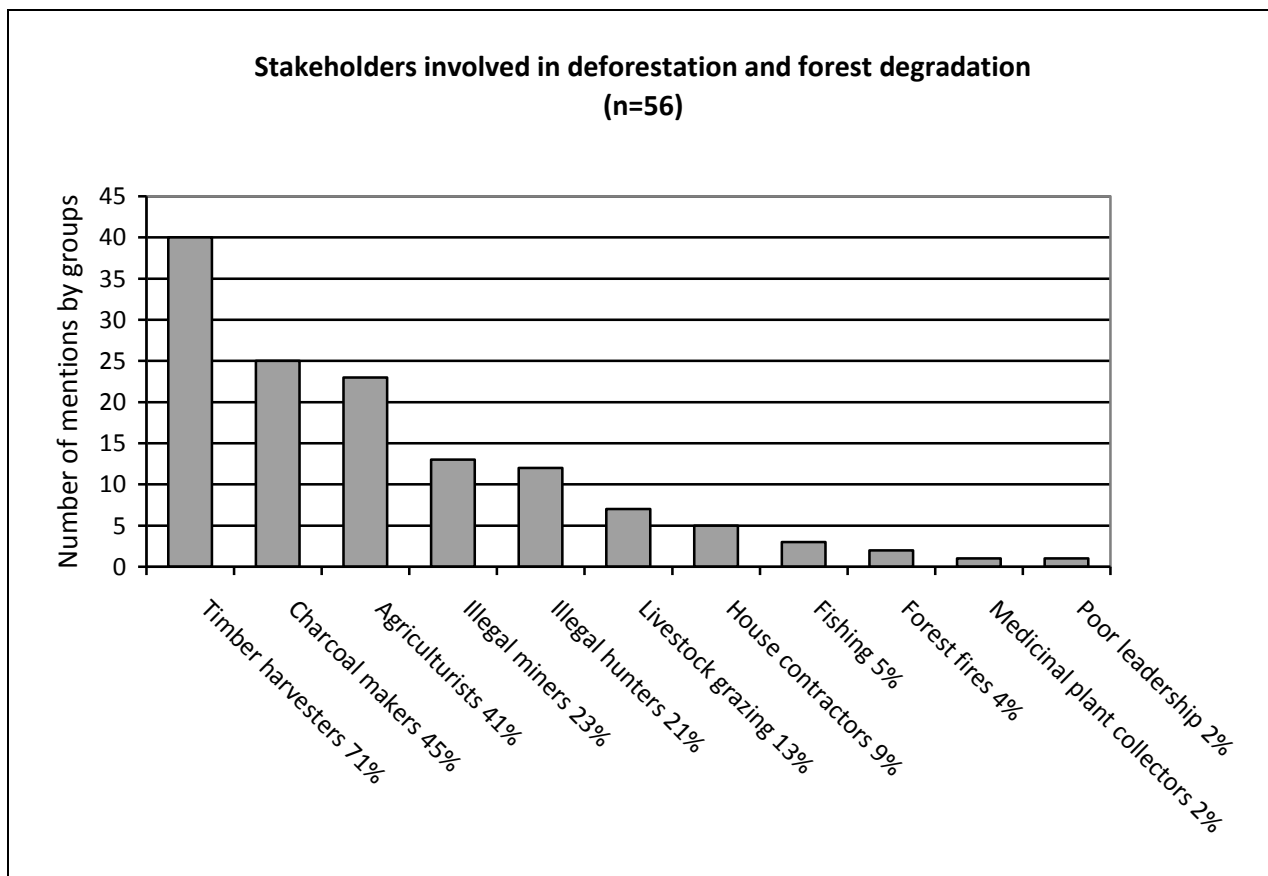


Figure 155 Can you describe the stakeholders who in your opinion are involved in deforestation or forest degradation?

Figure 155 shows that the most commonly mentioned stakeholders involved in deforestation and forest degradation were timber harvesters 71% followed by charcoal makers 45%, agriculturists 41%, illegal miners 23%, illegal hunters 21%, livestock grazing 13% and house contractors 9%. Fishing 5%, forest fires 4%, medicinal plant collectors and poor leaders 2%.

Q. What are your preferred ways of receiving information?

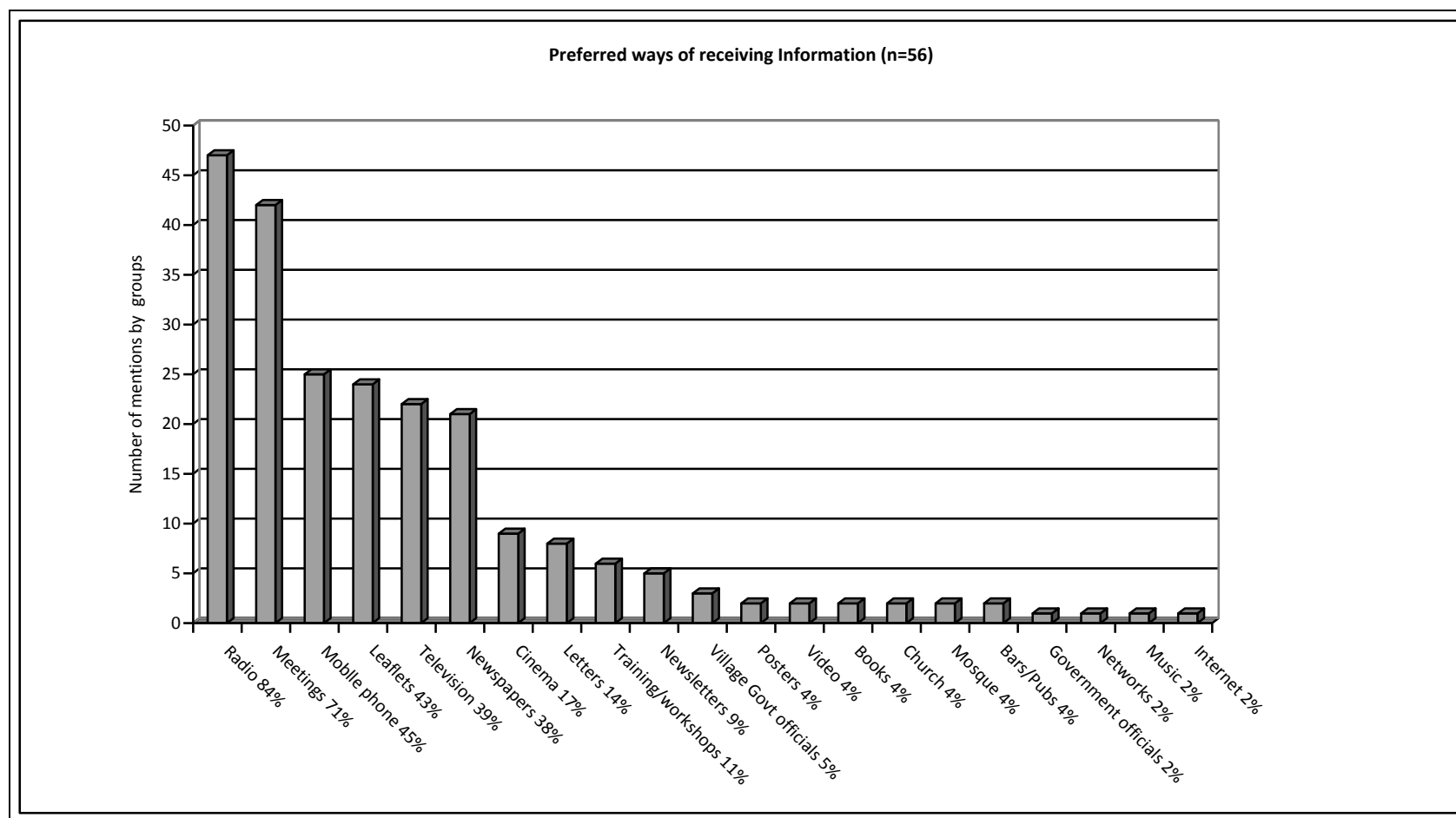


Figure 156 What are your preferred ways of receiving information?

Figure 156 shows that for the FGD participants at village level the most commonly mentioned way of receiving information was radio by 84% followed by meetings 71%. Mobile phones 45%, leaflets 43%, television 39%, newspapers 38%, cinema 17%, letters 14% and training/workshops 11%. Newsletters 9%, village government staff 5%, posters, video, books, church, mosque and bar/pubs 4%. Government officials, networks, music and internet were mentioned by 25 of the groups.

Q. Have you received any information through radio about forest conservation and EACF and if so can you describe your favorite programmes and explain why you liked them?

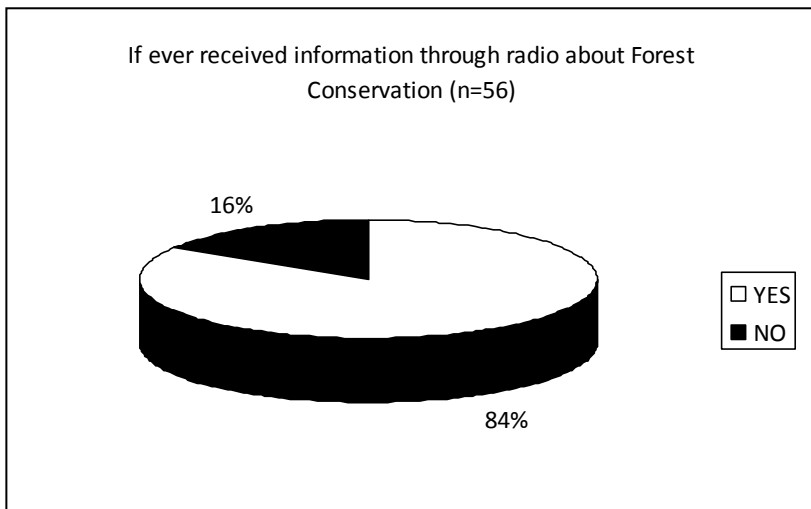


Figure 157 Have you received any information through radio about forest conservation and EACF?

Figure 157 shows that 84% of the groups had received information through radio about forest conservation and the EACF whereas 16 had not.

In the 2004 baseline survey only 4% of the respondents had received information through radio about forest conservation.

Q. Can you mention the radio stations on which you have heard about forest conservation?

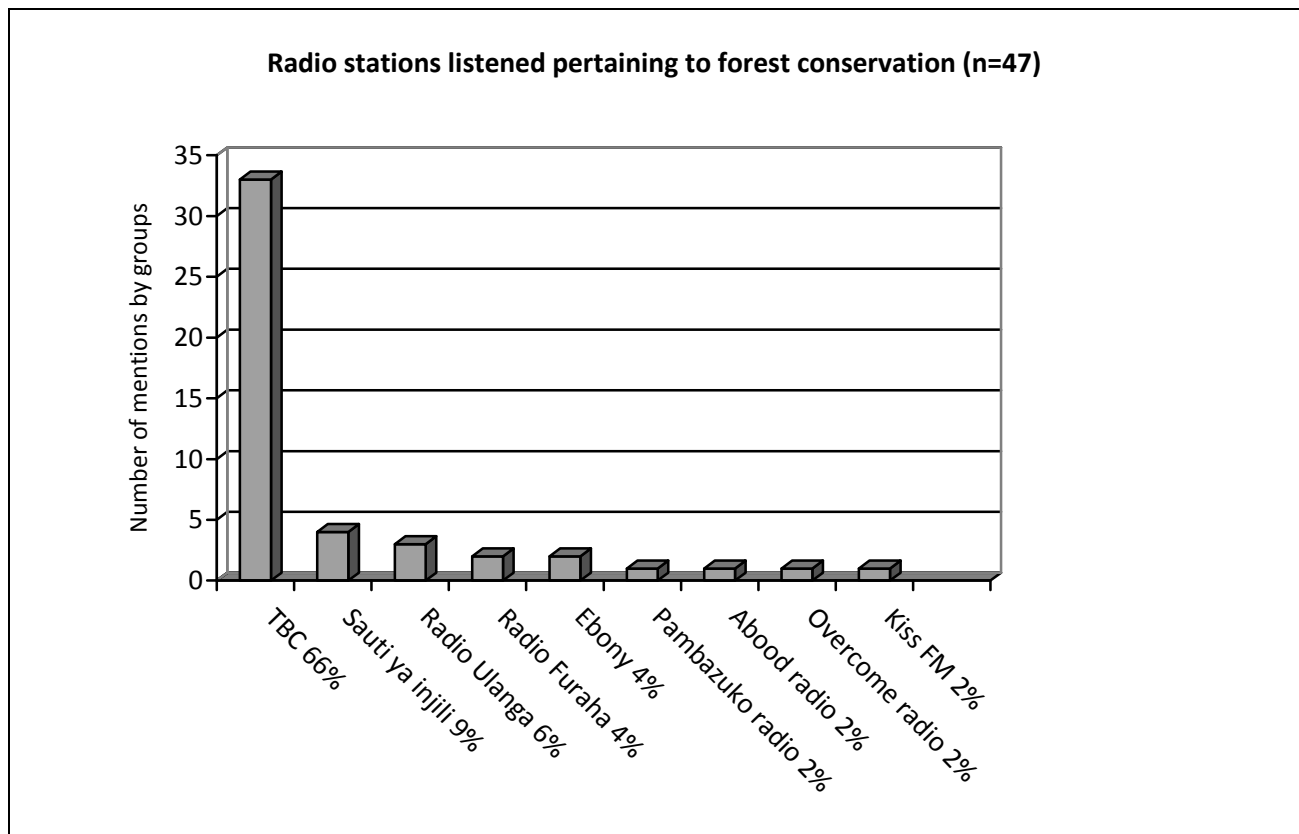


Figure 158 Can you mention the radio stations on which you have heard about forest conservation?

