



Ministry of Natural Resources and Tourism

Forestry and Beekeeping Division

Conservation and Management of the Eastern Arc Mountain Forests Project

Threats to Eastern Arc Mountains forests and solutions to those threats as defined by stakeholders in Eastern Arc Districts

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Executive summary

Tanzania Forest Conservation Group (TFCG) was contracted by the Conservation and Management of the Eastern Arc Mountains Forests (CMEAMF) Project to collate and analyse data from 14 district stakeholder meetings on the threats and possible solutions facing the Eastern Arc Mountains (EAM). The workshops upon which this report is based were conducted in 2004 and 2005 and are a key part of the development of a conservation strategy for the Eastern Arc Mountains. TFCG is a partner in this project and has already undertaken a similar process for the Information, Education and Communication component of CMEAMF.

The District workshops involved different stakeholders groups such as village chairpersons, teachers, councilors, district staff, NGOs, the private sector etc. The stakeholders were asked to describe the causes of forests destruction and to propose solutions to these problems. Fourteen districts were involved: Kilindi, Kilolo, Kilombero, Kilosa, Korogwe, Lushoto, Morogoro, Mpwawa, Mufindi, Muheza, Mwanga, Mvomero, Same and Ulanga. The following six questions were asked:

1. What are the major problems facing the Eastern Arc as defined by all combined stakeholders from the eight districts?
2. What are the major problems facing the Eastern Arc as defined by all combined stakeholders in each of the Eastern Arc districts (between district comparisons)?
3. What are the major problems facing the Eastern Arc as defined by different stakeholder groups (villagers, NGOs etc) (between district comparisons)?
4. What are the most popular solutions to the problems proposed by all combined stakeholders from the eight districts?
5. What are the most popular solutions to the problems proposed by the combined stakeholders in each of the Eastern Arc districts (between district comparisons)?
6. What are the most popular solutions to the problems proposed by different stakeholder groups (villagers, NGOs etc) (between district comparisons)?

Problems causing forest destruction

The main findings are summarized. The most frequently mentioned problems responsible for forest destruction, identified by the district groups, are:

- Bush fires (89%)
- Illegal harvesting of trees (67%)
- Poor / lack of awareness / knowledge (44%)
- Increase of livestock population / grazing (33%)
- Illegal hunting (33%)
- Encroachment (33%)
- Poverty (33%)
- Laws and procedures not followed / implemented / outdated and conflicting / lacking (33%)

The main problems identified by individual stakeholder groups are summarized in Table 1.

Table 1 Main problems identified by individual stakeholder groups for causing forest destruction

Stakeholder	No. of districts	No. of problems mentioned	Main problems (no. of groups who mentioned the problem)
Councillors	6	20	Lack of awareness / knowledge (4), bushfires (4), laws / procedures followed / implemented (3)
Environmental Committees	6	14	Bushfires (8), illegal harvesting of trees (8), poor / lack of awareness / knowledge (8), Encroachment (5), Poor farming methods (5)
District Experts	8	25	Illegal harvesting of trees (9), poor / lack of awareness / knowledge (8), poverty (7), poor farming methods (7), bushfires (6), increase in livestock populations (6), encroachment (6), mining (6), illegal hunting (6)
NGOs	4	16	Bushfires (3), poor / lack of awareness (3), encroachment (3)
VEO	4	15	Bushfires (4), illegal harvesting of trees (4), poor / lack of awareness (3), encroachment (3)
Village chairpeople	6	17	Bushfires (14), illegal harvesting of trees (13), illegal harvesting (7), increase in livestock population (7), mining (7)
WEO	4	19	Bushfires (3), poverty (3)
Village experts	3	15	Illegal harvesting (2), increase in livestock population (2), Lack of forest resources for management (2), lack of forest user rights (2), poor farming methods (2), poverty (2)

Solutions to the problems causing forest destruction

The main solutions to the main problems are shown in Table 2. Community environmental education or specific education on subjects linked to the problem was commonly mentioned. Law enforcement, collaboration and cooperation, such as participation in forest management were also general solutions to various problems.

Table 2 Solutions suggested to a variety of problems identified as causing forest destruction

Problem	No. of solutions mentioned	Main solutions (no. groups who mentioned)
Fire	23	Community environmental education (43), creating / enforcing new by-laws (36), improving agricultural practices (21)
Poverty	20	Tree planting programme, education on IGA (25), education on improved agricultural practices (24)
Ignorance on Nature reserve and forest reserves	21	Community / school environmental education programme (32), participation in forest management (11), law enforcement (9)
Lack of knowledge / implementation of laws	30	Community legal education (11), invest in human resources (11), incentives to forest conservators (10)
Illegal tree harvesting	32	Prosecute offenders (18), participate in forest management (14), water source protection education (13)
Mining	23	Prohibit mining in reserves (16), collaboration and cooperation (12), law enforcement (11)

CMEAMF Threats and solutions to the Eastern Arc Mountain forests

Agriculture, charcoal making and livestock keeping	32	Community environmental education (20), law enforcement (18), collaboration and cooperation (16)
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Numbers of solutions mentioned per stakeholder group for each main problem detailed in this report are summarized below.

Table 3 Solution numbers mentioned per stakeholder groups per problem identified

Stakeholder	No. solutions mentioned per stakeholder group per problem							Total solutions
	Fire	Poverty	Ignorance about reserves	Lack of law enforcement	Illegal tree harvesting	Mining	Agriculture, charcoal, livestock	
Village experts	11	9	5	10	9	7	11	62
NGO	11	13		8	14	8	14	68
Village chairperson	7		2	7		6	8	30
District experts	15	14	11	18	21	15	25	119
Councillors	8	9	10	5	7	8	12	59
Environment committee	6	9	6		9	9	10	49
WEO	11	11	7	13	8	6	17	73

It is clear that each group may have certain levels of expertise and knowledge in different areas discussed, as can be seen in the number of solutions given by district experts on problems pertaining to agriculture, charcoal and livestock, illegal tree harvesting and their overall suggested solutions. The village chairperson and environmental committees had the lowest suggested solutions and this only serves to emphasise the importance of the workshops and the need to share ideas, educate and empower the people who are living closest to the Eastern Arc forests.

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Acronyms

CBO	Community Based Organisation
CMEAMF	Conservation and Management of the Eastern Arc Mountain Forests Project
EAM	Eastern Arc Mountains
EIA	Environmental Impact Assessment
FBD	Forestry and Beekeeping Division
FR	Forest Reserve
GEF	Global Environment Facility
IGA	Income Generating Activity
JFM	Joint Forest Management
NEMC	National Environment Management Council
NGO	Non Government Organisation
PDF	Project Development Funds
PFM	Participatory Forest Management
TAFORI	Tanzania Forest Research Institute
TANAPA	Tanzania National Parks Authority
TANESCO	Tanzania Electricity Supply Company
TFCG	Tanzania Forest Conservation Group
UNDP	United Nations Development Programme
VEO	Village Executive Officer
VPO	Vice Presidents Officer
WEO	Ward Executive Officer

1 Introduction

1.1 Conservation and Management of the Eastern Arc Mountain Forests (CMEAMF)

The “Conservation and Management of the Eastern Arc Mountain Forests” (CMEAMF) Project (GEF-UNDP URT/01/32) has its roots in the 1997 International Conference on the Eastern Arc Mountains, organized by TAFORI in Morogoro. Following the recommendations from that conference, the Forestry and Beekeeping Division of the Ministry of Natural Resources and Tourism (FBD) initiated the process of developing a full project proposal for the GEF. PDF Block A and Block B processes were completed. The PDF B comprised two elements: one developed through the World Bank for an endowment trust fund and the second developed through the UNDP, and coordinated by CARE International in Tanzania (CARE Tanzania) for the FBD. The latter resulted in the development of two project components: one, a site-based project in the Uluguru Mountains (\$2.86 million) and the second, a holistic conservation strategy for the entire Eastern Arc Mountains (\$2.14 million). These two components comprise the current project “*Conservation and Management of the Eastern Arc Mountain Forests*” (CMEAMF), which is being implemented with funding from the GEF channeled through the UNDP. The Project headquarters is based in Morogoro.

1.2 Tanzania Forest Conservation Groups (TFCG)

The Tanzania Forest Conservation Group (TFCG) is a Tanzanian non-governmental organization promoting the conservation of the Eastern Arc / Coastal Forest biodiversity hotspot. For the last 20 years the Tanzania Forest Conservation Group has worked to provide sustainable solutions to the problems that have driven deforestation in this unique area.

TFCG Mission

- To conserve and restore the biodiversity of globally important forests in Tanzania for the benefits of the present and future generations. We will achieve this through capacity building, advocacy, research, community development and protected area management, in ways that are sustainable and foster participation, cooperation and partnership.

TFCG Vision

- We envisage a world in which Tanzanians and the rest of humanity are enjoying the diverse benefits from well conserved, high biodiversity forests.

1.3 What is this report about?

CMEAMF subcontracted TFCG to enter and analyse data collected from 14 district stakeholder meetings in the Eastern Arc Mountains, completed in 2004 and 2005. This work is a part of the development of a conservation strategy for the Eastern Arc Mountains (EAM). TFCG is a partner in this project and has already undertaken a similar process for the Information, Education and Communication component of CMEAMF.

The research involved different stakeholders groups such as village chairpersons, teachers, Councillors, district staff, NGOs, private sector etc. The stakeholders were asked to describe the causes of forests destruction and to propose solutions to these problems. Among the 14 districts, nine districts (Kilindi, Kilolo, Korogwe, Lushoto, Muheza, Mwangi, Same, Mvomero and Kilombero) were asked to mention the causes of forests destruction and five districts (Kilolo, Mufindi, Ulanga, Mpwapwa and Morogoro) were asked to mention the solutions to the problems facing the forests. A slight variation on this process was in Kilombero district, where five of the groups within the meeting were asked to list the causes of forests destructions and eight other groups were asked to list the solution to these problems.

Data was entered into an excel spreadsheet and analysis was undertaken to answer the following questions.

- What are the major problems facing the Eastern Arc as defined by all combined stakeholders from the eight districts?
- What are the major problems facing the Eastern Arc as defined by all combined stakeholders in each of the Eastern Arc districts (between district comparisons)?
- What are the major problems facing the Eastern Arc as defined by different stakeholder groups (villagers, NGOs etc) (between district comparisons)?
- What are the most popular solutions to the problems proposed by all combined stakeholders from the eight districts?
- What are the most popular solutions to the problems proposed by the combined stakeholders in each of the Eastern Arc districts (between district comparisons)?
- What are the most popular solutions to the problems proposed by different stakeholder groups (villagers, NGOs etc) (between district comparisons)?

2 Methods

2.1 Data gathering

Data analysed here were gathered in 14 separate workshops organized by CMEAMF during 2004 and 2005.

The programme of workshops was as follows:

Table 4 Summary of workshops held in 14 districts

District	Date	Approximate Number of People	Number of groups
Muheza (Causes)	15 th September, 2004	c. 120	12
Korogwe (Causes)	16 th September, 2004	c. 100	12
Mwanga (Causes)	5 th November 2004	35	6
Kilolo (Causes)	31 st March 2005	40	8
Mvomero (Causes)	25 th May 2005	53	10
Kilindi (Causes)	3 rd November 2004	13 (data missing)	6
Same (Causes)	4 th November 2004	47 (data missing)	7
Lushoto (Causes)	17 th September, 2004	40	3
Kilombero (Causes and Solutions)	30 th May 2005	44 (data missing)	13
Kilosa (Solutions)	17 th March 2005	65	8
Mufindi (Solutions)	29 th May 2005	56	8
Ulanga (Solutions)	20 th March 2005	46 (data missing)	9
Mpwapwa (Solutions)	15 th March 2005	75	8
Morogoro (Solutions)	27 th May 2005	12 (data missing)	10
Total		746 (data missing)	120

At each workshop the participants were divided into similar interest groups and organised into small working groups. Groups typically covered a) Village chairmen and Village Environment committee members, b) District officials, c) NGOs, d) Private sector and others, such as the army. Each group had the same set of questions to answer (except in Kilombero – see in section 1.3 above).

For the nine districts (Kilindi, Kilolo, Korogwe, Lushoto, Muheza, Mwanga, Same, Mvomero and Kilombero) focusing on problems, the questions were as follows:

1. Benefits from Forest Reserves (FR)
2. Causes of degradation
3. What should be done to reduce forest destruction
4. Three priority issues that need to be implemented

This report summarises the information on the second question and third questions only, as these are the ones most clearly focused on identifying the main problems in the forests.

For the five districts (Kilolo, Mufindi, Ulanga, Mpwapwa and Morogoro) focusing on solutions, the questions that needed answers were ways to solve the most highly ranked problems identified in the previous set of meetings:

1. Fire
2. Lack of awareness of benefits of forests
3. Poverty
4. Lack of law enforcement

5. Lack of participation by communities
6. Unclear forest boundaries and lack of resources
7. Uncontrolled logging
8. Mining
9. Shifting cultivation/encroachment
10. Charcoal burning
11. Grazing

2.2 Data capture procedure.

Data from the workshop flip charts was typed into word and translated into English. Electronic data files are available at CMEAMF that contain the typed Kiswahili / English answers to all the questions. These typed answers were then entered into Excel data sheets and formed the basis of all further analysis.

2.3 Analysis

2.3.1 Problems identified by all stakeholders in eight districts

- All the 'problems' or causes of forest destruction mentioned by nine districts were listed in the first column of a matrix, the top row lists each of the districts concerned and each of the stakeholder groups is listed in row two.
- Each of the groups in each of the district that mentioned the problem was indicated in the table with the number one.
- Totals of the number of times each 'problem' was mentioned by each group and each district were calculated and the percentage computed.
- Graphs were plotted using the totals / percentage calculated.

2.3.2 Problems identified between districts by combined stakeholders in nine districts

- Totals for each problem in each of the nine districts were calculated.
- The percentage of the number of groups mentioning each specific problem was calculated to allow for the different number of groups in different districts.
- A graph was plotted for each of the 'problems'.
- Patterns between districts are clarified.

2.3.3 Solutions to the problems as proposed by all combined stakeholders from the six districts

- The seven main problems leading to forest destruction and the solutions to these problems proposed by six districts were grouped in seven different excel work sheets.
- In each excel work sheet all the solutions to each problem of forest destruction mentioned by six districts were listed in the first column of a matrix, the top row lists each of the districts concerned and each of the groups was listed in row two.
- Each of the groups in each of the district that mentioned the solution to the problem was indicated in the table with the number one.
- Totals of the number of the mentions for 'solutions' for each group were calculated and percentages computed.
- Graphs were plotted using the totals / percentage calculated.

2.3.4 Solutions to the problems as proposed by different stakeholder groups in different districts (villagers, NGOs etc, between district comparisons)

- The main seven problems to forest destruction with the solutions proposed by six districts were grouped in seven different excel work sheets.

- From each problem, answers from similar groups across different districts were sorted and grouped together (e.g. NGOs consulted from any from the six districts)
- In each excel work sheet all the solutions to each problem of forest destruction mentioned by similar groups from six districts were listed in the first column of a matrix, the top row lists each of the groups and each of the districts concerned was listed in row two.
- Each of the groups in each of the district that mentioned the solution to the problem was indicated in the table with the number one.
- Totals of the number of times the 'solution' was mentioned by each similar group from the six districts were calculated.
- Graphs were plotted using the totals calculated.

3 Results

3.1 Problems mentioned by and more than 50% of groups by district

The most frequently mentioned problems identified by the district groups are bush fires (89%), illegal harvesting of trees (67%), and poor/lack of awareness / knowledge (44%) (Table 55). Only a few district groups (11%) mentioned unsustainable harvesting of medicines as a problem.

Table 55 also shows that the largest number of problems was mentioned in Lushoto district groups (53%), Kilolo district groups (47%) and Mwanga district groups (40%), while few problems were mentioned by Muheza district groups (20%).

Table 5 Problems mentioned by and more than 50% of groups by district

Problem	Kilindi groups	Mvomero groups	Same groups	Kilombero groups	Kilolo groups	Korogwe groups	Lushoto groups	Muheza groups	Mwanga groups	%
Bush fires	*	*		*	*	*	*	*	*	89
Illegal harvesting of trees	*	*			*	*	*	*		67
Poor / lack of awareness / Knowledge	*		*				*		*	44
Increase of Livestock Population/grazing					*	*	*			33
Illegal hunting					*	*	*			33
Encroachment		*		*	*					33
Poverty			*				*		*	33
Mining					*			*		22
Laws and procedures not followed / implemented / outdated and conflicting / lacking		*	*						*	33
Illegal honey hunters				*	*					22
Increase of human population / development							*		*	22
Poor farming methods / Shifting cultivation				*		*				22
Lack of resources for forest management	*								*	22
Poor relationship / communication / cooperation	*		*							22
Unsustainable harvesting of medicines							*			11
Total problems mentioned by and more than 50% in each district groups	5	4	4	4	7	5	8	3	6	
%	33	27	27	27	47	33	53	20	40	

3.2 Major problems facing the Eastern Arc as defined by all combined stakeholders from the 8 districts

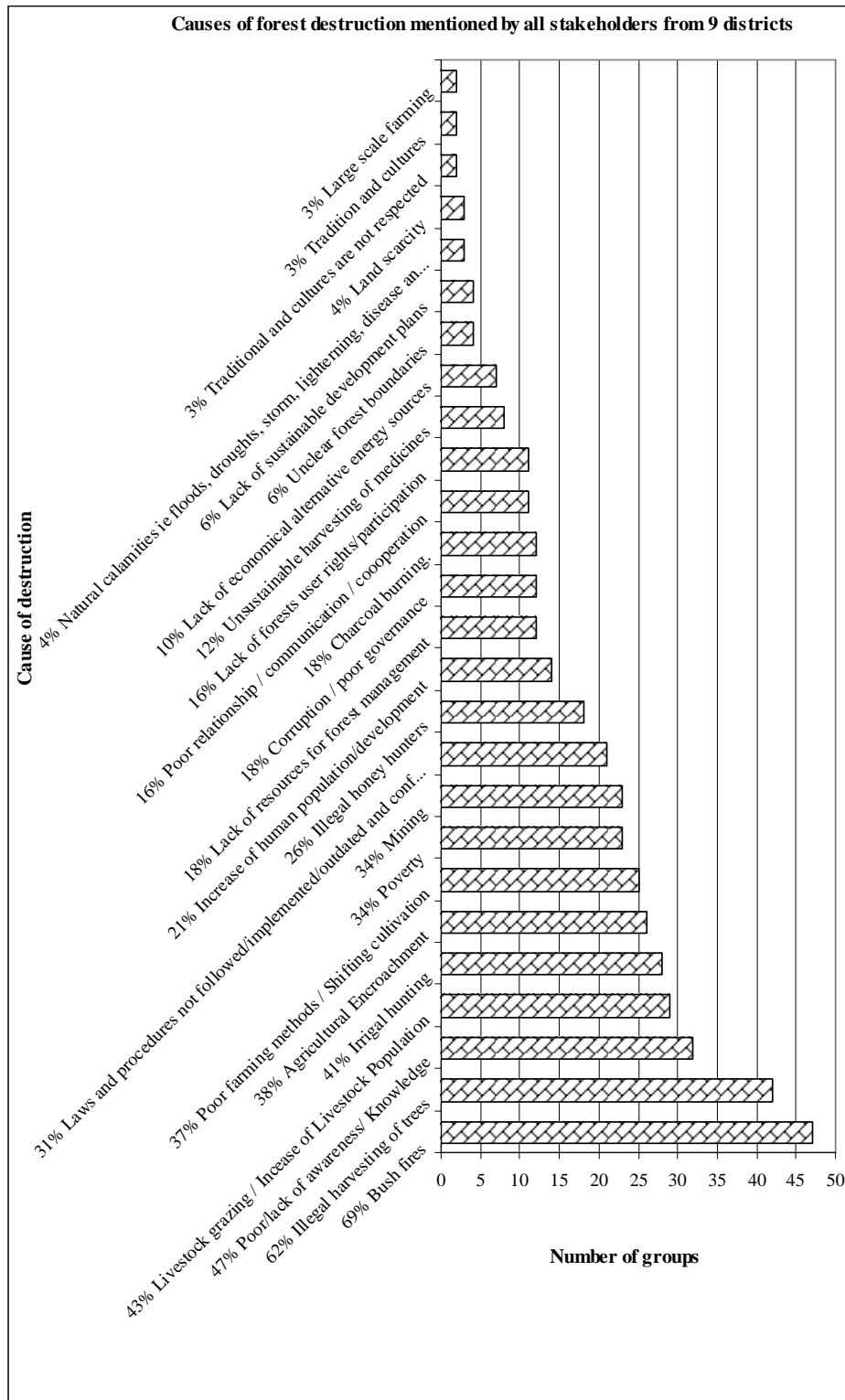


Chart 1 showing the overall causes of forests destruction from 9 districts

Chart 1 shows that the most commonly mentioned problems across all groups in all districts were:

- bush fires
- illegal tree harvesting
- lack of awareness
- livestock grazing
- illegal hunting
- agricultural encroachment
- poor farming methods / shifting cultivation
- poverty
- mining

Problems mentioned by a smaller number of groups include; laws and procedures not followed / implemented / outdated; illegal honey hunters; increase of human population / development; lack of resources for forest management; corruption / poor governance; charcoal burning; poor relationship / communication / cooperation; lack of forests user rights / participation; unsustainable harvesting of medicines; lack of economical alternative energy sources; unclear forest boundaries; lack of sustainable development plans; natural calamities i.e. floods, droughts, storm, lightening, disease and insects; land scarcity; tradition and cultures are not respected; and, finally, large scale farming.

The following causes of forest destruction were mentioned by only one group and they were not included in the graph; political interference; lack of a good system for benefit sharing; lack of employment; insufficient trade policy; demand for forest products (charcoal, timber); and closing forests for harvesting for a long time.

3.3 Major problems facing the Eastern Arc as defined by all combined stakeholders in each of the Eastern Arc Districts (between district comparison)

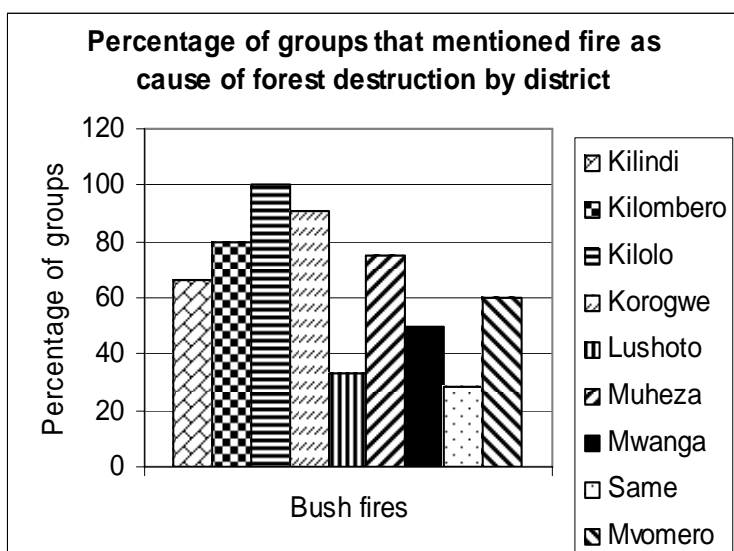


Chart 2 shows that bush fires were considered a problem by more than 50% of the groups in seven out of nine districts.

Bush fire was mentioned as a problem by the majority of the groups in Kilombero, Kilolo and Korogwe.

Fewer groups considered bush fires as a problem in Lushoto and Same.

Chart 2 Percentage of groups that mentioned fire as a cause of forest destruction

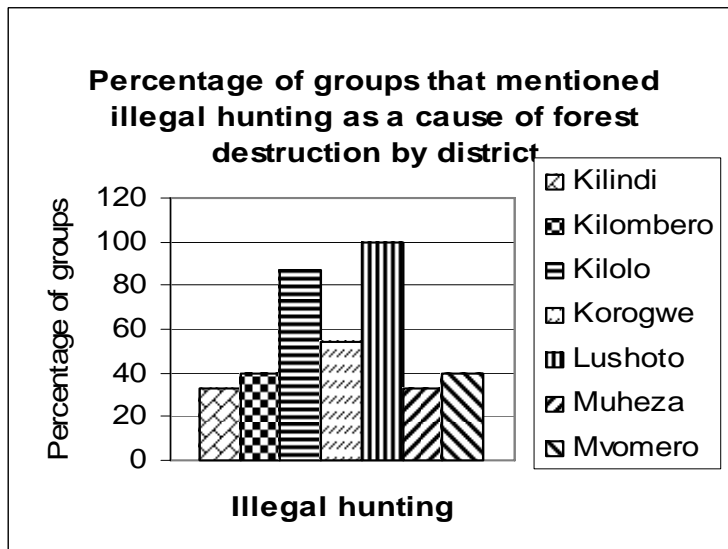


Chart 3 shows that illegal tree harvesting was mentioned to be a problem by all nine districts.

The majority of groups in Kilombero, Kilolo, Korogwe, Lushoto, Muheza and Mvomero mentioned illegal tree harvesting.

Fewer groups considered illegal tree harvesting a problem in Kilindi, Same and Mwanga.

Chart 3 Percentage of groups that mentioned Illegal tree harvesting as a problem

Chart 4 shows that a lack of awareness / knowledge was mentioned as a cause of forest destruction in seven out of the nine districts. The majority of groups (>80%) mentioned this problem in Lushoto, Mwanga and Same, whereas between 30–50% of groups mentioned this as a problem in Kilindi, Kilombero, Muheza and Mvomero districts.

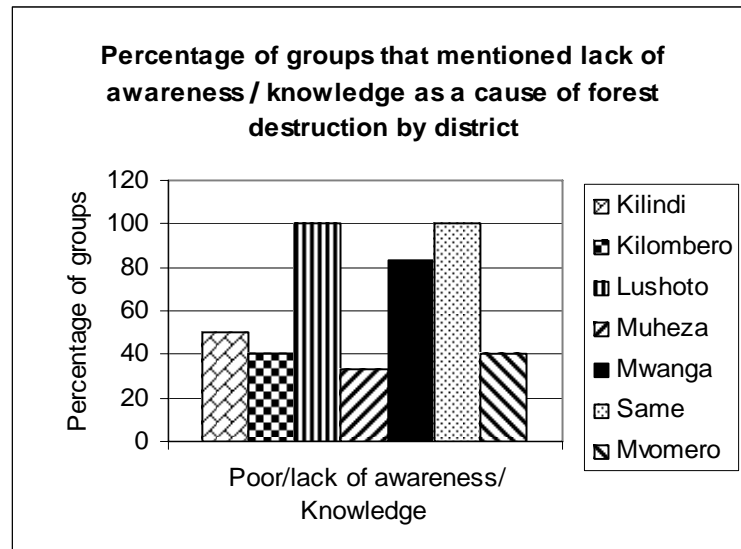


Chart 4 Percentage of groups that mentioned lack of awareness/knowledge

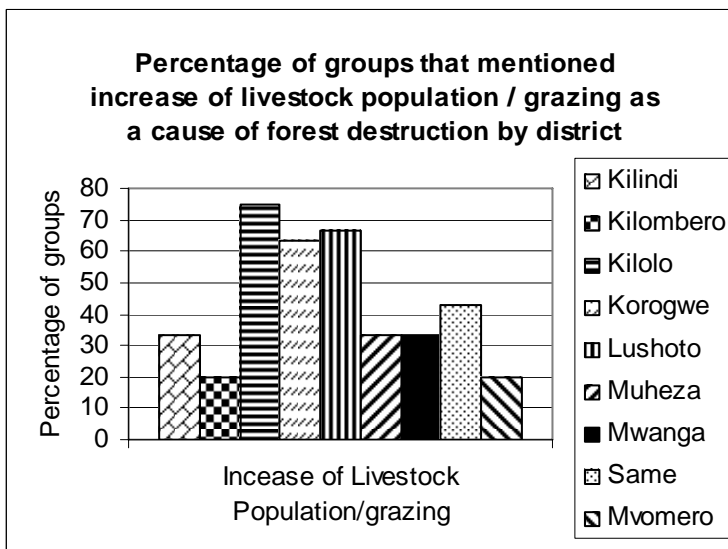


Chart 5 shows that an increase of livestock population / grazing was mentioned as a cause of forest destruction in all nine districts. More groups (60-75% of groups) mentioned this problem in Kilolo, Korogwe Lushoto and Same, while in Kilindi, Kilombero, Muheza, Mwanga and Mvomero less than 40% of groups mentioned this as a problem.

Chart 5 Percentage of groups that mentioned increase of livestock population / grazing

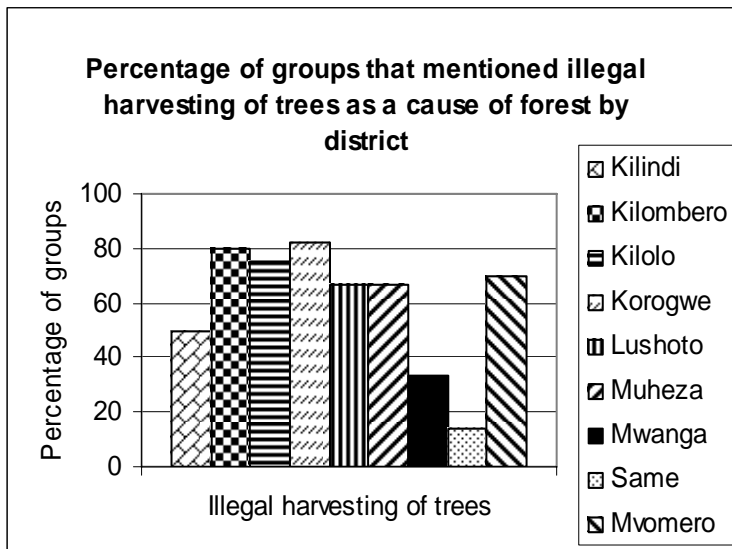


Chart 6 shows that illegal hunting was mentioned as a problem in seven out of the nine districts.

