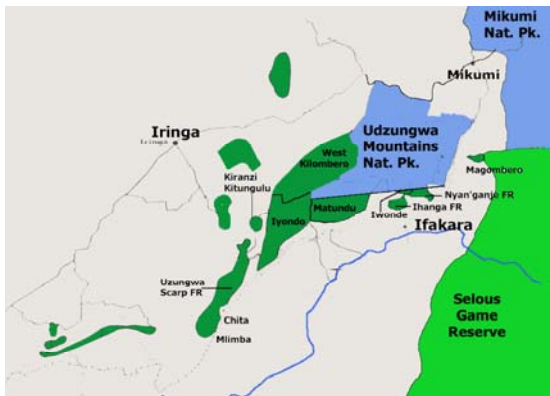


WORKSHOP PROCEEDINGS: CONSERVATION AND MANAGEMENT OF THE SOUTHERN UZUNGWWA MOUNTAINS: THE WAY FORWARD

Oasis Hotel, Morogoro

23rd March 2007



Critical Ecosystem
Partnership Fund



WWF Tanzania
Programme Office



Museo Tridentino
di Scienze Naturali

Report Compiled by WWF Tanzania Programme Office,
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Executive Summary

The report presents proceedings of the stakeholders' workshop held on 23rd March 2007 at Oasis Hotel, Morogoro. The workshop brought together sixty people from different organizations including government departments, International and Local NGOs, Private sector and local communities. The workshop was a follow-up of the December 2004 meeting, on the results of CEPF and other projects conducted in southern Udzungwa Mountains by Stakeholders to facilitate decision-making for better protection and management of this critical area for conservation of biodiversity and ecological services.

The workshop was organized by WWF-Tanzania Programme Office with financial support from CEPF and MTSN. Dr. Aloys Tango, Director of Forestry and Beekeeping officially opened the workshop on behalf of the Permanent Secretary, Ministry of Natural Resources and Tourism. The workshop addressed the CEPF's Strategic Directions 1 and 2 on increasing the ability of local populations to benefit from, and contribute to biodiversity conservation and enhancing connectivity among fragmented forest patches in the hotspot in and around Udzungwa.

During the workshop, five main presentations were made by the researchers and representatives from institutions followed by talks given by representatives from other partners namely the district councils, private sector and the civil society, then some plenary discussions. To encourage maximum participation and feedback from the varied stakeholders were encouraged to use participants, both English and Swahili languages.

The workshop participants underscored the importance of conserving the Southern Udzungwa Mountains which are known worldwide for their biodiversity values. Participants also acknowledged that the forests are under great pressure and thus improved protection of the same was urgently needed if their biodiversity and ecological services were to be maintained and passed on to the future generations.

Upgrading the Forest Reserves to the status of a Nature Reserve was currently seen to be the best option although the proposed size was seen to be too large and thus would require a huge management restructure and funding before effective protection was ensured. Through four break-away groups, participants discussed key issues identified in the presentations and proposed interventions as summarized in the respective sections of this report. The following action points were recommended by the workshop:

Management Options (for Corridors and Forest Reserves):

- a) Iyondo, Matundu and West Kilombero Scarp Forest Reserves should form party of the proposed Kilombero Nature Reserve and managed under this protected area category.
- b) Uzungwa Scarp FR and Njelela Forest Reserve should urgently be upgraded and either incorporated in the proposed Nature Reserve or annexed to the Udzungwa Mountain National Park.
- c) The only two remaining elephant corridor linking Udzungwa and Selous ecosystems (Nyanganje and Ruipa Corridors) were considered critical for elephant's migration between these protected areas. Efforts need to be made to secure them as a matter of urgency

- d) The Mngeta corridor linking Uzungwa Scarp to the northern Udzungwa forests was considered feasible and immediate management interventions were recommended
- e) WWF -Tanzania Programme Office was requested to facilitate legalizing annexation of Magombera Forest Reserve into Selous Game Reserve including the dialogue with Illovo Sugar Company that has volunteered to release the land.
- f) Incorporation of buffer zones within the village land management to reduce the farm-to-reserve borders that have resulted in encroachment and even human-wildlife - conflicts.

Management of Village lands/corridors

- a) Environmental friendly IGA such as beekeeping, tree planting, and improved agriculture practices should be encouraged and supported.
- b) Land use planning processes should be participatory and coordinated by village leaders, District Councils, interested partners and NGOs ensuring that all interested are discussed and agreed.
- c) Land adjudication and the ultimate zonation within villages should include setting aside village forest reserves and forests management should address tree planting and land/water resources management as per the Government Directives (i.e. 20 trees/year planted by every household) and woodlots established to sustain wood requirement at household level.
- d) Planting of invasive plant species that have negative impact on the environment should be discouraged and communities should be advised on afforestation and agroforestry systems including availing a list of suitable tree species.

Local communities' participation

- a) FBD should prepare guidelines for community participation in managing Nature Reserves and communities should be trained on how to apply such guidelines
- b) District councils should facilitate and support villages in preparing and implementation of respective by-laws for implementing village land use plans and resources management in the Nature Reserve and wildlife corridors.
- c) Management Plans for Nature Reserves should stipulate provide access for communities through clearly demarcated utilization zones (for firewood, thatching grasses, and worshipping etc)
- d) Community benefits on revenue sharing should be clearly defined and MOUs between the parties prepared and agreed.
- e) Environmental education, agroforestry and sustainable farming techniques, alternative sources of livelihoods, energy saving stoves as well as adoption of acceptable indigenous knowledge should be promoted by the different stakeholders.

Research and dissemination of information

- a) Establish a centralized data base for Eastern Arc Mountains to be managed by FBD and Database Management Officer be placed and trained
- b) Respective institutions should enhance communication and coordination among themselves to ensure effective information sharing.
- c) To facilitate research work, FBD should communicate with COSTECH and TAWIRI on the aspect of issuing research permits.

ACKNOWLEDGEMENTS

WWF would like to thank all those who contributed their time and effort in ensuring the success of the workshop. Very special thanks go to Dr. Aloys Tango, Director of Forestry and Beekeeping for his official opening the workshop on behalf of the Permanent Secretary , Ministry of Natural Resources and Tourism and to Hon. Halima Kasungu, Iringa Regional Commissioner for her wise workshop closing remarks.

We thank CEPF and MTSN for funding the workshop and in particular we are grateful to John Watkin and Sandy Andelman from CI for taking time to travel to Morogoro to participate in the workshop.