Figure 158 shows that the most commonly listened radio was Tanzania Broadcasting Corporation TBC mentioned by 66% of the groups followed by Sauti ya Injili 9% and radio Ulanga 6%, radio Furaha 4% Ebony radio 4%, Pambazuko radio, Abood radio, Overcome radio and Kiss FM 2%.

Q. What kind of information would you like to receive about forest conservation in the Eastern Arc Mountain and Coastal Forests?

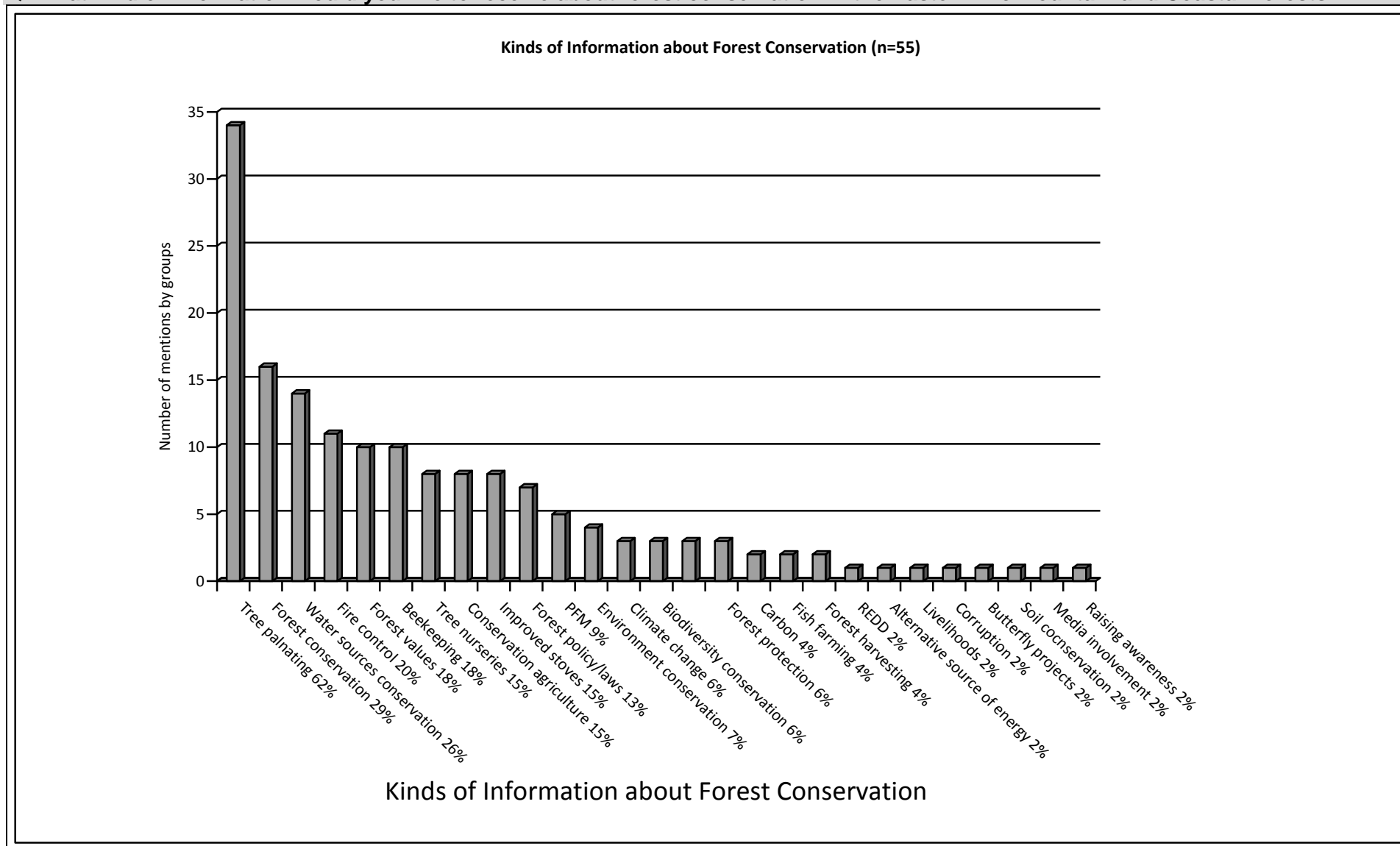


Figure 159 What kind of information would you like to receive about forest conservation in the Eastern Arc Mountain and Coastal Forests?

Figure 159 shows that when asked about the kinds of information they would like to receive about forest conservation, 61% of groups mentioned tree planting, forest conservation 29%, Water sources conservation 26%, fire control 20%, forest values and beekeeping 18%, tree nurseries, conservation agriculture, and improved stoves 15%. Forest policy and laws 13%, PPFM 9%, environment conservation 7%, climate change, biodiversity conservation and forest protection 6%. Carbon, fish farming and forest harvesting 4% whereas REDD, alternative source of energy, livelihoods, corruption, butterfly projects, soil conservation, media involvement in forest conservation and raising awareness were mentioned by 2% of the groups.

3.3 Semi-structured interviews

14 semi-structured interviews were conducted with a variety of people including government staff and local level civil servants from the Tanzania Forest Service, Ministry of Education, Ministry of agriculture, Department of Environment and Prime minister's office Regional Administration and Local Government, private sector, civil society organizations and elected representatives (MPs)

Q. Have you ever heard of the Eastern Arc Mountain Forests?

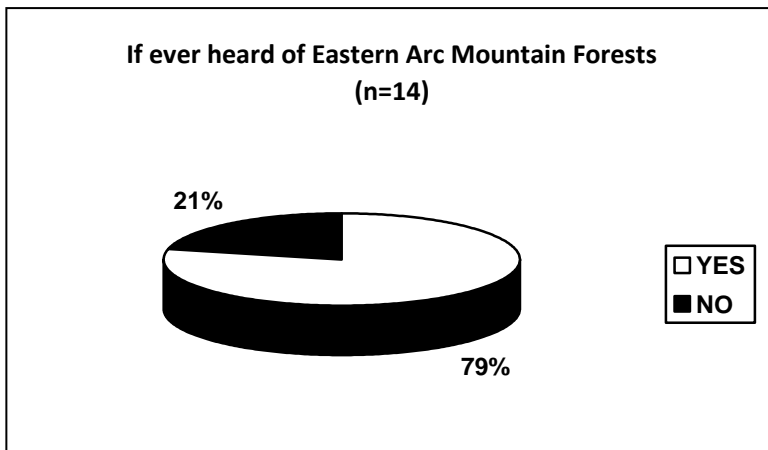


Figure 160 Have you ever heard of the Eastern Arc Mountain Forests?

Figure 160 shows that 79% said they had heard of the Eastern Arc Mountain Forests whilst 21% said they had not.

Q. Can you tell me the names of the mountains that make up the Eastern Arc Mountains?

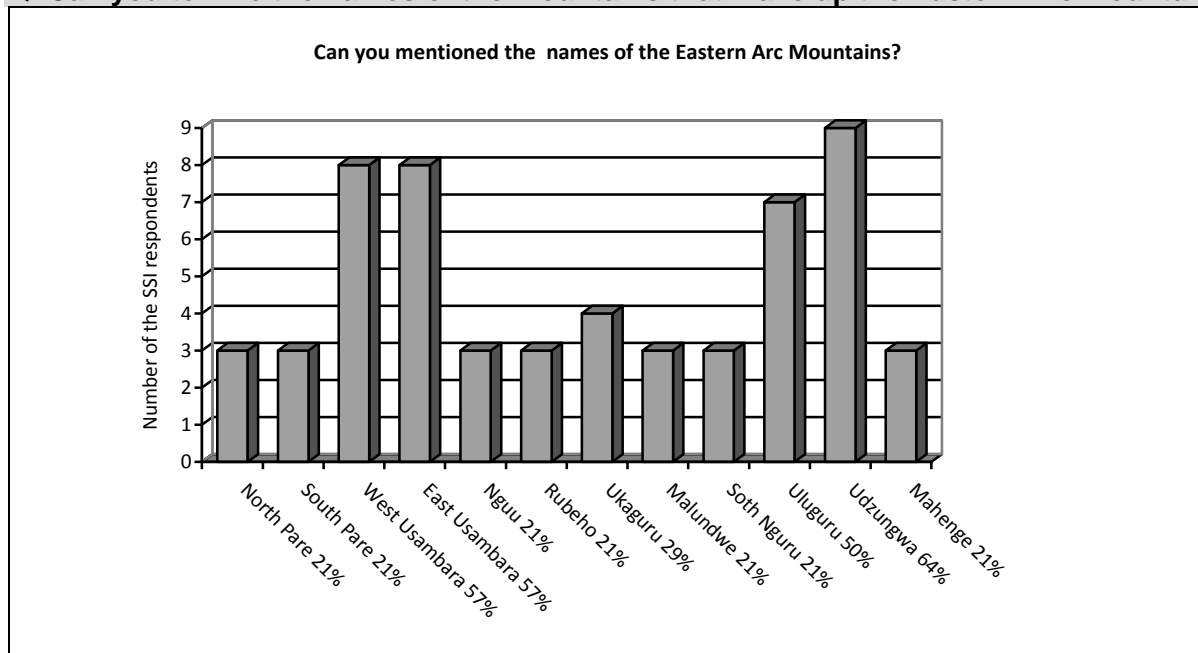


Figure 161 Can you tell me names of the mountains that make up the Eastern Arc Mountains?

Figure 161 shows that the Udzungwa Mountains were the most frequently mentioned (by 64% of respondents) followed by 57% who mentioned East Usambara & West Usambara, about 50% of the respondents mentioned Uluguru, 29% mentioned Nguu while 21% mentioned North Pare, South Pare, Rubeho, Malundwe, South Nguru, Nguu and Mahenge.

Q. Why are the Eastern Arc Mountain forests important?

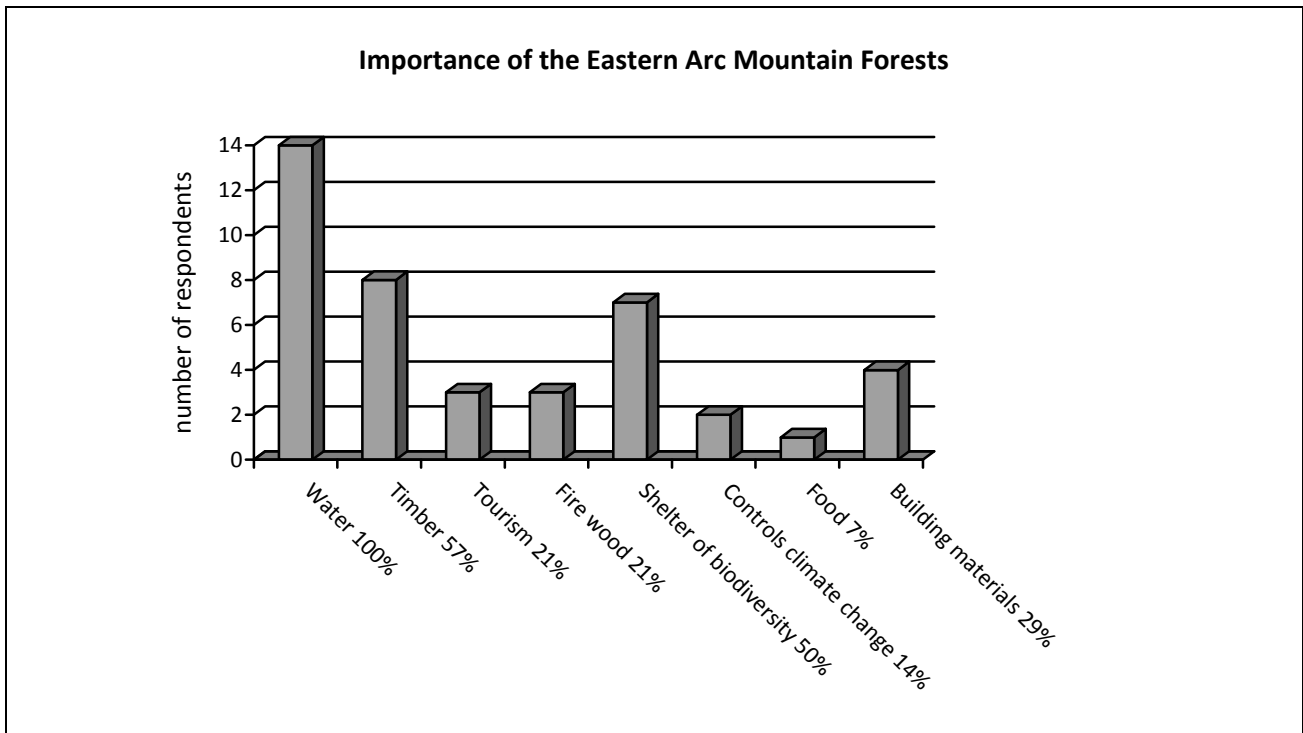


Figure 162 Why are the Eastern Arc Mountain forests important?