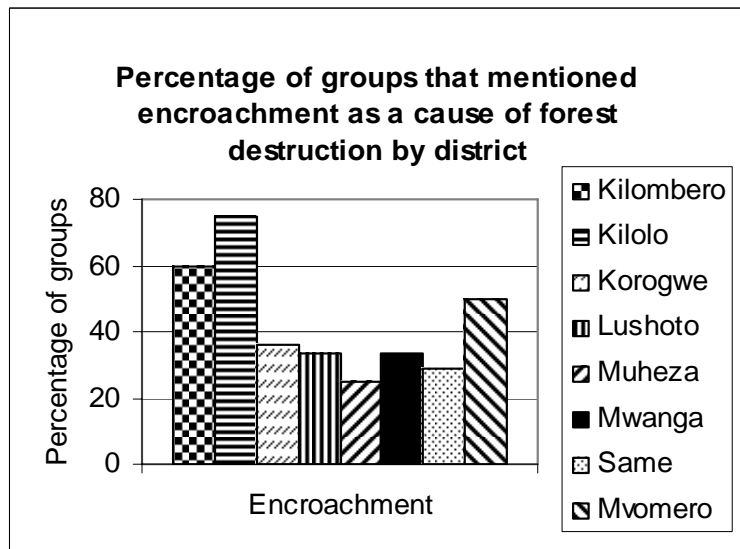
More than 80% of groups in Kilolo, and Korogwe mentioned this problem, 50% of groups in Lushoto mentioned it as a problem, while in the other districts (Kilindi, Kilombero, Muheza and Mvomero) less than 50% of groups mentioned this as a problem.

Chart 6 Percentage of groups that mention illegal hunting

Chart 7 shows that encroachment was mentioned as a of forest destruction in eight districts.

The majority of groups (50 - 80%) from Kilombero, Kilolo and Mvomero mentioned this problem. However fewer groups in Korogwe, Lushoto, Muheza, Mwanga and Same mentioned this problem (<40%).

Chart 7 Percentage of groups that mentioned encroachment as a forest problem

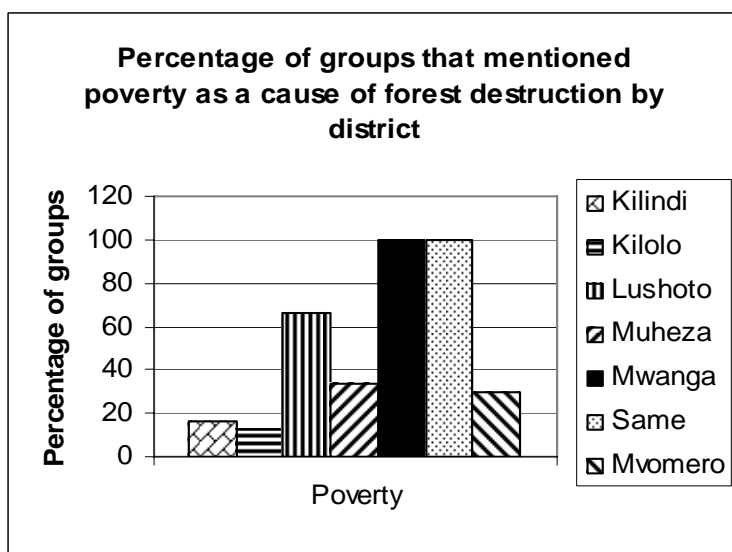


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Chart 8 shows that poverty was mentioned as forest destruction in seven districts.

The majority of groups (>60-100%) were from Lushoto, Mwanga and Same districts, while <40% were groups from Kilindi, Kilolo, Muheza and Mvomero districts.

Chart 8 Percentage of groups that mentioned poverty as a cause of forest destruction



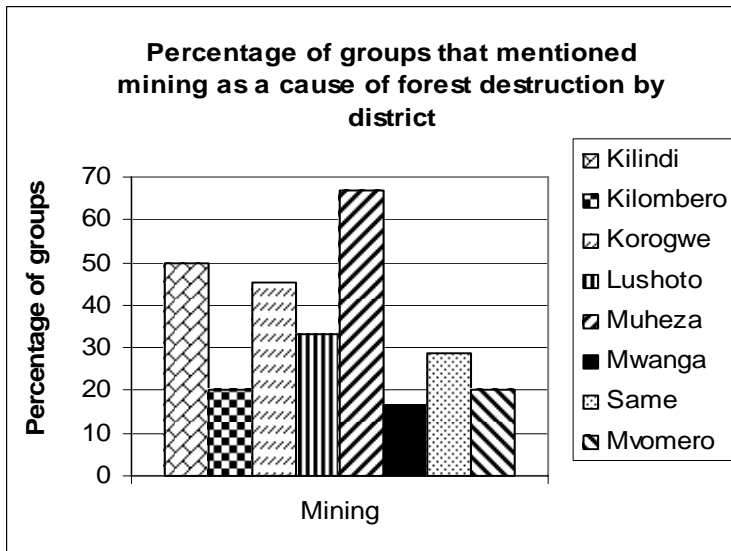


Chart 9 shows that mining was mentioned as a cause of forest destruction by eight districts.

67% of Muheza district groups mentioned the problem, while other district groups were <50% (Kilindi, Kilombero, Korogwe, Lushoto, Mwanga, Same and Mvomero districts).

Chart 9 Percentage of groups that mentioned mining as a cause forest destruction

Chart 10 showing the majority of groups (>40%), from Mwanga, Same and Mvomero districts, mention poor implementation of laws / procedures as a cause of forests destruction, however less than 40% of groups were from Kilindi, Kilombero, Kilolo, Lushoto and Muheza districts.

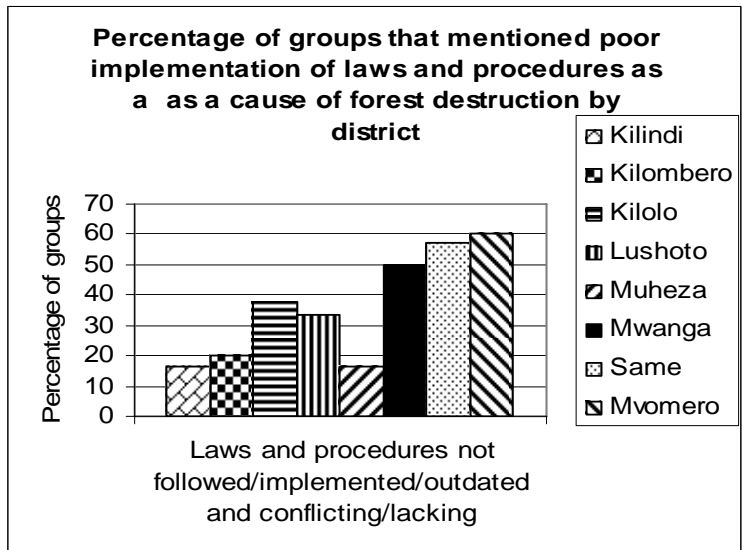


Chart 10 Percentage of groups that mentioned poor implementation of laws / procedures as a cause of forest destruction

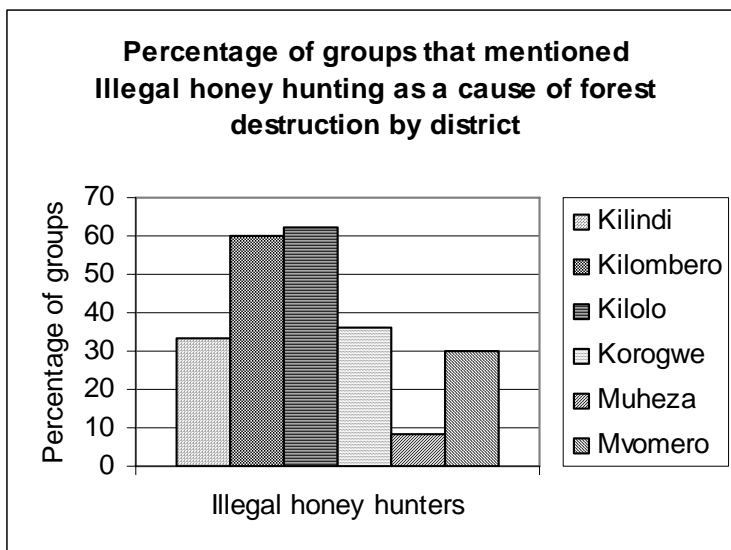


Chart 11 shows that six districts mentioned illegal honey hunting as a cause of forests destruction.

Majority of groups (>50%) were from Kilombero and Kilolo districts while <50% of groups were from Kilindi, Korogwe, Muheza and Same districts

Chart 11 Percentage of groups that mentioned illegal honey hunting as a cause of forest destruction

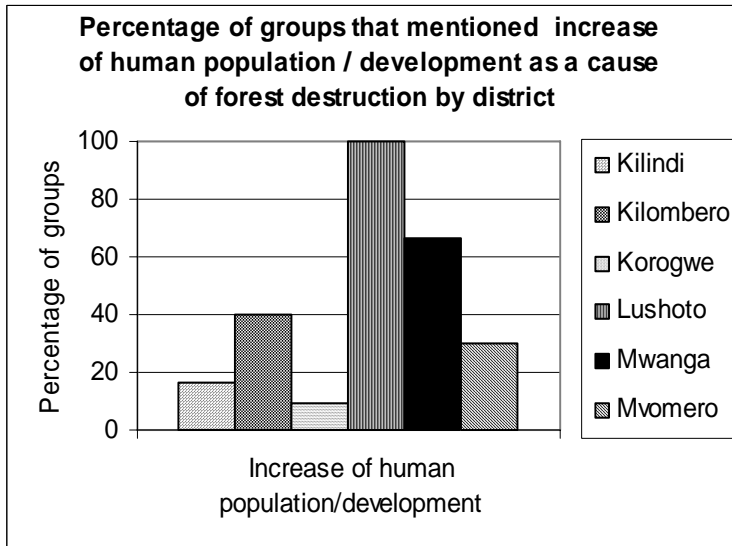


Chart 12 shows that six districts mentioned an increase of human population/development as a cause of forest destruction, including >50% groups from Mwanga district and all groups from Lushoto district. Fewer groups <40% mentioned increase of human population /development as a cause of forest destruction in Kilindi, Kilombero, Korogwe and Mvomero districts.

Chart 12 Percentage of groups that mentioned increase of

human population /development as a cause of forest destruction

Chart 13 shows that eight districts mentioned poor farming methods / shifting cultivation as a cause of forests destruction.

The majority of groups (50-60%) were from Kilombero and Korogwe districts, however in Kilindi, Kilolo, Muheza, Mwanga, Same, and Mvomero district groups got <50%.

Chart 13 Percentage of groups that mentioned poor farming methods/shifting cultivation as a cause of forest destruction

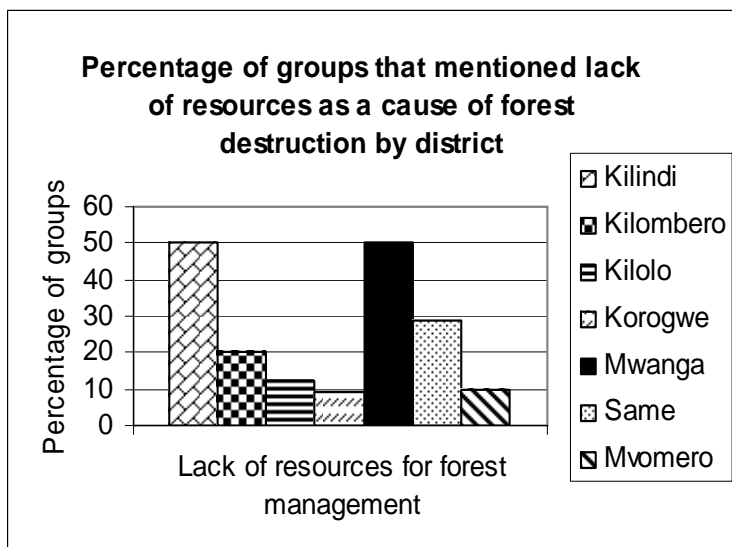
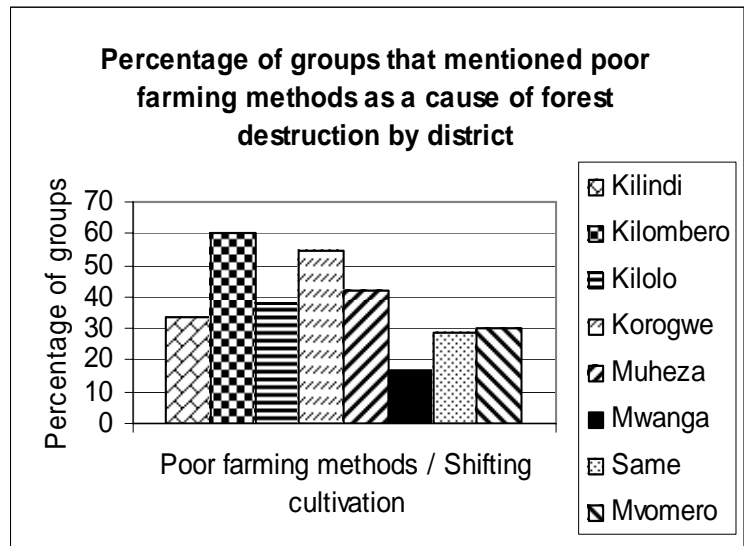


Chart 14 shows nine districts mentioned lack of resources as a cause of forests destruction.

Half of the groups (50%) in Kilindi and Mwanga Districts mentioned lack of resources as a cause of forests destruction. However there were fewer districts groups (<50%) from Kilombero, Kilolo, Korogwe, Same and Mvomero districts.

Chart 14 Percentage of groups that mentioned lack of resources as a cause of forest destruction

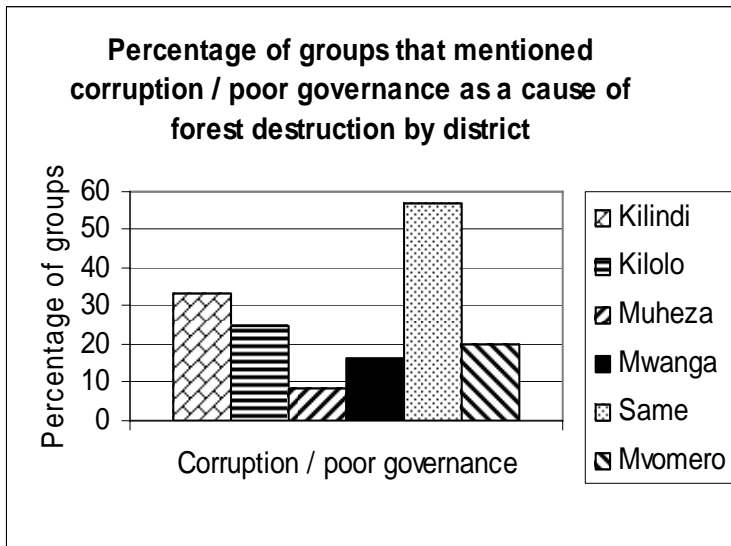


Chart 15 shows that six districts mentioned corruption / poor governance as a cause of forests destruction.

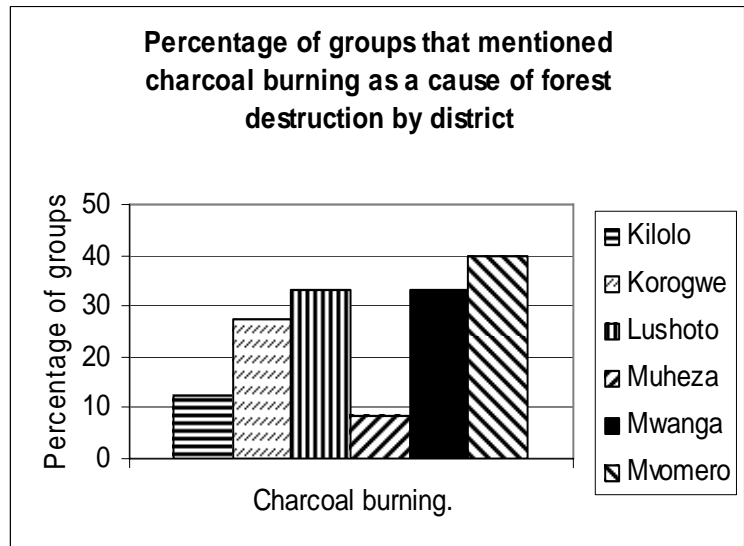
Majority of groups, >50% were from Same district while fewer groups (<50%) were from Kilindi, Kilolo, Muheza, Mwanga and Mvomero districts.

Chart 15 Percentage of groups that mentioned corruption/poor governance as a cause of forest destruction

Chart 16 shows that six districts mentioned charcoal burning as a cause of forest destruction.

The majority of groups (>30-40%) were from Lushoto, Mwanga and Mvomero districts, while districts groups from Kilolo, Korogwe and Muheza districts scored less than 30%.

Chart 16 Percentage of groups that mentioned charcoal burning as a cause of forest destruction



3.4 Major problems facing the Eastern Arc as defined by different stakeholder groups (villagers, NGOs etc) (between District comparison)

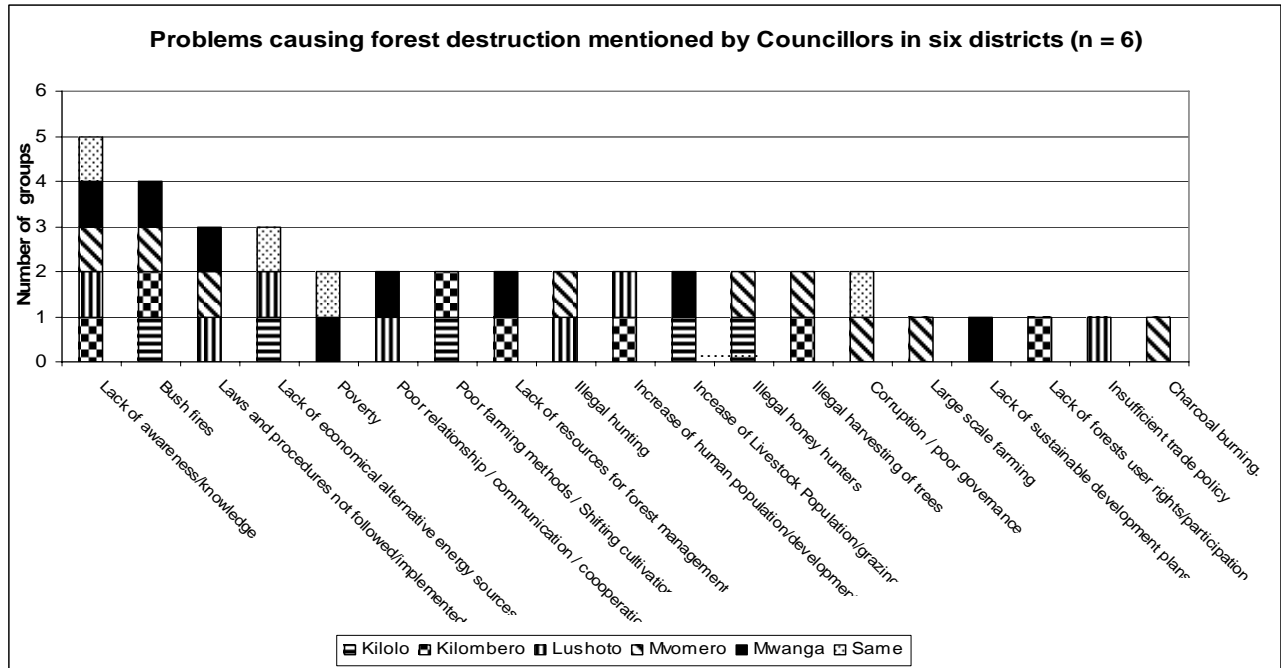


Chart 17 Problems causing forests destruction mentioned by Councillors in 6 districts

Chart 17 shows that Councillors mentioned 20 problems as causes of forest destruction, e.g. lack of awareness / knowledge (mentioned by four groups), bush fires (four groups), laws / procedures followed / implemented (three groups). Large scale farming, lack of sustainable development plans, lack of forests user rights / participation, insufficient trade policy and charcoal burning were mentioned by one district group.

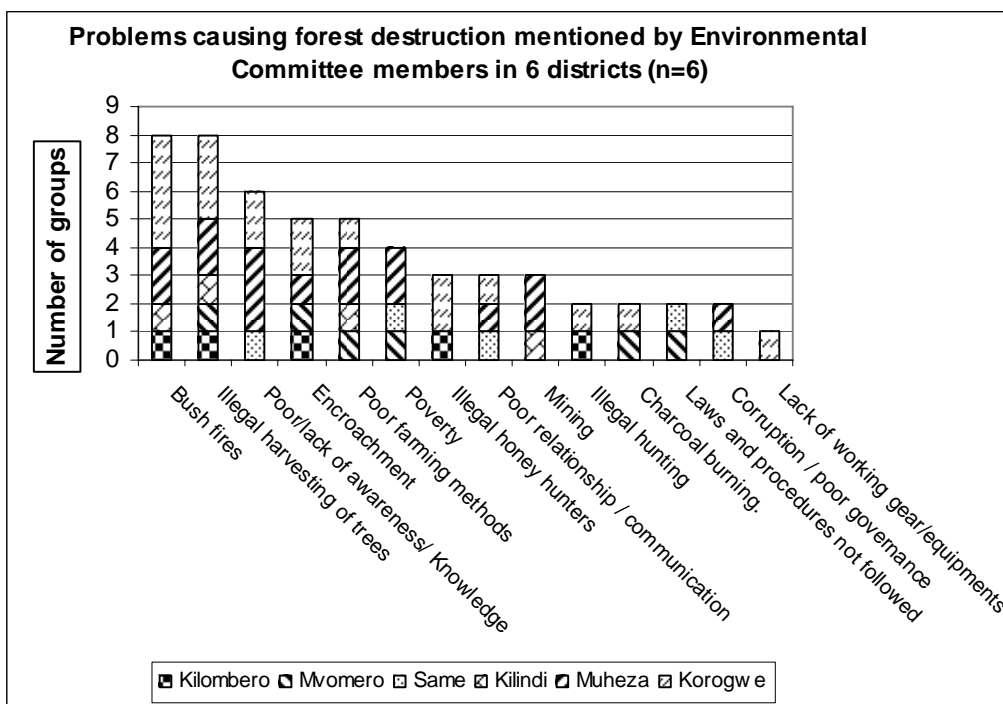


Chart 18 shows Environmental committee members mentioned 14 problems causing forests destruction. The top two problems were illegal harvesting of trees and bush fires.

Chart 18 Problems causing forests destruction mentioned by Environmental committees

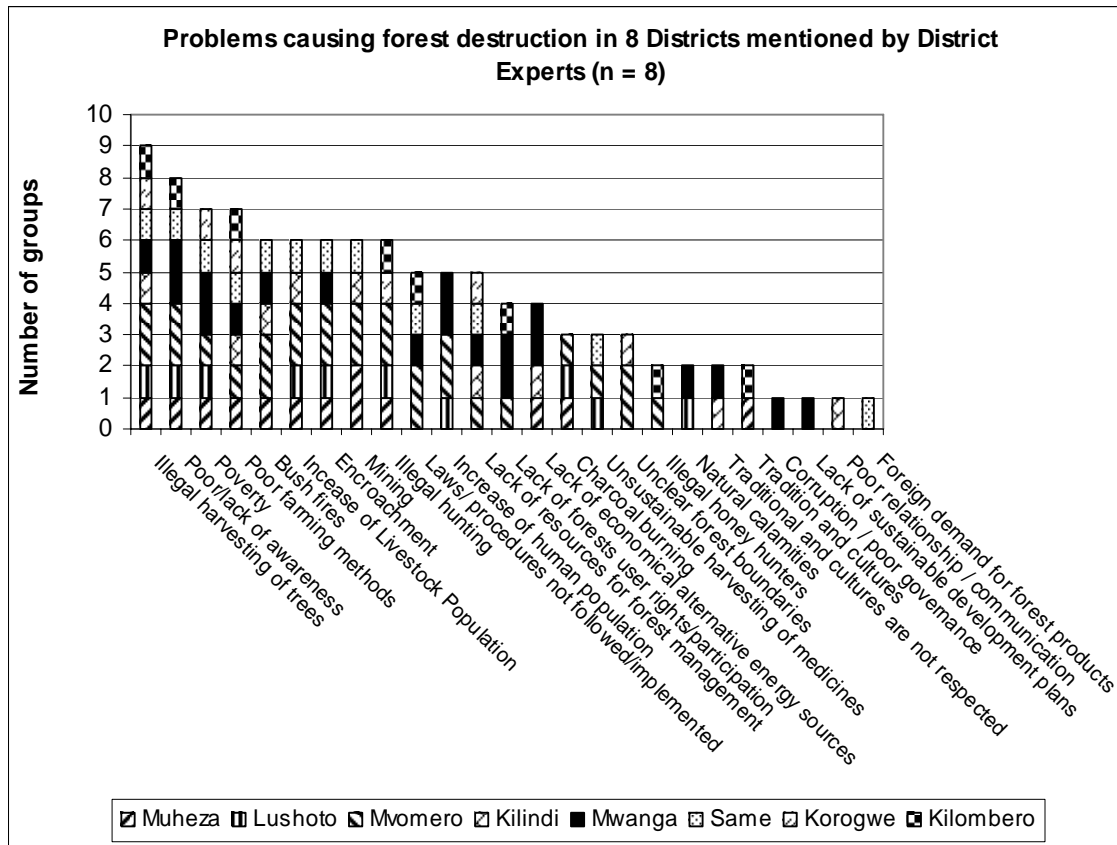


Chart 19 Problems causing forest destruction mentioned by district experts

Chart 19 shows district experts mentioned 25 problems as causes of forest destruction. Illegal tree harvesting was mentioned by nine district groups, poor / lack of awareness was mentioned by eight district groups and poverty was mentioned by seven district groups. Corruption / poor governance, lack of sustainable development plans, poor relationship / communication, and demand for forest products were mentioned by one district group.

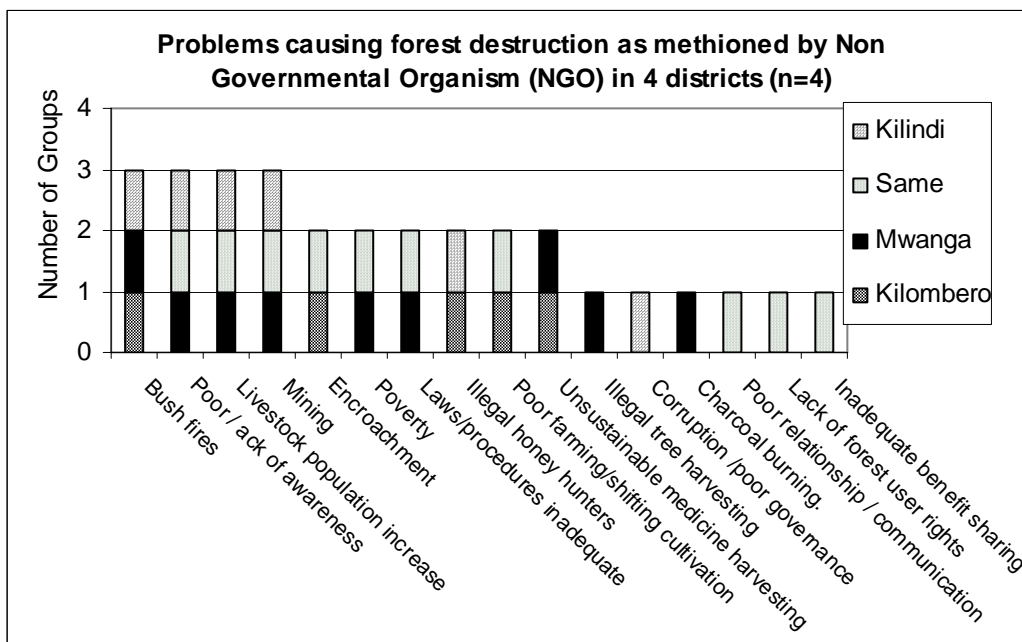


Chart 20 shows that NGOs mentioned 16 problems as causes of forest destruction.

Chart 20 Problems causing forests destruction mentioned by NGO in 4 districts

Bush fires, poor / lack of awareness, increase of livestock and mining were each mentioned in three districts. Corruption / poor governance, illegal harvesting of trees, charcoal burning, and poor relationships were each mentioned in one district.

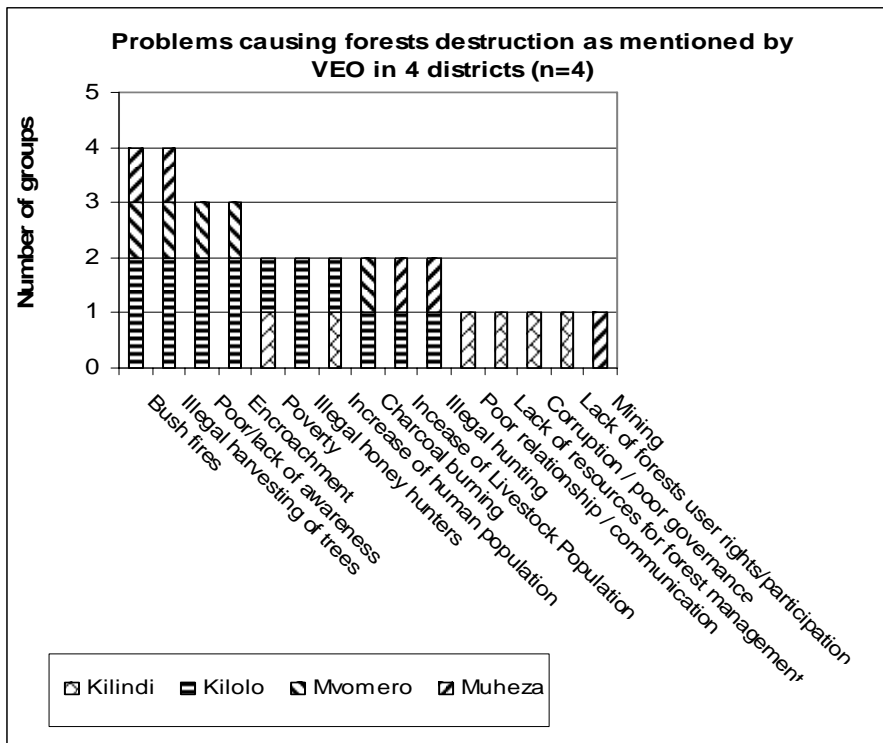


Chart 21 shows that Village Executive Officers (VEO) mentioned 15 problems as causes of forests destruction. Illegal harvesting of trees and bush fires were each mentioned by four district groups. Poor relationship / communication/cooperation, lack of resources for forest management, corruption / poor governance, Lack of forests user rights / participation and mining were mentioned each by one district group.