We would also like to thank Mr. Stephen Mariki for facilitating the workshop, Hon. Erick Nyali, Councilor of Mchombe Ward for chairing the workshop, Zakiya Aloyce, Andy Marshall and Paul Banga for taking notes.

We thank Oasis Hotel for providing the facilities and services.

This workshop report was prepared by WWF-Tanzania Programme Office.

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Acronyms

CBO	Community Based Organization
CD	Conservation Director
CEAMF	Conservation of Eastern Arc Mountains Forest
CEPF	Critical Ecosystem partnership Fund
CI	Conservation International
COSTECH	Commission for Science and Technology
DANIDA	Danish Development Agency
EAMCEF	Eastern Arc Mountains Conservation Endowment Fund
EE	Environmental Education
FBD	Forestry and Beekeeping Division
FR	Forest Reserve
FRs	Forest Reserves
GPS	Geographical Positioning System
HWC	Human Wildlife Conflict
IGAs	Income Generating Activities
IUCN	International Union for Nature Conservation
JFM	Joint Forest Management
METT	Management Effectiveness Tracking Tool
MNRT	Ministry of Natural Resources and Tourism
MTSN	Museum Trento di Scienze di Naturali
NORAD	Norwegian Development Agency
PFM	Participatory Forest Management
RC	Regional Commissioner
TAFORI	Tanzania Forestry Research Institute
TANAPA	Tanzania National Park
TANESCO	Tanzania National Electric Supply Company
TAWIRI	Tanzania Wildlife Research Institute
TFCG	Tanzania Forest Conservation Group
UMNP	Udzungwa Mountains National Park
USFR	Udzungwa Scarp Forest Reserve
WCS	Wildlife Conservation Society
WCST	Wildlife Conservation Society of Tanzania
WWF TPO	World Wide Fund Tanzania Programme Office

1.0 INTRODUCTION

The report presents proceedings of a one- day stakeholders workshop held on 23rd March 2007 at Oasis Hotel, Morogoro that was attended by sixty representatives from different organizations including government departments, International and Local NGOs, Private sector and local communities. The workshop was a follow-up of the December 2004 meeting, on the results of CEPF and other projects conducted in southern Udzungwa Mountains by Stakeholders to facilitate decision-making for better protection and management of this critical area for conservation of biodiversity and ecological services. The workshop was funded by Critical Ecosystem Partnership Fund (CEPF) and Museum Trento di Scienze di Naturali (MTSN) and facilitated by WWF Tanzania Programme Office.

2.0 BACKGROUND TO THE WORKSHOP

The Udzungwa Mountains in Central Tanzania are globally recognized for high level of biodiversity and endemism. Besides this biological importance, the mountains serve as water towers for the surrounding high value agricultural land and feed streams and rivers flowing into the Great Ruaha and Kilombero Rivers and the Rufiji Basin. Water from the mountains supports livelihoods of a large population and various commercial services such as two of the countries key hydropower generation facilities (with a total capacity of 380 MW at Kidatu and Kihansi hydropower stations connected to the national grid), irrigated agriculture, tourism and fisheries.

In December, 2004, WWF in collaboration with UNDP-GEF project ‘Conservation and Management of the Eastern Arc Mountains Forests with financial support from Critical Ecosystem Partnership Fund (CEPF) organized a national workshop on the “Future of biodiversity in the Udzungwa Mountains Ecosystem and surrounding landscape as well as connectivity of the areas. The outcome of the workshop attracted a number of initiatives both within protected and the general lands meant to improve conservation and management of the ecosystem as well as enhance connectivity of fragmented areas in the southern Udzungwa Mountains.

Based on these developments, WWF –Tanzania Programme Office in partnership with Trento Museum of Natural Science, and with funding from CEPF, organized a one day stakeholder’s follow-up workshop. The forum presented to all key stakeholders the results of ongoing CEPF and other projects and pipeline interventions in Southern Udzungwa Mountains.

3.0 AIM OF THE WORKSHOP

The aim of the workshop was to present to all relevant stakeholders the results of ongoing CEPF and other projects conducted and pipeline interventions in the Southern Udzungwa Mountains for enhancing management of this critical area for conservation of biodiversity and ecological services.

4.0 WORKSHOP ORGANISATION

4.1 Participants

A multi-disciplinary group of stakeholders including representatives from key Ministries, Regional and District Authorities, representatives from the Forestry and Beekeeping Division, Tanzania National Parks (TANAPA), private sector, Non-governmental organisations (NGOs), Community Based Organisations (CBOs) communities' representatives, media, MTSN, CEPF and CI as well as independent researchers attended the workshop. A full list of participants is given with contact details in Appendix "A"

4.2 Facilitation

The workshop was facilitated by Stephen Mariki, Conservation Director, WWF-Tanzania Programme Office and chaired by Mr. Nyali Eric, Councilor of Mchombe Ward. Presentations, plenary sessions and group work were the main methodologies in stimulating discussions and contributions from participants. For the benefit of all participants, both Swahili and English languages were applied.

5.0 WORKSHOP OPENNING

5.1 Welcoming Remarks by Stephen Mariki, Conservation Director WWF-TPO

On behalf of the Country Representative of WWF-Tanzania Programme Office, Mr. Mariki, thanked all participants, for accepting to attend the workshop despite of all the work they had before them. Their presence indicated that they are committed to the conservation of Udzungwa Mountains. He informed participants that this is a follow up of the 2004 workshop that will concentrate in assessing progress and achievements made as well as identifying gaps and plan the way forward. Presentations will be made by different stakeholders to update workshop participants on what has happened so far. CEPF will also present on what they are planning and the available resources. He said that, WWF has the feeling that collaboration is very important in bringing sustainable management and conservation of the Udzungwa ecosystem while ensuring the available resources were efficiently invested.

5.2 Official Opening- Dr Aloys Tango-Director of Forestry and Beekeeping

The Director of Forestry and Beekeeping, Dr. Aloys Tango officially opened the workshop on behalf of the Permanent Secretary of the Ministry of Natural Resources and Tourism. Highlights in his speech which appears in full in Appendix "B" include the stress that:

- a) Udzungwas form part of the Eastern Arc Hot spots Mountains which have high level of biodiversity and endemism.
- b) They are a critical catchment area for major rivers in southern Tanzania that provide water for agriculture, power generation and other socio-economic activities.
- c) Despite this critical importance, the mountains are among the most threatened and the impact of their abuse is evident including drying up of river systems and loss of ecological process and other environmental services.
- d) Recognizing the expansiveness of the area and the issues involved ranging from inadequate information on the biodiversity and other livelihood support services to institution of sound management regimes, there was a need for clear information sharing and collaboration.