Figure 162 shows that all the respondents (about 100%) said source of water is an import value of the EAM forests. 57% mentioned timber, 50% mentioned shelter of biodiversity, 29% mentioned building materials, 21% mentioned tourism and fire wood, 14% mentioned climate change while only 7% mentioned source of food.

Q. Have you ever heard of the Coastal Forests?

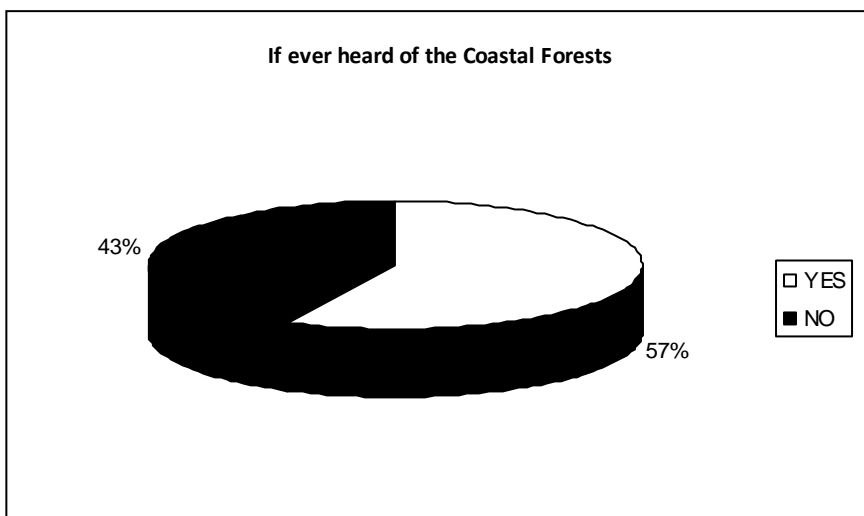


Figure 163 Have you ever heard of the Coastal Forests?

Figure 163 shows that 57% said they had heard of the Coastal Forests whilst 43% said they had not.

Q. Can you mention the names of the Coastal Forests of Tanzania?

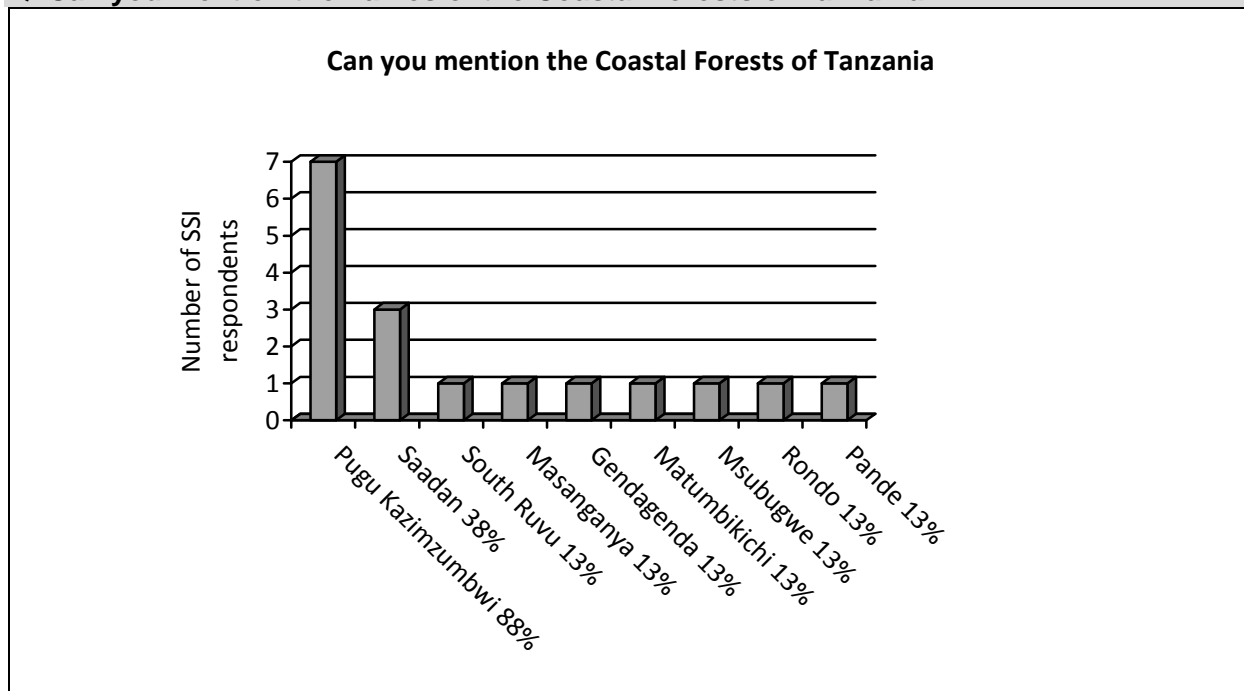


Figure 164 Can you mention the names of the Coastal Forests of Tanzania?

8 of the 14 (57%) of respondents answered this question. Figure 164 shows that Pugu Kazimzumbwi forest was mentioned by 88% of the respondents Saadani by 38% whereas Ruvu South, Masanganya, Gendagenda, Matumbikichi, Msubugwe, Rondo and Pande were mentioned by 13%

Q. The EACF are important because they are home to many species of plant and animal found nowhere else on the planet. Can you tell me any of these species?

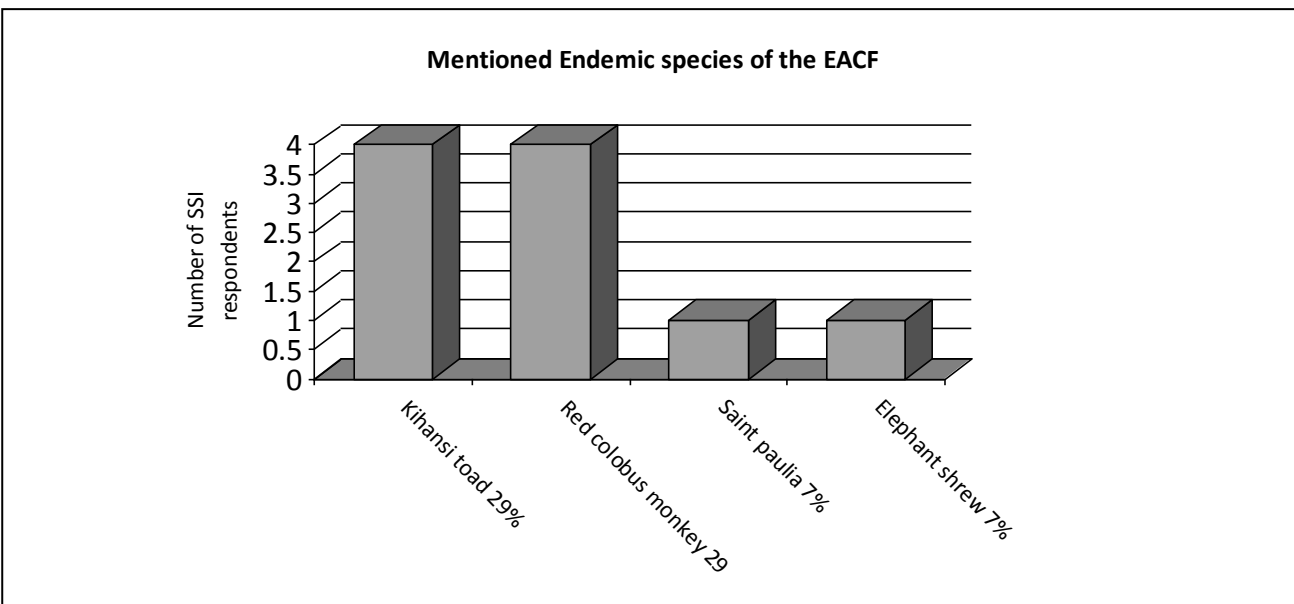


Figure 165 Please can you mention the endemic species of the Eastern Arc Mountain and Coastal Forests?

Figure 165 shows that Kihansi spray toad and the Red colobus monkey were mentioned by 29% of the respondents where as 7% mentioned Saintpaulia and Elephant shrew

Q. What do you think are the main threats to the EACF and their biodiversity?

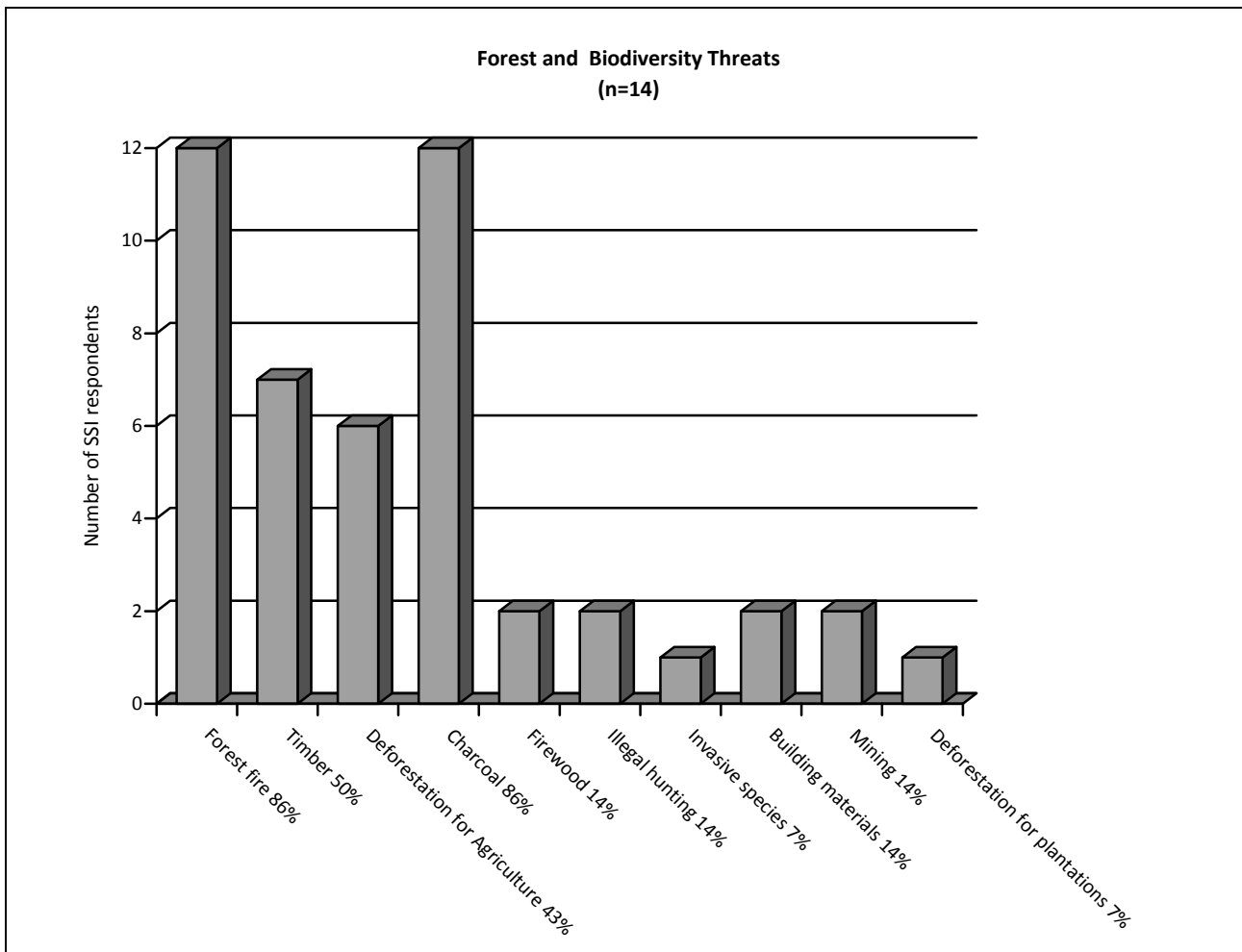


Figure 166 What do you think are the main threats to the EACF and their biodiversity?

Figure 166 shows that 86% of the respondents mentioned forest fire and charcoal making as threats. Timber ranked second mentioned by 50% of the respondents whereas 43% mentioned deforestation for agriculture. Mining, building materials, illegal hunting and firewood were mentioned by 14% of the respondents. 7% of the respondents' mentioned deforestation due to plantations and invasive species.