Chart 21 Showing causes of forests destruction mentioned by Village Executive Officers (VEO) in 4 districts

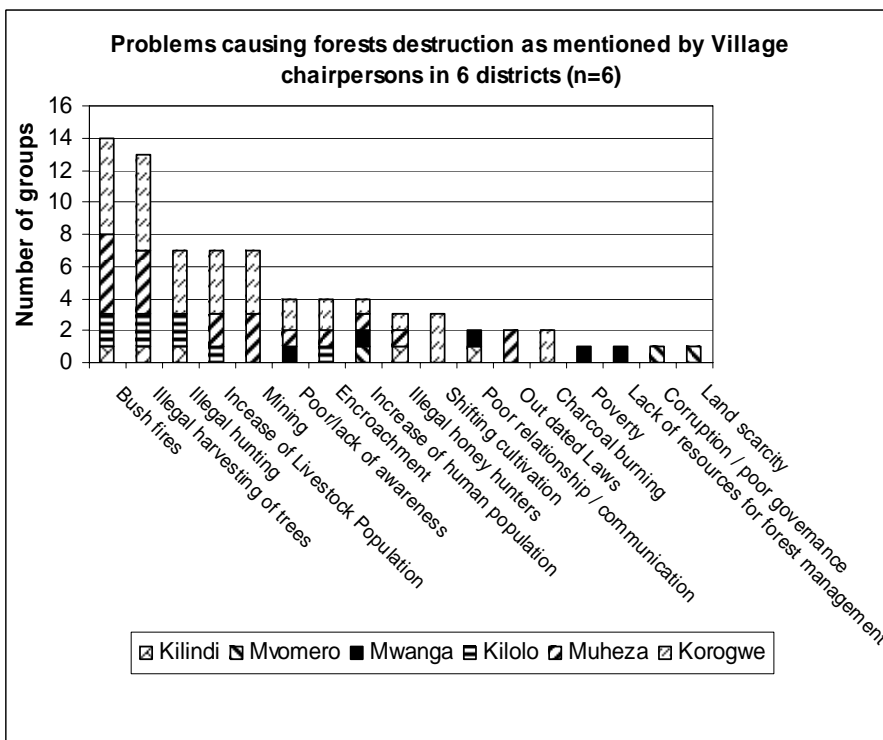


Chart 22 shows that village chairpersons mentioned 17 problems as causes of forests destruction: bush fires (mentioned by 14 district group), illegal harvesting of trees (13 groups). Poverty, lack of resources for forest management, illegal honey hunting, corruption / poor governance and land scarcity were each mentioned in one district.

Chart 22 Problems causing forests destruction mentioned by Village chairpersons in 6 districts

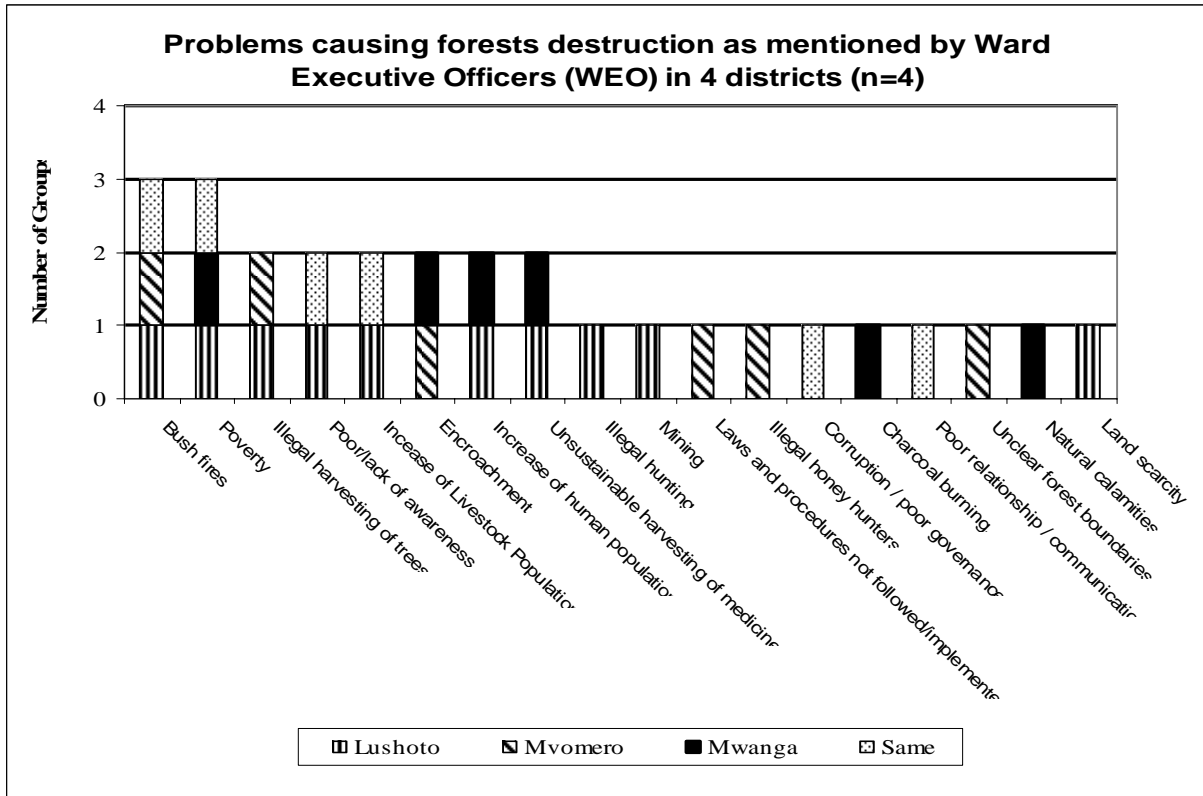


Chart 23 Problems causing forests destruction mentioned by Ward Executive Officers (WEO) in 4 districts

Chart 23 shows that Ward Executive Officers (WEO) mentioned 19 problems as causes of forest destruction. Bush fires and poverty were mentioned by three district groups each, illegal harvesting of trees and poor / lack of awareness / knowledge were each mentioned by two district groups. Some of the problems were mentioned by one district group, such as illegal hunting, mining, laws and procedures not followed / implemented, illegal honey hunters, corruption / poor governance, poor relationship, unclear forest boundaries, natural calamities, land scarcity and closing forests for long time.

Women’s groups in Kilombero and Mvomero District mentioned the following problems as causes of forest destruction. Women mentioned nine problems as causes of forests destruction. Each problem was mentioned in only one district:

- Livestock population increase (Kilombero)
- Illegal harvesting of trees (Kilombero)
- Bush fires (Kilombero)
- Mining (Kilombero)
- Encroachment (Kilombero)
- Poor / lack of awareness (Mvomero)
- Poverty (Mvomero)
- Laws / procedures inadequate (Mvomero)
- Lack of sustainable development plans (Mvomero)

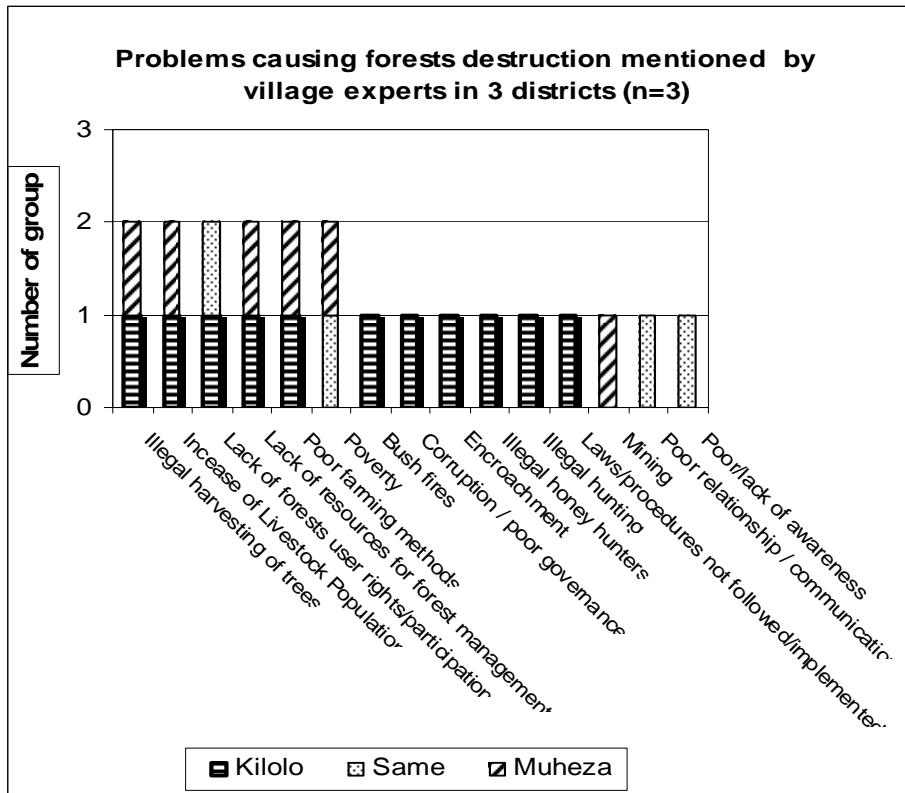


Chart 24 shows that village experts mentioned 15 problems as causes of forest destruction.

Chart 24 Problems causing forests destruction mentioned by village experts in 3 districts

Poverty, poor farming methods / shifting cultivation, lack of resources for forest management, lack of forests user rights / participation, increase of livestock population / grazing and illegal harvesting of trees were each mentioned by two district groups. Bush fires, corruption / poor governance, encroachment, illegal honey hunters, illegal hunting, laws and procedures not followed implemented / outdated and conflicting / lacking, mining, poor relationship / communication / cooperation and poor / lack of awareness / knowledge were each mentioned by one district group.

3.5 Solutions

3.5.1 Most popular solutions to the problems proposed by all combined stakeholders from the 6 districts

Chart 25 shows 23 solutions to the problem of fire, the most commonly mentioned were: community environmental education (mentioned by 43 groups), creating and enforcing new by-laws (36 groups) and improving agricultural practices (21 groups). Some of the solutions to fire problems mentioned by one group only were: stopping political interference, conduct EIA, controlling fire sources, use of improved energy serving stoves financial support from the government and improve revenue sharing system.

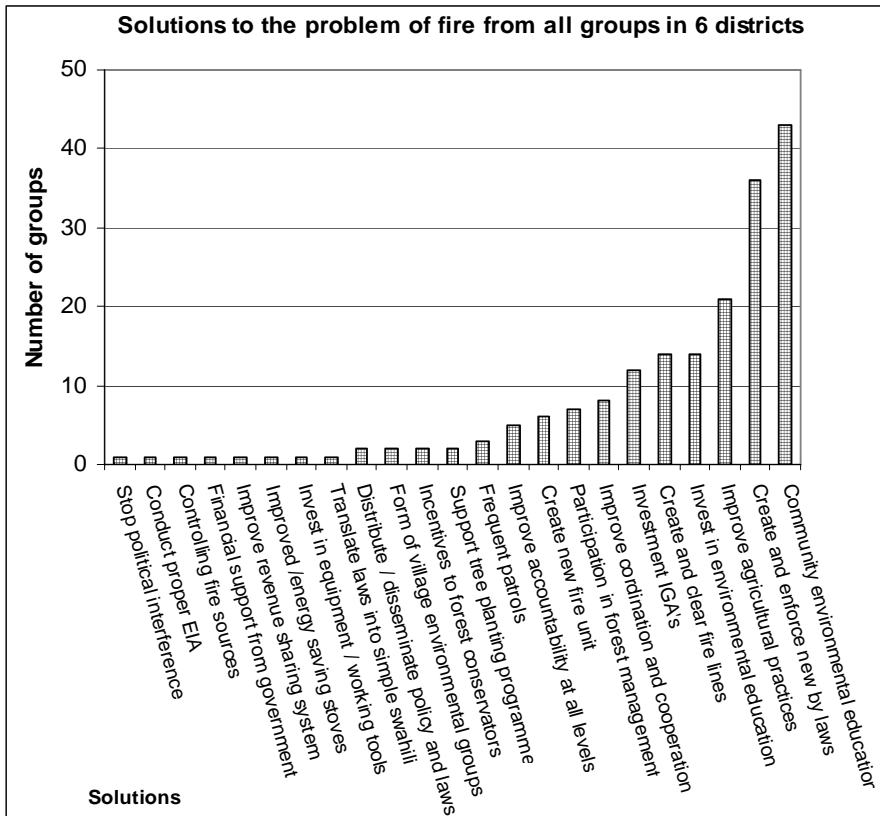


Chart 25 showing overall fire solutions as mentioned from six districts

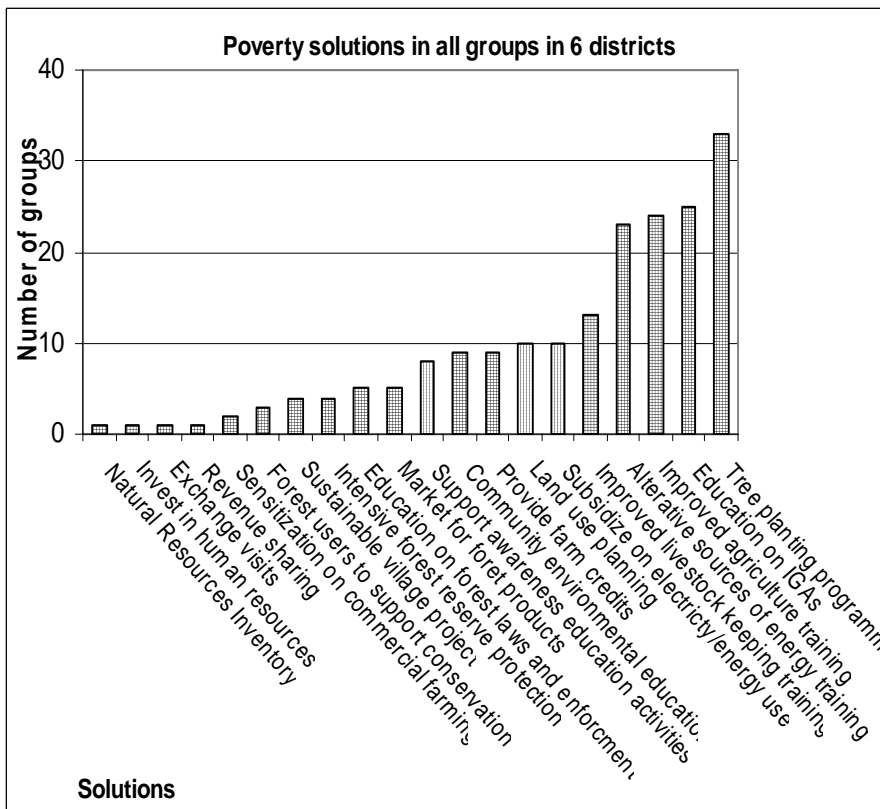


Chart 26 showing overall poverty solutions mentioned from 6 districts

Chart 26 shows 20 solutions to the problem of poverty, the most commonly mentioned were: supporting tree planting programme (mentioned by 33 groups in all the six districts), education on IGAs (mentioned by 25 groups in all six the districts) and education on improved agricultural practices (mentioned by 24 groups in all the six districts).

Some of the solutions to poverty problems mentioned by only one group were: inventory on natural forests, investment on experts / human resources, exchange visits and revenue sharing.

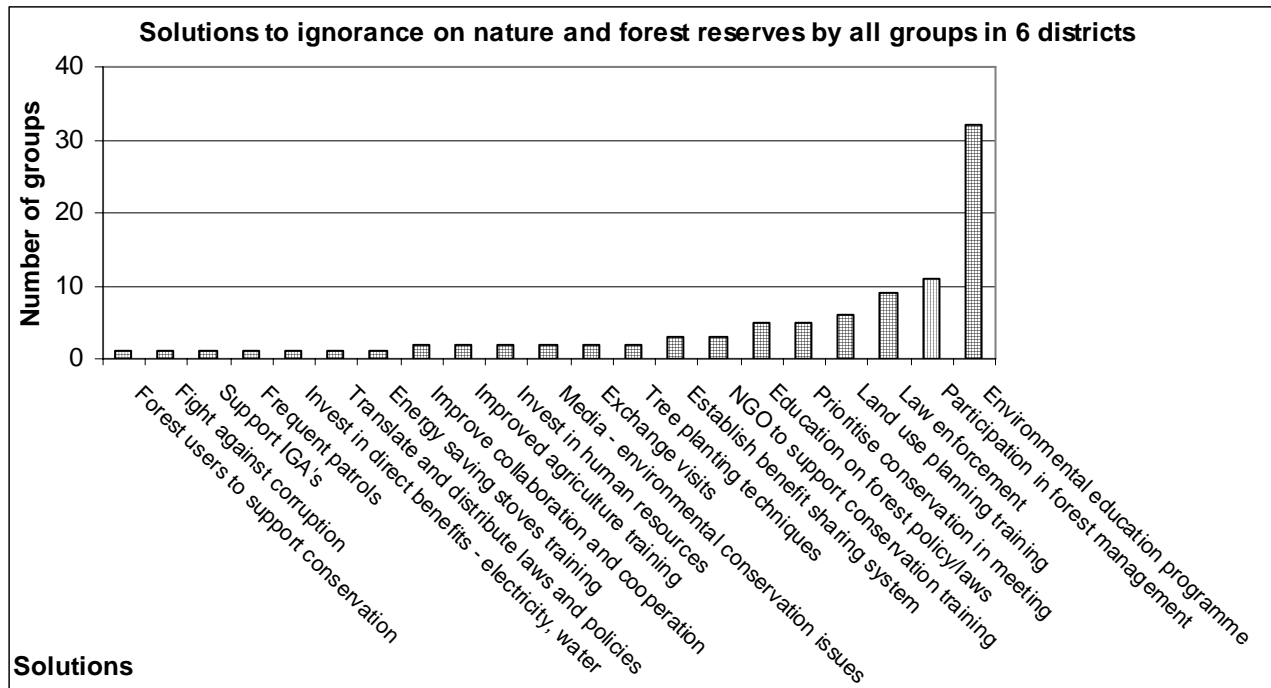


Chart 27 showing overall solutions to ignorance on nature and forest reserves

Chart 27 shows 21 solutions to the problem of ignorance on nature and forest reserves, where the majority of groups mentioned community / school environmental education programme (32 groups in all the six districts).

Some of the solutions to ignorance on nature and forest reserves problems mentioned by only one group were:

- nations / companies with heavy consumption of forest products to compensate the conservation costs; fighting against corruption
- encourage use of Income Generating Activities (IGA)
- frequent patrol in forest reserves
- invest on direct benefits such as electricity and tap water
- translating laws and policies of lands and forests ministries
- distributing them to the communities and awareness raising on the use of energy saving stoves.

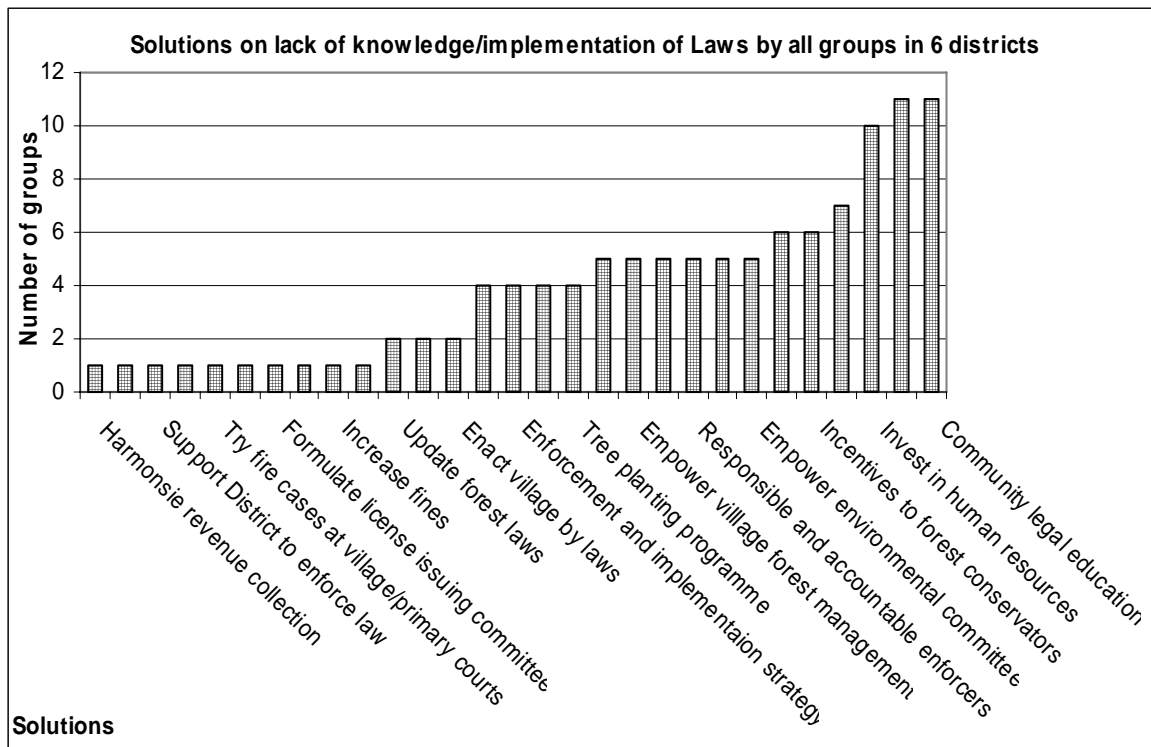


Chart 28 showing overall solutions on lack of knowledge / implementation of laws from 6 districts

Chart 28 shows 30 solutions to the problem of lack of knowledge / implementation of laws, where the most commonly mentioned solutions were:

- collaboration and cooperation at all levels (mentioned by 11 groups in all six districts)
- investments on staffs / human resources (mentioned by 10 groups in all six districts)
- educating the communities on consequences of corruption (mentioned by seven groups in all the districts).

Some of the solutions to the problem of lack of knowledge / implementation of laws mentioned by only one group were:

- rationale for forest revenue collection between Central Government and Local Authorities, District Councils should be subsidized to enforce forest laws
- fire cases to start at village / ward and primary courts
- quick decision making in the courts; village by-laws should resemble court laws and avoid political interferences.

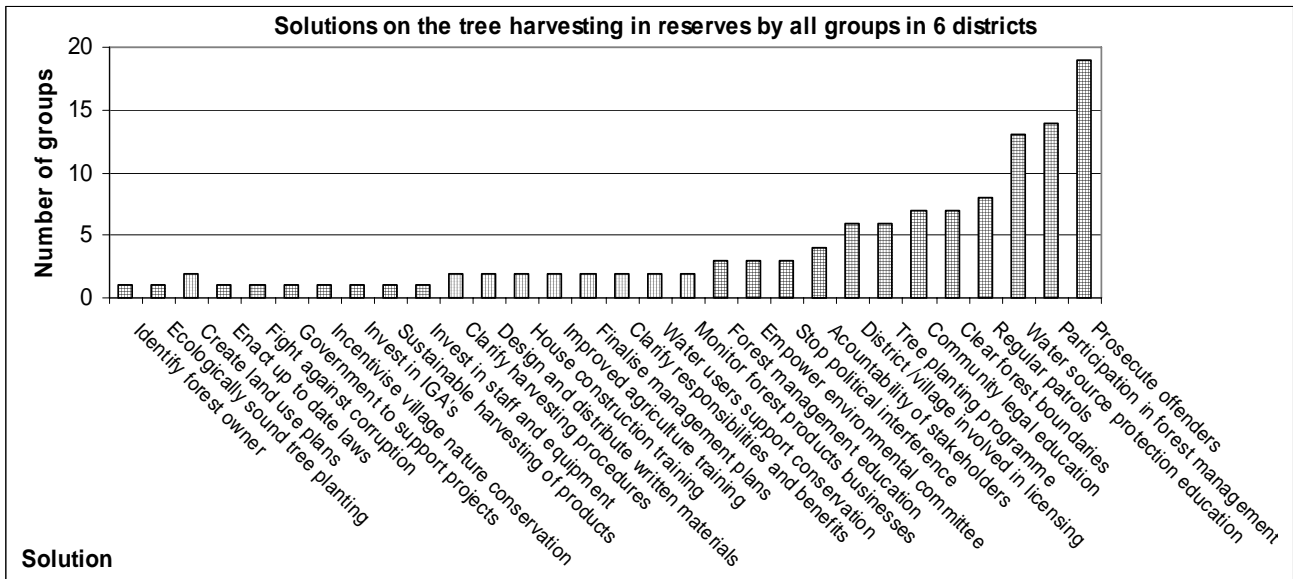


Chart 29 showing overall solutions on illegal tree harvesting in reserves mentioned from 6 districts

Chart 29 shows 32 solutions to the problem of illegal tree harvesting, the most commonly mentioned were:

- law enforcement (mentioned by 18 groups in all the six districts)
- participation of communities in the conservation activities (mentioned by 14 groups in all the six districts)
- community education on the importance of safe guarding the water sources (mentioned by 13 groups in all six the districts)

Some of the solutions to illegal tree harvesting mentioned by only one group were:

- forest reserve owner to be known e.g. village, NGOs etc.
- tree species known to consume too much water should not be planted e.g. *Eucalyptus* near water sources
- create land use plans; government have to support projects once its time commences
- enacting up to date laws
- incentives to people in the village for nature conservation
- fight against corruption.

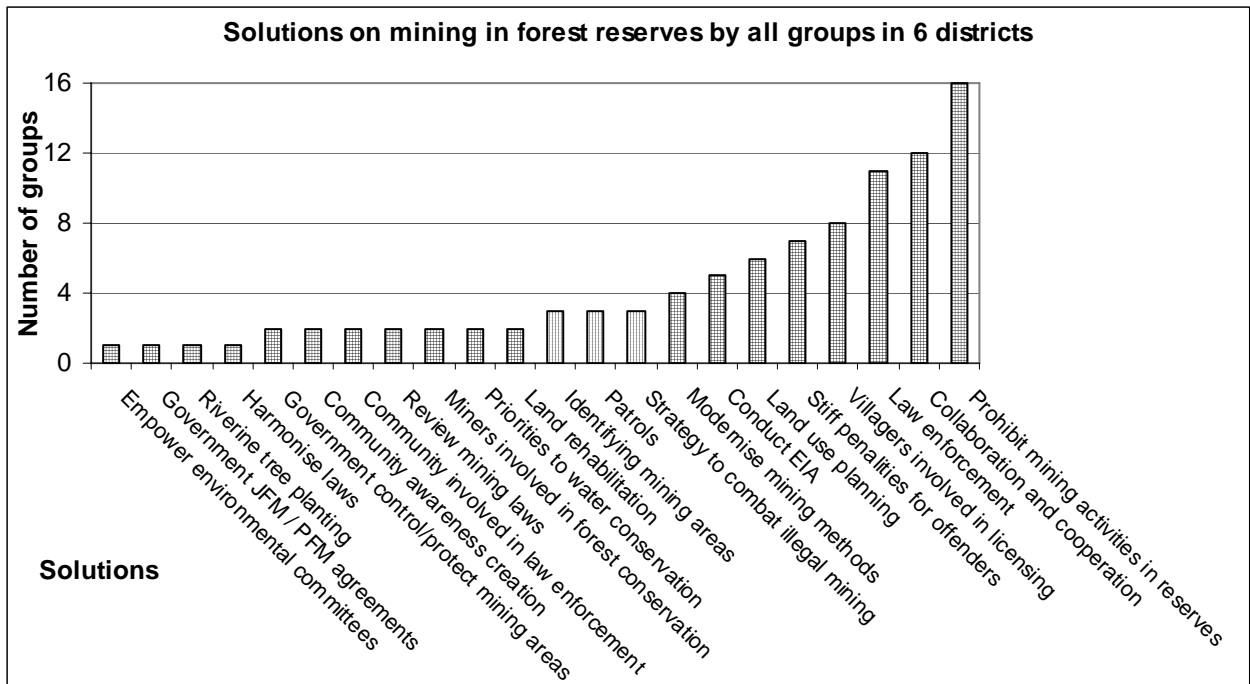


Chart 30 showing overall solutions on mining in reserves mentioned from 6 districts

Chart 30 shows 23 solutions to the mining in the catchment forest reserves, the most commonly mentioned were:

- prohibiting mining activities in forest reserves (mentioned by 16 groups in all the six districts)
- law enforcement (mentioned by 11 groups in all six the districts)
- collaboration and cooperation improving agricultural practices (mentioned by 11 groups in all the six districts).

Some of the solutions to mining in the catchment forest reserves mentioned by only one groups were:

- empowering environmental committee / village councils
- government to sign agreements with village governments on conservation of adjacent forests (PFM / JFM)
- riverine trees to be planted in catchment areas
- find a solution to conflicting laws among the agencies / ministries.

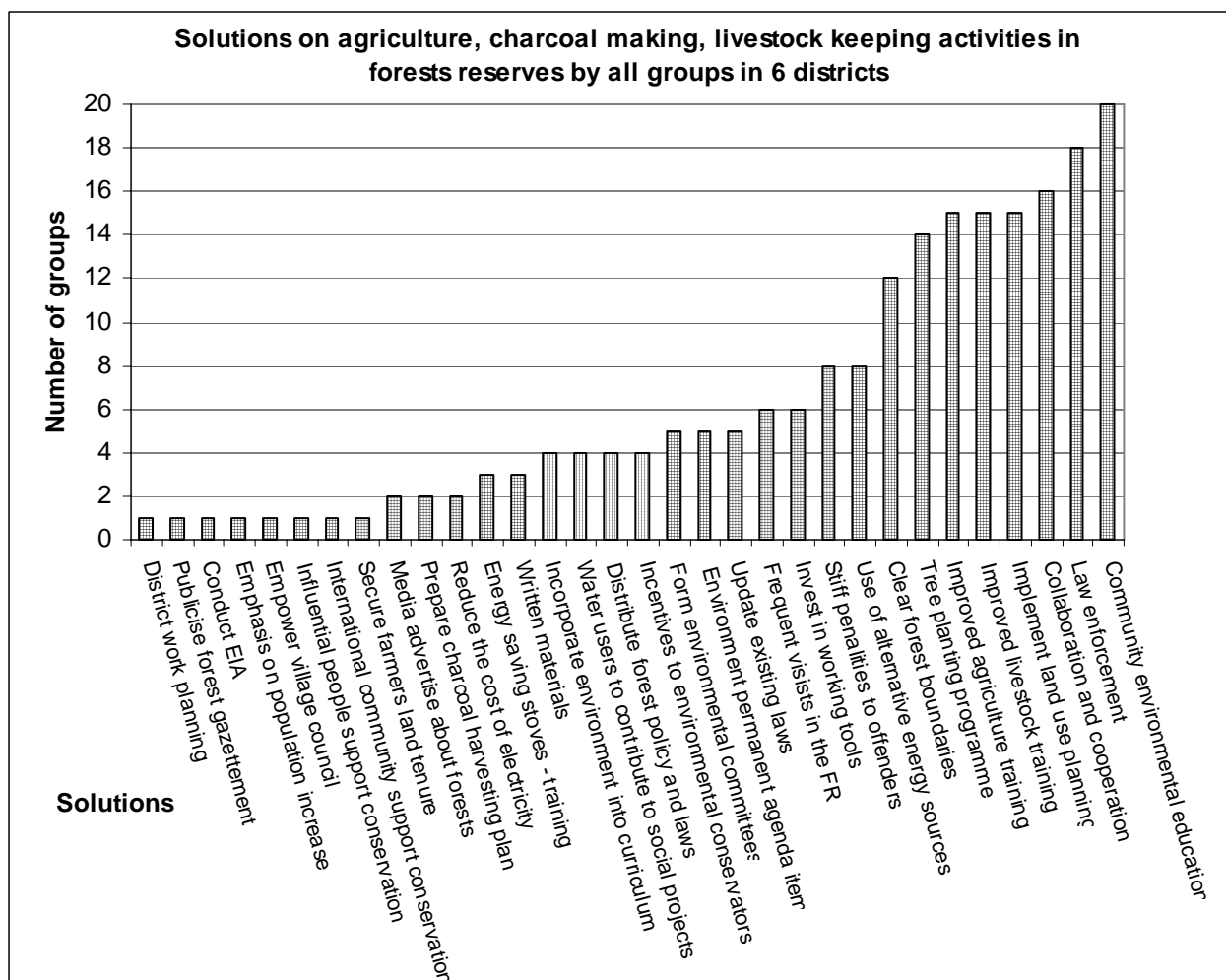


Chart 31 showing overall solutions to Agriculture, Charcoal making and Livestock keeping mentioned from 6 districts

Chart 31 shows 32 solutions to the agriculture, charcoal making and livestock keeping, the most commonly mentioned were:

- community education on forestry / environment (mentioned by 20 groups in all the six districts)
- law enforcement (mentioned by 18 groups in all six the districts)
- collaboration and cooperation between sectors / levels / politicians (mentioned by 16 groups in all the six districts).