- e) The vastness of the area and diversity of the issues and interest required capacity beyond one institution to achieve meaningful results.
- f) The varying ownership and management capacities have led to differing qualities of the conservation work and uncoordinated efforts and thence the limited impact.
- g) Stakeholders needed to collaborate to ensure that all activities are well coordinated as this would encourage maximum participation and bring great impact.
- h) His Ministry commends efforts and contributions of CEPF, MTSN, WWF and other stakeholders in facilitating this process and called for continued support as the work ahead was immense.

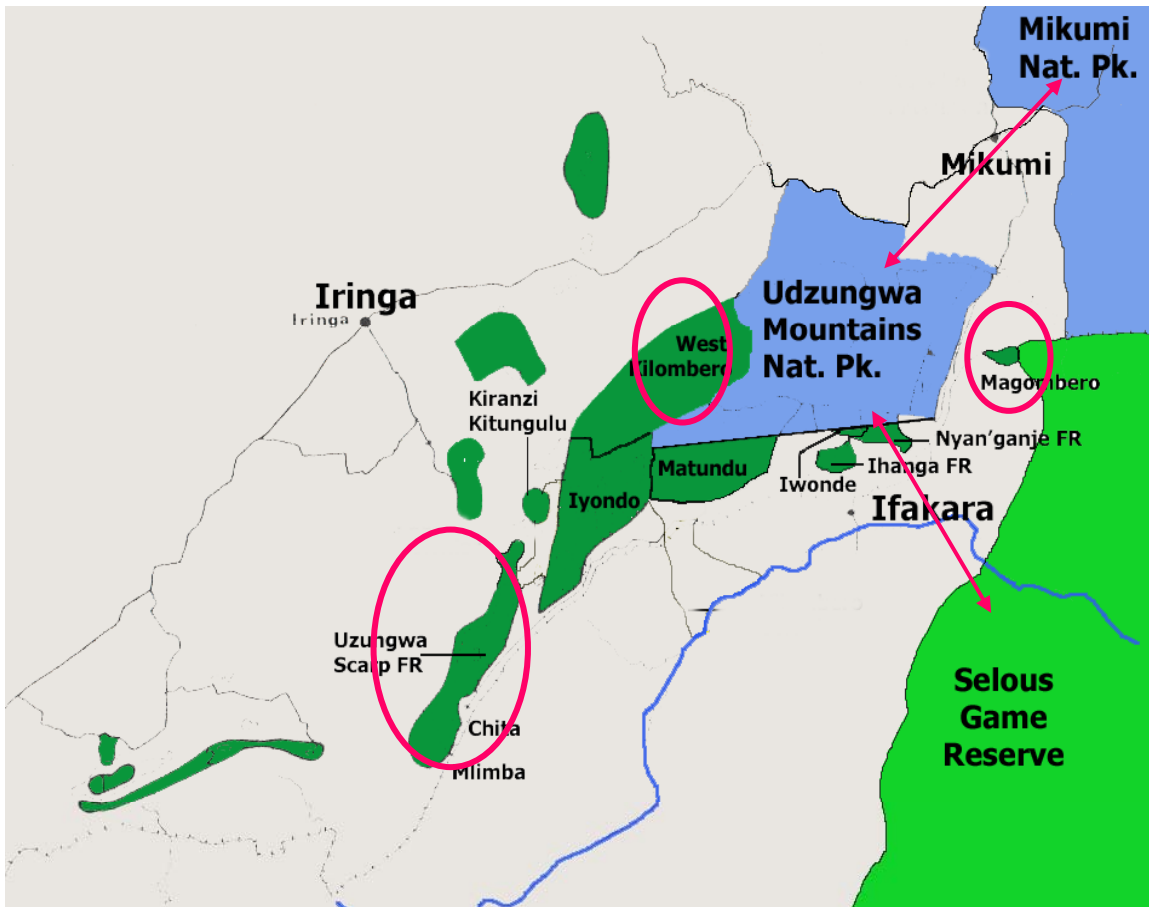
5.3 Recap on CEPF and projects in the Udzungwa- John Watkin- CEPF Director

John Watkin gave a brief overview of the CEPF activities in the area. He said that Udzungwa is one of the CEPF's priority sites. CEPF has supported several projects that were identified at the stakeholders' workshop in 2004. This workshop therefore was to assess achievements, identify gaps and plan the way forward for all of us as stakeholders.

5.4 Conservation and Management of Southern Udzungwa-The way forward, Stephen Mariki, Conservation Director, WWF-TPO

Mr. Mariki took participants through the resolutions made in December, 2004 workshop. In that workshop, stakeholders had agreed that in order to improve management and conservation of Udzungwa Mountains, four priority areas were identified. These were:

- i) Magombera Forest Reserve:** Legal protection of Magombera forest through gazettelement and annexation to the Selous Game Reserve; and while incorporating the needs of communities adjacent to Magombera Forest (with activities ranging from land use planning, afforestation - tree nurseries, initiating Income Generating Activities and facilitation of Environmental Education both formal and informal).
- ii) Management of wildlife Corridors** to connect Udzungwa to other protected areas such as the Selous Game Reserve and Mikumi National Park.
- iii) Improving management of Ndundulu and Nyumbanitu peaks** of the West Kilombero Forest Reserve that constitute the highest biodiversity including the recently discovered *kipunji* monkey
- iv) Uzungwa Scarp Area:** Restoring connectivity between Udzungwa Scarp and the rest of the Udzungwa ecosystem through different management approaches including Participatory Forest Management; and a feasibility for upgrading its protection status through extension of UMNP.



Participants were informed that this workshop would focus on reviewing and discussing progress including achievements made, problems encountered and issues needing further intervention within these priority areas. See Appendix “C” for the detailed programme.

He said that the expected output of this workshop was to deliberate on how stakeholders could work together to sustainably manage these rich biodiversity hotspots that the livelihoods of thousands of people and the economy of this country rested on. See Appendix “D” for the full transcript of his presentation.