Q. Have you heard of REDD?

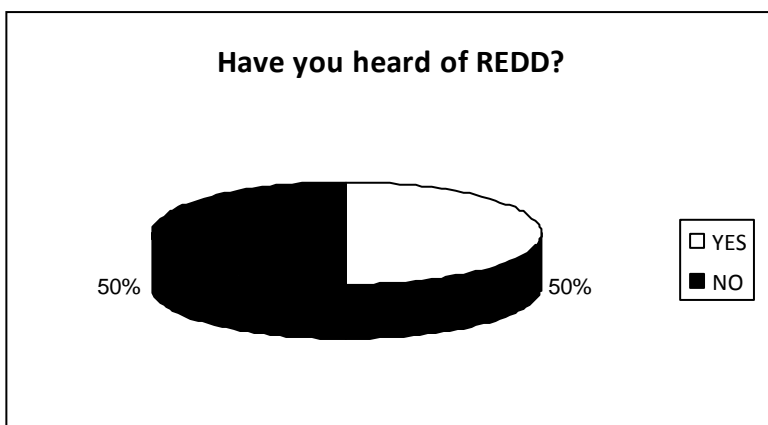


Figure 167 Have you heard of REDD?

Figure 172 shows that 50% said they had heard of REDD whilst 50% said they had not.

Q. Can you tell me what REDD stands for?

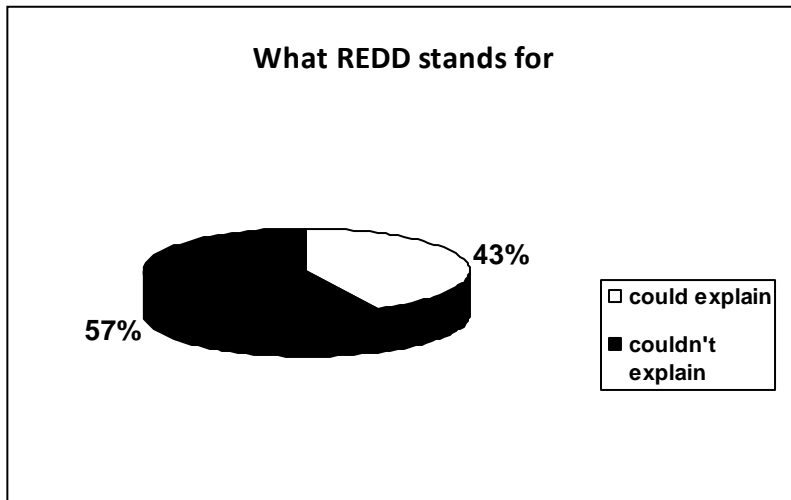


Figure 168 What does REDD stand for?

Figure 168 shows that 57% of the respondents could explain what REDD stands for, while 43% could not explain

Q. What do you think that the government should do to improve forest conservation?

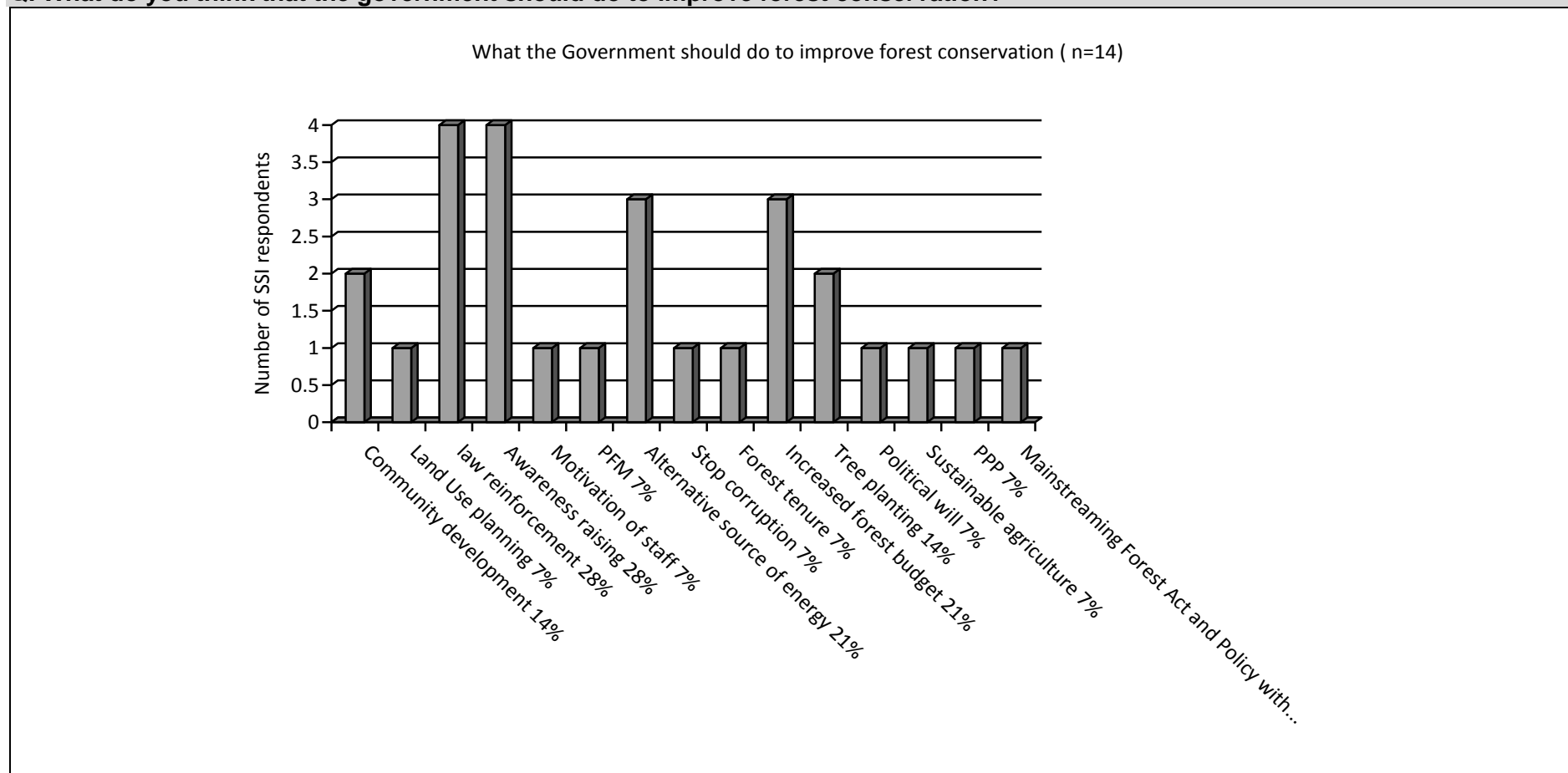


Figure 169 What do you think that the government should do to improve forest conservation?

Figure 169 shows that 28% of the respondents mentioned awareness raising and law enforcement. 21% mentioned alternative source of energy and increasing forestry budget. Community development was mentioned by 14%. 7% of the respondents mentioned stop corruption, mainstreaming forest act and policy with other sectors, public private partnership, sustainable agriculture, political will, forest tenure, PFM, motivation of staff and land use planning.

Q. Please can you describe any awareness raising campaigns or other communication initiatives about environmental issues that your organisation / company / government department is involved with?

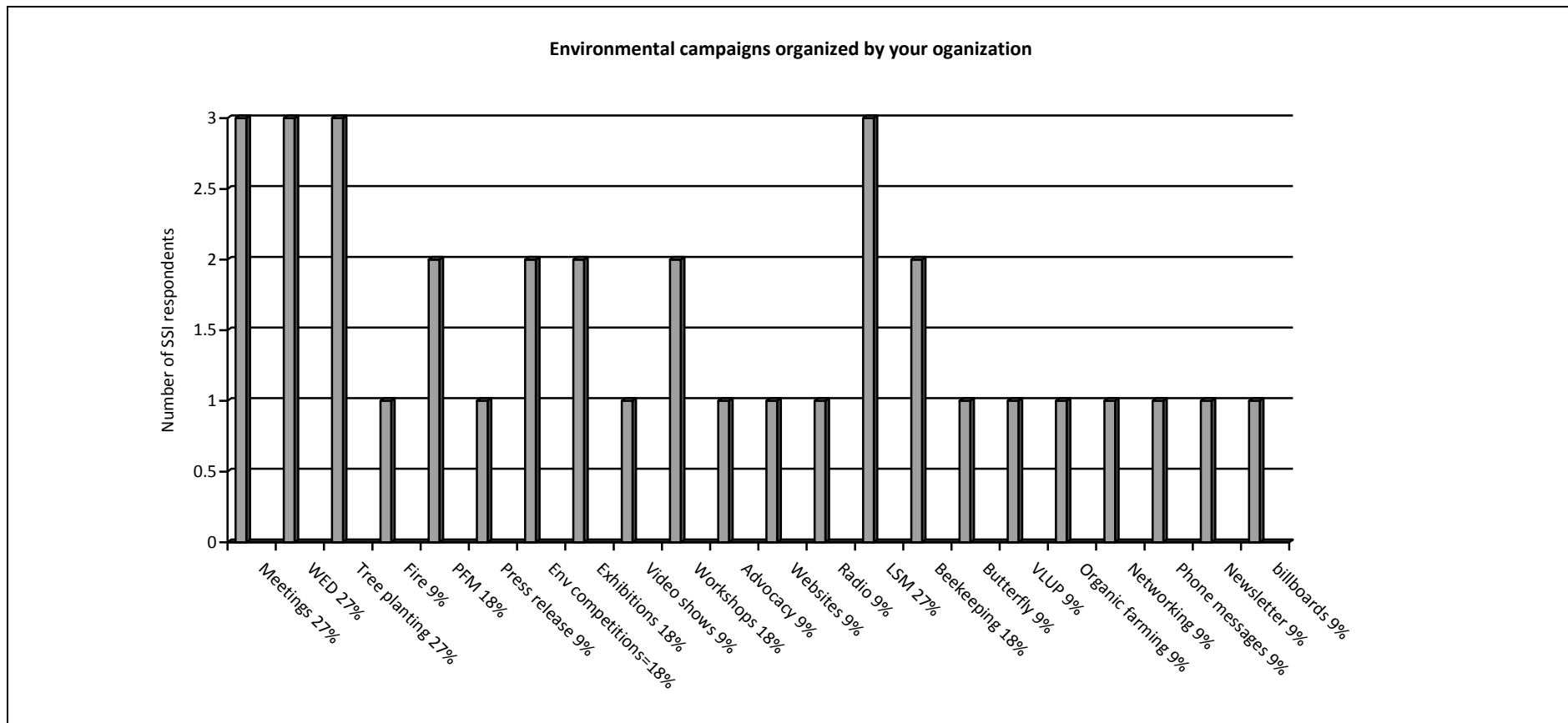


Figure 170 Please can you describe any awareness raising campaigns or other communication initiatives about environmental issues that your organisation / company / government department is involved with?

Figure 170 shows that meetings, world environment day, tree planting and learning support materials were the most frequently mentioned (about 27%) campaigns and communication initiatives about environmental issues. Participatory forest management, environment competitions, exhibitions, workshops and beekeeping were mentioned by 18%. The remaining mentioned by 9% were fire campaigns, press releases, video shows, advocacy, websites, radio butterfly farming, village land use planning, organic farming, networking, phone messages, newsletter and use of billboards.

Q. Please can you describe any other awareness raising campaigns or other communication initiatives about environmental issues that you are familiar with?