Solutions to agriculture, charcoal making and livestock keeping mentioned by only one group were:

- a year work plan for forest conservation in respective districts
- empowering village councils
- influential people to participate in forest management activities
- announcing when the forest has become a forest reserve
- conducting EIA
- emphasis on reducing population increase
- international communities should contribute on conservation and management of these forests NEMC and VPO environmental department establish environmental offices in every district council
- especially those vulnerable areas / districts
- subsistence farmers to have their land tenure according to land act of 1999.

3.5.2 Most popular solutions to the problems proposed by the combined stakeholders in each of the Eastern Arc districts (between District comparison)

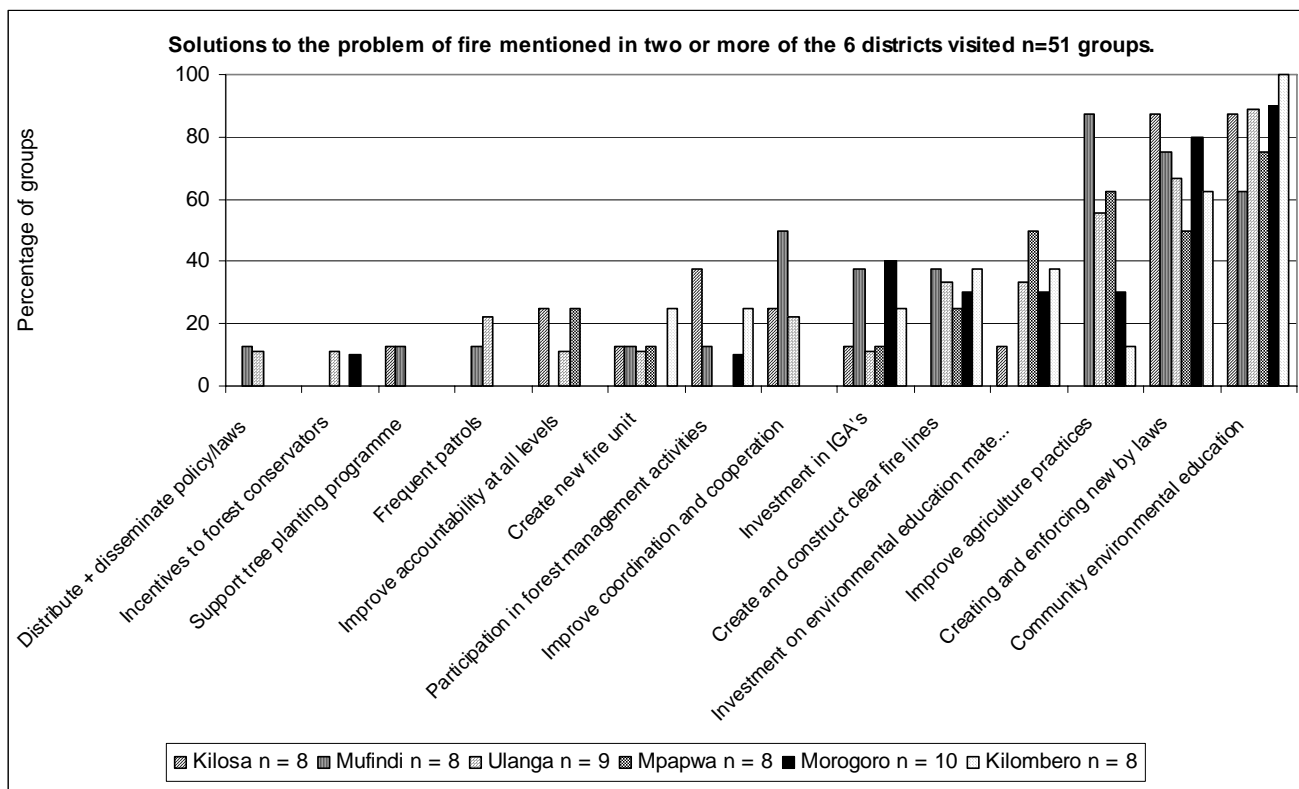


Chart 32 Showing the solutions mentioned in 6 districts to the problem of fire

Chart 32 shows 23 solutions to the problem of fire, the most commonly mentioned were:

- community environmental education (mentioned by the majority (> 60%) of groups in all six districts)
- creating and enforcing new by-laws (mentioned by more than 50% of groups in all six districts)
- improving agricultural practices (mentioned in five districts by between 87.5% and 11% of groups).

Fire problem solutions mentioned by fewer groups (less 50%) but in a range of districts include:

- investment in environmental education materials (five districts)
- create and construct clear fire lines (5 districts)
- investment in income generating activities (five districts)
- improved coordination and cooperation (three districts)
- participation in forest management activities (four districts)
- create new fire unit (five districts)
- improve accountability at all levels (three districts).

Other solutions to the problem of fire mentioned by less than 25% of groups in two or less districts are:

- frequent patrols
- support tree planting programme

- incentives to forest conservators
- distribute and disseminate policy and laws.

Other solutions suggested not shown on chart 32 as they were mentioned only in one district include:

- translating laws to understandable Swahili language
- investment on equipment / working tools
- improved / energy saving stoves
- improve revenue sharing system
- financial support from government
- controlling fire sources
- formation of village environmental committee / groups
- conduct proper EIA
- stop political interference.

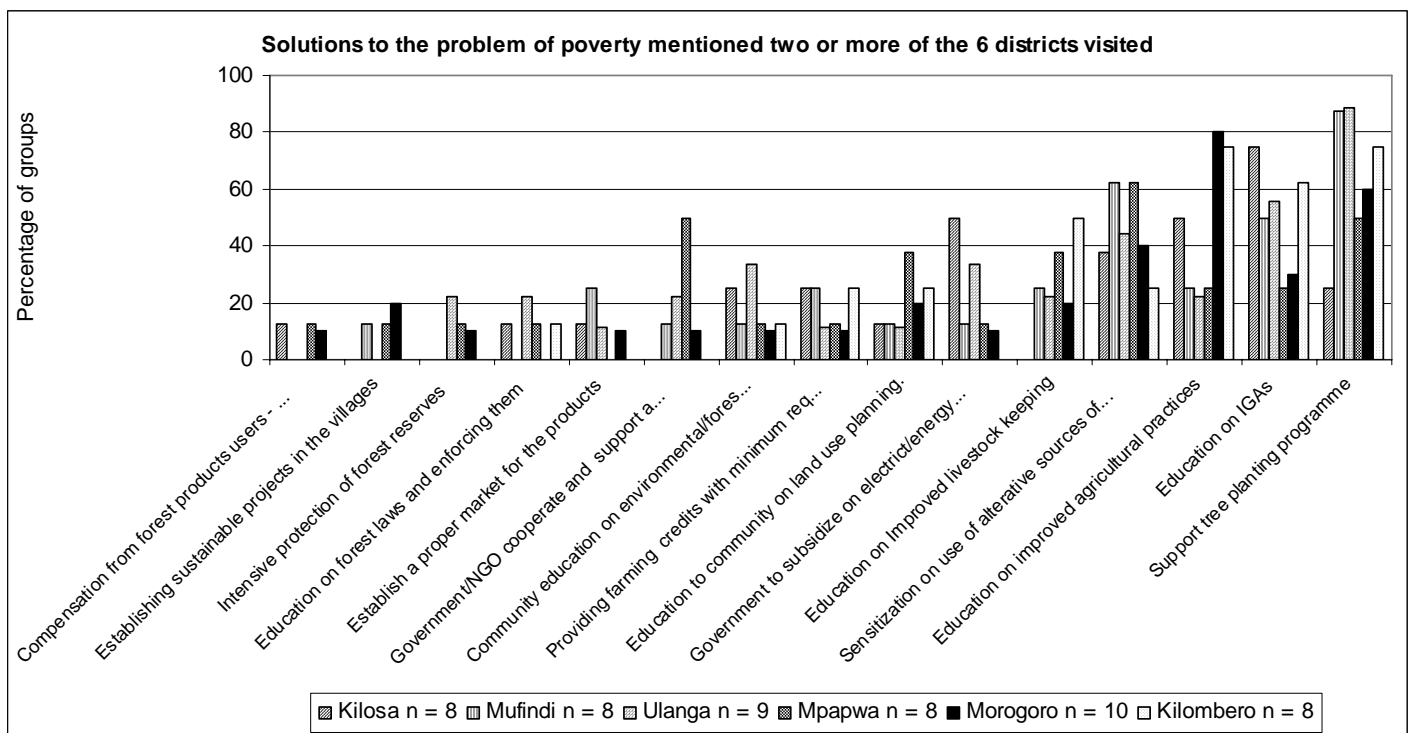


Chart 33 shows solutions to the problem of poverty mentioned in two or more districts.

Chart 33 shows the most popular solutions mentioned by a higher percentage (22–87%) of groups in six of the districts area:

- support tree planting programme
- education on IGAs
- education on improved agricultural practices
- sensitization on use of alterative sources of energy

Solutions mentioned in all districts but by fewer (12 – 37%) groups are:

- community education on environmental / forest conservation
- providing farming credits with minimum requirements
- education to community on land use planning

Chart 33 shows solutions mentioned in two – five of the districts by between 12 and 50% of groups, these are:

- education on improved livestock keeping
- government to subsidize on electricity / energy use
- government / NGO cooperate and support awareness raising and education activities
- establish a proper market for the products
- education on forest laws and enforcing them
- intensive protection of forest reserves
- establishing sustainable projects in the villages
- compensation from forest products users – nations / companies

Other solutions not shown on Chart 33 mentioned in only one district are:

- inventory on natural forests
- investment on experts / human resources
- exchange visits
- revenue sharing
- sensitization on commercial farming
- education on improved agricultural practices
- sensitization on use of alternative sources of energy
-
- Solutions mentioned in all districts but by fewer (12 – 37%) groups are:
- community education on environmental/forest conservation
- providing farming credits with minimum requirements
- education to community on land use planning

Chart 33 shows solutions mentioned in two – five of the districts by between 12 and 50% of groups, these are:

- education on improved livestock keeping
- government to subsidize on electricity / energy use
- government / NGO cooperate and support awareness raising and education activities
- establish a proper market for the products
- education on forest laws and enforcing them
- intensive protection of forest reserves
- establishing sustainable projects in the villages
- compensation from forest products users – nations / companies

Other solutions not shown on Chart 33 mentioned in only one district are:

- inventory on natural forests
- investment on experts/human resources
- exchange visits
- revenue sharing
- sensitization on commercial farming

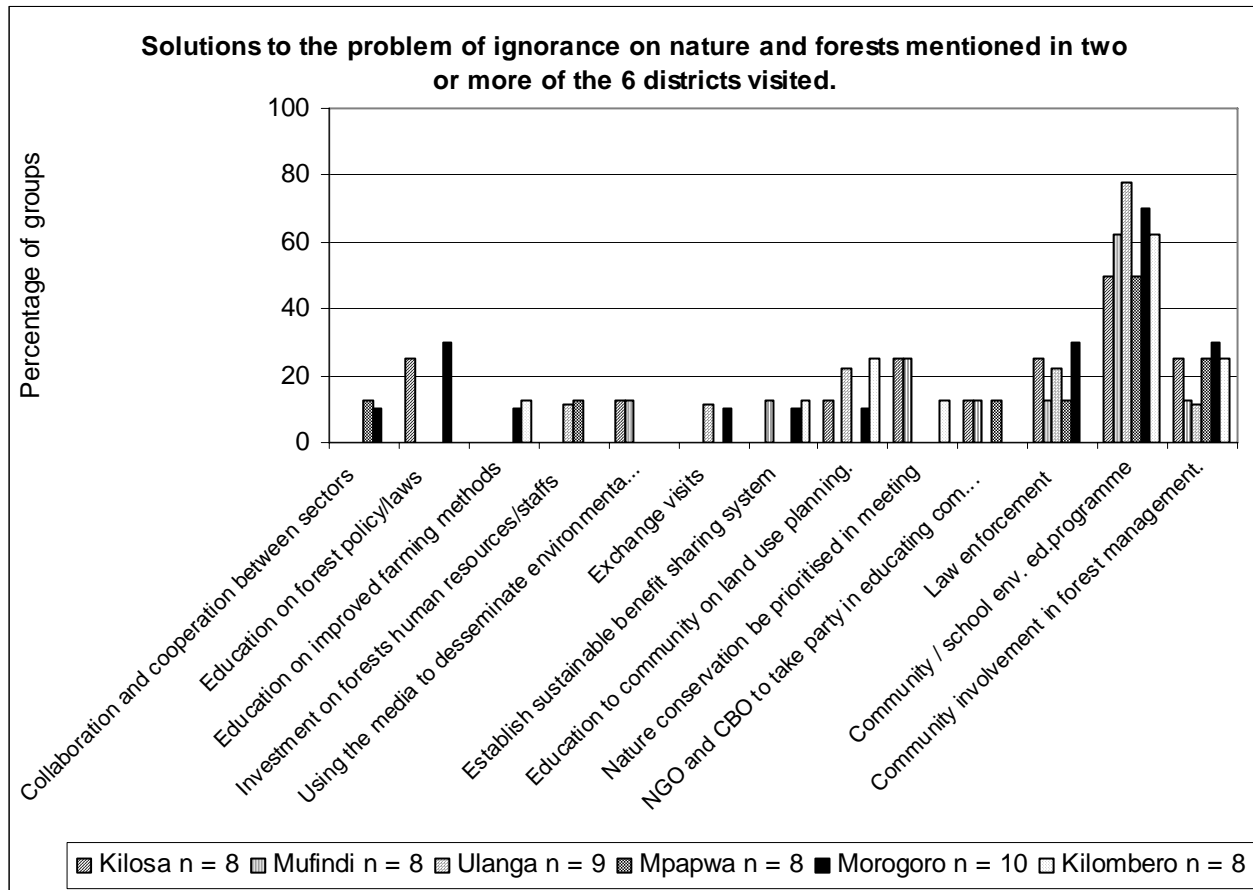


Chart 34 shows solutions to the problem of ignorance about nature and forests mentioned in two or more districts

Chart 34 shows the most popular solution mentioned by the majority of groups (50 – 78 %) of groups in all six of the districts is community / school environmental education programme. Community involvement in forest management was mentioned in all districts but by fewer (< 30 %) groups.

Chart 34 shows solutions mentioned in two – five of the districts by between 12 and 30% of groups, these are:

- collaboration and cooperation between sectors
- education on forest policy / laws
- education on improved farming methods
- investment on forests human resources / staffs
- using the media to disseminate environmental conservation issues
- exchange visits
- establish sustainable benefit sharing system
- education to community on land use planning.
- nature conservation be prioritised by meetings
- NGO and CBO to take party in educating communities on environmental conservation
- law enforcement

Other solutions not shown on Chart 34 mentioned in only one district are:

- nations / companies with heavy consumption of forest products to compensate the conservation costs

- fighting against corruption
- encourage use of IGAs
- frequent patrol in forest reserves
- invest on direct benefits such as electricity, tap water
- translating laws and policies of lands and forests ministries, and distributing them to the communities
- awareness raising on the use of energy saving stoves
- tree planting techniques

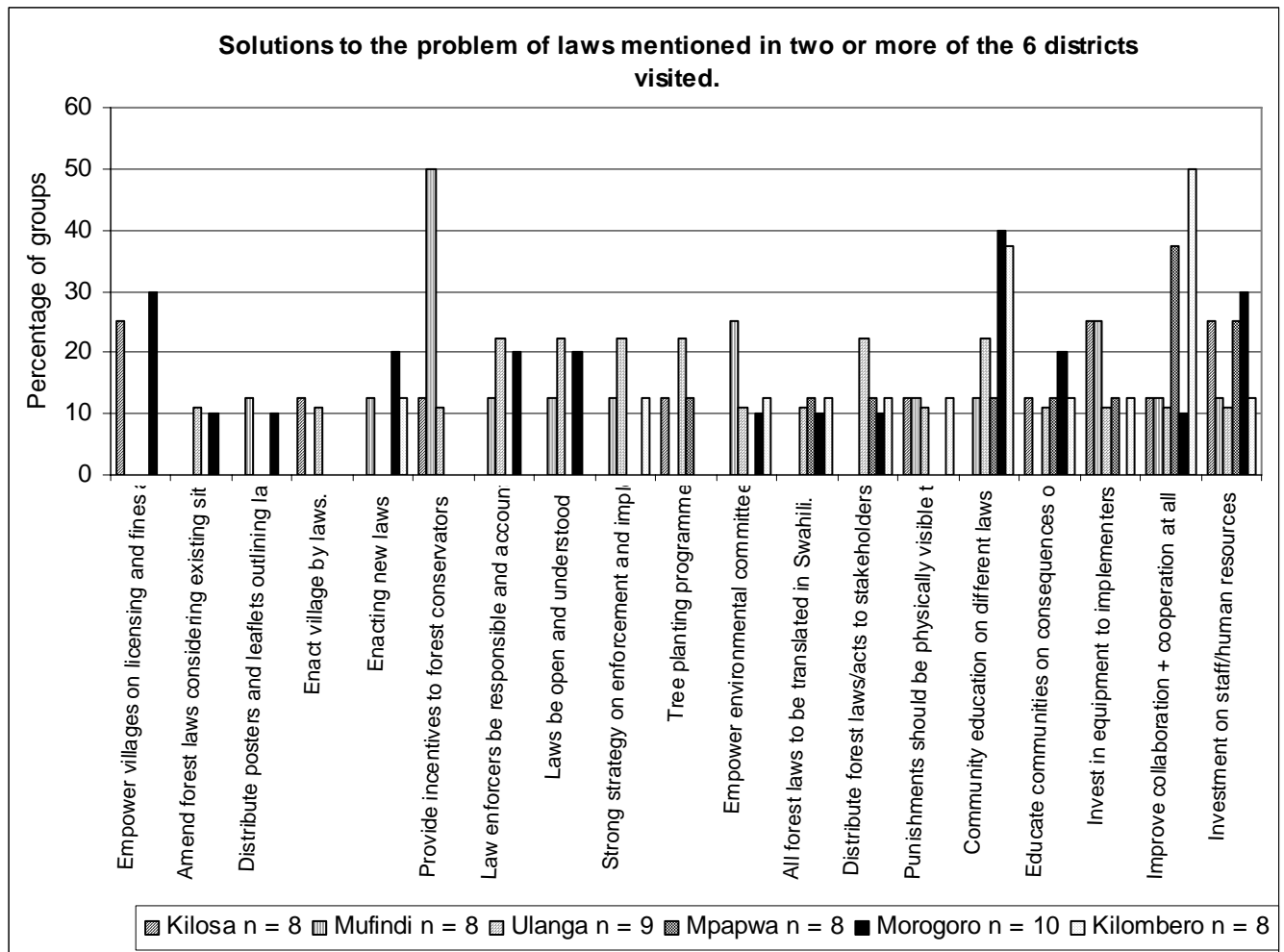


Chart 35 shows solutions to the problem with laws mentioned in two or more districts

Chart 35 shows the most popular solutions mentioned by between 11 – 50% of groups in all six of the districts are:

- improve collaboration and cooperation at all levels
- investment on staff / human resources

Chart 35 shows solutions mentioned in two – five of the districts by between 11 and 50% of groups, these are:

- empower villages on licensing and fines according to harvesting plan
- amend forest laws considering existing situation / environment
- distribute posters and leaflets outlining laws
- enact village by-laws
- enact new laws

- provide incentives to forest conservators
- law enforcers be responsible and accountable
- laws be open and understood
- strong strategy on enforcement and implementation of laws
- tree planting programme
- empower environmental committee
- all forest laws to be translated in Swahili
- distribute forest laws / acts to stakeholders at all levels
- punishments should be physically visible to all
- community education on different laws
- educate communities on consequences of corruption
- invest in equipment to implementers

Other solutions not shown on Chart 35 mentioned in only one district are:

- rationale for forest revenue collection between Central Government and Local Authorities.
- avoiding miscommunication and conflicts among agencies e.g. TANAPA and TANROAD
- district councils should be subsidized to enforce forest laws
- exchange visits
- fire cases to start at village / ward and primary courts
- proper implementation of Forest Policy and Act.
- quick decision making in the courts
- to formulate forest license issuing committee
- village by-laws should resemble court laws
- increasing fines
- avoid political interference

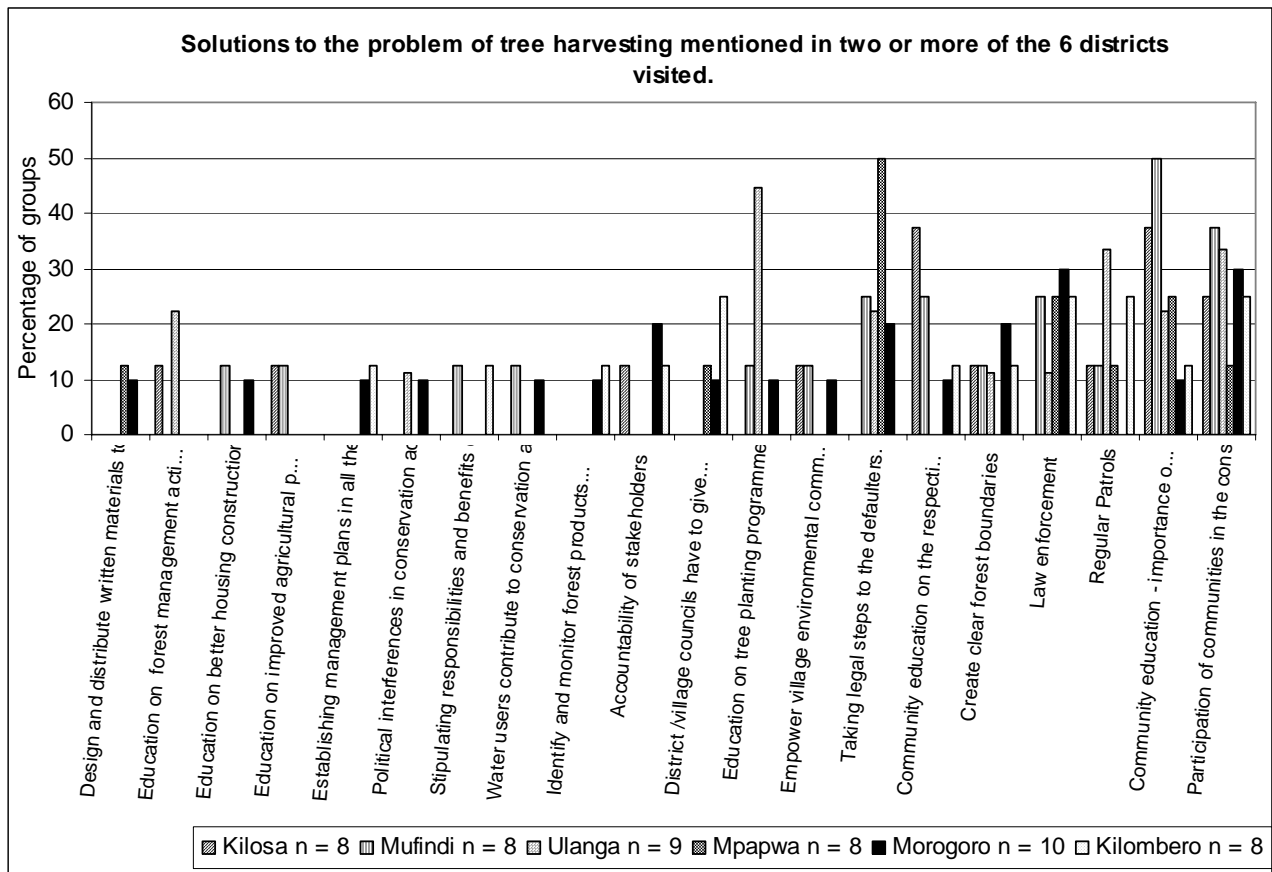


Chart 36 shows solutions to the problem of tree harvesting mentioned in two or more districts.

Chart 36 shows the most popular solutions mentioned by between 10 and 50 % of groups in all six of the districts are:

- community education - importance of safe-guarding water sources
- participation of communities in the conservation activities

Chart 36 shows solutions mentioned in two – five of the districts by between 10 and 50% of groups, these are:

- design and distribute written materials to villages
- education on forest management activities
- education on better housing construction
- education on improved agricultural practices
- establishing management plans in all the forests reserves
- political interferences in conservation activities
- stipulating responsibilities and benefits clearly
- water users contribute to conservation activities
- identify and monitor forest products merchants
- accountability of stakeholders
- district / village councils have to give permissions of harvesting the forests
- education on tree planting programme
- empower village environmental committee to enforce laws
- taking legal steps to the defaulters
- law enforcement
- create clear forest boundaries
- community education on the respective laws and its implementation
- regular patrols

Other solutions not shown on Chart 36 mentioned in only one district are:

- forest reserve owner to be known e.g. village, NGOs etc.
- tree species known to consume too much water should not be planted e.g. *Eucalyptus* near water sources.
- clear and open harvesting procedures to all levels
- enacting up to date laws
- create land use plans
- fight against corruption
- government have to support projects once its time commences
- incentives to people in the village for nature conservation
- investment IGAs
- setting up a department to follow up agreements / implementation
- sustainable harvesting forests products e.g. camphor, sandalwood
- increase number of foresters, and working tools

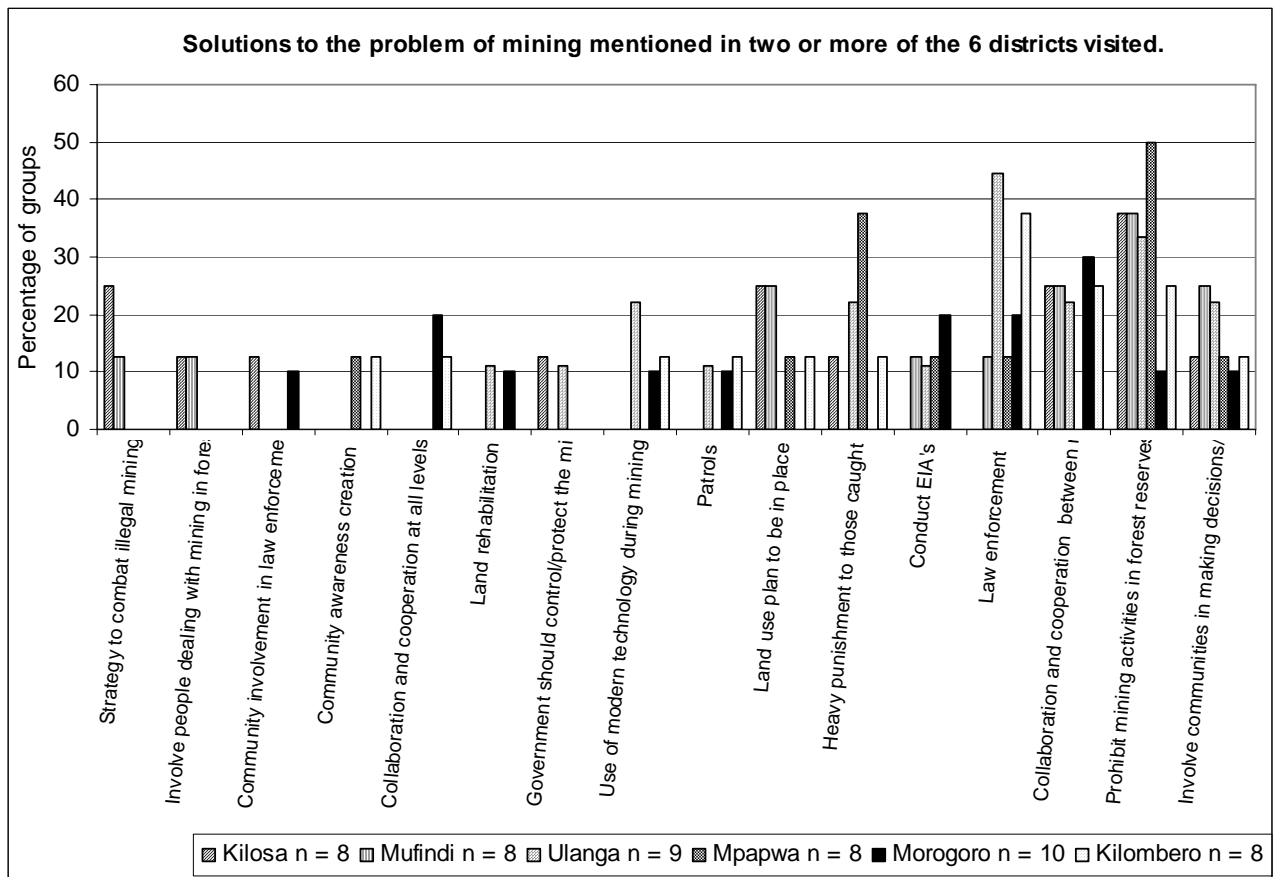


Chart 37 shows solutions to the problem of mining mentioned in two or more districts.