6.0 PRESENTATIONS

6.1 Conservation status, connectivity and options for improved management of southern Forest Reserves in the Udzungwa Mountains of Tanzania, Francesco Rovero Trento Museum of Natural Sciences, Italy

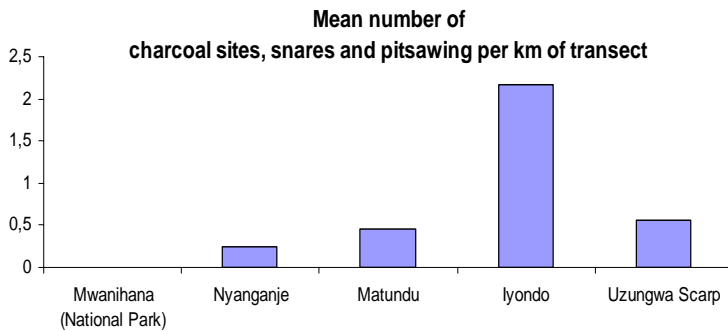
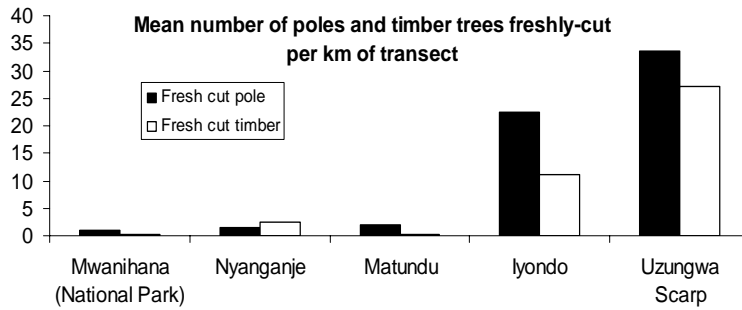
Dr. Rovero made a summary presentation of his study in the Southern Forest Reserves including options for improved management of the area. The study was recommended as one of the four priorities at the Udzungwa stakeholders workshop held in Morogoro in December, 2004. The main objective of the study was to assess the conservation status, management effectiveness and threats to the target forests that would provide recommendations for a conservation of target forests, and provide information to facilitate

decision-making. The study was carried out in four Forest Reserves namely: Nyanganje (69 km²), Matundu (106 km²), Iyondo (280 km²) and Uzungwa Scarp (207 km²); and also Mwanihana (177 km²) within Udzungwa Mountains National Park (UMNP) and the area between Iyondo and Uzungwa Scarp Forest Reserve. Different stakeholders including community representatives in 7 villages near the target FRs were involved in the study.

The study reviewed and compiled available information and data; undertook socio-economic assessments and biodiversity surveys using maps, aerial photographs and field data collection that involved systematic transects for disturbance i.e. counts of poles and trees harvested along transects 500 m in length starting at the FR edge; land use mapping in the potential corridor area between Iyondo and Uzungwa Scarp FR (USFR); as well as stakeholders' consultation and community interviews.

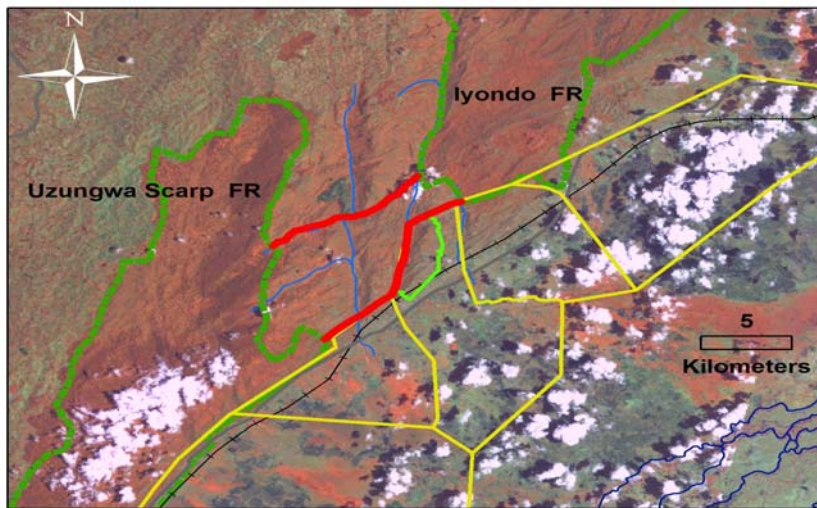
Key Findings of the Study

Results of disturbance assessment in the target Forest Reserves and UMNP: The key results indicated that there was a high rate of disturbance caused by illegal activities in the target Forest Reserves compared to those recorded in the National Park. Disturbance is particularly high in the southern-most forests, especially Iyondo and USFR as summarized in the figures below.






Results on the assessment of Connectivity between Iyondo and Udzungwa Scarp:

Proposed Mngeta corridor: According to the information from the Kilombero District, the villagers and ground surveys, the proposed “Mngeta Corridor” lies in the Government land and falls entirely outside village land. The corridor is 9.2-15.2 km long between protected areas and 2.1-6.8 km wide, and an area estimated at 63 km². As much as 80% of the corridor appears to be covered by natural vegetation including approximately 25% natural forest and woodland. Some parts of the corridor are very steep and covered by mixed grassland, shrubs and low-canopy forest. Only 20% appears occupied by recent farms. It is estimated that less than 100 households live in the corridor area and most of the people using the proposed corridor are seasonal farmers and in the case of those from Mngeta village they have been asked to move inside the village land to allow for the implementation of a Participatory Forest Management Programme.