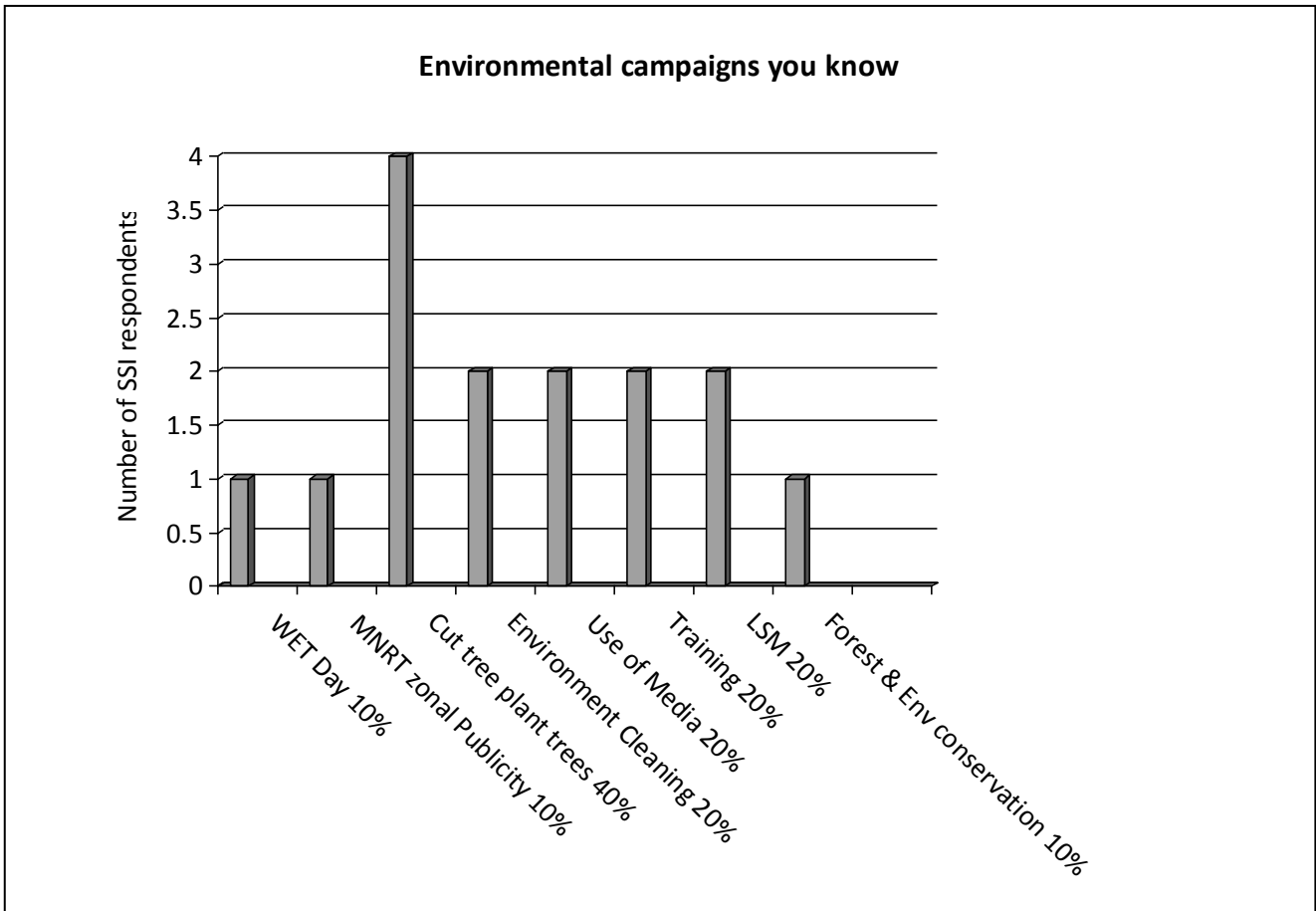


Figure 171 Awareness raising campaigns or other communication initiatives about environmental issues that you are familiar with?

Figure 171 shows that 40% of the respondents said that they know 'cut tree, plant trees' campaign. 20% mentioned Media use, environment cleaning, Training, and LSM. 10% mentioned forest and environmental conservation, MNRT zonal publicity and World Environment day.

Q. What kind of information would you like to receive in relation to forest conservation?

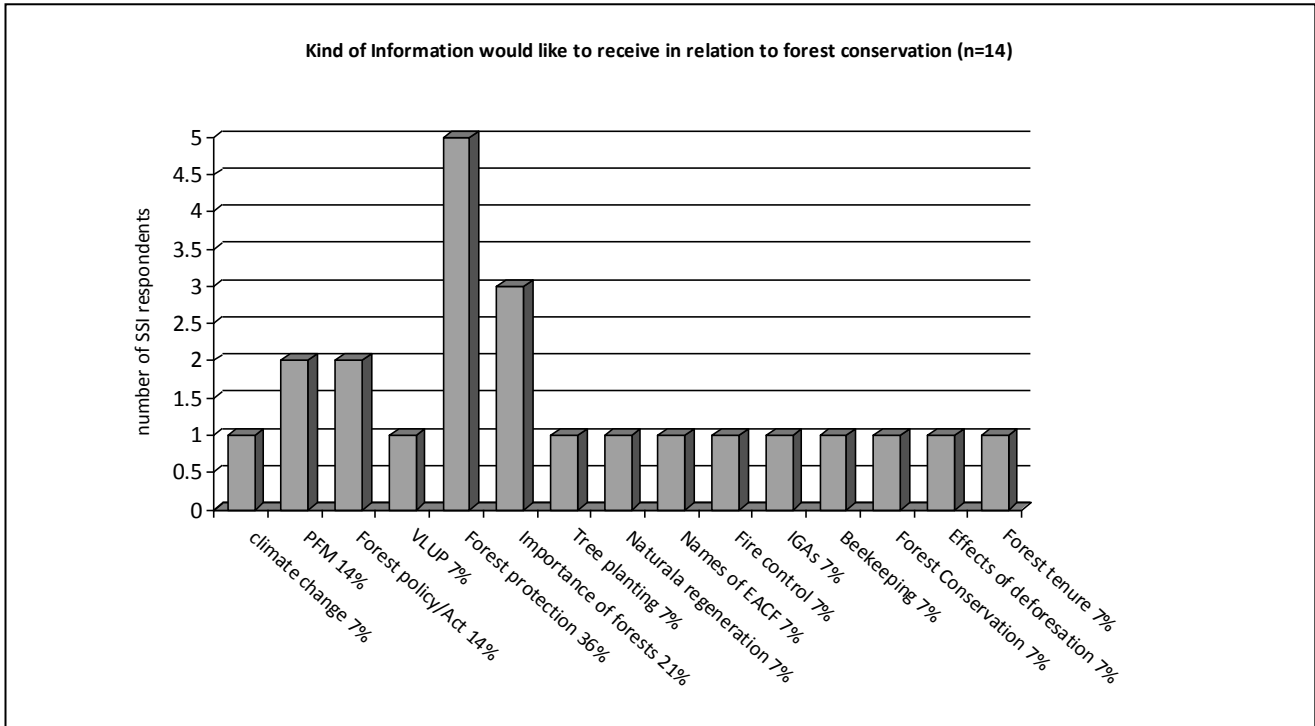


Figure 172 What kind of information would you like to receive in relation to forest conservation?

Figure 172 shows that 36% of respondents mention forest protection as information that they would like to receive, 21% mention importance of forests, 14% mentioned PFM and Forest policy and/or Act whereas 7% mentioned village land use, climate change, tree planting, natural regeneration, names of the EACF, fire control, IGAs, beekeeping forest conservation, effects of deforestation and forest degradation and forest tenure.

Q. How would you like to receive information about forest conservation?

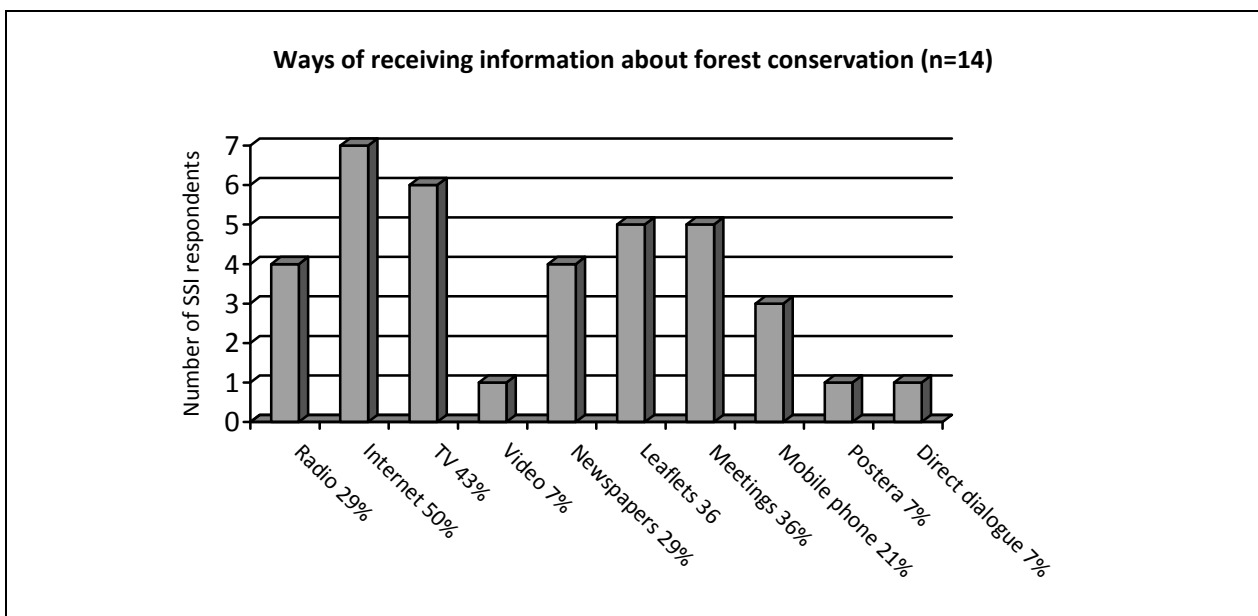


Figure 173 How would you like to receive information about forest conservation?

Figure 173 shows that 50% of the respondents mentioned Internet as a way of receiving information about forest conservation, 43% mentioned TV, 36% mentioned meetings and leaflets, 29% mentioned newspapers and radio, 21% mentioned mobile phones, and 7% mentioned posters, direct dialogue and video shows.

Q. Relative to the situation five years ago, can you describe any significant new stakeholders living in, working in, investing in or visiting the Eastern Arc Mountains and coastal forests?

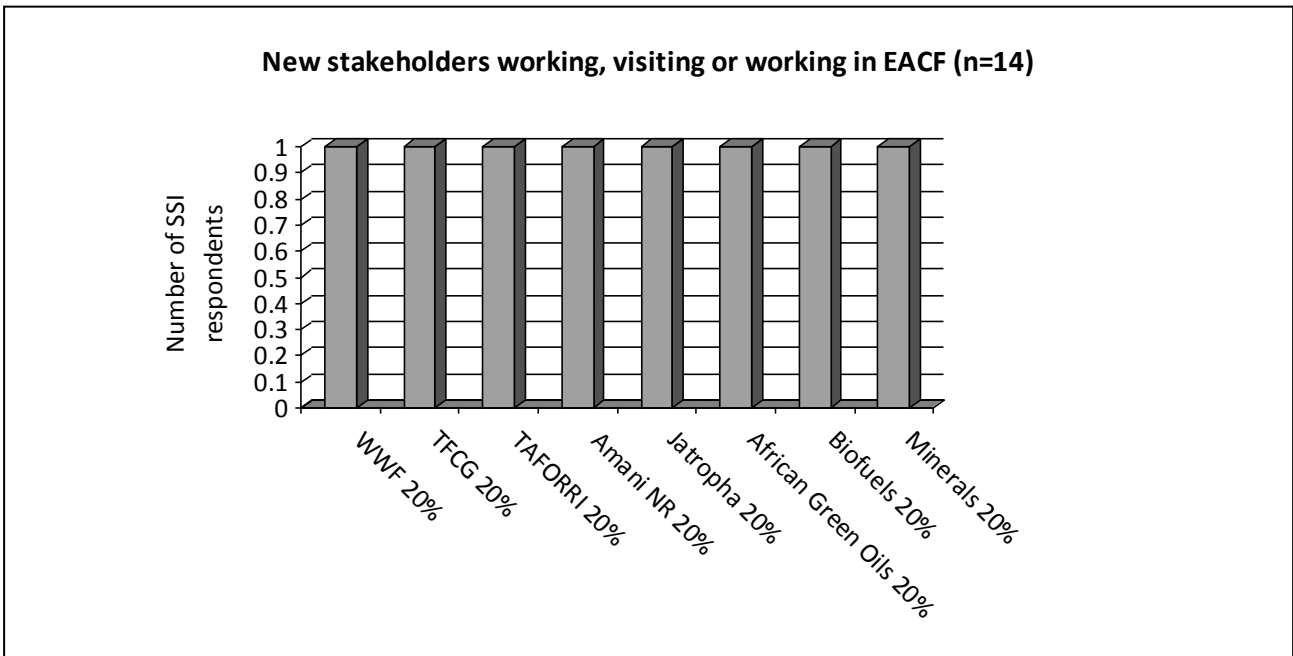


Figure 174 Can you describe new stakeholders in the Eastern Arc and Coastal forests?

Figure 174 shows that the new stakeholders which were mentioned by 20% of the stakeholders are WWF, TFCG, TAFORI, Amani Nature Reserve, Jatropha project, African Green Oil, Biofuels, Mining Companies.