Chart 37 shows the most popular solutions mentioned by between 10 and 50 % of groups in all six of the districts are:

- prohibit mining activities in forest reserves
- involve communities in making decisions / issuing licenses

Chart 37 shows solutions mentioned in two – five of the districts by between 10 and 50% of groups, these are:

- strategy to combat illegal mining
- involve people dealing with mining in forest conservation.
- community involvement in law enforcement.
- community awareness creation
- collaboration and cooperation at all levels
- land rehabilitation
- government should control / protect the mining area
- use of modern technology during mining
- patrols
- land use plan to be in place
- heavy punishment to those caught
- conduct EIAs
- law enforcement
- collaboration and cooperation between ministries

Other solutions not shown on Chart 37 mentioned in only one district are:

- solution to conflicting laws among the agencies / ministries
- riverine trees to be planted in catchment areas
- priorities to water conservation
- laws which govern mining procedures be renewed
- identifying mining areas
- government to sign agreements with village governments on conservation of adjacent forests (PFM / JFM)
- empowering environmental committee / village councils

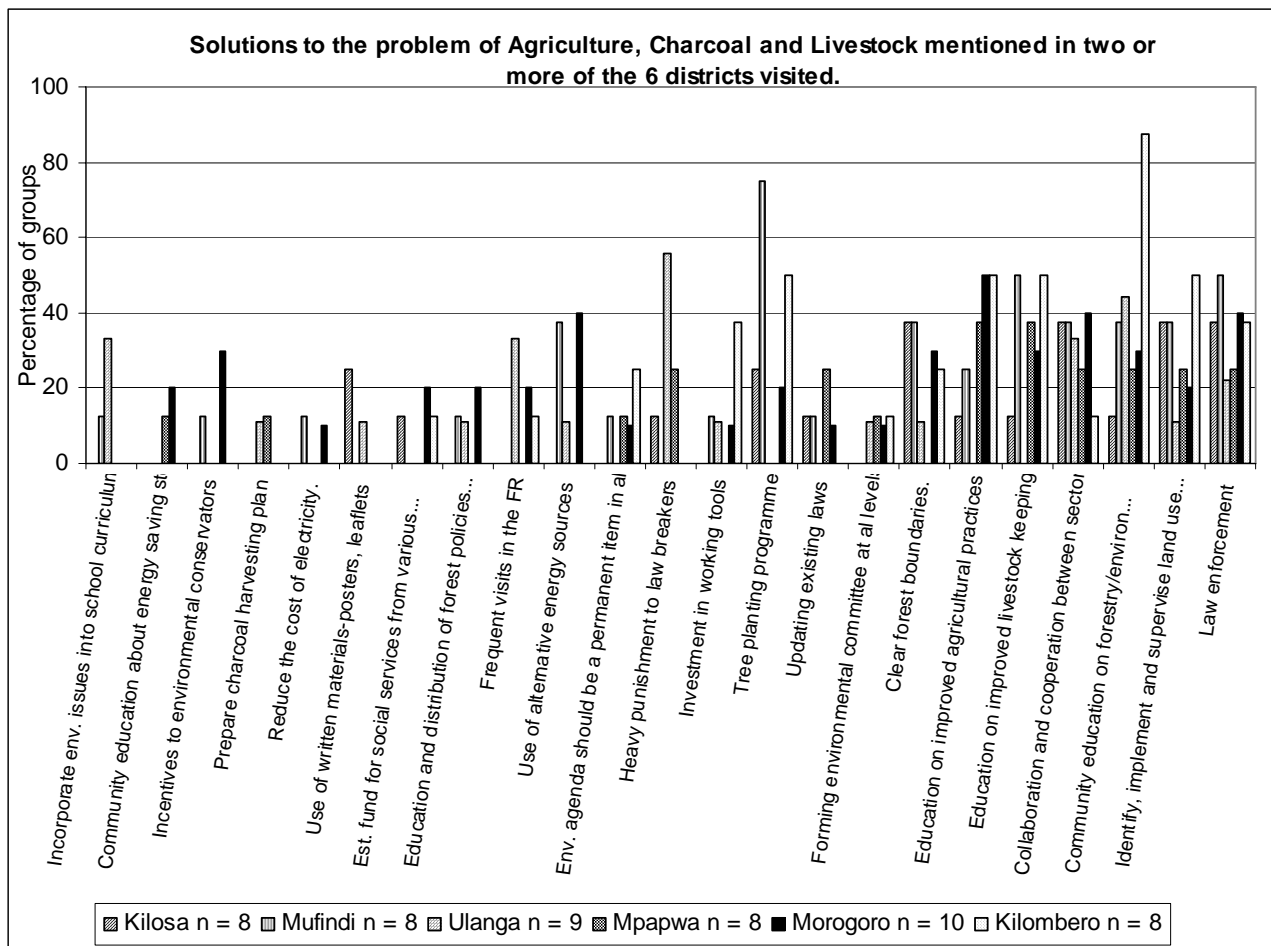


Chart 38 shows solutions to the problem of Agriculture, Charcoal Burning and Livestock mentioned in two or more districts

Chart 38 shows the most popular solutions mentioned by between 12.5 and 87.5 % of groups in all six of the districts are:

- collaboration and cooperation between sectors / levels / politicians
- community education on forestry / environment
- identify, implement and supervise land use plans
- law enforcement

Chart 38 shows solutions mentioned in two – five of the districts by between 11 and 75% of groups, these are:

- incorporate environmental issues into school curriculum.
- community education about energy saving stoves
- incentives to environmental conservators
- prepare charcoal harvesting plan
- reduce the cost of electricity.
- use of written materials-posters, leaflets
- establish fund for social services from various sources e.g. TANESCO, water department, wildlife etc.
- education and distribution of forest policies, laws and regulations
- frequent visits in forest reserves
- use of alternative energy sources
- environmental agenda should be a permanent item in all government meetings.
- heavy punishment to law breakers
- investment in working tools

- tree planting programme
- updating existing laws
- forming environmental committee at all levels
- clear forest boundaries.
- education on improved agricultural practices
- education on improved livestock keeping

Other solutions not shown on Chart 38 mentioned in only one district are:

- a year work plan for forest conservation in respective districts
- announcing when the forest has become a forest reserves
- conducting EIA
- emphasis on population increase
- empowering village council
- influential people to participate in forest management activities
- international communities should contribute on conservation and management of these forests
- media and journalists advertise about forests
- NEMC and VPO environmental department establish environmental offices in every district council, especially those vulnerable areas / districts
- subsistence farmers to have their land tenure according to land act of 1999.

3.5.3 Most popular solutions to the problems proposed by different stakeholder groups in different districts (villagers, NGOs etc, between District comparison)

3.5.3.1 Solutions to the problem of fire (by group and district comparison)

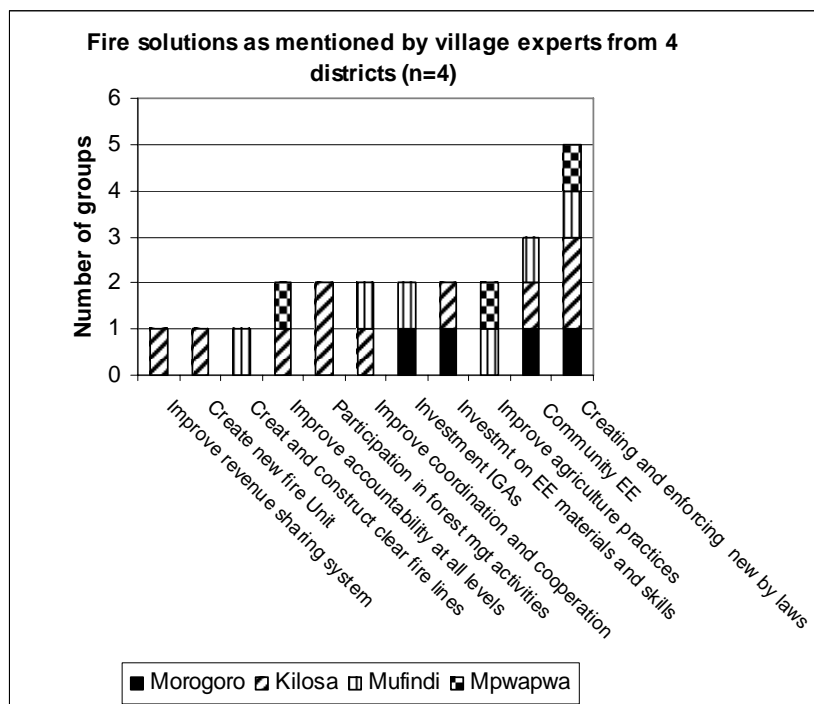


Chart 39 shows that Village experts from four districts mentioned 11 solutions to fire problems including: create and enforce new by-laws (mentioned by five district groups) and community environmental education (mentioned by three district groups).

Chart 39 showing fire solutions mentioned by village experts from 4 districts

Improved revenue sharing system, create new fire unit and create and construct clear fire lines were mentioned each by one district group.

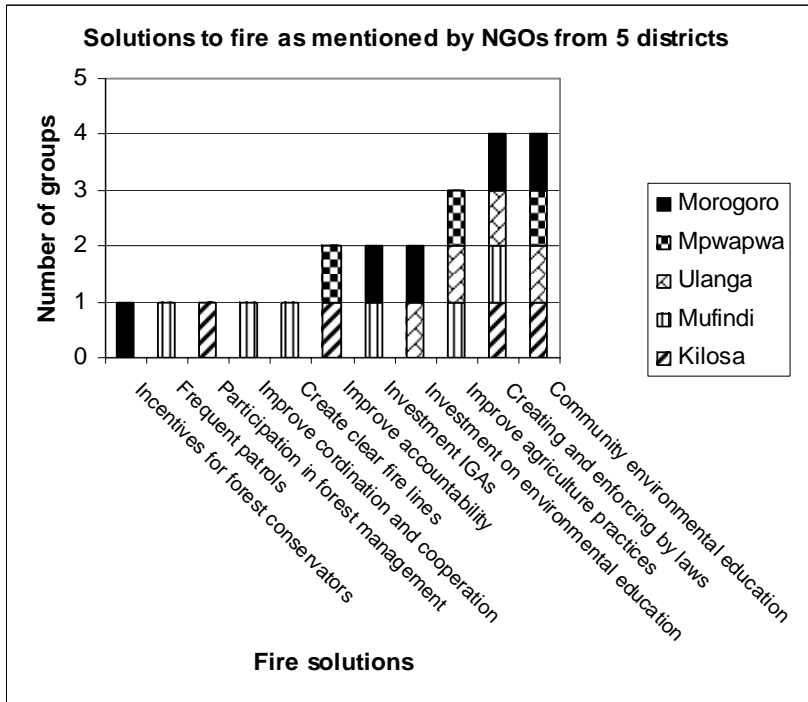


Chart 40 shows that NGOs from five districts mentioned 11 solutions to fire problems: community environmental education and creating enforcing new by-laws were each mentioned by four district groups. Incentives to forest conservators, frequent patrols, participation in forest management activities, improve coordination and cooperation, create and construct clear fire boundaries were mentioned each by one district group.

Chart 40 showing fire solutions mentioned by NGOs from 5 districts

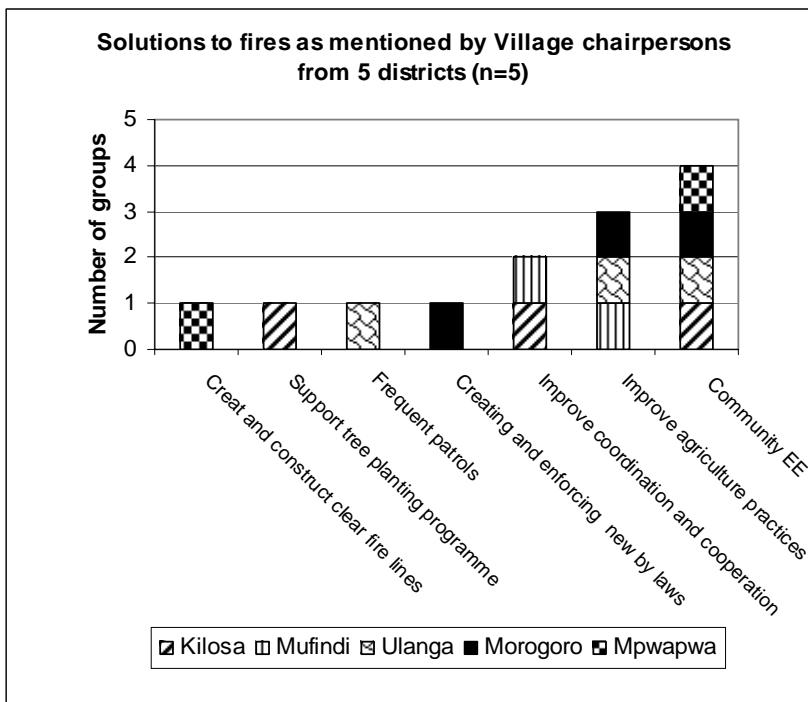


Chart 41 shows that village chairpersons from five districts mentioned seven solutions to fire problems: community environmental education (mentioned by four districts groups) and improve agricultural practices (mentioned by three districts groups). Create and construct clear fire lines, support tree planting programme, frequent patrols, and creating and enforcing new by-laws, were mentioned each by one district group.

Chart 41 showing fire solutions mentioned by village chairpersons from 5 districts

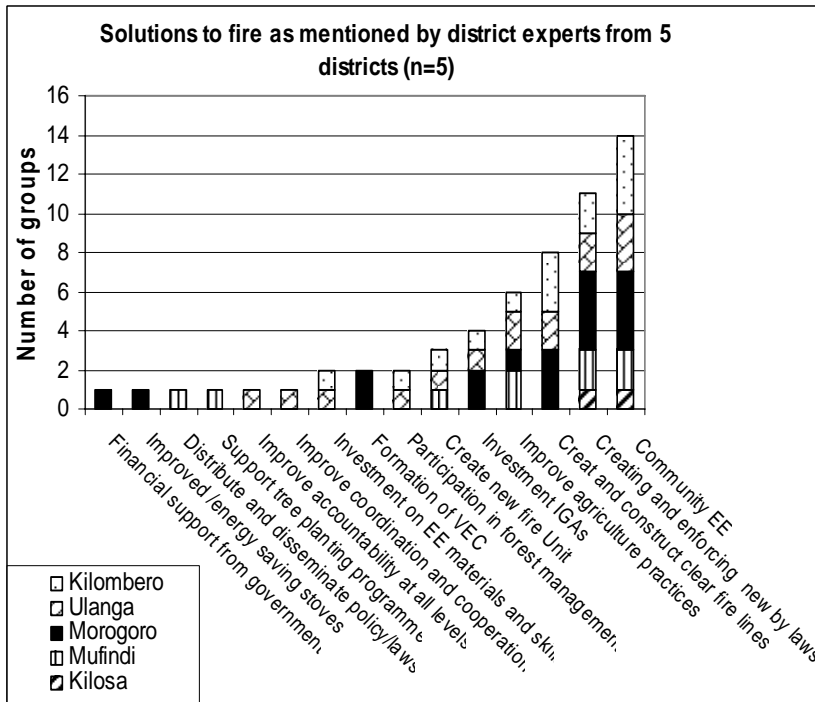


Chart 42 shows that district experts from five districts mentioned 15 solutions to fire problems: community environmental education was mentioned by 14 district groups, and creates and enforce new by-laws was mentioned by 11 district groups. Financial support from government, the use of improved / energy saving stoves, translate and disseminate policy and laws were also mentioned.

Chart 42 showing fire solutions mentioned by district experts from 5 districts.

Support tree planting programme, improve accountability at all levels, improve coordination and cooperation were mentioned each by one district group.

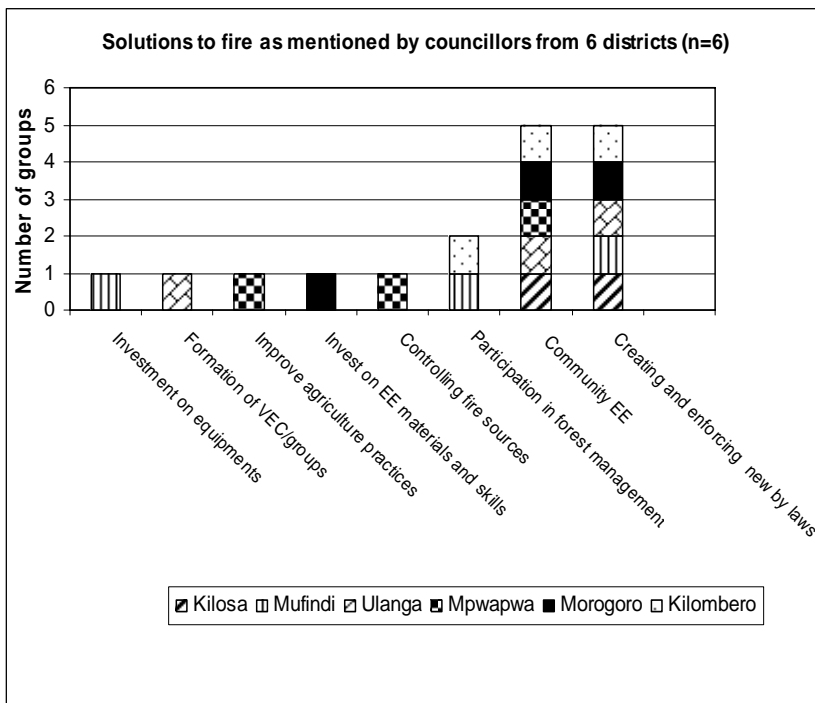


Chart 43 shows that Councillors from six districts mentioned eight solutions to the problem of fire: create and enforce new by-laws and community environmental education were each mentioned by five district groups. Participation in forest management activities was mentioned by two district groups.

Chart 43 showing fire solutions mentioned by Councillors from 6 districts.

Controlling sources of fire, investment on environmental education materials and skills, improve agriculture practices, formation of village environmental committee / groups and investment on equipments / working tools were mentioned each by one district group.

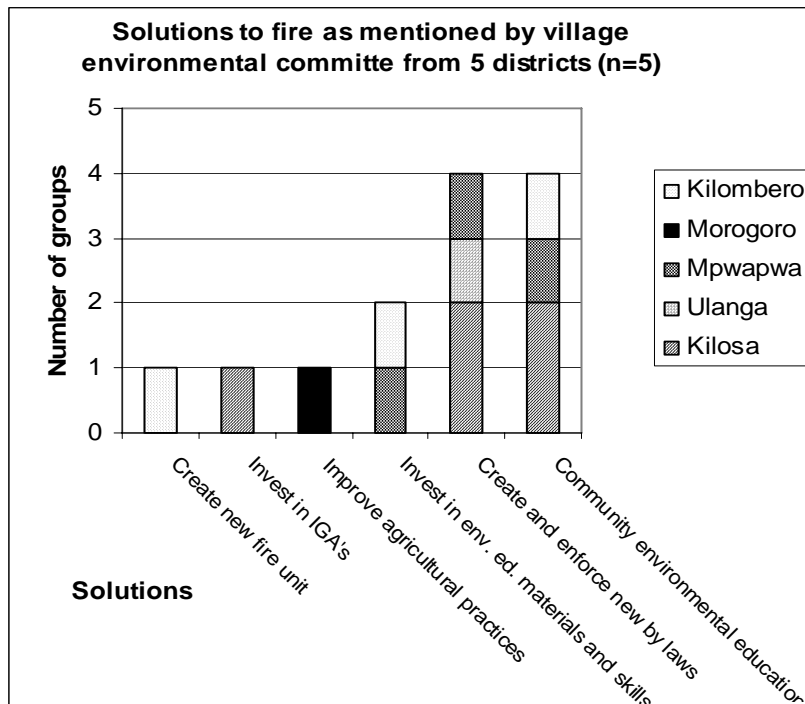


Chart 44 shows that village environmental committees from five districts mentioned six solutions to fire problems: community environmental education, and creating and enforcing new by-laws were each mentioned by four district groups. Create new fire unit, investment IGAs and improved agricultural practices were mentioned each by one district group

Chart 44 showing fire solutions mentioned by village environmental committee from 5 districts

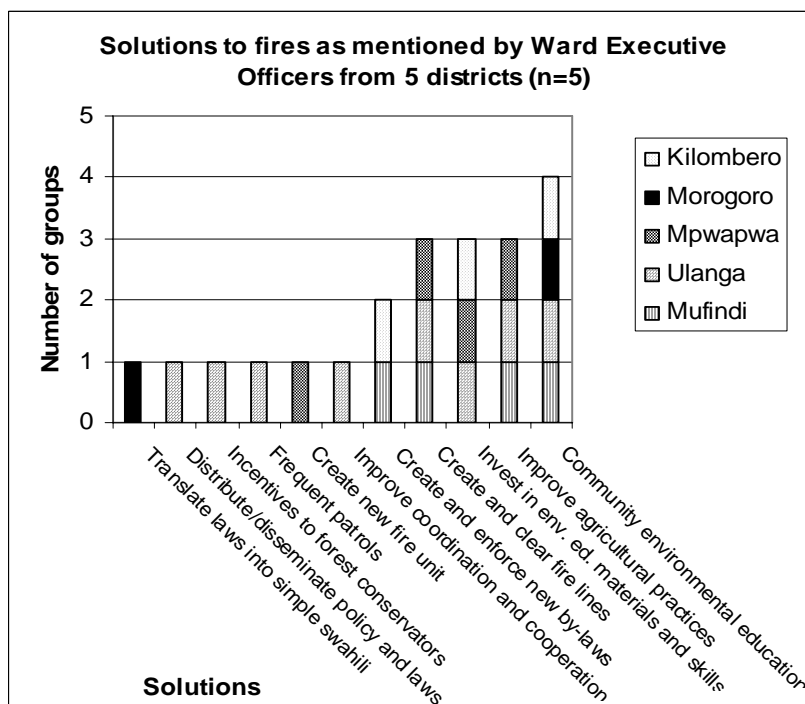


Chart 45 shows that Ward Executive Officers from five districts mentioned 11 solutions to the problem of fire: community environmental education was mentioned by four districts groups whilst improve agricultural practices, investment on environmental education materials and skills, and create and construct clear fire lines were each mentioned by three districts groups.

Chart 45 showing fire solutions mentioned by ward executive officers from 5 districts.

Incentives to forest conservators, frequent patrols create new fire unit and improve coordination and cooperation among sectors were mentioned each by one district group.

3.5.3.2 Poverty

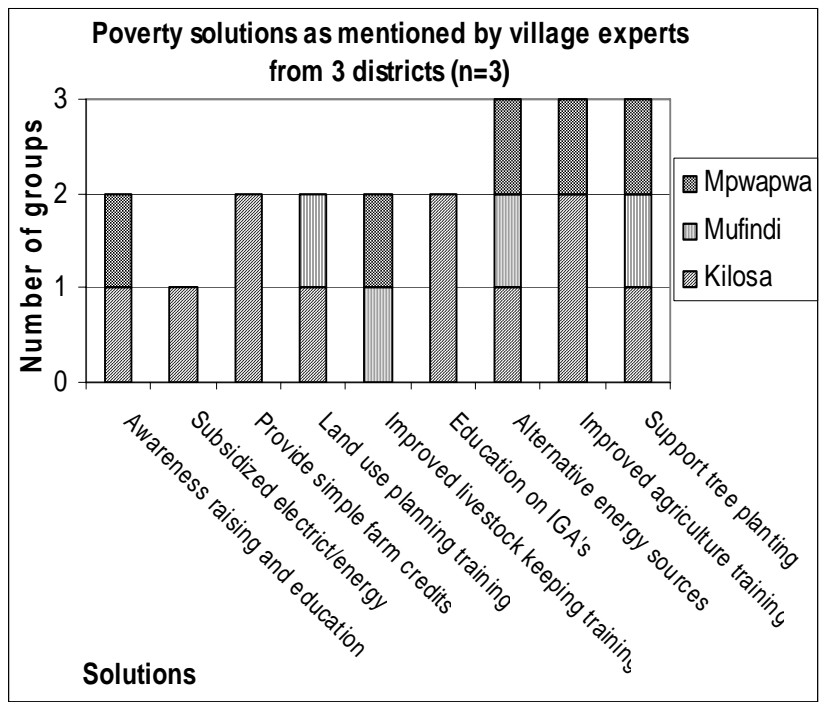


Chart 46 shows that village experts from three districts mentioned nine solutions to poverty problems.

Support tree planting, education on improved agriculture, sensitisation on use of alternative energy sources were each mentioned by three districts groups. Awareness raising and education, and government to subsidize electricity were mentioned each by one district group.

Chart 46 showing poverty solutions mentioned village experts from 3 districts

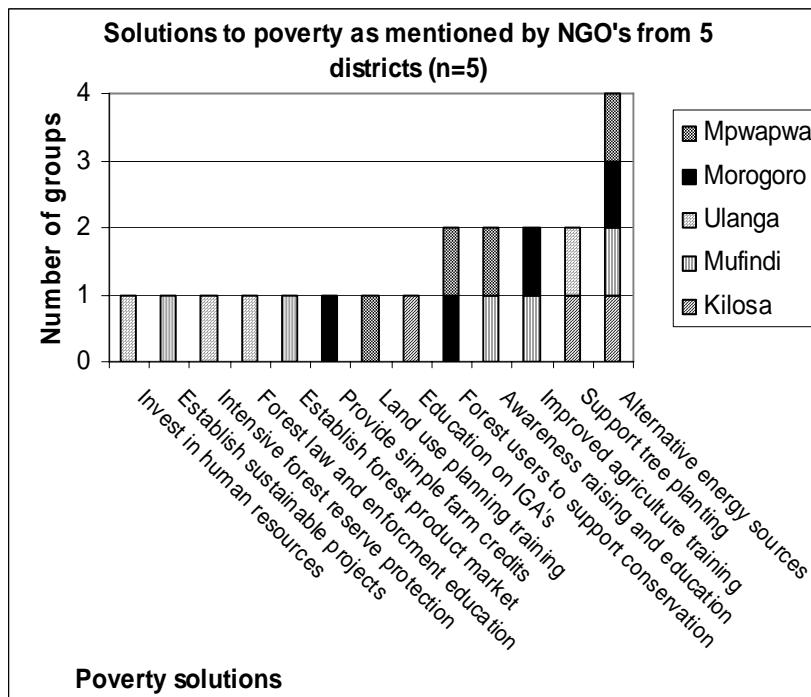


Chart 47 shows that NGOs from five districts mentioned 13 solutions to poverty problems.

Alternative energy sources was mentioned by four groups. Investment in human resources, establish sustainable projects, intensive forest reserve protection, forest laws and enforcement education, establish forest products market, provide simple farming credits, land use planning education and education on IGAs were mentioned each by one group.

Chart 47 showing poverty solutions mentioned by NGOs from 5 districts

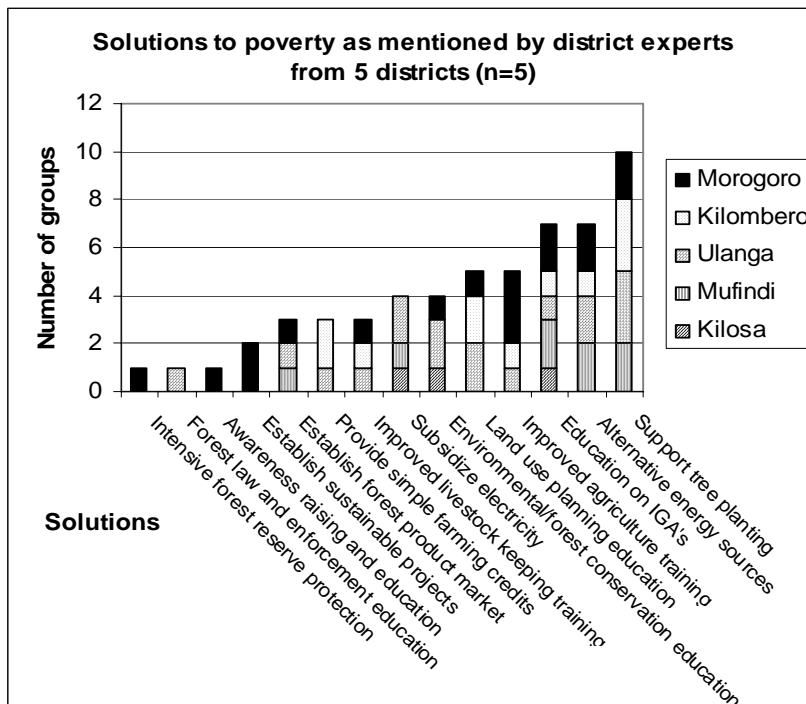


Chart 48 shows that district experts from five districts mentioned 14 solutions to the problem of poverty.

Support tree planting was mentioned by 10 groups.

Intensive forest reserve protection, forest law and enforcement education, and awareness raising and education were mentioned each by one district group.

Chart 48 showing poverty solutions mentioned by district experts from 5 districts

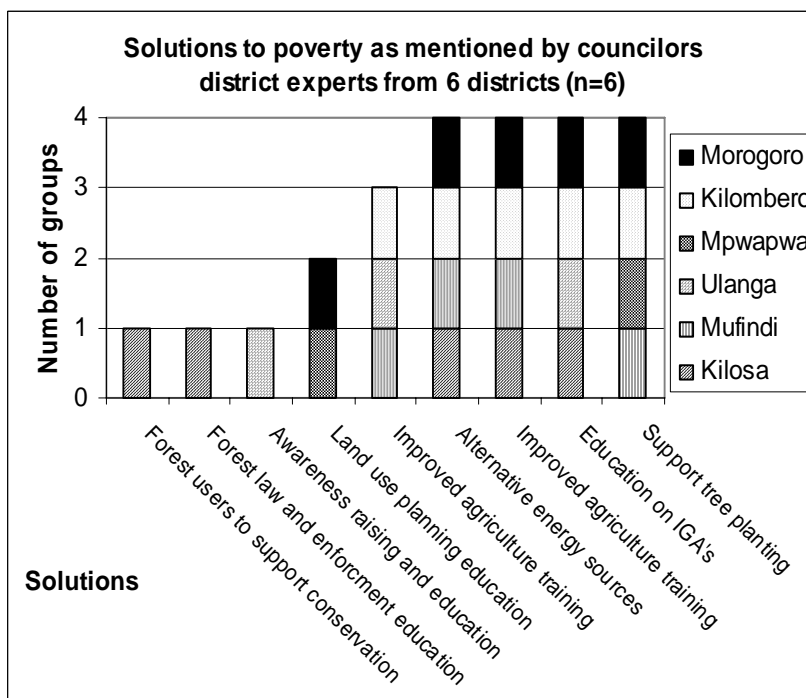


Chart 49 shows that Councillors from six districts mentioned nine solutions to the problem of poverty.