Map of the proposed Mngeta Corridor, linking Iyondo FR and USFR: The dark green shade is the boundary of Iyondo FR and USFR, while the small, light green oval is the Mngeta PFM. Village land boundaries are also indicated

Legend

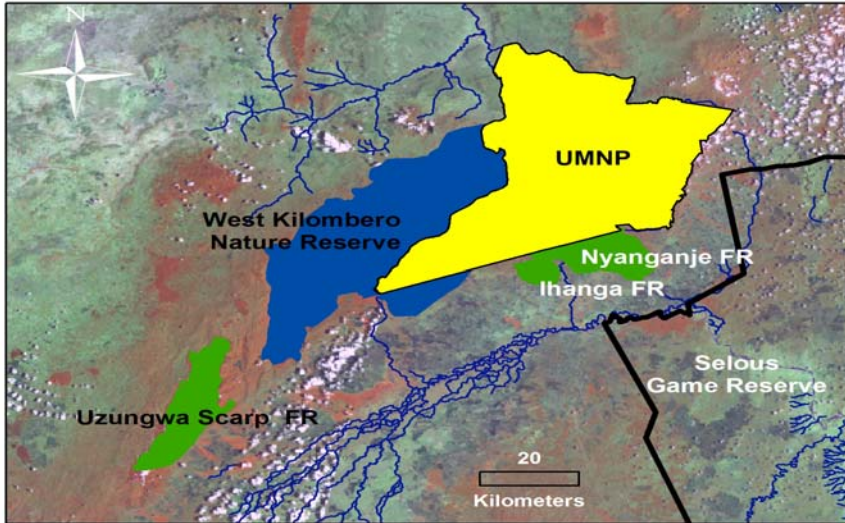
-  proposed Mngeta corridor
-  village land boundary
-  Iwungi mngeta PFM
-  road
-  railway

Results of Community Interviews: Levels of conflict with wildlife were higher in Matundu and Nyanganje because of crop-raiding by elephants, and only 13% of respondents living near USFR declared to have suffered from conflicts with wildlife. Firewood collection in FRs was declared by a maximum 50% of respondents (37% in USFR), thus many people collect firewood outside FRs.

Awareness on FRs regulations was lower in Iyondo and USFR (49-54%) than in Nyanganje and Matundu (65-75%), indicating a greater need for awareness raising initiatives for communities around the more southern forests.

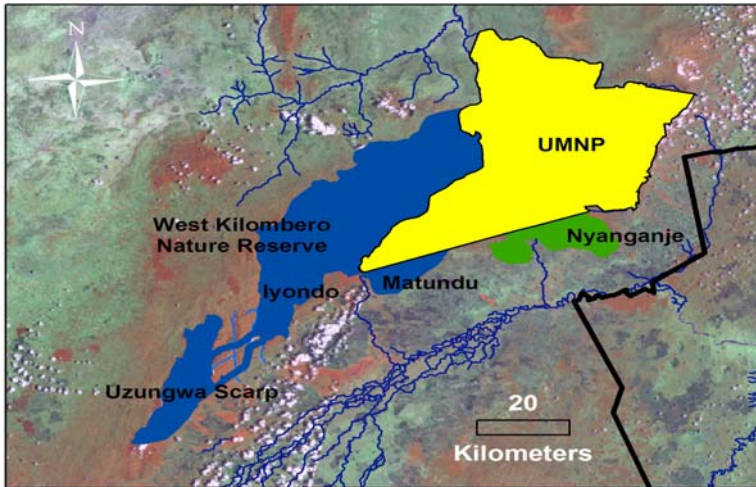
The study recommends three major options for improved management of these FRS. These include:

Management option 1: Establish West Kilombero Nature Reserve: Amalgamate West Kilombero FR (1,040 km²), Matundu FR (280 km²), and Iyondo FR (76 km²)



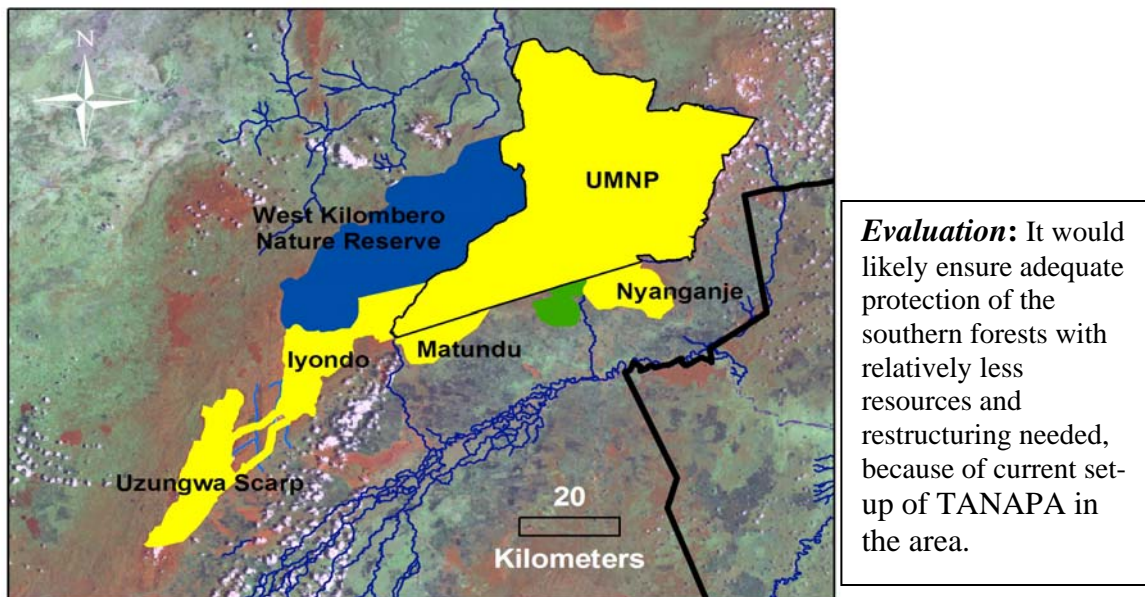
Evaluation: It isolates Uzungwa Scarp FR; it ignores the connectivity with Iyondo and does not address protection of USFR.

Management option 2: Establish a Larger Nature Reserve (about 1,660 km²) that include Uzungwa Scarp and the “Mngeta corridor”



Evaluation: It would address the limits of Option 1, but because of the large size it would require substantial restructuring and funding before effective protection is ensured

Management option 3: A Possible Compromise: limit West Kilombero Nature Reserve to current West Kilombero FR and expand UMNP to the south-eastern FRs



Please see Appendix “E” for the full transcript of the presentation.