Q. How can NGOs reach and raise awareness among the villagers?

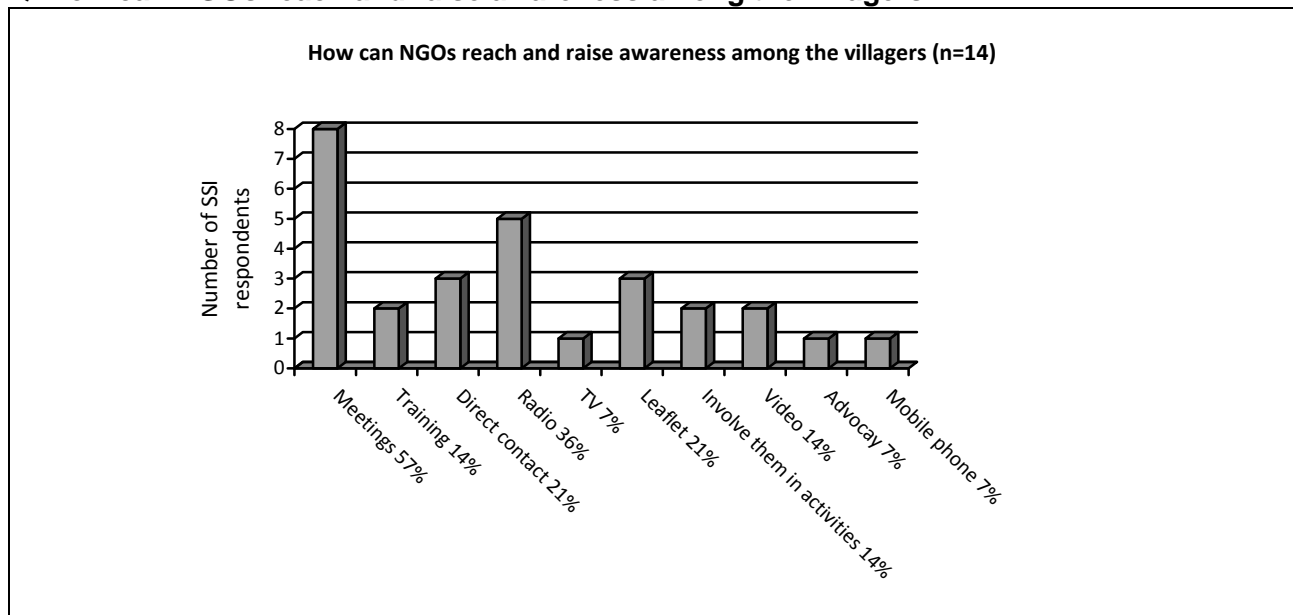


Figure 175 How can NGOs reach and raise awareness among the villagers?

Figure 175 shows that the most commonly mentioned were meetings by 57% of the respondents as the way of reaching the villagers. 36% of the respondents mentioned radio, 21% mentioned direct contact and leaflet, 14% mentioned training/workshop, involving villagers in the NGOs' activities, and video. 7% suggested using of TV, mobile phones and advocacy.

Q. How can NGOs reach and raise awareness among the government staff?

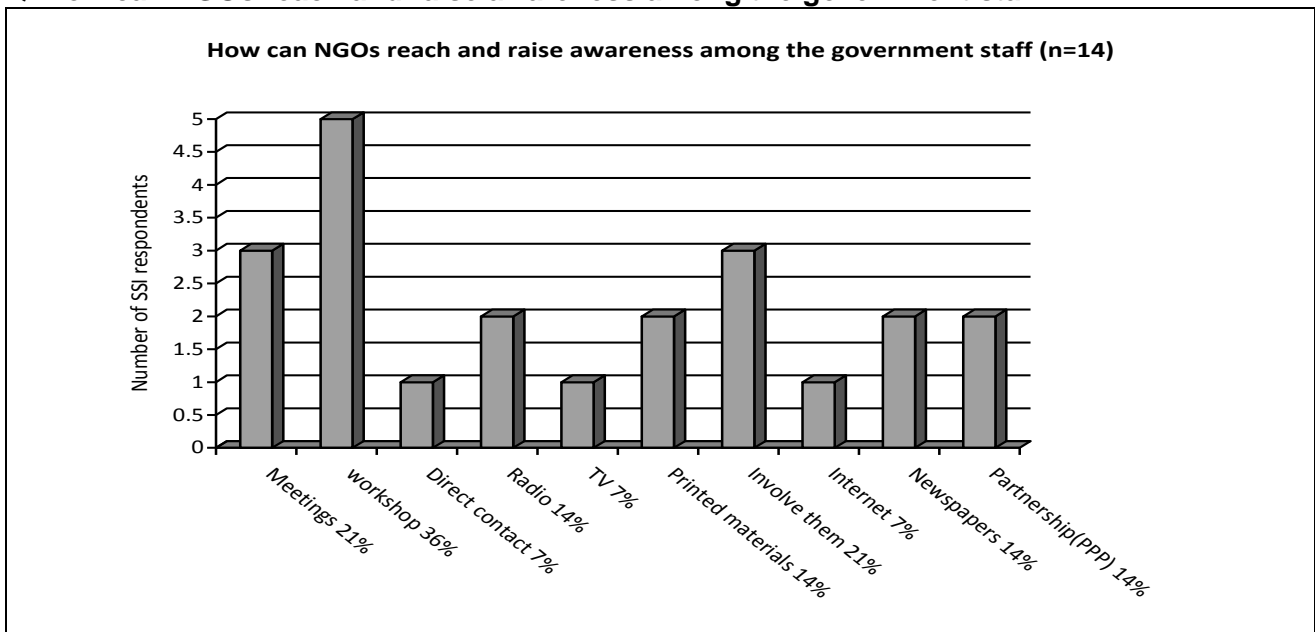


Figure 176 How can NGOs reach and raise awareness among the government staff?

Figure 176 shows that 21% of the respondents mentioned meetings as the way of reaching the government staff. 14% mentioned radio, printed materials and newspapers. 7% mentioned direct contact, radio, TV, Internet, 36% mentioned training/workshop, and 21% mentioned involvement of villagers in the NGOs' activities.

Q. How can NGOs reach and raise awareness among the politicians?

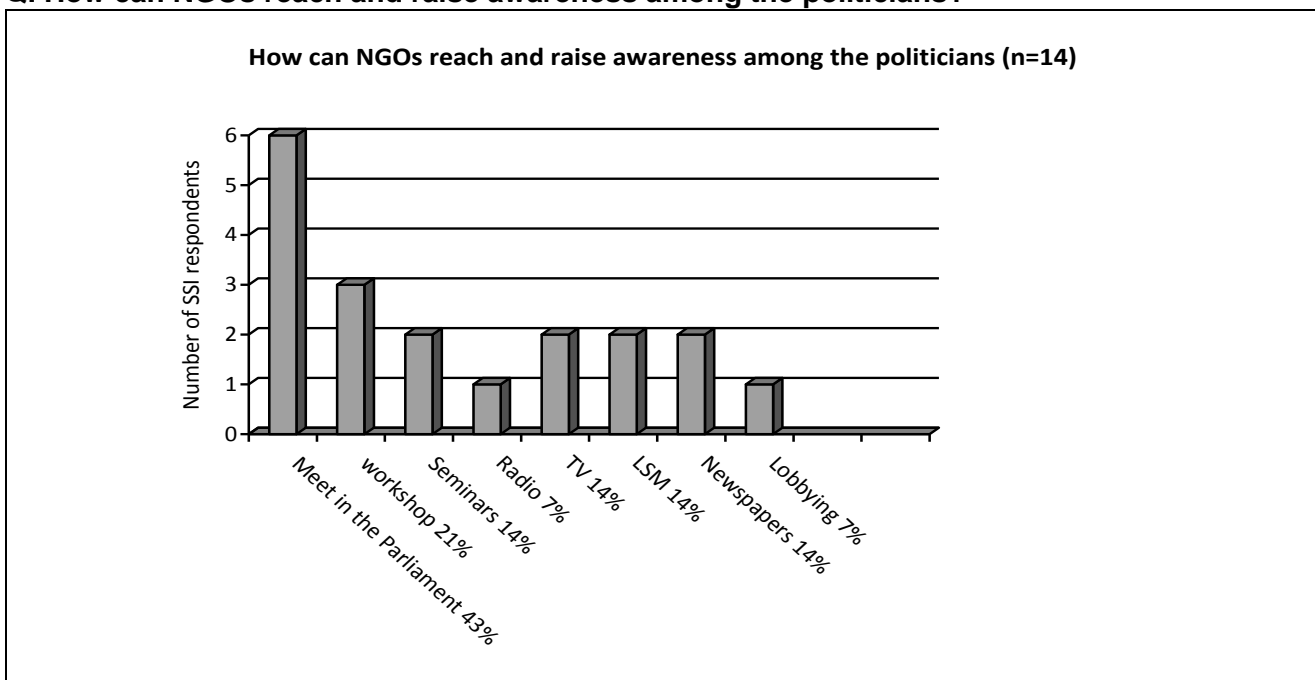


Figure 177 How can NGOs reach and raise awareness among the politicians?

Figure 177 shows that 43% of the respondents mentioned organising meetings with them during parliamentary sessions as the way of reaching the politicians. 7% mentioned radio and lobbying. 21% mentioned training/workshop. 14% mentioned seminars, TV, LSM and newspapers.

3.4 Personal Direct observation

Date	Place	Observation	Remarks
23 Jan 2013	Kilindi district	There is a shortage of personnel at District level for example there were only four staff working for the district land and natural resources department. This is hindering the day to day conservation activities. The District Executive Director and his staff were very enthusiastic to share information with the research team. Tree planting was observed in front of the district office. However there was a huge deforestation and forest degradation activities outside the office. Waste management observed to be poor. Forest and environmental conservation interventions are quite few.	The research team was requested to give a feedback of their report. It was agreed to be so.
24 Jan 2013	Kilindi village	The villagers were enthusiastic to share information with the research team. Deforestation and forest degradation were rampant. This was observed to happen due to farming, fire, lumbering, charcoal making and grazing activities. Tree planting was not observed. Waste management is poor. We did not observe the zero grazing habit or the efficient cooking stoves. Conservation of catchment areas observed to be poor. Fire incidences. Deforestation and forest degradation observed.	The village leadership was eager to know the outcome of the research.
25 Jan 2013	Lulago village	Village leadership not enthusiastic in providing information to the research team. The leadership was not ready to work with the team. The village is full of illegal activities among them being mining, lumbering, encroachment, grazing in the forest. There was no tree planting observed and waste management was poor. Level of understanding things was low. Fire incidents. Deforestation and forest degradation observed.	Interventions required due to the fact that peoples' awareness level is quite low.
18 Jan 2013	Muheza district	The District Executive Director and his staff were very enthusiastic in sharing information with the research team. Inadequate natural resources manpower. Workers complaining of poor motivation. Waste management observed to be poor. Tree planting observed. Forest and environment awareness observed to be high among the district staff.	
19 Jan 2013	Kisiwani village	The villagers were very enthusiastic to share information and to cooperate and work with the team. Tree planting and tree nurseries were observed. Waste management observed to be poor. Fuel efficient stoves and zero grazing observed.	TFCG highly commended for their project activities
21 Jan 2013	Misozwe village	Village leadership was ambivalent to share information with the team. Soil erosion observed to be rampant. Zero grazing observed. Poor tree planting and waste management were observed. Few fuel efficient stoves observed. No sustainable agriculture practices observed (no terraces etc).	
10 Jan 2013	Mpwapwa district	The District Executive Director and his staff were very enthusiastic in sharing information with the research team. Inadequate natural resources manpower. Workers complaining of poor motivation. Waste management observed to be poor. Tree nurseries observed. Fire incidences.	
11 Jan 2013	Mbuga village	The villagers were very enthusiastic to share information to cooperate and work with the team. Tree planting and tree nurseries were observed. Waste management observed to be poor. Farming on the slopes without terraces. Zero grazing observed. Fire incidents. Deforestation and forest degradation observed.	Beekeeping is appropriate for Mbuga
12 Jan 2013	Mwanawotta village	The villagers were very enthusiastic to share information, to cooperate and work with the team. Tree planting was observed. Farming on the slopes with terraces. Awareness level pertaining to	

Date	Place	Observation	Remarks
		forest and environment conservation was high. Charcoal used for cooking.	
04 Jan 2013	Kilolo district	The District Executive Director and his staff were very enthusiastic in sharing information with the research team. Inadequate natural resources manpower. Waste management properly organized. Tree planting and nurseries observed.	
05 Jan 2013	Kidabaga village	The villagers were very enthusiastic to share information, to cooperate and work with the team. Tree planting, logging and timber business observed.	
05 Jan 2013	Udekwa village	The villagers were very enthusiastic to share information, to cooperate and work with the team. Fire incidents.	
17 Dec 2012	Kilombero district	The District Executive Director and his staff were ambivalent in sharing information with the research team. Inadequate natural resources manpower. There was proper waste management.	
18 Dec 2012	Signal Village	The villagers were very enthusiastic to share information, to cooperate and work with the team. Tree planting observed.	
19 Dec 2012	Namwawala village	The villagers were very enthusiastic to share information, to cooperate and work with the team. Tree planting and nurseries observed.	
06 Dec 2012	Lindi district	The District Executive Director and his staff were enthusiastic in sharing information with the research team. There was proper waste management.	
7-8 Dec 2012	Kinyope Village	The villagers were very enthusiastic to share information, to cooperate and work with the team. Tree planting and nurseries observed.	
8-9 Dec 2012	Ntene village	The villagers were very enthusiastic to share information, to cooperate and work with the team. Tree planting and nurseries observed. Timber business rampant. Natural forest deforestation and plantations observed	
28 Jan 2013	Same district	The District Executive Director and his staff were enthusiastic in sharing information with the research team. There was a proper waste management. Tree planting was observed. Soil erosion observed.	
29 Jan 2013	Vumari village	The villagers were enthusiastic to share information to cooperate and work with the team. Small scale tree planting was observed. Waste management observed to be poor. Farming on the slopes without terraces. Fire incidences, Deforestation and forest degradation observed. Rampant soil erosion observed. Encroachments observed.	Some of the villagers were eager to know the outcome of the research
30 Jan 2013	Mhero village	The villagers were enthusiastic to share information to cooperate and work with the team. Tree planting, Terraces, Sacred forests, fuel efficient stoves and soil erosion control were observed.	