Support tree planting, education on IGAs, education on improved agricultural practices and sensitization on use of alternative sources of energy were each mentioned by four districts groups.

Chart 49 showing poverty solutions mentioned by Councillors from 5 districts

Forest users to support conservation, forest law and enforcement education, and awareness raising and education were mentioned each by one district group.

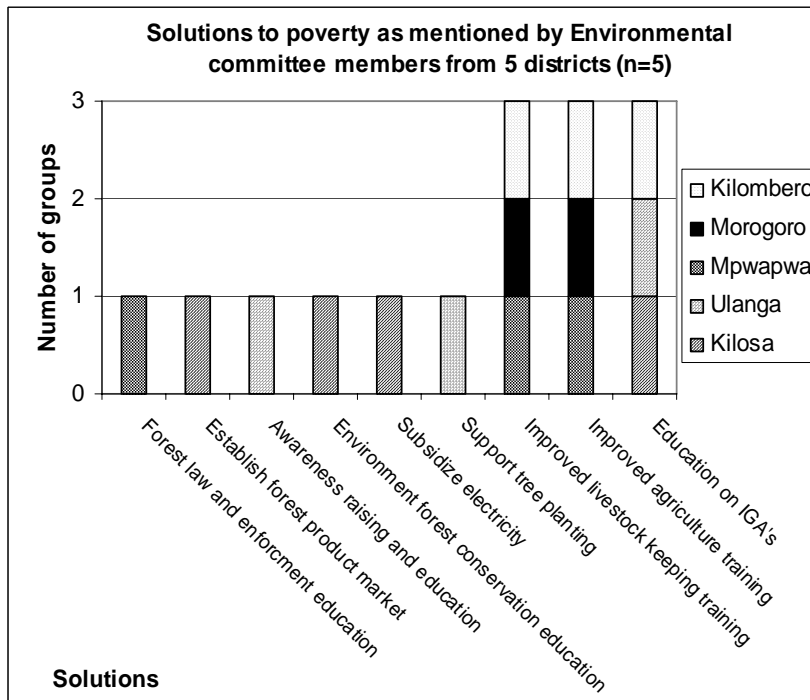


Chart 50 shows that environmental committee members from 5 districts mentioned 9 solutions to the problem of poverty. Education on improved livestock keeping / agriculture and education on IGA's were each mentioned by 3 district groups.

Chart 50 showing poverty solutions mentioned by Environmental committee members from 5 districts

Solutions mentioned by one group included forest law and enforcement education, establish forest products market, awareness raising and education, environmental / forest conservation education, subsidized electricity and support tree planting.

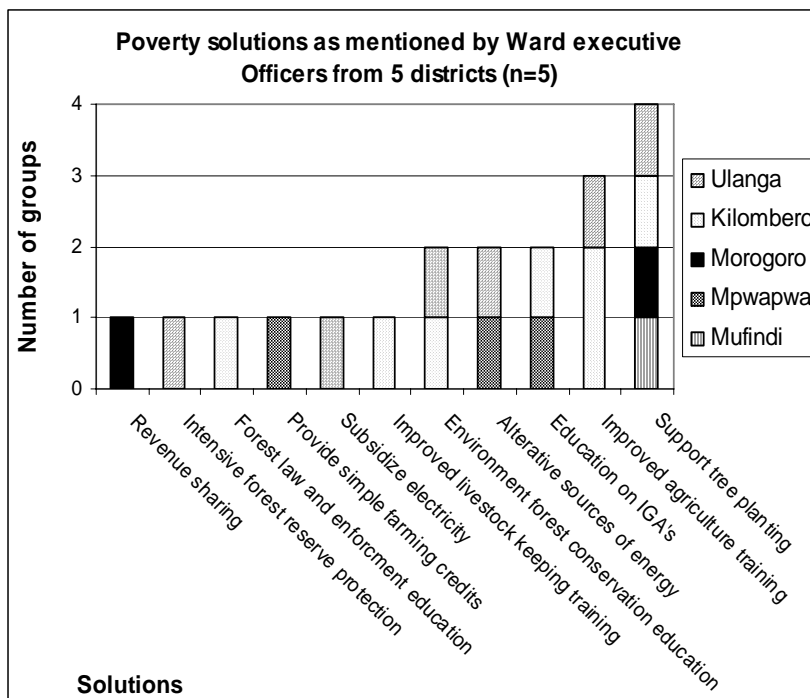


Chart 51 shows that ward executive officers from five districts mentioned 11 solutions to poverty problems. Improved agriculture training was mentioned by four groups, and support tree planting was mentioned by three groups. Revenue sharing, intensive forest reserve

protection, forest law and enforcement education, provide simple farm credits, subsidize electricity and improved livestock keeping training were each mentioned by one district group.

Chart 51 showing poverty solutions mentioned by Ward executive officers from 5 districts

3.5.3.3 Ignorance on nature and forest reserves

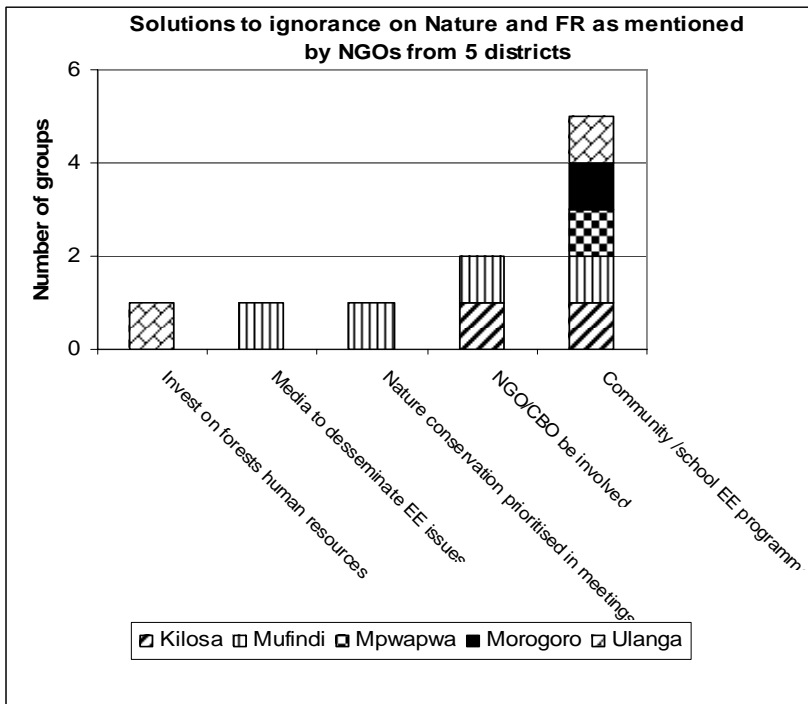


Chart 52 shows that NGOs from five districts mentioned five solutions to ignorance on nature and forest reserves.

All the five district groups mentioned community / school environmental education programme as a solution to ignorance on nature and forest reserves. Invest in human resources / staff, use of media to disseminate environmental conservation issues be prioritised in meetings was each mentioned by one district group.

Chart 52 showing ignorance on nature and forest reserves mentioned by NGOs from 5 districts

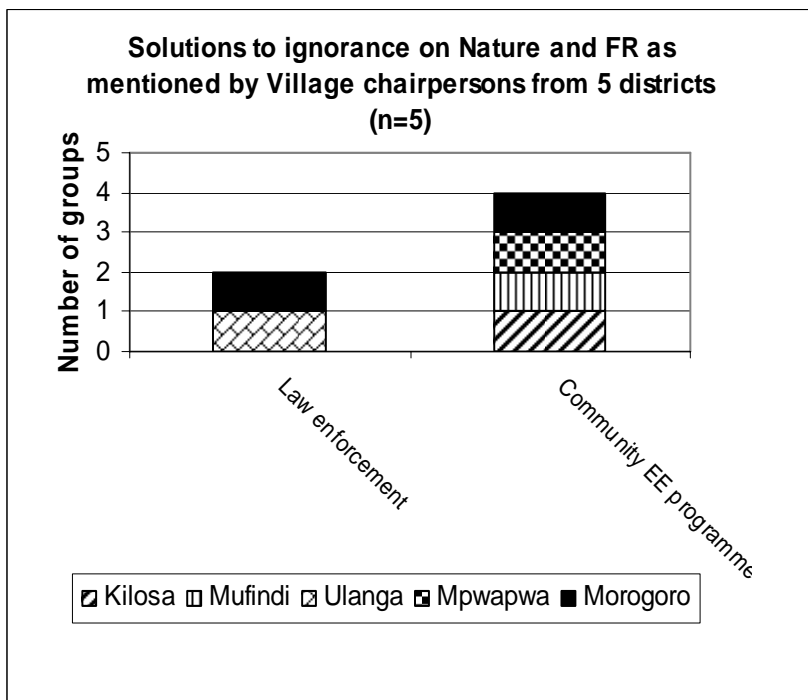


Chart 53 shows that village chairpersons from five districts mentioned two solutions to ignorance on nature and forest reserves.

Four district groups mentioned community / school environmental education programme as a solution to ignorance on nature and forest reserves. However two district groups mentioned law enforcement as a solution to ignorance on nature and forest reserves.

Chart 53 showing ignorance of nature and forest reserves mentioned by village chairpersons from 5 districts

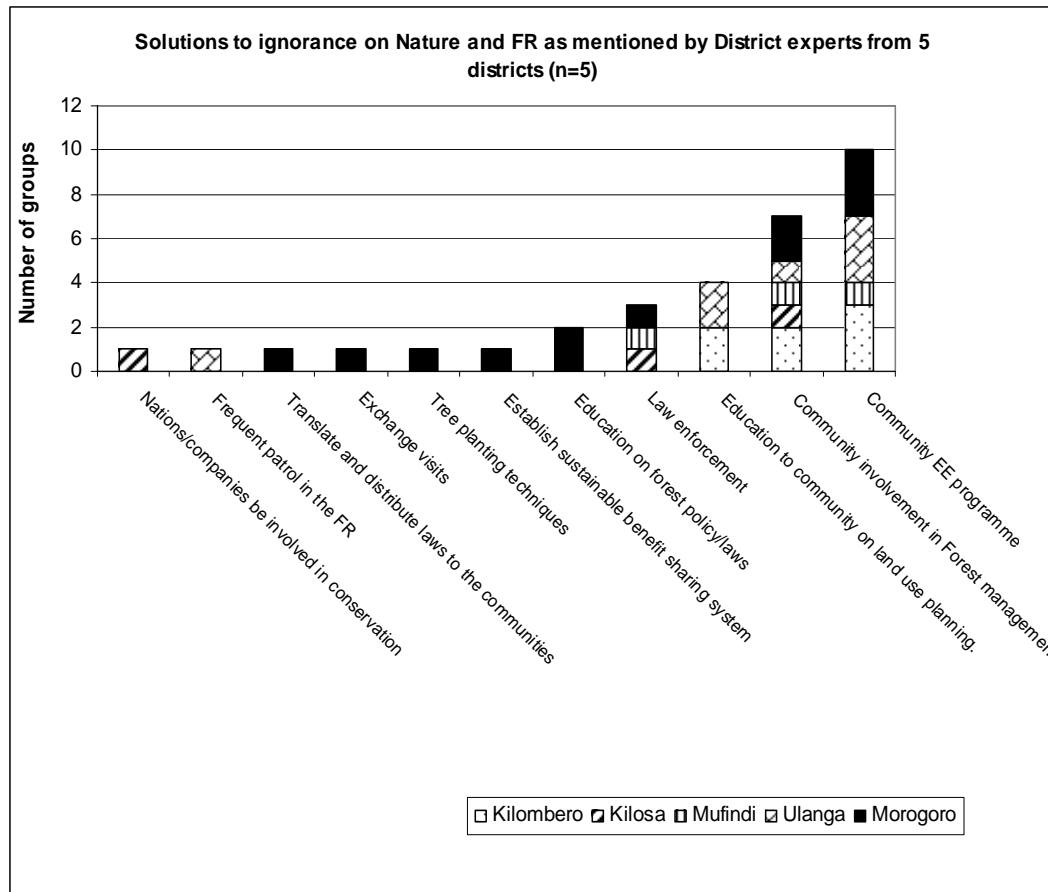


Chart 54 showing ignorance on nature and forest reserves mentioned by district experts from 6 districts

Chart 54 shows that district experts from five districts mentioned 11 solutions to ignorance on nature and forest reserves: community / school environmental education programme (mentioned by 10 district groups) and community involvement in forest management activities (mentioned by eight district groups) as a solutions to ignorance on nature and forest reserves.

However the following solutions were mentioned by only one district group:

- establish sustainable benefit sharing system
- tree planting techniques
- exchange visits
- translating laws and policies of lands and forests ministries and distributing them to the communities
- frequent patrol in forest reserves
- nations /companies with heavy consumption of forest products to compensate the conservation costs

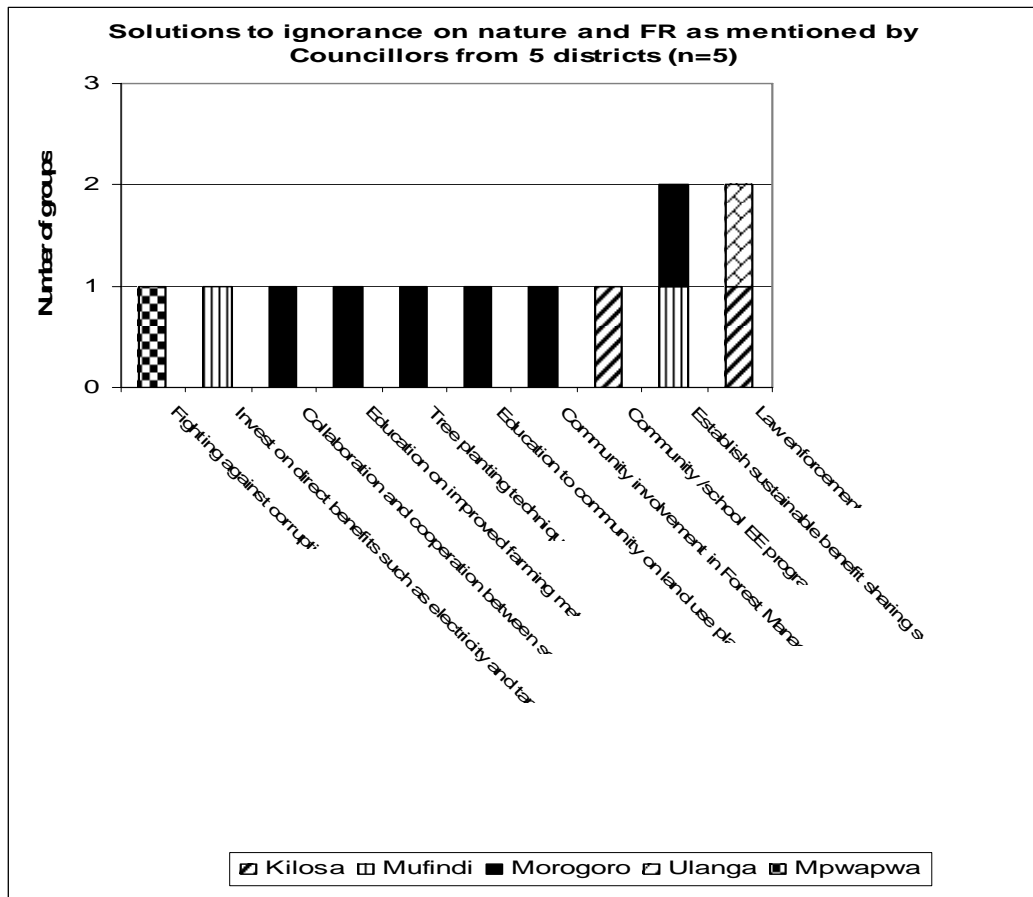


Chart 55 showing ignorance on nature and forest reserves mentioned by Councillors from 5 districts

Chart 55 shows that Councillors from five districts mentioned 10 solutions to ignorance on nature and forest reserves. Law enforcement and establishment of sustainable benefit sharing system were each mentioned by two district groups.

However the following solutions were mentioned by only one district group:

- community / school environmental education program
- community involvement in forest management activities
- education to community on land use planning
- tree planting techniques
- education on improved farming methods
- collaboration and cooperation between sectors
- invest on direct benefits such as electricity and tap water
- fighting against corruption

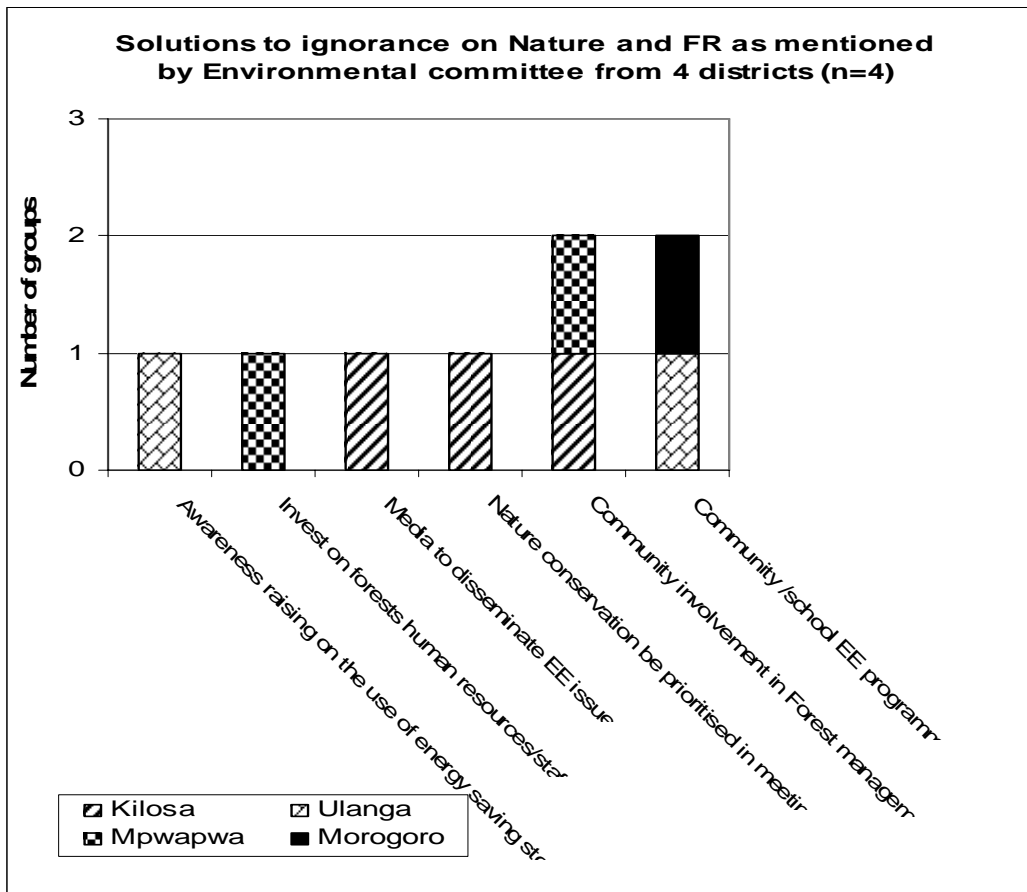


Chart 56 showing ignorance on nature and forest reserves mentioned by Environmental committee from 4 districts

Chart 56 shows that Environmental Committees from four districts mentioned six solutions to ignorance on nature and forest reserves: community / school environmental education programme and community involvement in forest management activities were each mentioned by two district groups.

However the following solutions were mentioned by only one district group:

- nature conservation to be prioritized in meetings
- using the media to disseminate environmental conservation issues
- investment on forests human resources / staffs
- awareness raising on the use of energy saving stoves

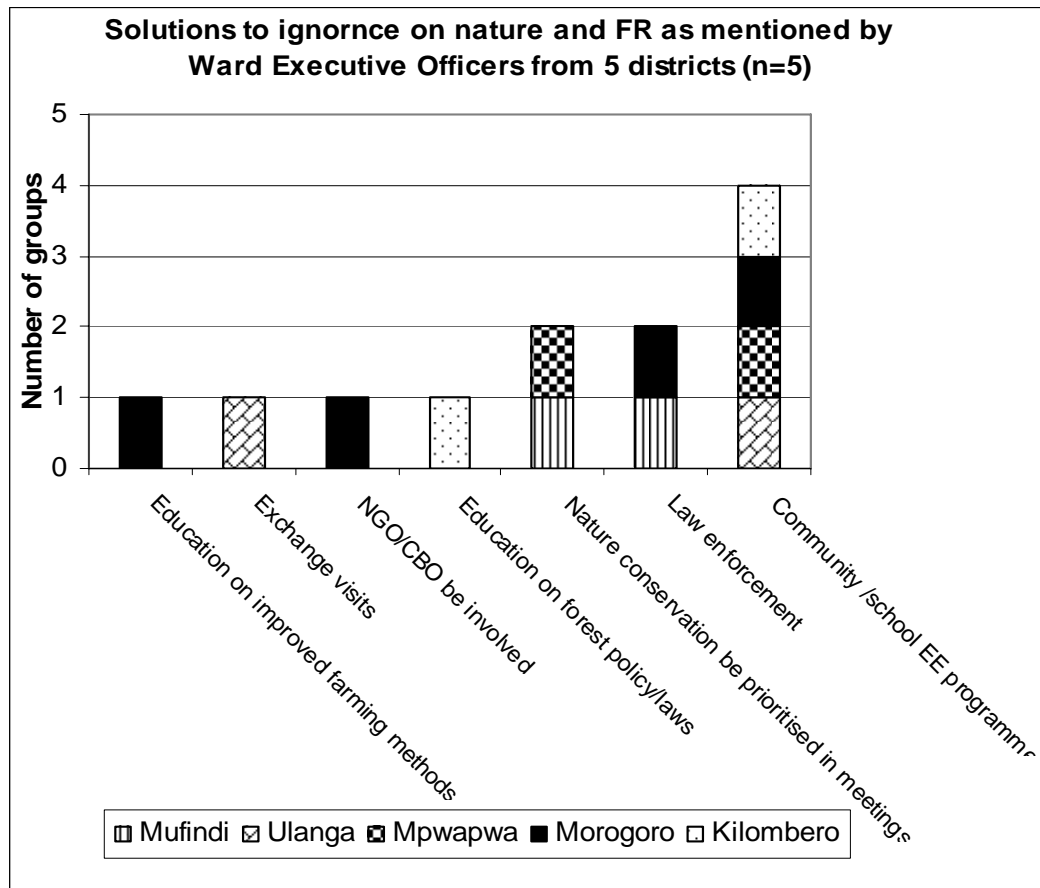


Chart 57 showing ignorance on nature and forest reserves mentioned by Ward executive officers from 5 districts

Chart 57 shows that WEO from five districts mentioned seven solutions to ignorance on nature and forest reserves: community /school environmental education programme was mentioned by 4 district group, while the following were mentioned each by only one district group:

- education on improved farming methods
- exchange visits
- NGO / CBO to take part in educating communities on environmental conservation and education on forest policy / laws

3.5.3.4 Lack of Law enforcement

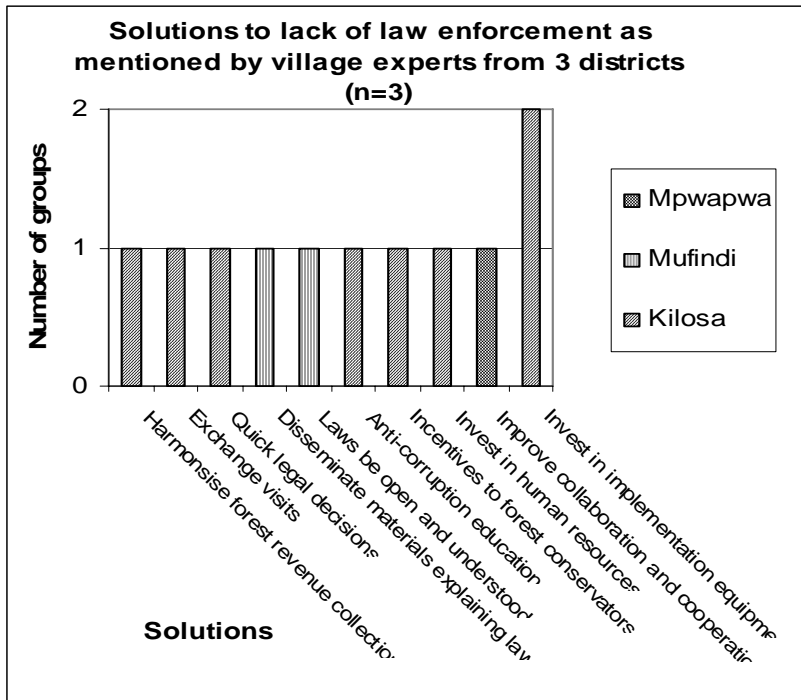


Chart 58 shows that village experts from three districts mentioned 10 solutions to lack of law enforcement.

Investment in equipment to implementers was mentioned by two district groups.

Chart 58 showing solutions to lack of law enforcement mentioned by village experts from 3 districts

Harmonize forest revenue collection between Central Government and Local Authorities, exchange visits, quick decision making in the courts, using posters and leaflets to outline laws and distribute these materials, laws be open and understood, educating the communities on consequences of corruption, incentives to forest conservators, investment on staffs / human resources and collaboration and cooperation at all levels were each mentioned by one district group.

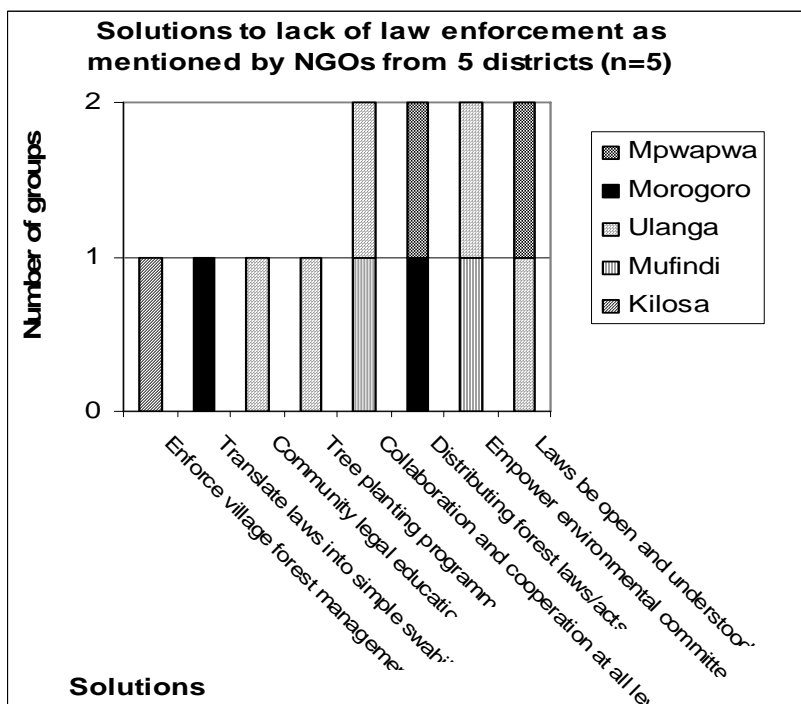


Chart 59 shows that NGO's from five districts mentioned eight solutions to lack of law enforcement. Laws be open and understood, empowering environmental committees, distributing forest laws / acts to stakeholders at all levels, and collaboration and cooperation at all levels were each mentioned by two groups.

Chart 59 showing solutions to lack of law enforcement mentioned by NGOs from 5 districts

Enforce village forest management (by empowerment of villages on license issuing process according to village harvesting plan and impose fine to culprits), all forest laws to be translated in Swahili, community education on different laws and tree planting programme were each mentioned by one district group.

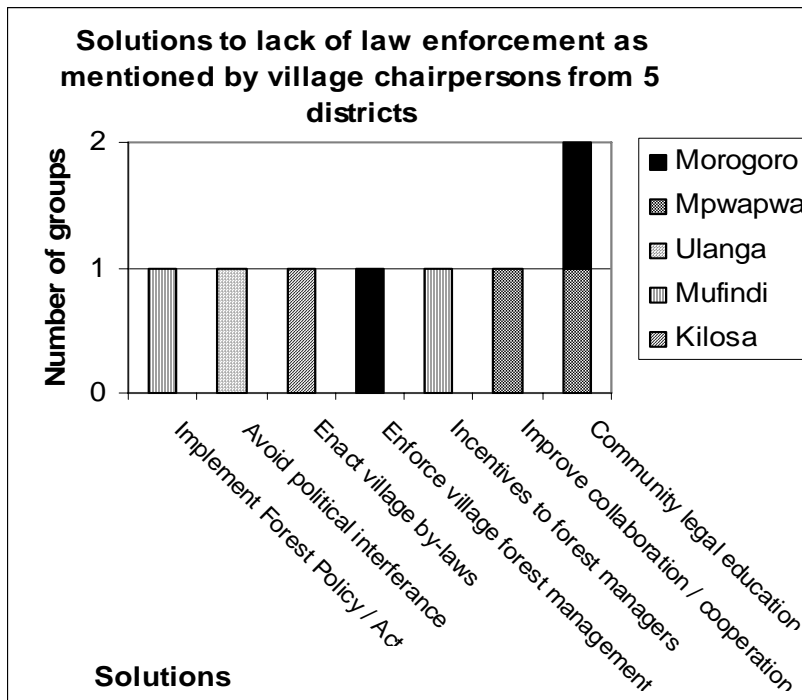


Chart 60 shows that Village chairpersons from five districts mentioned seven solutions to lack of law enforcement.

Community education on different laws was mentioned by two district groups.

Chart 60 showing solutions to lack of law enforcement mentioned by village chairpersons from 5 districts

However, collaboration and cooperation at all levels, incentives to forest conservators, village to be empowered on licenses issuing process according to village harvesting plan and impose fine to culprits, village by-laws be enacted in villages, avoid political interference and proper implementation of Forest Policy and Act was each mentioned by one district group.