Questions/Comments:

- a) Kilolo DC: **Scope of the study:** the study could have been extended to Iringa, particularly in Udekwa where there is edge boundary farming and encroachment.
- b) Dr. Kilahama: **the nature reserve:** it has already been agreed in April last year to incorporate all forests into a new “**Kilombero Nature Reserve**”
- c) Rovero: **Connectivity:** Regarding connectivity, the existing settlement and other human activities are purely seasonal and therefore there won’t be a problem of compensation. Also Mngeta farmers have been told to move backward to their village land through PFM programme.
- d) Mbega-Kilombero DFO: regarding **the inclusion of Iyondo and Matundu Forest Reserves into Nature Reserve**, discussions and consultations have already been conducted in nine villages and bringing in new ideas will retard the whole process. He further elaborated that the survey and mapping of Iyondo Forest Reserve is being carried out by District Council and MNRT, Uzungwa Scarp Forest Reserve was not covered though.
- e) Rovero: **Community livelihoods:** said that whatever management option is chosen, interest of local communities and their livelihood which very much depend on these FRs should be taken into consideration.
- f) Hon. Halima Kasungu, RC. Iringa: **Scope:** the study focused more on the Morogoro side leaving the Iringa aside while the big portion of the forest is in Kilolo-Iringa. Encroachment is a big problem in Kilolo and people are cultivating marijuana inside the Forest Reserve. The place has tourism potential that was yet to be tapped.

Infrastructure is better developed on Kilombero side as compared to Kilolo. This would need to be considered in this process of establishing the Nature Reserve.

- g) Mr. Massao of FBD: **Establishing the Kilombero Nature Reserve:** it was difficult to include all the Udzungwa Mountains Forest Reserves in the proposed Kilombero Nature Reserve from the beginning as this would require substantial resources including finances although connecting these two important areas i.e. Kilombero and Udzungwa Scarp was very important.

6.2 Improving the Management of Udzungwa Mts. Natural Resources including socio-economic aspects around southern forest reserves - Zakiya M. Aloyce, WWF- TPO.

Ms Zakiya Aloyce made a presentation on WWF's initiatives in the Udzungwa Mountains including findings of the socio-economic study that was carried out around Southern Forest Reserves. She informed participants that WWF has been supporting conservation of Udzungwa Mts for over 16 years in collaboration with TANAPA, Kilolo and Kilombero District Councils and local communities to conserve the Udzungwa Mountains National Park (UMNP). Establishment of UMNP was one of the biggest achievements in the area.

However, pressure to the natural resources remains major challenge both within the PAs and areas outside PAs. WWF's goal is to ensure sustainability and health of forest and freshwater ecosystems of Udzungwa for all Tanzanians depending on these forests.

Different funding sources secured by WWF for implementing different projects in the area that address key priorities identified following the 2004 CEPF workshop included:

- a) Improving Natural Resources Use on the Eastern Side of Udzungwa Mountains National Park - funded by NORAD as from 2006 for three years
- b) Conservation of *Rungwecebus Kipunji*: a new species of African monkey in Ndundulu Peak, Udzungwa Mountains - funded by WWF-Sweden *for two years beginning 2006 (West Kilombero Scarp)*
- c) Facilitating community conservation activities around Iyondo Forest Reserve-funded by EAMCEF for one year beginning 2007 **(West Kilombero Scarp)**
- d) Improving the Conservation of Magombera Forest - funded by CEPF for two years beginning 2006 **(Corridors)**
- e) Socio-economic study of Southern Udzungwa Forests- funded by CEPF implemented in 2006 **(Corridors/West Kilombero Scarp)**

The main objective is to reduce pressure and improve utilization of forests, water and land resources in the Udzungwa ecosystem.

Key activities implemented by WWF to achieve the targeted goals include: facilitation of participatory land use planning; promotion of alternative sources of energy including establishment of tree nurseries, establishment of community forests and woodlots, promoting use of efficient woodfuel stoves; carrying out environmental education and awareness; supporting sustainable farming including agroforestry practices; facilitating development of village by-laws, supporting ecological research and monitoring, supporting establishment of IGAs and facilitation of stakeholders dialogue and discussions to improve forest conservation and management.

Socio-economic study of Southern Udzungwa Forests

One of the projects identified in the December 2004 workshop to address the problem of corridors and connectivity was related to generating socio-economic information; status of communities adjacent to the protected areas; their capacity and willingness to support environmental protection for improving conservation of the forests and re-establishing connectivity.

The Socio-economic study was commissioned in 2006 to provide an understanding of how communities value the forests and the ways they are likely to participate and engage in future forest management activities. The project contributed to the CEPF strategic directions 1 & 2 which focus on increasing the ability of the local population to benefit from, and contribute to biodiversity conservation, and enhancing connectivity among fragmented forest patches in the hotspot in and around Udzungwa.

The study covered 15 villages' communities around Udzungwa Scarp, Iyondo, Matundu, Nyanganje, Ihangwa and Iwonde Forest Reserves to the south, west and south-western part of Udzungwa Mountains National Park. Over 650 people were interviewed through two discussion groups (male and female) per village with 300 responding to detailed questionnaires. The total population in the area was 70,956 (2002 census). Stakeholders consulted were government institutions, private sector and NGOs

Major findings of the study

- a) The 'community' was not homogenous, with 70.3% being immigrants, not having historical claim to the area and 78% of immigrants having moved in for agricultural opportunities
- b) 97% of respondents indicated that agriculture is the most important livelihood activity where 54% rely on agriculture for cash income. Other income sources included animal husbandry, small business enterprises and artisanal work
- c) Communities rely heavily on forest products mainly as a source of energy (firewood), although only a minority admitted entering into the Forest Reserves (for fuelwood 14.4%, building poles 18.6%)
- d) Communities are, to some degree, aware of their rights as land managers, although they had not be involved in the land use planning process
- e) Communities lacked an understanding of the environment and therefore the need for continued environmental education and awareness raising programme
- f) The level of education amongst the majority of the communities was low and the current level of awareness regarding forest conservation was also generally basic.

Management options proposed by communities

Nyanganje Village

Communities were partly cautious on TANAPAs regulations because of past conflicts and their policy of non-consumptive utilisation but partly appreciate the conservation work done. They would prefer controlled utilisation with greater individual village taking role in controlling the respective section of the forest.

Iwonde/Ihanga

Communities would favour local management, or a joint management, with management zones detailing various management options, and the support of an environmental management and awareness programme.

Iyondo/Matundu villages

Communities would favour local management, with management zones, and the support of an environmental management and awareness programme

‘Mngeta Corridor’

Communities would favour local management, but would also support partnership with FBD or TANAPA, provided there were utilisation zones for the villages to access their basic needs.

Uzungwa Scarp

Communities would support management by TANAPA provided they were given environmental education leading to a form of collaborative management involving communities.