4. Summary and Discussion

4.1 Stakeholders Knowledge, Attitudes and Practices in relation to forest values, threats and conservation in the EACF

Knowledge about the Eastern Arc and Coastal Forests. This study found that about 38% of the EAM community members, 74% of ward members, 62% of district staff and 79% of National-level respondents¹ had heard of the Eastern Arc Mountain Forests or *Misitu ya Milima ya Tao la Mashariki*. In 2004, 30% of the community members and 72% of district and ward staff had heard of the EAM. Overall there has been an 8 % increase in the % of community members familiar with the term Eastern Arc whereas the percentage of EAM-aware ward level officers has remained the same whilst the % of EAM-aware district staff has decreased by 10%.

Within the Eastern Arc, the percentage of people familiar with the term varied between Districts as follows:

53% Kilolo
47% Mpwapwa
43% Muheza
32% Kilombero
28% Same
25% Kilindi.

Overall, levels of awareness of the Eastern Arc Mountains have remained about the same amongst community and local government stakeholders over the last 10 years. The apparent decline in awareness at District level may reflect staff turnover and highlights the importance of constant awareness-raising.

For the Coastal Forests, 82% of community members, 100% of ward staff and 64% of district staff in Lindi and 47% of Central Government staff stated that they had heard of the Coastal Forests. The higher level of awareness in Lindi may, in part, be a product of the less specific terminology for the Coastal Forests when compared with the term 'Eastern Arc'.

In the EAM, levels of awareness follow the order: National, Ward, District and then Communities whereas for the Coastal Forests it follows the order: Ward, Communities, District and then National. That Ward officials in both the EAM and Coastal Forests are more aware than District staff highlights the importance of involving Ward staff in awareness raising campaigns.

Knowledge about forest values. Stakeholders were aware of the values of the EACF. In order of frequency, village level respondents mentioned: water, timber, fuel wood, building materials, avoiding climate change, protecting biodiversity and food plants as the top seven values. Amongst District officials, a similar pattern emerges with the forest values cited being: water, biodiversity, timber, fuel wood, species endemism, food and climate change mitigation.

¹ Includes civil servants from the Tanzania Forest Service, Ministry of Education, Ministry of agriculture, Department of Environment and Prime minister's office Regional Administration and Local Government, private sector, civil society organizations and elected representatives (MPs).

Although different methods were used in 2014 (questionnaires) than in 2004 (focus group discussions) at village level, Table 4 provides a comparison of the frequency with which values were mentioned in 2004 and 2014 at village level. Notable differences include the apparent decline in the percentage of people considering hunting, medicinal plants, spirituality and soil erosion to be forest values to $\leq 15\%$ of questionnaire respondents compared with 2004 when they were mentioned in focus group discussions in 11 or 12 of the 12 villages.

Table 5. Comparison of forest values cited at community level between 2004 and 2014.

	2004	2014
Forest Value Mentioned	Number of villages in which the value was mentioned (n=12)	% of village level questionnaire respondents (n=140)
Water	12	61
Hunting (incl. animal trade and food)	12	15
Timber	12	52
Medicinal Plants	12	15
Fuel wood	12	41
Building Poles / Materials	12	37
Climate Control (2004) / Climate change, Rain, Good weather (2014)	11	32 avoiding climate change, 4 Good weather, 1 Rain
Fruits / leaves / berries / mushrooms	11	22
Cultural / Spiritual Values	11	4 spiritual values
Control of Soil erosion	11	15
Other Values mentioned e.g. beauty, inspiration, peace	9	0
Beekeeping	9	11
Unique Biodiversity (2004) / shelter of biodiversity, protecting endemics (2014)	6	25 shelter of biodiversity 10 protecting endemics
Mineral Prospecting or mining	5	5
Tourism	0	12
Beauty products	0	11
REDD revenues	0	5
Water for hydropower	0	6
Recreation	0	5
Thatching grass	0	2
Good weather	0	1
Foreign money	0	1

At District level there was a 16% increase in the proportion of respondents mentioning water as a forest value with it being the most frequently mentioned value in 2014 where as in 2004 the most frequently cited value was timber. Also notable is the increase in the percentage of respondents specifically mentioning biodiversity values from 11% to 45%; and soil conservation from 5% to 20%. Values mentioned in 2014, that were not mentioned in 2004 include REDD revenues, hydropower and bush-meat.

Table 6. Comparison of forest values cited at community level between 2004 and 2014

Forest value	2004	2014
	% of District level questionnaire respondents	% of District level questionnaire respondents
Water	63	79
Biodiversity (habitat for animals)	11 (21)	45
Timber	84	44
Fuel wood	42	38
Shelter endemic species		27
Food plants	53	26
Healthy Environment (2004) / Controls climate change (2014)	53	26
Medicinal plants	37	22
Building materials	16	20
Soil conservation	5	20
Tourism	11	19
Rain		17
Beekeeping		13
Bush meat		12
Hydropower		11
Thatching grass	5	10
Social values (2004) / Beauty (2014)	5	10
Minerals	5	9
REDD revenues		7
Recreation	5	7
Building products		7
Ropes for beds		2
Good air		2
Charcoal	11	
Economic values	5	

Knowledge about relevant policies and laws. The survey shows that 21% and 25% of the community members from the EAM had heard of the National Forest Policy 1998 and the Forest Act 2002. In 2004 survey results showed that 32% of the Focus Groups at community level had heard of the National Forest Policy and / or Act including 9% of the groups who had seen copies of the documents. The reason for this apparent decline in awareness is not clear but points to a need for more awareness raising on national policy and law. In 2012, some respondents were not clear about the terms policy and Act.

The level of awareness varied between Districts with Kilombero and Lindi showing the highest levels of awareness compared with Kilolo and Same where 0% of respondents had heard of the Forest Act 2002. There was similarly low awareness of the Tanzania Forest Services Agency with only 27% of Ward and Community respondents stating that they had ever heard of TFS. Awareness about participatory forest management was generally higher with 47% of community respondents stating that they had heard of participatory forest management including 71% and 74% of respondents in Lindi and Mpwapwa.

Knowledge about threats to forests. The study showed that stakeholders are aware of the main threats to forests. In terms of the frequency with which threats were mentioned, fire (62%) was the most frequently mentioned threat followed by timber harvesting (57%), agriculture (35%), illegal hunting (21%), charcoal production (20%), fuel wood collection (10%), clearing for plantations (9%) and livestock (6%). A few participants also mentioned some of the indirect threats with 4% mentioning corruption and 2% mentioning low forestry budgets. The Coastal Forest respondents cited fire most frequently. A similar pattern is reflected in the responses at ward, district and national level although at Ward level, timber harvesting was considered more of a threat than fire. In 2004, fire was the most frequently mentioned threat (92%) during the village-level focus group discussions followed by timber harvesting (82%), hunting (47%), agriculture (34%) and charcoal making (13%). As such, the 'top 5' threats have remained the same, the order has changed with agriculture more frequently perceived as a threat than hunting by 2014.

Gender and wealth ranking

In most cases a lower percentage of women were aware of the forest-related issues that we asked about compared with men. This difference was greatest for awareness on climate change and REDD.

There appears to be a positive correlation between awareness and wealth whereby in most cases the wealthiest households were the most aware and the poorest households were the least aware. There were a few exceptions to this such as in the case of REDD where the medium-ranked households were more aware than the wealthiest households. The greatest discrepancy was on climate change where only 27% of the poorest households had heard of climate change compared with 52% and 55% in the medium and highest-wealth ranked households.

Attitudes

Attitude to forest conservation. Stakeholders at all levels were supportive of forest conservation with 86% of Village, 100% of Ward and 98% of District respondents stating that it was good to conserve forests.

Opinions of how government should conserve the forest. All stakeholders mentioned law enforcement, awareness raising, participatory forest management, tree planting and stopping corruption as strategies to conserve forests. Law enforcement was the most frequently cited strategy by community members (44%) whilst District and Ward respondents mentioned awareness raising more frequently than law enforcement.

Attitude to environmental education. 76% of community respondents stated that they would like environmental education to be provided in their schools although only 23% of teachers said that they were providing this.

Cultural values. Whereas in 2004, 11 out of 12 villages mentioned that the forests have cultural values, only 29% of the Eastern Arc Mountain community-level respondents mentioned cultural values in 2012. The rate was much higher in Lindi where 61% of respondents mentioned cultural values. Similarly the percentage of respondents who said that they had used medicinal plants in the last 12 months was much higher in Lindi (82%) than it was in the EAM communities (39%). The reason for the decline is not clear although it is interesting that in Kilombero District where there is a high rate of in-migration, 0% of respondents stated that they had used medicinal plants in the last 12

months. This suggests a link between migration and traditional forest values highlighting a need for more awareness raising in areas of high in-migration to compensate for a lack of traditional values.

Practices

Participatory forest management. 10% of the community respondents stated that there was PFM operating in a forest near them. Given the much higher rate of awareness on PFM (47%), this is surprisingly low. With hindsight, the question should have been phrased more specifically in terms of whether there is PFM within their village or ward.

In contrast the percentage of respondents who say that they have met with ward or district officers over the last year is high with 53% of community respondents stating that they met with a government forestry officer at least once over the last year; and 63% said that they met with a government agricultural officer at least once over the last year..

Other forest management activities including fire prevent / control. Forest management activities that were mentioned include fire control, conservation of water sources, patrolling against encroachment into forest reserves, reporting to district officials when illegal incidents occur, maintaining forest boundaries and establishing and running of tree nurseries. EACF community members are collecting fire wood, medicinal plants and building materials from the adjacent forests. 75% of the Ward-level respondents mentioned that there were fire prevention and / or control initiatives active in their wards. This compares with 89% of the village-level focus groups interviewed in 2004, who mentioned active fire management strategies in their villages.

Environmental education. Between 2004 - 2012 environmental education in primary schools appears to have increased and broadened. In 2012, 12% of the teachers mentioned that they had been trained to provide environmental education whilst 23% of the teachers stated that they practice environmental education in their schools with school greening being the most frequently mentioned activity (75%) followed by teaching about the environment in the classroom (41.7%) and distribution of educational materials, tree planting, establishing and support of environmental clubs (16.7% each). In contrast in 2002, 71% mentioned tree nurseries, 5 % mentioned environmental clubs (Same and Kilombero Districts only) and 0% mentioned teaching about the environment in the classroom.

Awareness raising events. The survey indicates that there is widespread participation in awareness raising events on forest conservation with 52%, 58% and 36% of District, Ward and Village level respondents stating that they had participated in forest conservation awareness raising events over the last 5 years.

4.2 Eastern Arc Mountain and Coastal Forest Stakeholders

The 2004 survey included a more thorough stakeholder analysis and listed 126 stakeholders compared with the 52 listed in this report. This is a product of the time and effort allocated to this in 2004 (more) relative to 2012 (less). Comparing the 2004 list with the 2012 list, some of the new stakeholders who were mentioned in 2012 but not in 2004, include:

AFRICARE

Aga Khan Foundation

CAMFED

CARITAS

CEFA

Delimundos

Eastern Arc Mountains Conservation Endowment Fund
FIDE
FINCA
New Forest
Peace Corps Tanzania
Plan International
TUNAJALI
Udzungwa Ecological Monitoring Centre

Some groups who were notably not mentioned include pastoralists, SAGCOT and mining companies. Eight Eastern Arc Mountain blocks lie within the SAGCOT corridor and if the initiative achieves its target of expanding agricultural land to 350,000 ha per 2030, it runs a high risk of increasing deforestation in EAM forests. The omission of pastoralists is something that occurs quite frequently in stakeholder interviews. Thus although livestock are identified as a problem for forest conservation when they are allowed to graze in forest reserves, the people who own the livestock are not mentioned as stakeholders. This may reflect the sensitivities that have arisen over the last decade regarding pastoralists, linked to violent and sometimes fatal clashes between pastoralists and resident farmers.

Stakeholders who were described as causing deforestation include, in order of frequency: timber harvesters, charcoal producers, farmers, miners and hunters.

When we asked 56 focus groups at community level to describe the stakeholders who 'in your opinion play an important role in promoting forest conservation' the most frequently cited stakeholders were Local Government, TFCG and TANAPA. Neither the Tanzania Forest Services Agency nor the Forestry and Beekeeping Division were mentioned by a single group.