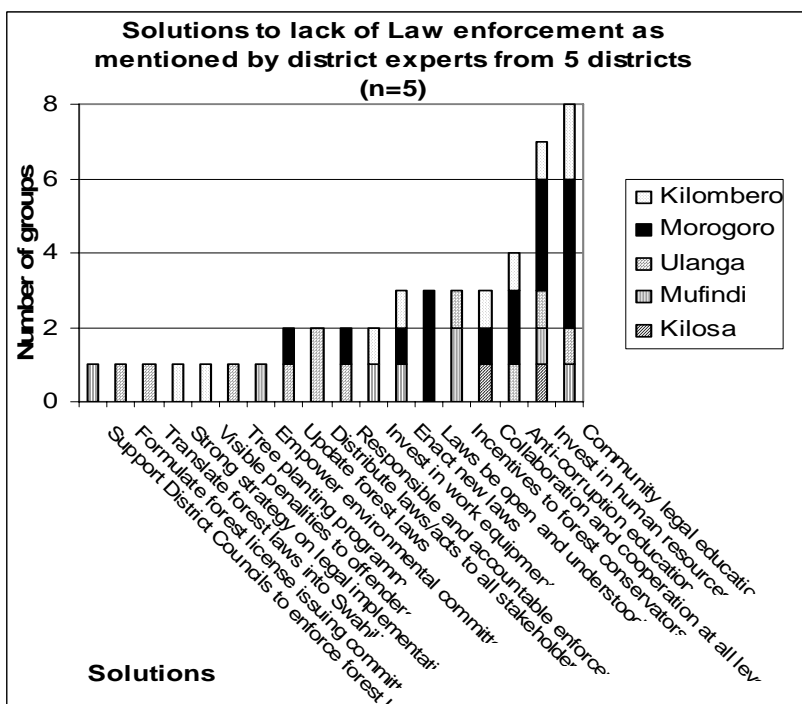


Chart 61 shows that district experts from five districts mentioned 18 solutions to lack of forest law enforcement. Community education on different laws was mentioned by eight groups from four districts and investment in human resources was mentioned by seven groups from five districts. Anti-corruption education was mentioned by four groups.

Chart 61 showing solutions to lack of law enforcement mentioned by

district experts from 5 districts

Support district councils to enforce laws, formulate forest license issuing committee, translate forest laws into Swahili, strong strategy on legal implementation, visible penalties to offenders, tree planting programme and empowering environmental committees were all mentioned by one group only.

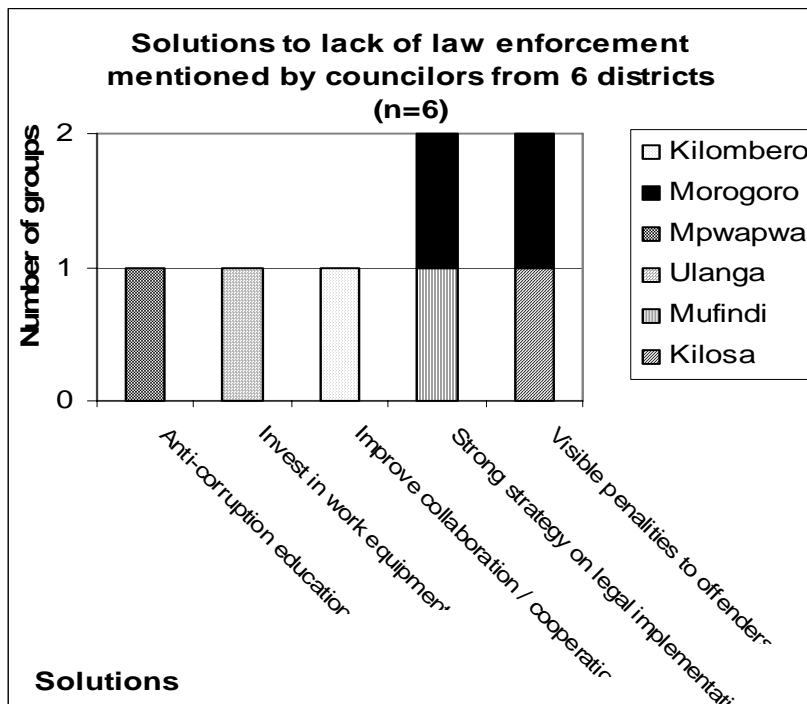


Chart 62 shows that Councillors from six districts mentioned five solutions to the problem of lack of law enforcement.

Visible punishment to offenders and strong strategy on legal implementation were each mentioned by two district groups across three districts.

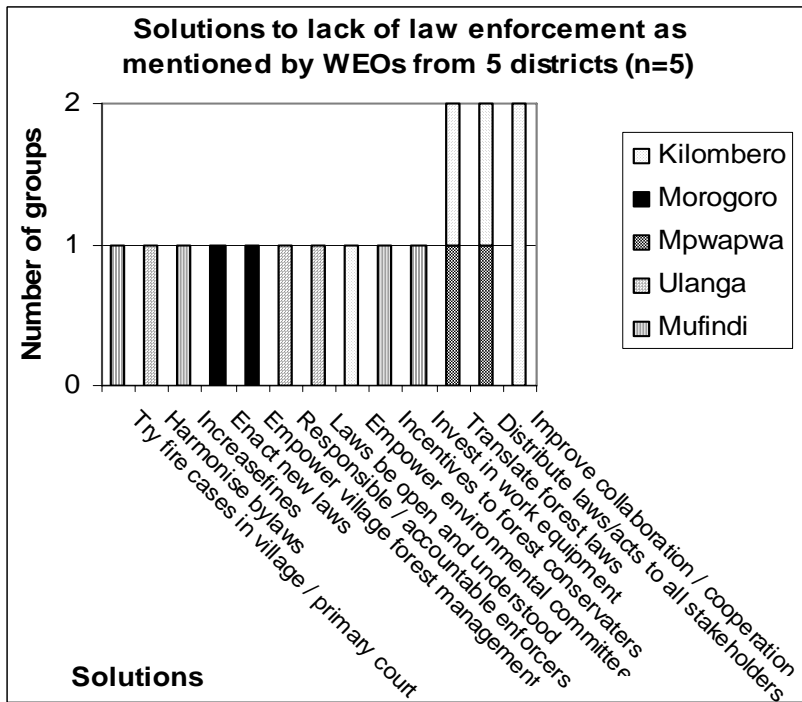
Chart 62 showing solutions to lack of law enforcement mentioned by Councillors from 6 districts

Anti-corruption education, invest in work equipment, and improve collaboration and cooperation were each mentioned by only one district group.

Councillors from five districts mentioned seven solutions to lack of law enforcement. Each solution was mentioned by only one group as listed below:

- enact by-laws (Mufindi)
- visible penalties to offenders (Mufindi)
- tree planting programme (Kilosa)
- enforce village forest management (Kilosa)
- empower environmental committees (Morogoro)
- invest in human resources (Mpwapwa)
- community legal education (Kilombero)

Chart 63 shows that Ward Executive Officers from five districts mentioned 13 solutions to lack of law enforcement. Improve collaboration / cooperation, distribute forest laws / acts to all stakeholders and translate forest laws into Swahili were each mentioned by two groups.

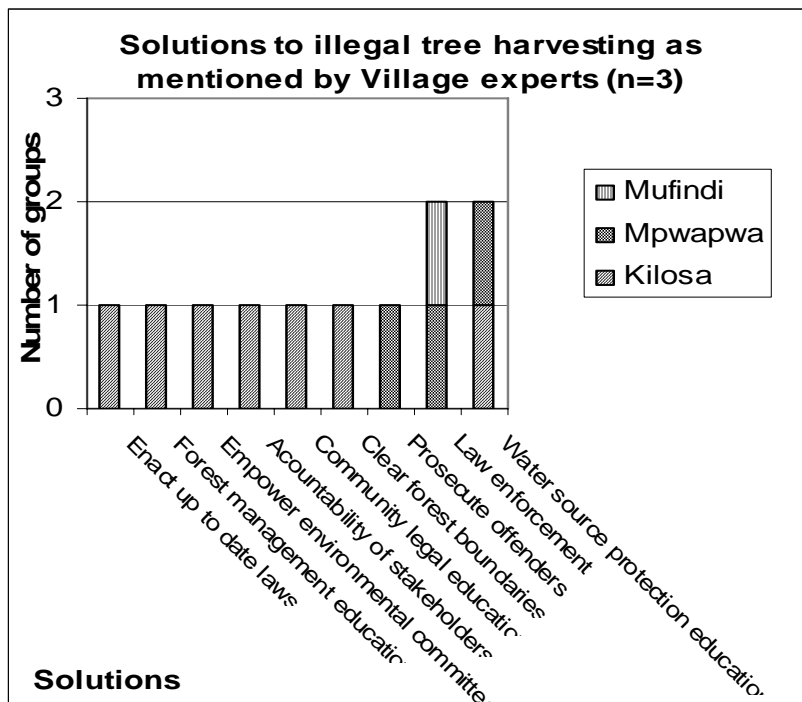


Try fire cases at village primary courts, harmonise by-laws, increase fines, enact new laws, empower village forest management, responsible / accountable enforcers, laws be open and understood, empower environmental conservators, incentives to forest conservators, and investment in work equipment were each mentioned by only one district group.

Chart 63 showing solutions to lack of law enforcement mentioned by WEO from 5 districts

3.5.3.5 Solutions to the problem of illegal tree harvesting in forest reserves

Chart 64 shows that village experts from three districts mentioned nine solutions to illegal tree harvesting. Water source protection education and law enforcement were each mentioned by 2 district groups.



Enact up to date laws, forest management education, empower village environmental committee, accountability of stakeholders, community legal education on the, clear forest boundaries and prosecute offenders were each mentioned by one district group.

Chart 64 showing solutions to illegal tree harvesting in forest reserves mentioned by village experts from 3 districts

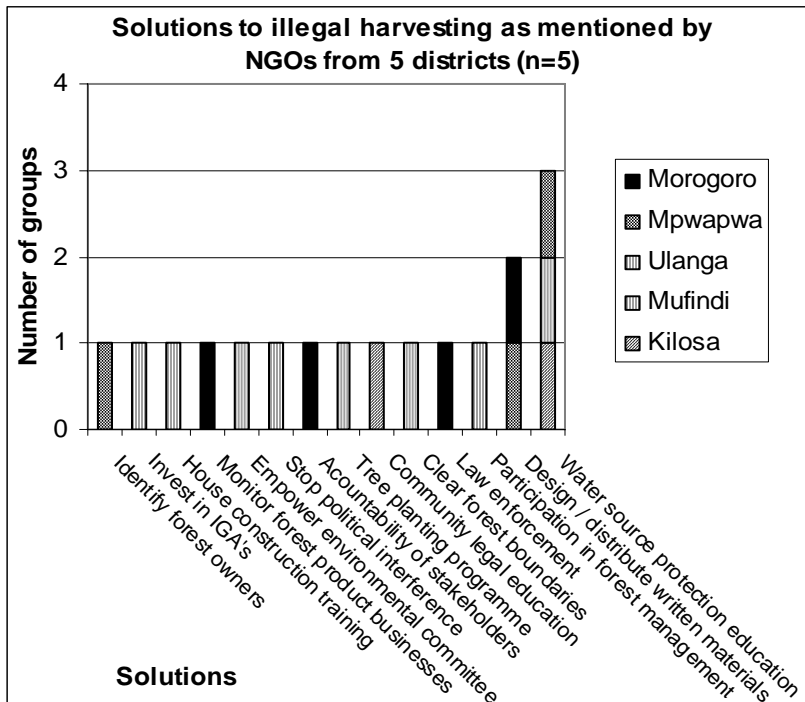


Chart 65 shows that NGOs from five districts mentioned 14 solutions to illegal tree harvesting.

Water source protection education was mentioned by three groups and design / distribute written materials was mentioned by two groups.

Chart 65 showing solutions to illegal tree harvesting in forest reserves mentioned by NGOs from 5 districts

Community participation in forest management, law enforcement, clear forest boundaries, community legal education, tree planting programme, accountability of stakeholders, stop political interference, empower village environmental committee, monitor forest product businesses, house construction training, invest in IGAs and identify forest reserve owner were each mentioned by one district group.

Village chairpeople from five districts mentioned seven solutions to illegal tree harvesting, each of the solutions (listed below) was mentioned by only one group:

- support projects (Morogoro)
- follow up on implementation (Morogoro)
- stop political interference (Morogoro)
- community legal education (Kilosa)
- prosecute offenders (Mpwapwa)
- water source protection education (Mufindi)
- participation in forest management (Ulanga)

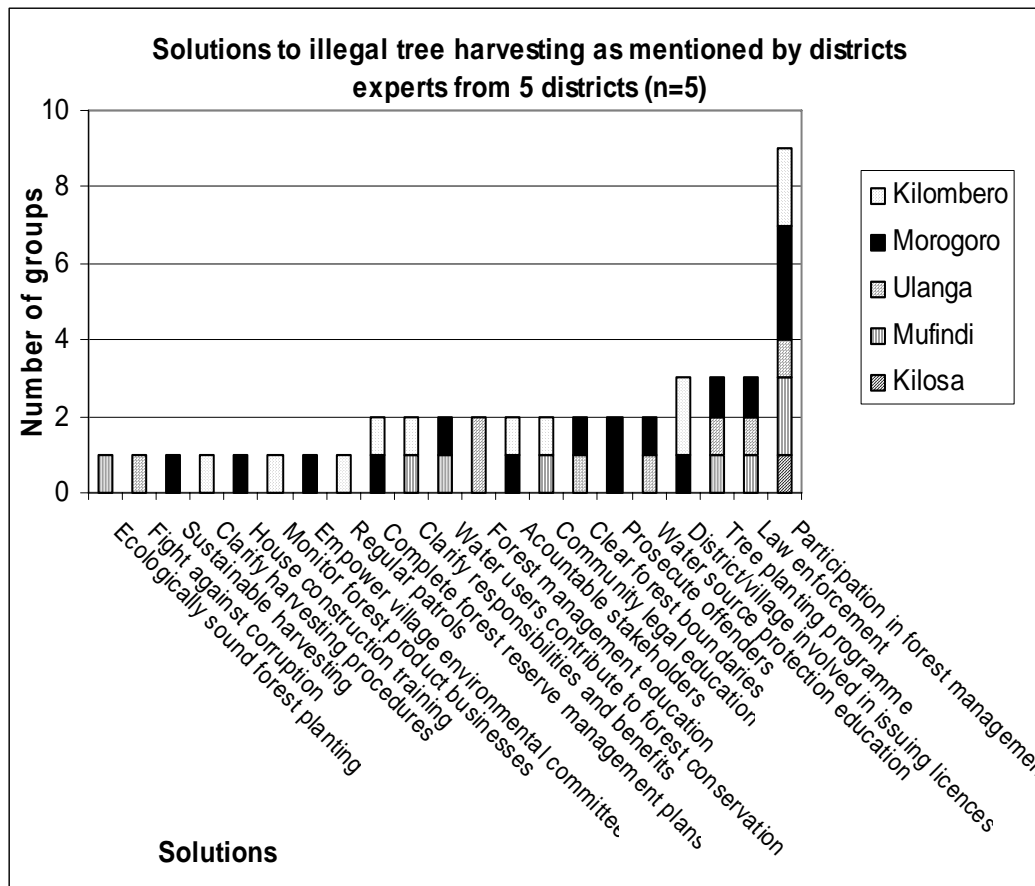


Chart 66 showing solutions to illegal tree harvesting mentioned by district experts from 5 districts

Chart 66 shows that district experts from five districts mentioned 21 solutions to illegal tree harvesting. Participation of communities in forest management was mentioned by nine district groups. The following solutions were mentioned by one district group:

- ecologically sound forest planting
- fight against corruption
- sustainable harvesting
- clarify harvesting procedures
- house construction training
- monitor forest product businesses
- empower village environmental committee
- regular patrols were each mentioned by one district group.

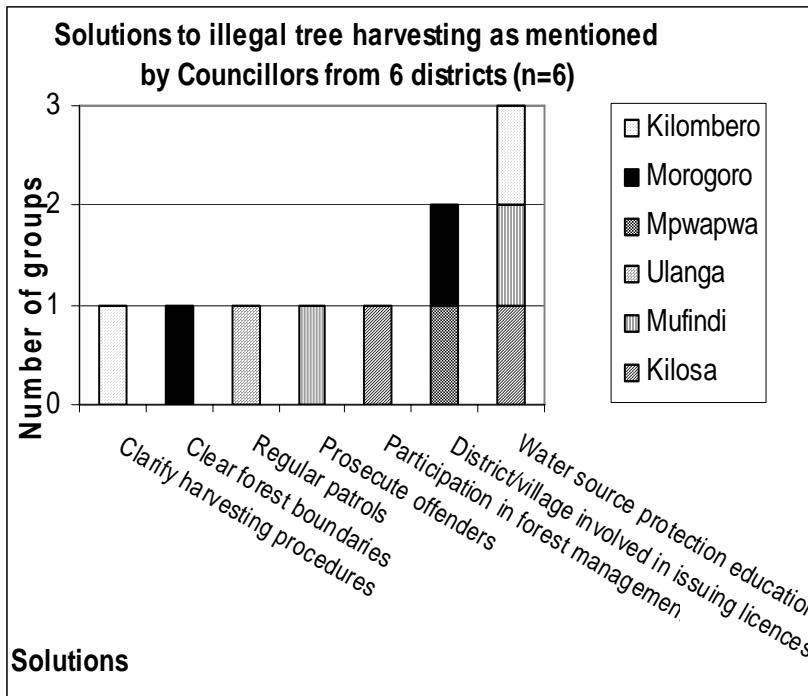


Chart 67 shows that Councillors from six districts mentioned seven solutions to illegal tree harvesting. Water source protection education was mentioned by three groups, district / village involvement in issuing licences was mentioned by two groups. Participation in forest management, prosecute offenders, regular patrols, clear forest boundaries, clarify harvesting procedures were each mentioned by one district group.

Chart 67 showing solutions to illegal tree harvesting mentioned by Councillors from 6 districts

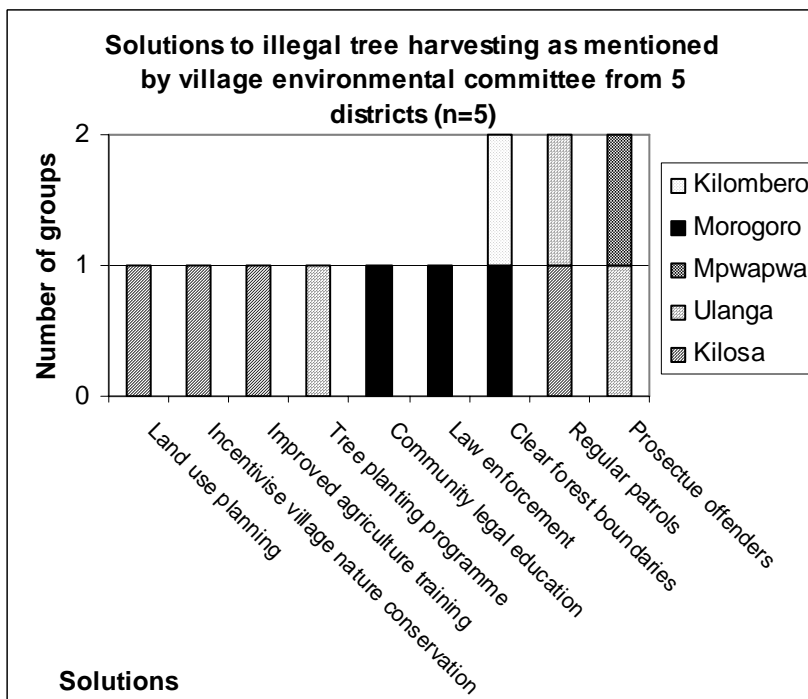


Chart 68 shows that environmental committees from five districts mentioned nine solutions to the problem of illegal tree harvesting.

Prosecute offenders, regular patrols, and clear forest boundaries were each mentioned by two district groups.

Chart 68 showing solutions to illegal tree harvesting mentioned by village environmental committees from 5 districts

Law enforcement, community legal education, tree planting programme, improved agriculture training, incentives village nature conservation, and land use planning were each mentioned by only one district group.

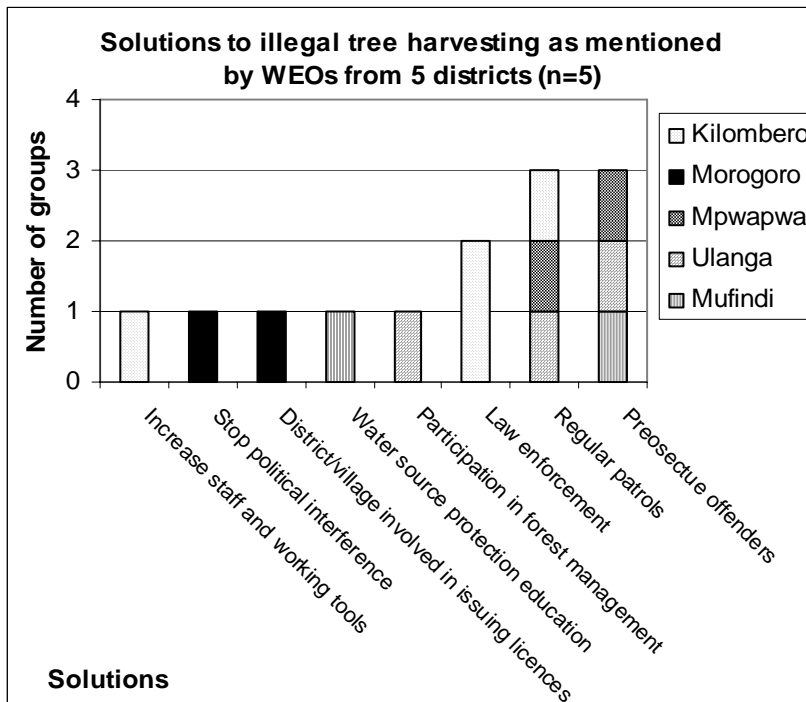


Chart 69 shows that Ward Executive Officers from five districts mentioned eight solutions to the problem of illegal tree harvesting.

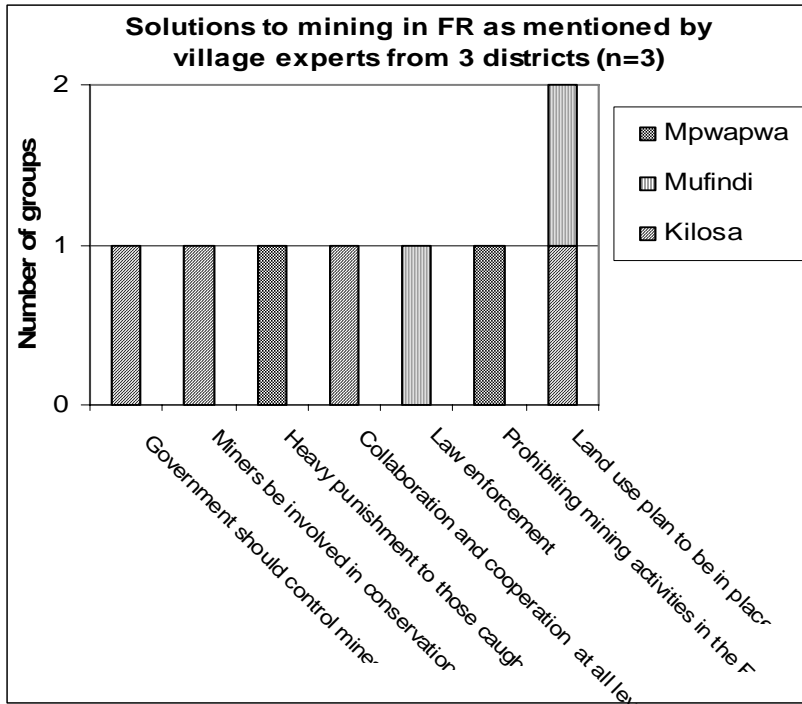
Prosecute offenders and regular patrols were mentioned by three districts groups.

Chart 69 showing solutions to illegal tree harvesting in forest reserves mentioned by WEO from 5 districts

Participation in forest management, water source protection educations, district / village involved in issuing licenses, stop political interference and increase staff and working tools were each mentioned by only one district group.

3.5.3.6 Mining in Forest Reserves

Chart 70 shows that village experts from three districts mentioned seven solutions to mining in reserves.



Land use planning was mentioned by two district groups while prohibiting mining activities in forest reserves, law enforcement, collaboration and cooperation, heavy punishment to those caught, people dealing with mining to be involved in actual forest conservation, and government should control / protect the mining area were each mentioned by one district group.

Chart 70 showing solutions to illegal mining in reserves mentioned by village experts from 3 districts

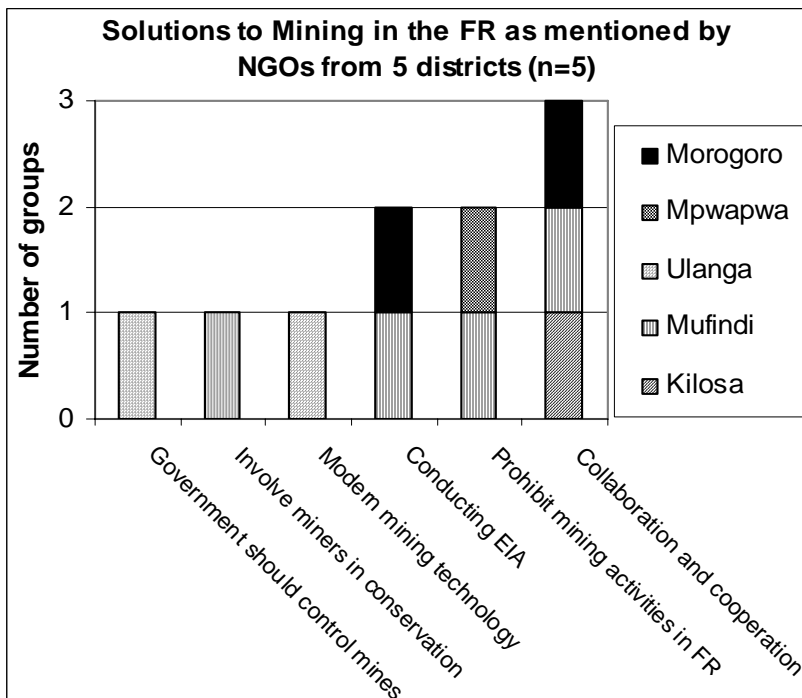


Chart 71 shows that NGOs from five districts mentioned eight solutions to mining in reserves. Improve collaboration and cooperation was mentioned by three groups, prohibit mining activities in FRs and conduct EIA was mentioned by two groups.

Chart 71 showing solutions to illegal mining in forest reserves mentioned by NGOs from 5 districts

Improve collaboration and cooperation, modern mining technology, involve miners in conservation and government should control / protect the mining area were each mentioned by one district group.

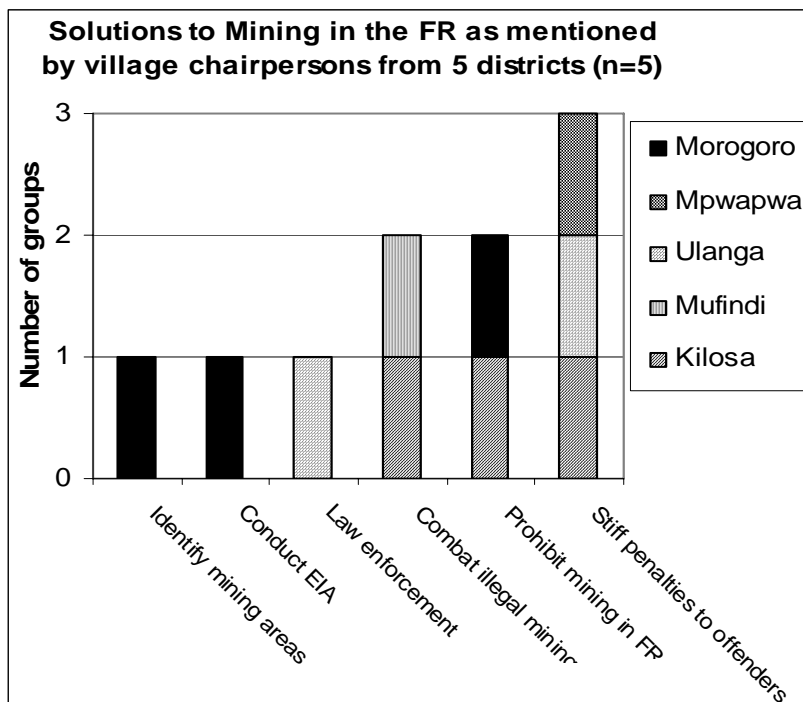


Chart 72 shows that village chairpersons from five districts mentioned six solutions to mining in FRs.

Stiff penalties to offenders were mentioned by three groups. Combat illegal mining and prohibit mining in FRs were each mentioned by two groups. Law enforcement, conduct EIA and identify mining areas were each mentioned by one district group.

Chart 72 showing solutions to illegal mining in reserves mentioned by village chairperson from 5 districts

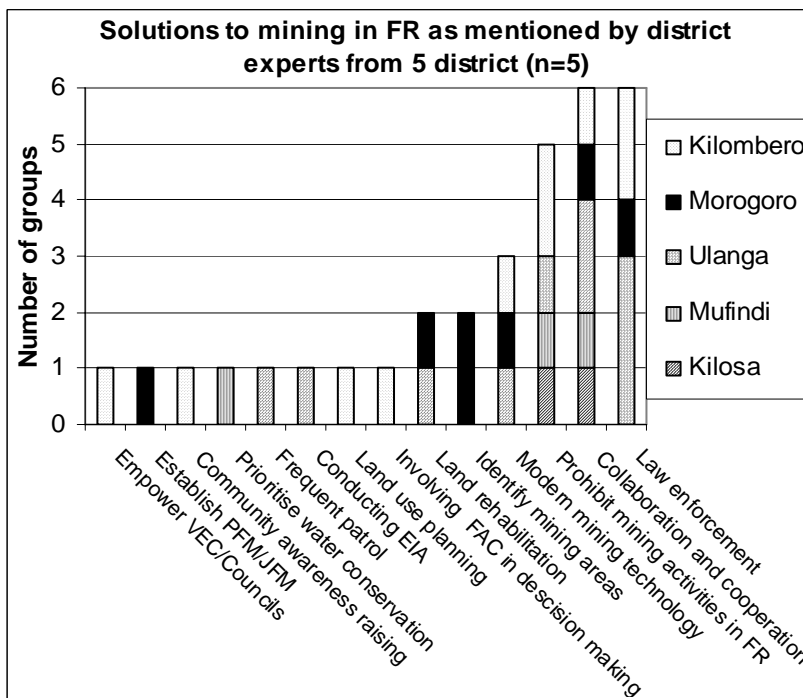


Chart 73 shows that district experts from five districts mentioned 15 solutions to mining in FRs.