The study recommended the following key issues to be addressed: environmental education and awareness raising, facilitate land use planning, establish clear forest-adjacent benefits and values of the forest to communities, promote efficient fuel stoves and alternative renewable energy technologies, promote establishment of woodlots and build capacity for the management of village forests as buffer zones for Forest Reserves, carry out research to identify and propose realistic IGAs interventions that will meet community aspirations and abilities but also sustainable from a forest conservation viewpoint as well as educate and build capacities of communities on efficient agricultural practices. A full transcript of the presentation is appended as Appendix “F”

Questions/comments

- a) **Immigrants:** Where were they from and were they pastoralists/farmers)? : Zakiya Aloyce: They were from Northern and western regions of Tanzania and most of them were the Sukuma, Maasai and Barbaig tribes who were mostly pastoralists.
- b) **Priority activities:** Hon. Halima Kasungu-RC Iringa: Sustainable livelihoods projects and land use planning for villages adjacent to the Reserves should be given priority.
- c) **PFM Programmes:** Dr. Kilahama: JFM and PFM programmes have proved success in management of Forest Reserves and thus should be considered as one of the management arrangement for these forests.
- d) **Management of Magombera Forest:** Mbwana Said: FBD could come to some agreement with ILLOVO regarding management of **Magombera** (rather than annexing this to Selous Game Reserve).
- e) **Compensation of the Illovo land:** Zakiya Aloyce: ILLOVO Co. has already been compensated their land (1976ha) at Ruipa area, however, the long distance from Kilombero to Ruipa (130km), necessitated **ILLOVO** to ask for more land from the village (8,000ha) that would suffice establishing a sugarcane plantation and setting up a plant.
- f) **Land acquisition process:** Hon. Castor R.S. Ligallama (MP Kilombero): In order for the ILLOVO to be considered for that extra land, they need to channel their request to

the respective Village Governments as stipulated in Village Land Act No.5 1999. Based on these discussions, WWF was requested to facilitate a meeting for the key stakeholders to discuss the issue and work on a practical solution.

6.3 Maintaining connectivity between the Udzungwa and Selous Ecosystems: A last chance - Trevor Jones, Anglia Ruskin University, Cambridge, UK

Trevor Jones made a brief presentation of his study on Maintaining Connectivity between the Udzungwa and Selous Ecosystems. He indicated that managing connectivity between ecosystems was very important because it reduces human-wildlife conflict (HWC) and brings effective management of animal corridors, protecting lives and livelihoods through emphasis on HWC mitigation. He also noted that gene flow was required for maintaining healthy populations of large mammals, including endangered species. Reduced pressure on ecosystems would thus reduce habitat destruction, through maintaining natural migration patterns.

His study was a result of the preliminary surveys carried out between 2002 and 2004 and the discussions and recommendations of the December 2004 CEPF Udzungwa workshop. The study focused on the CEPF Priority 1: “Identify, survey and map viable wildlife corridors in the area”. The areas studied were the identified Udzungwa-Selous Corridors.

He noted that there were three major factors contributing to the problem: i) Udzungwa area is too small for landscape species, e.g. elephants, wild dogs – which are known to move between Tanzanian Protected areas (PAs). ii) Increased protection of the Udzungwa Mountains National Park since 1992 has led to increased abundance and distribution of large mammals, observed annually. iii) Rapid immigration and land use changes in Kilombero Valley were cutting off previously used animal migration routes between Udzungwa Mountains and Selous-Mikumi-Niassa Ecosystem, further confining elephants, buffalo in smaller protected areas. Consequently there was an increase in human-wildlife conflict and loss of biodiversity. The study was premised on the notion that to identify and effectively manage remaining Corridors linking the Udzungwas with Selous would be an appropriate solution to these problems.

Methodology used in this study included:

Aerial surveys (WCS aerial mapping program), ground-truthing: Mapping of land use, habitat types, legal boundaries, animal trails (1299 GPS points); 44 Disturbance Transects (0.5 – 1 km); 38 Dung Transects (0.5 – 1 km). 127 targeted questionnaires on wildlife movements, human-wildlife conflict and attitudes were administered. Background research into existing information, e.g. legal status of Corridor areas was also done. The results of the study show that there were two remaining active corridors namely **Nyanganje and Ruipa Corridors**.

NYANGANJE CORRIDOR

This was the shortest possible route for wildlife migrating from Udzungwa Mountains to Selous GR. . **Questionnaires (n = 52)** with 80% of respondents have elephants on their

farms, 47% have buffalo and 29% perceive conflict with wildlife. Elephants were passing in January, February, March and Buffalos moving all year round. Critically threatened area is about 5 km²

Key Stakeholders of the Nyanganje Corridor were Communities of Sagamaganga, Signali and Kiberege; Forestry and Beekeeping Division; Wildlife Division; Hunting company (Kilombero North Safaris). Option would include establishing a Corridor Management Committee and an NGO to facilitate implementation process

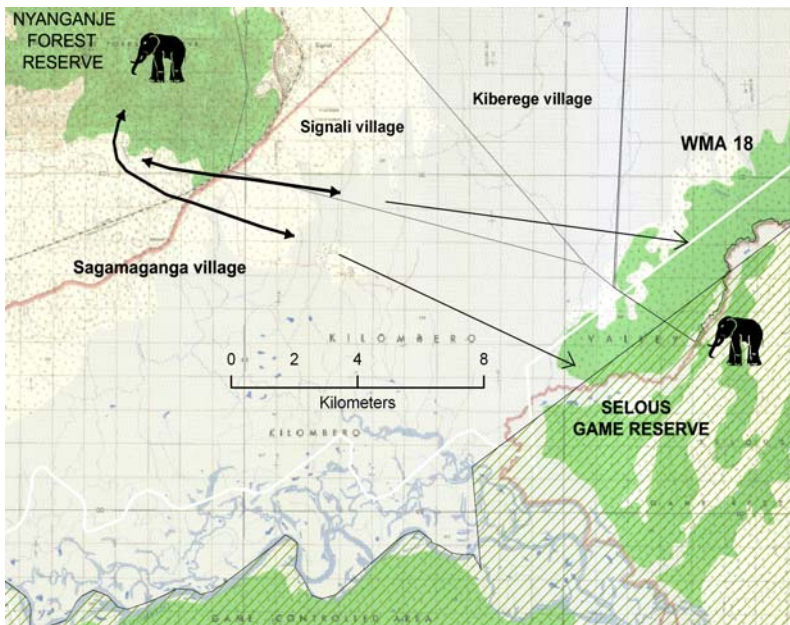


Fig. 1. Nyanganje Corridor

RUIPA CORRIDOR

Questionnaires (n = 65), 78% of respondents have elephants on their farms and 59% have buffaloes and 45% perceive conflict with wildlife. Critically threatened area of the Corridor is about 25 km². The whole Corridor was 0.5 to 6 km wide and 20 km long. Elephants crossing are in March, April, May and buffalos present all year round. Udzungwa red colobus, black-and-white colobus, duikers, waterbuck, aardvark, leopard can also be found.