4.3 Current information sharing, education and communication processes

The study found that information about forest conservation is provided a variety of stakeholders including: Zonal Publicity Units, NGOs, private sector, regional staff, learning institutions, district staff, ward staff and community members.

The majority of community members stated that radio is the main source of information (51%) followed by meetings/training 44%, leaflets 16%, village government officials 12%, television and mobile phones 10%. Only 2 % of community representatives said that they had ever used the internet.

Ward level respondents mentioned meetings/training 64%, radio 45%, leaflet 24%, newsletter 20%, television 16% and poster 12%.

At district level respondents stated that they received information through meetings/training 53%, radio 39%, leaflets 32%, television 29%, internet 25%, newspapers 23% and posters 11%.

4.4 Stakeholders comments on the kinds of information that they would like to receive and their preferred information /communication channels

The survey found that:

At **Village Level** respondents stated that they would like to learn more about (in order of frequency): tree planting, village land use planning, participatory forest management, conservation agriculture, policies and laws, water conservation, beekeeping and IGAs. The preferred ways of receiving

information mentioned were (in order of frequency): radio, meetings/training, leaflets, village government officials, TV and mobile phones.

In 2004 radio was also mentioned as the preferred means of communication.

At **Ward Level** respondents stated that they would like to learn more about (in order of frequency): tree planting, forest protection, policies and laws, IGAs, alternative sources of energy, beekeeping water conservation and PFM. The preferred ways of receiving information mentioned were (in order of frequency): meetings/trainings, radio, leaflets, newsletters, television and posters.

At **District Level** respondents stated that they would like to learn more about (in order of frequency): fire control, IGAs, PFM, REDD, beekeeping, village land use plan, policy and laws, tree planting, climate change, conservation agriculture, forest protection, alternative sources of energy and improved stoves. The preferred ways of receiving information mentioned were (in order of frequency): meeting/training, followed by radio, leaflets, television, internet, newspapers and posters.

At **national level** (ministerial, NGOs) respondents stated that they would like to learn more about (in order of frequency): forest values, PFM, forest policies and laws, village land use planning, climate change and tree planting. The preferred ways of receiving information mentioned were (in order of frequency): internet, television, meetings, leaflets, newspapers, radio and mobile phones.

5. Conclusions

Recognition of the term Eastern Arc Mountains has remained fairly constant between 2004 and 2012 with around one third of community members familiar with the term and around two thirds of District and Ward staff. Given the awareness raising work on the Eastern Arc Mountains that has been implemented by TFCG, the Eastern Arc Strategy, the Eastern Arc Mountains Conservation Endowment Fund and others, it is quite surprising that rates of awareness have not increased more. The results highlight the need for regular awareness raising initiatives.

Knowledge and perceptions of forest values and threats also remained quite similar between 2004 and 2012 although there are some signs that the forests' value as a supply of water is increasing; whilst bush-meat appears to be less important than in 2004. Relative to 2004 when the linkages between forests and hydropower were not mentioned, some stakeholders are now aware of this link.

Awareness about forest threats is very general and published data on deforestation rates in the Eastern Arc Mountains and Coastal Forests has not been widely communicated. Neither TFS nor Local Government generate or publish data on deforestation rates in the reserves for which they are responsible. With the establishment of the National Carbon Monitoring Centre, there is an opportunity for TFS to access and publish reserve-specific deforestation rates. Access to such information would allow stakeholders to have a much better understanding of the scale and distribution of threats and the actual (rather than perceived) deforestation drivers thereby making it easier to respond in a coordinated and effective way.

At community level more people are aware of participatory forest management as a policy tool than are aware of the Forest Policy and Forest Act. This probably reflects the successful scaling up of participatory forest management across Tanzania.

Awareness of the link between governance issues and deforestation remains low although many respondents are clearly eager for there to be more enforcement.

In general, poorer households and women have lower awareness than wealthier households and men.

In terms of attitudes, respondents at all levels want to see forests being conserved; and whilst there may be signs that forests are becoming less culturally important in some areas, it is clear that they remain a vital resource for rural communities. More people were supportive of forest conservation than understood the term Eastern Arc Mountains suggesting that people's day to day experience of the benefits of forests outweigh the importance of more scientific knowledge. At community level, many people are eager for the government to enforce forest laws; and for more environmental education to be introduced in schools. There is a sense of frustration in some areas at the poor law enforcement with timber harvesters being cited most frequently as damaging forests.

Since the 2004 survey, the area of forest under community-based forest management has increased significantly in Tanzania with more than 2.3 million ha of forest and woodland now in village land forest reserves in Tanzania. The survey found that more schools are now providing environmental education than in 2004 and the scope of environmental education has broadened from a focus on tree planting in 2004 to include classroom teaching on environmental values and establishment of environment clubs.

Many of the stakeholders who were active in 2004 are still relevant today with local government still playing a pivotal role in forest management. The Tanzania Forest Services Agency was not mentioned by respondents at community level and appears to be quite unknown at local level which probably reflects their minimal investment in *in-situ* forest reserve management.

In terms of the kind of information that people want to receive; and how they want to receive information, some clear trends emerge. Communities and Ward leaders are eager to learn more about tree planting, village land use planning, participatory forest management, conservation agriculture and income generating activities. At District level, fire management and REDD were also mentioned as topics that respondents wanted to learn more about. Whilst at national level water source management and forest values were also cited by stakeholders. Radio remains the means of communication of choice at village level; whilst stakeholders at ward, district and national level prefer meetings and training events.

6. Recommendations

1. Implement a diverse range of awareness raising activities amongst communities, local government, Central Government and other stakeholders at local and national level about the location of the EACF, their values including their unique biodiversity values and water catchment role, and the direct and indirect drivers of deforestation, including forest governance issues; and provide practical information about the kinds of actions that people can take to help to conserve forests including information on the topics identified by communities and other stakeholders such as participatory forest management, conservation agriculture and tree planting. More awareness is also needed on the National Forest Policy and the Forest Act 2002.

With a new forest policy and new Forest Act on the horizon, particular effort will be needed to raise awareness about the new documents once they come into operation.

Given the local, national and global importance of the Eastern Arc Mountain and Coastal Forests there is a need to develop activities which will raise the level of knowledge among the communities, schools and politicians; will nurture a sense of caring for the forests; and will inspire stakeholders to take action to conserve these unique forests. Particular effort should be made to reach women and poorer households.

Recommended activities to raise awareness on the values of the EACF and on the National Forest Policy and Forest Act

Radio programmes on forest values and threats using TBC and local radio stations like Radio Abood, Radio Sauti ya Injili and Radio Ulanga

Produce Swahili summaries of the new National Forest Policy and Forest Act and distribute widely to EACF stakeholders.

Organise awareness raising events such as World Environment Days in EAM districts bringing together village, ward and District stakeholders; and the media.

Produce awareness raising materials such as brochures, booklets, leaflets and posters on forest values, threats, policies and laws, and forest conservation strategies such as PFM, fire fighting, law enforcement, tree planting and conservation-compatible income generating activities.

Support fire awareness campaigns particularly before and during times of year when the forests are particularly vulnerable. Awareness should include practical information on how people can prevent forest fires. The TFS Publicity Unit has experience on organising such campaigns; and local government should also take a lead on this.

Organise meetings and training events particularly at District and Ward level to cover issues such as relevant policies and laws (forest, land, water and wildlife).

Organise meetings with local politicians including Ward Councillors and MPs, particularly just after elections so that newly appointed elected representatives have information about the EACF for the duration of their term in office.

Maintain and update the Eastern Arc (www.easternarc.or.tz) and Coastal Forests websites (<http://cf.tfcg.org>) as an online resource for interested individuals and organisations in Tanzania and internationally with internet access.

2. Reach out to stakeholders directly linked to deforestation including those who have not been targeted in previous awareness raising campaigns such as charcoal producers, SAGCOT and pastoralists.

Stakeholders who have influence on forest conservation include those stakeholders who were identified as causing deforestation including timber harvesters, charcoal producers, farmers, hunters and livestock keepers. More targeted awareness campaigns are needed including meetings and training events that target those groups specifically.

For example to reach timber harvesters, lessons could be learned from the Mama Misitu Campaign who have held awareness raising meetings specifically targeting stakeholders involved in the timber trade.

More effort is also needed to reach pastoralists who may not attend village assembly meetings and are not fully integrated into villages where they reside, whether permanently or temporarily.

With growing efforts to formalise charcoal production and organise charcoal producers associations, raising awareness with such groups on how to implement sustainable charcoal production; and how to integrate sustainable production in village forest reserves is important.

In terms of reaching small-scale farmers, given that 80% - 90% of the community members are farmers, there will be overlap with the community-level awareness raising mentioned above. Particular attention needs to be paid to those on the forest frontier as their behaviour is critical to conserving forests. Similarly outreach is needed to Ward and District agricultural officers to encourage them to remind farmers on the importance of conserving forests.

Other important stakeholders with an influence over agricultural trends include the Ministry of Agriculture and SAGCOT for whom targeted awareness raising is also needed.

Development partners are also an important stakeholder. Providing development partners with concise, accurate data on forest values and threats can inform their decisions on investing development funding.

For all of these groups more specific research is needed in order to understand their current levels of awareness; their interests and challenges; and their preferred means of communication.

Recommended activities to raise awareness amongst stakeholders directly linked to deforestation

Conduct more detailed analyses of the stakeholders with an influence on deforestation in order to determine their awareness; their interests and challenges; and their preferred means of communication.

Conduct meetings with the groups mentioned above. In the case of the pastoralists, care should be taken to hold meetings in local languages and in times / places that will reach both women and men.

Develop awareness raising printed materials targeting the specific stakeholders; and provide information on relevant radio programmes / radio stations that are listened to by these groups.

3 Support more environmental education in primary and secondary schools in the EACF.

Raising awareness and nurturing a caring attitude towards the forests in the younger generation is critical if they are to take on the custodianship of the forests. Such awareness raising is particularly important in areas of high migration where traditional values have been eroded.

Recommended activities to raise awareness on the values of the EACF and on the National Forest Policy and Forest Act

Train teachers to integrate environmental education in classroom teaching.

Provide teaching materials to primary and secondary school. For example, TFCG has developed a manual for primary school teachers to integrate environmental education activities into their teaching freely available online at: <http://www.tfcg.org/publications.html>

Organise environmental clubs in more primary and secondary schools.

Support schools to implement 'school greening' activities.

Support forest visits for students.

Support student-led school tree nurseries.

4 Build the capacity of local government staff at Ward and District Level to promote forest conservation and lead forest conservation activities. This will require a restructuring of forestry sector finance in order to channel more funding to the local level.

Given the survey's finding that local government are the most frequent source of information for communities, it is important that local government staff have the skills, resources and motivation to communicate effectively about the EACF. In order to achieve this, more needs to be invested in local government staff in terms of training, motivation, transport and other materials. Providing local government with more resources will also require restructuring of forestry sector finance in order to channel more funds to local government. With only 5% of royalty revenues being retained by local government with the rest going to TFS, the funds available at District and Ward levels come nowhere close to the resources needed at these critical layers of government.

5 Encourage cooperation and coordination between different parts government as well as with civil society and the media in awareness raising activities about the EACF.

Considering the communication practices, the study has shown that more organized coordination is required. Adopting a landscape approach into the national forest policy and Forest Act should be practiced. This approach emphasizes the need for cross-sectoral coordination of forestry management; strengthen the linkages between the different levels of forest management and lastly involvement of a broad range of stakeholders. Forest officers should work closely with other sectors such as agriculture to create alternative livelihood options and thus reduce total dependence on forestry resources. The process should be consultative to ensure buy in from all stakeholders. This should be in the form of awareness creation on alternative livelihoods as well as trainings on improved agriculture practices to increase yield.

Similarly more cooperation is needed between civil society organisations and the media. The stakeholder analyses in 2002 and 2012 document the many organisations are working in the EACF. Coordination at District Level, as is done in some districts such as Muheza, would help to achieve synergies and avoid duplication. Similarly organisations such as MJUMITA which support

networking between community forestry networks should be supported in order to foster, community to community learning and dialogue.

6 Support forest conservation action at all levels including those actions recommended by stakeholders including law enforcement, participatory forest management, conservation agriculture and tree planting.

7 Raise the profile of the Tanzania Forest Services Agency and publish timely and accurate data on deforestation rates in government reserves so that stakeholders have a better understanding of the scale and distribution of deforestation.

The Tanzania Forest Services Agency should invest more in outreach as their role (and even existence) is poorly known at community level. TFS should also implement more *in situ* forest management in collaboration with communities and local government.

In order for stakeholders to have a better understanding of the scale and distribution of threats; and of the relative importance of the different drivers of deforestation, TFS should support the publication of data on deforestation rates per forest reserves. This could be generated by the national carbon monitoring centre and / or by a body empowered to implement the independent forest monitoring that many stakeholders are calling for.

7. References

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