Law enforcement and collaboration and cooperation were each mentioned by six district groups.

Chart 73 showing solutions to illegal mining in forest reserves mentioned by district experts from 5 districts

Empower environmental committee / village councils, establish PFM / JFM, community awareness raising, prioritise water conservation, collaboration and cooperation, frequent patrols, conduct EIA, land use planning and involve forest adjacent communities in decision making were each mentioned by one group.

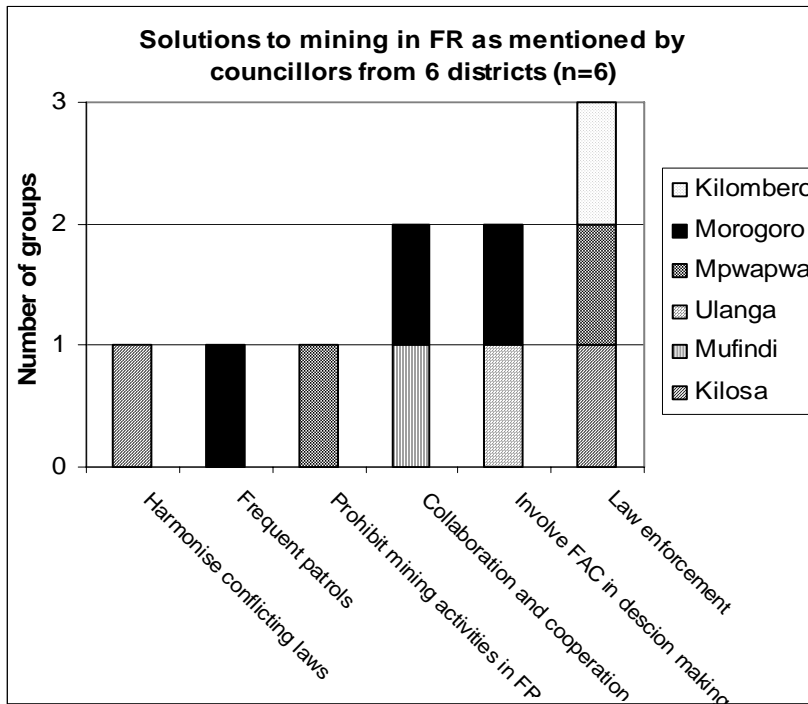


Chart 74 shows that Councillors from six districts mentioned eight solutions to mining in FRs.

Law enforcement and involve forest adjacent communities in decision making were each mentioned by two groups.

Chart 74 showing solutions to illegal mining in forest reserves mentioned by Councillors from 6 districts.

Prohibit mining activities in FRs, collaboration and cooperation, frequent patrols, community involvement in law enforcement and harmonise conflicting laws were each mentioned by one district group.

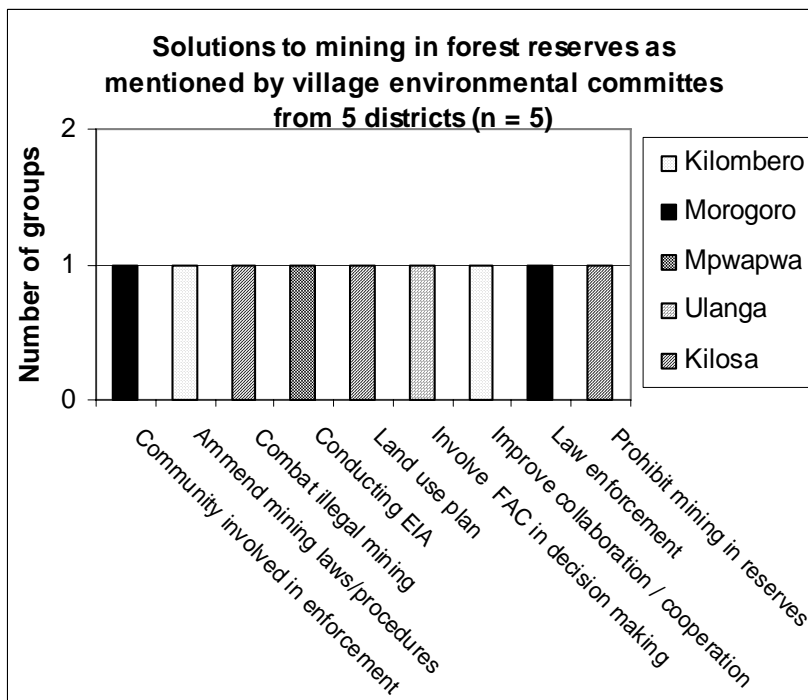


Chart 75 shows that environmental committees from five districts mentioned nine solutions to mining in FRs.

Chart 75 showing solutions to illegal mining in forest reserves mentioned by village environmental committee from 5 districts

All the solutions were mentioned by one group as follows: community involvement in law enforcement, amend mining laws, combat illegal mining, conduct EIA, land use plan, involve forest adjacent communities in decision making, improve collaboration and cooperation, law enforcement and prohibit mining in forest reserves.

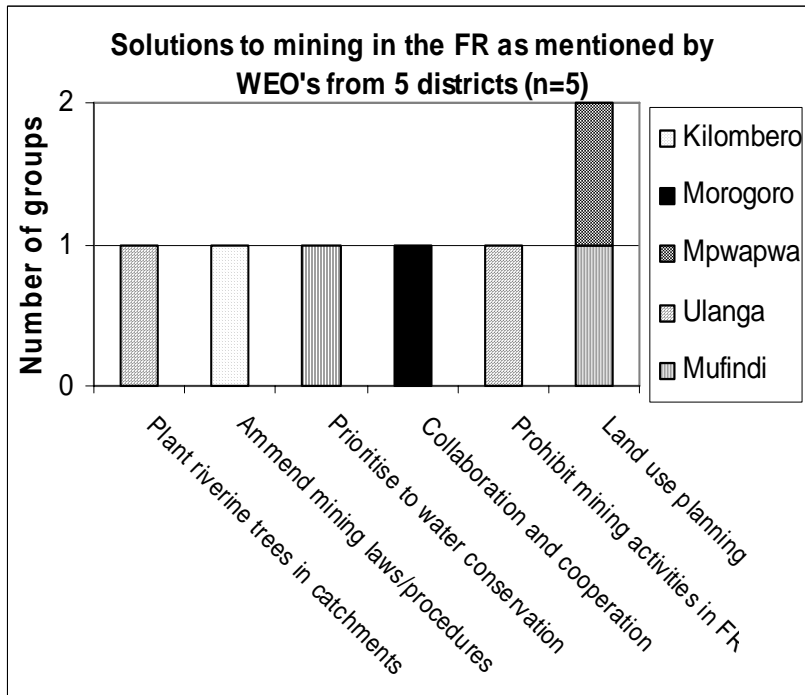


Chart 76 shows that Ward Executive Officers from five districts mentioned six solutions to mining in FRs. Land use planning was mentioned by two groups. Prohibit mining in FRs, collaboration and cooperation, prioritize water conservation, amend mining laws / procedures, and riverine trees to be planted in catchment areas were each mentioned by one district group.

Chart 76 showing solutions to illegal mining in forest reserves mentioned by Ward Executive Officers from 5 districts

3.5.3.7 Agriculture, Charcoal and Livestock keeping in forest reserves

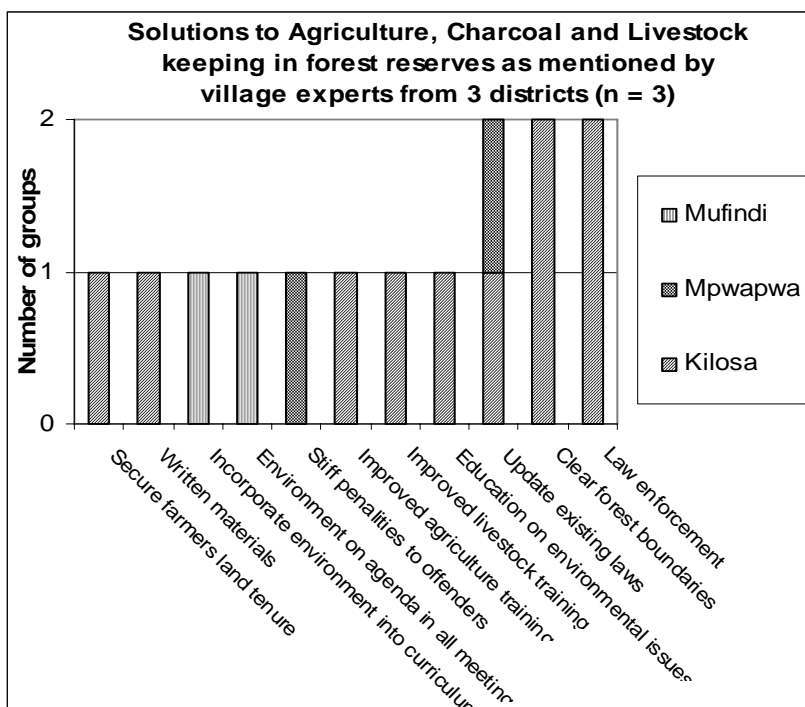


Chart 77 shows that village experts from three districts mentioned 11 solutions to agriculture, charcoal and livestock keeping in FRs.

Law enforcement, clear forest boundaries and update existing laws were each mentioned by two district groups.

Chart 77 showing solutions to Agriculture, Charcoal and livestock keeping in forest reserves mentioned by Village experts from 3 districts

The following were each mentioned by one group: secure farmers land tenure, incorporate environment into curriculum, use of written materials, environmental agenda should be a permanent agenda to all government meetings, stiff penalties to offenders, improved agriculture education, improved livestock education, community environmental education and secure farmers land tenure.

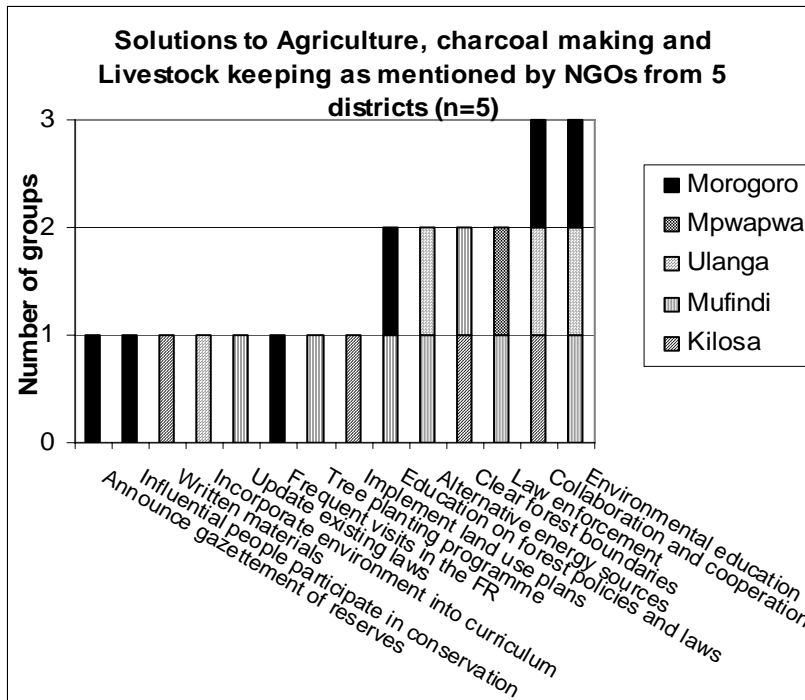


Chart 78 shows that NGOs from five districts mentioned 14 solutions to agriculture, charcoal and livestock keeping in FRs.

Environmental education and collaboration and cooperation were each mentioned by three district groups.

Chart 78 showing solutions to Agriculture, Charcoal and livestock keeping in the forest reserves mentioned by NGOs from 5 districts

Announce gazettement of FRs, influential people to participate in conservation, written materials, incorporate environment into curriculum, update existing laws, frequent visits to FRs, tree planting programme, and implement land use plans were each mentioned by one district group.

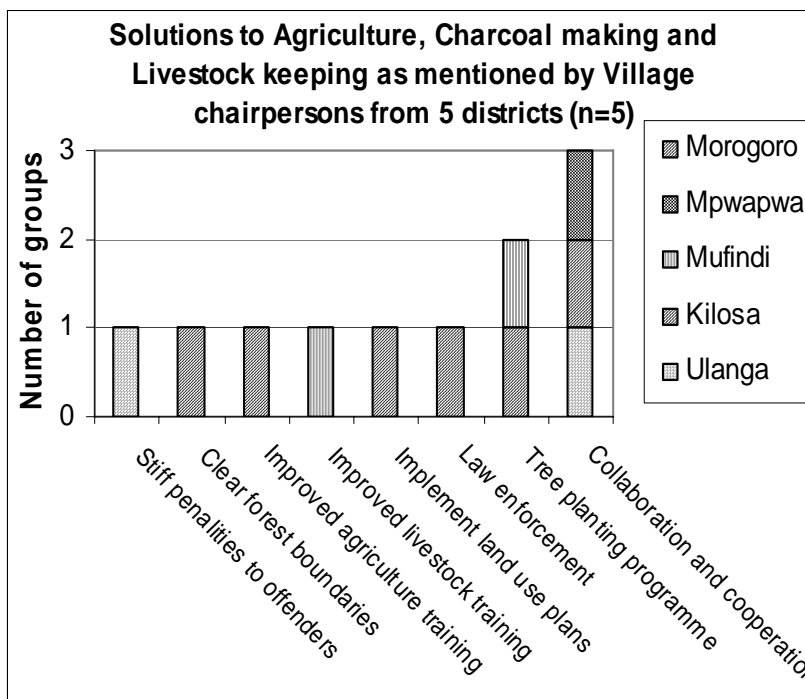


Chart 79 shows that village chairpersons from five districts mentioned eight solutions to agriculture, charcoal and livestock keeping in FRs. Collaboration and cooperation was mentioned by three district groups and tree planting programme was mentioned by two district groups.

Chart 79 showing solutions to Agriculture, Charcoal and livestock keeping in forest reserves mentioned by village chairpersons from 5 districts

The following solutions were mentioned by one district group: stiff penalties for offenders, clear forest boundaries, improved agriculture training, improved livestock keeping training, implement land use plans and law enforcement.

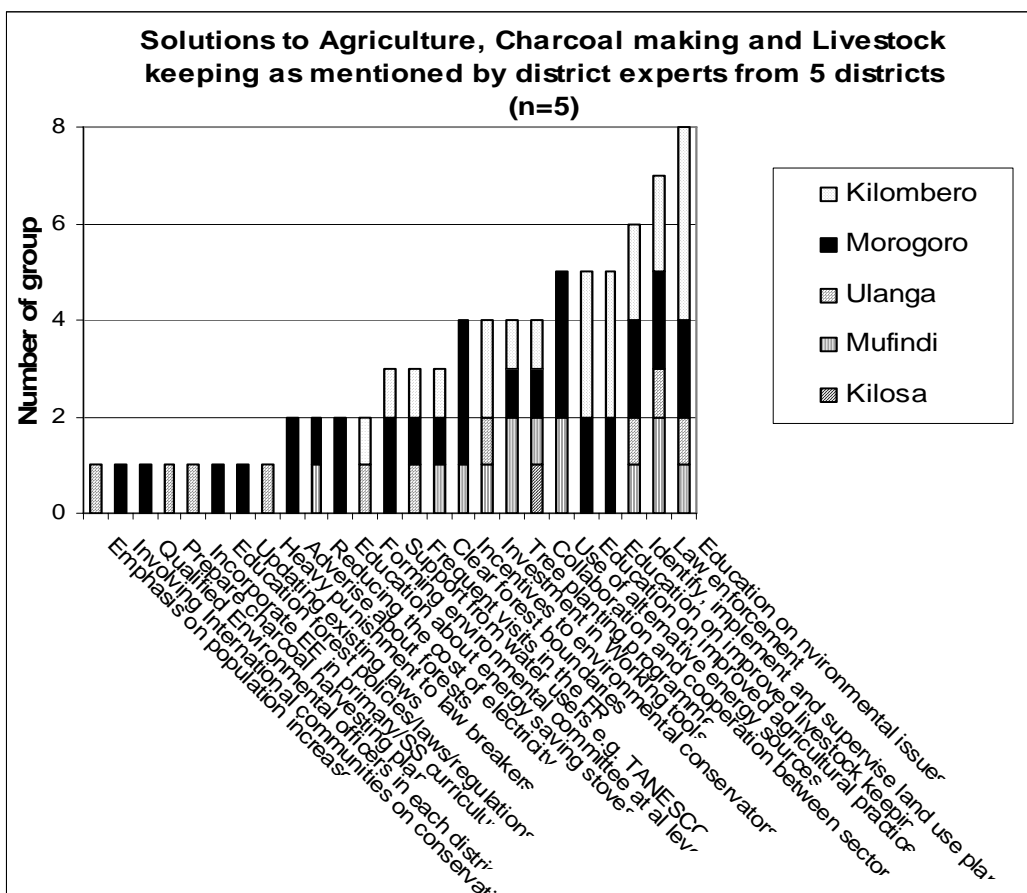
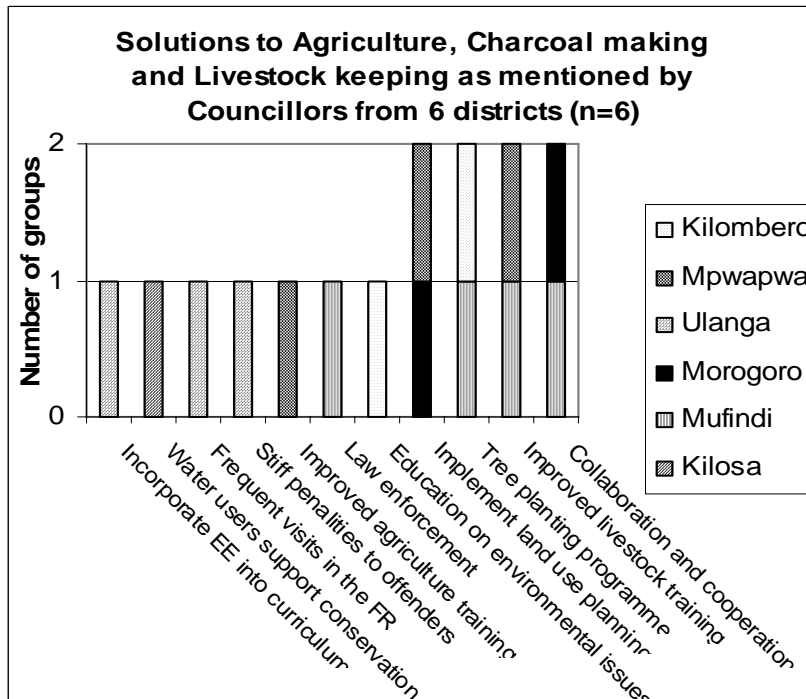


Chart 80 showing solutions to Agriculture, Charcoal and livestock keeping in forest reserves mentioned by district experts from 5 districts

Chart 80 shows that district experts from five districts mentioned 25 solutions to agriculture, charcoal and livestock keeping in reserves. Education on environmental issues was mentioned eight district groups. The following were each mentioned by one group:

- emphasis on population increase
- involve international communities in conservation
- qualified environmental offices in each district
- charcoal harvesting plan
- incorporate environment education into school curriculum
- education in forest policies / laws / regulations and updating existing laws

Chart 81 shows that Councillors from six districts mentioned 12 solutions to agriculture, charcoal and livestock keeping in forest reserves. Collaboration and cooperation between sectors / levels / politicians, education on improved livestock keeping and tree planting programme were each mentioned by two district groups.



Environment issues to be incorporated into curriculum, water users to support conservation, frequent visits in forest reserves, stiff penalties to offenders, improved agriculture training, implement land use planning, law enforcement, and education on environmental issues were each mentioned by one group.

Chart 81 showing solutions to agriculture, charcoal and livestock keeping in forest reserves mentioned by Councillors from 6 districts

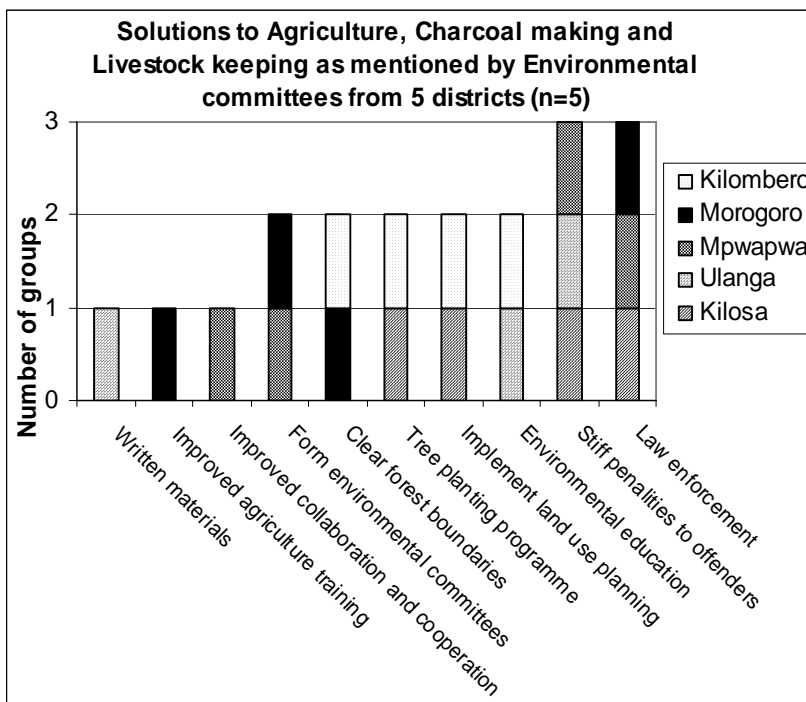


Chart 82 shows that environmental committee from five districts mentioned 10 solutions to the problems of agriculture, charcoal and livestock keeping in reserves.

Law enforcement and stiff penalties to offenders were each mentioned by three groups.

Chart 82 showing solutions to Agriculture, Charcoal and livestock keeping in forest reserves mentioned by environmental committee from 5 districts

Use of written materials, improved agriculture training and collaboration and cooperation were each mentioned by one district group.

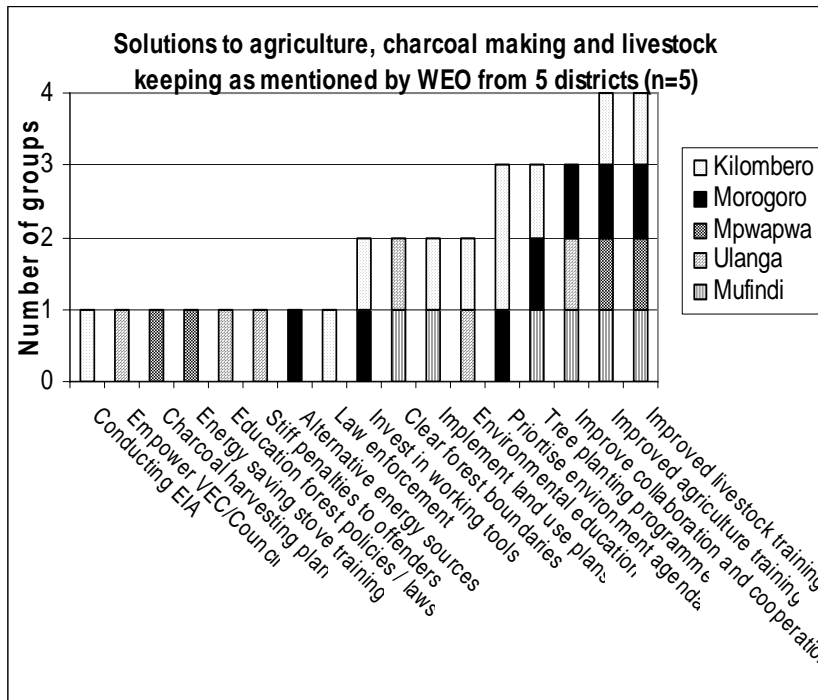


Chart 83 shows that Ward Executive Officers from five districts mentioned 17 solutions to the problem of agriculture, charcoal and livestock keeping in reserves. Improved agriculture training and improved livestock keeping training were each mentioned by four district groups.

Chart 83 showing solutions to agriculture, charcoal and livestock keeping in reserves mentioned by Ward Executive Officers from 5 district

Conducting EIA, empowering village councils, prepare charcoal harvesting plan, community education about energy saving stoves, education and distribution of forest policies, laws and regulations, heavy punishment to law breakers, use of alternative energy sources, and law enforcement were each mentioned by one district group.

Appendix 1 Terms of Reference

CONSERVATION AND MANAGEMENT OF THE EASTERN ARC MOUNTAIN FORESTS

SCOPE OF WORK

Title: Data entry and analysis for CMEAMF
Prepared by: Neil Burgess, CMEAMF
Date: 14th June 2005

Introduction

Conservation and Management of the Eastern Arc Mountain Forests is seeking the assistance of the Tanzania Forest Conservation Group to enter and analyse data collected from 14 District Stakeholder meetings. This work is a part of the development of a conservation strategy for the Eastern Arc Mountains – one of the major outputs of the FBD project 'Conservation and Management of the Eastern Arc Mountain Forests' funded by UNDP GEF. TFCG is a partner in this project and has already undertaken a similar process for the Information, Education and Communication element of CMEAMF. The work is expected to be completed during early July 2005.

There are two components to this work:

1) Entry of data from 14 Districts into the computer

Aim

To enter into Excel results of stakeholder meetings from 14 Eastern Arc districts

Details

The consultant will:

- Receive from CMEAMF copies of word files summarising the results of 14 meetings with stakeholders from the Eastern Arc Mountains
- Organise data into a number of separate Excel spreadsheets covering the following issues
 - o Major problems facing the Eastern Arc Mountains as defined by groups of a) District officials, b) villagers, c) CBOs, d) private sector representatives.
 - o Solutions offered to the problems facing the Eastern Arc Mountains as defined by groups of a) District officials, b) villagers, c) CBOs, d) private sector representatives.

Outputs

Excel spreadsheets ready for analysis

2) Analysis of data to inform strategy development process

Aim

To analyse stakeholder data to inform the strategy development process

Details

The consultant will:

- Prepare simple bar charts and other relevant graphs in Excel showing the following
 - o Major problems facing the Eastern Arc as defined by all combined stakeholders from the 14 Districts
 - o Major problems facing the Eastern Arc as defined by the combined stakeholders in each of the Eastern Arc districts (between District comparison)

- Major problems facing the Eastern Arc as defined by different stakeholder groups (villagers, NGOs etc) (between District comparison)
- Most popular solutions to the problems proposed by all combined stakeholders from the 14 Districts
- Most popular solutions to the problems proposed by the combined stakeholders in each of the Eastern Arc districts (between District comparison)
- Most popular solutions to the problems proposed by the different stakeholder groups (villagers, NGOs etc) (between district comparison)

Output

Excel Spreadsheets. Graphs. Analysis. Provided electronically to CMEAMF.

Contact people:

Neil Burgess and Felician Kilahama at CMEAMF
Nike Doggart and Charles Meshack at TFCG

Time scale: Excel spreadsheets ready early July. Analysis completed before 22nd July 2005.

Appendix 2 Lists of attendance to stakeholder meetings

Groups and number of people mentioned causes of forests destruction in 9 districts

Group		Total number of people
Kilindi	Chairpersons	
	Teachers	
	NGOs and village experts	4
	Urban experts	9
	VEOs	
	Environmental committee chairpersons	
Kilombero	Councillors	6
	Women	4
	District staffs	7
	NGO's	7
	Environmental committee	
Kilolo	WEO 1	5
	Village Chairman	7
	Village Chairman 2	6
	VEO	5
	Group 2	
	Village professionals	7
	WEO 2	3
	Councillors	7
Korogwe	Village experts	
	Village environmental committee	
	Village chairpersons	
	Village chairpersons	
	Village environmental committee	
	Village chairpersons	
	Village environmental committee	
	Village chairpersons	
	Village chairpersons	
	Village chairpersons	
	Village environmental committee	
District experts		
	Total	100
Lushoto	WEO	
	District experts	
	Councillors	
	Total	40
Group		Total number of people
Muheza	District expert	
	Village experts	
	Village chairpersons	

CMEAMF Threats and solutions to the Eastern Arc Mountain forests - Appendices

	Village chairpersons	
	Village environmental committee	
	Village chairpersons	
	Village environmental committee	
	Village executive officers	
	Village environmental committee	
	Village chairpersons	
	Village chairpersons	
	Village environmental committee	
	Total	120
Mwanga	NGO	5
	Councillors	3
	District Secretary	7
	District Experts	10
	Village Chairman	5
	WEO	5
Same	NGO	6
	Rural foresters	4
	Councillors	14
	District sectors	
	DEO	5
	WEO	11
	Environmental committee	7
Mvomero	District NR officers	6
	Head of Dept	
	Councillors	8
	DEO	6
	Women group	4
	Environmental Committee	6
	District experts	7
	WEO	8
	Village chairperson	9
	VEO	6
	Total	479
	9 district	
	68 groups	

Groups and number of people mentioning solutions to the causes of forest destruction in 6 districts

Groups		Total number of people
Kilosa district	Village Experts	6
	NGO	7
	Village Experts	11
	Chairpersons	13
	District Experts	11
	Councillors	7
	Village Environmental committee 1	10
	Village Environmental committee 2	
Mufindi district	Village experts	
	Councillors	8
	Natural Resources Experts	11
	District Experts	13
	WEO	11
	Chairpersons	3
	NGO and Private sector	4
	VEO	5
Ulanga-District	H/teachers	4
	Ward Executive Officer	
	District Experts 1	10
	Village chairperson	
	Councillors	4
	Environmental committee	14
	NGO	5
	District expert 2	9
District expert 3		
District-Mpwapwa	H/Teachers	19
	NGOs	4
	Councillors	10
	Chairpersons	9
	WEO and divisional officers	9
	Village Environmental committees	11
	VEO	9
	Village experts	4
Morogoro District	DEO/POLITICIAN	
	WEO	
	District Experts	
	Regional secretary	
	SUA/TAFORI	
	Village Chairmen	7
	Environmental committee	
	Districts NR staffs	
	Extension officers	5
	NGO	
Groups		Total number of people
Kilombero district	Influential women	4
	No name	
	Retired officers	

CMEAMF Threats and solutions to the Eastern Arc Mountain forests - Appendices

	District staffs	
	Environmental committee Chairmen	6
	Councillors	6
	WEO'S/VEO'S	
	Division Executive Officers	4
	Grand Total	273
	51 groups	
	6 districts	