Namwai Forest

It is a mosaic of moist forest, Miombo woodland and grassland. Buffalo and other wildlife are present all year round and sable antelope noticed until recently. Elephants browse as they pass through. There were no human inhabitants until recently when a new sub-village of Ihenga with 100-200 inhabitants, from outside the area was established. The forest was surveyed by FBD and beacons erected in 2004 for a possible National Forest Reserve but was yet to be gazetted. The forest was critically important but was faced with problems of clearance for agriculture, forest fires, cattle grazing and commercial logging.

Key stakeholders of Ruipa Corridor: Communities of Kisegeese, Namawala, Mbingu-Njagi, Mofu, Forestry and Beekeeping Division, Wildlife Division (GCA), Kilombero Farm Limited, Illovo Sugar Company , KVTC and a Private donor. Corridor Management Committee facilitated by an NGO for implementation process was recommended

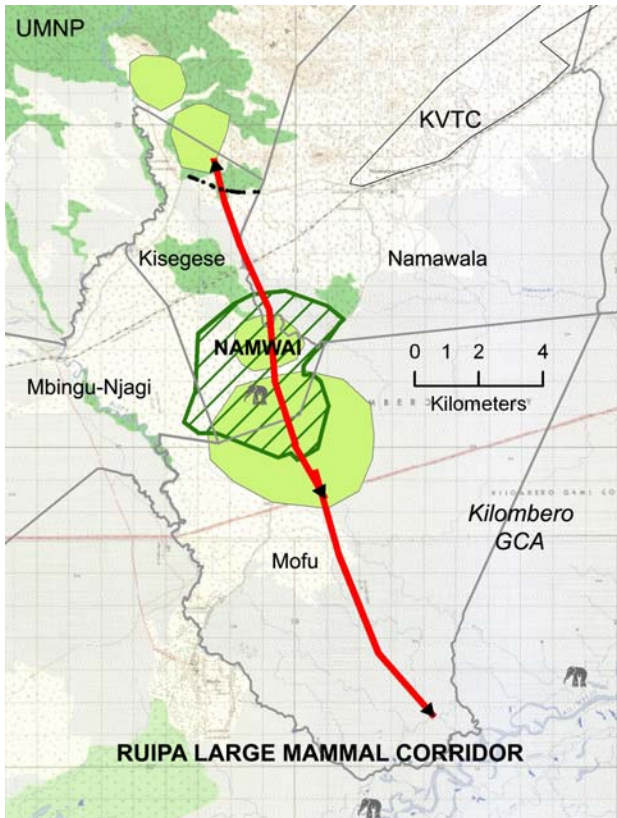


Fig. 2. Ruipa Corridor

Summary of Management Options for Both Corridors:

- a) Private ownership of Corridors
- b) Forest Reserve gazettement
- c) UMNP extension
- d) Community Corridor Protection
- e) Combination of all of the above
- f) Facilitation by NGO

Questions/Comments

- a) **Duration of the study:** DC-Kilolo: How long did the study take place? Trevor: One year
- b) **Blockage of the corridors:** DC-Kilolo: If by 2009 the corridors will be blocked, as revealed by the study, what is the position of the MNRT? Massao, FBD: The government will definitely take action, such as eviction of pastoralists from the Kilombero Valley
- c) **Participation of stakeholders:** Hon. Halima Kasungu, RC-Iringa: Why did the study cover local communities only without involving the district authorities? Trevor: This

was a feasibility study and the final report will be forwarded to district authorities and the consultation and implementation phases will begin.

6.4 Ongoing and Future Plans for Conservation of Catchment Forest Reserves, J. Massao, Regional Manager Catchments Forest Manager– Iringa.

On behalf of the Forestry and Beekeeping Division, Mr. Massao made a presentation on the government’s on-going and future plans for conservation of Catchment Forest Reserves including Udzungwa. He reminded on importance of the Udzungwa Mountains as they were renowned for their biodiversity value and endemism.

Communities derived their daily requirements from these forests (poles, charcoal, wood, fruits, medicinal plants, etc). However, the forests were threatened by wild fires, encroachment, illegal hunting, medicinal extraction, timber harvesting and overgrazing. Apart from human threats, the forests were also threatened by natural climate change, invasive species of plants.

Management Initiatives

The government was very keen in conserving the Udzungwa because of its potential, and the exceptional resources harboured in there. The table below summarise different management initiatives executed in the area by FBD in collaboration with other stakeholders

No	Management Initiative	Support or Facilitation	Output
1	Initiatives on Review of Forest Regulations to accommodate Forest Management gaps (Nature Reserves, PFM guidelines, Utilization Procedures etc)	FBD/ DANIDA	Draft PFM guidelines and Resource assessment guidelines
2	Boundary Consolidation and Mapping of Catchment Forest Reserves and village land Forest Reserves initiated	FBD through CEAMF and District Councils	Four Catchment Forest Reserves mapped (Kitonga Kihulula FR and Kilombero Nature Reserve (3FRs)) and six village land Forests (Kilolo District)
3	Amalgamation of West Kilombero Scarp, Iyondo and Matundu FRs into Kilombero Nature Reserve initiated	FBD/CMEA MF	Surveying and mapping completed (134,511ha) Declaration order forwarded for approval
4	Upgrading West Kilombero Scarp, Iyondo and Matundu FRs to Kilombero Nature Reserve and World Heritage Site	FBD through CEAMF and District Councils	Mandated from National level 17 Agreements signed with communities bordering the forest 2 District Councils (Kilolo and Kilombero) sanction in writing the process to continue

No	Management Initiative	Support or Facilitation	Output
5	Categorization of all forest Reserves in IUCN protected area criteria	FBD through CEAMF	18 FRs Categorised in IUCN protected area criteria pending finalisation
6	Expansion of PFM activities to other areas	FBD through CEAMF and Communities	29 new villages bordering the Udzungwa Mountains practising PFM adding to 52 villages
7	Construction of 2 Nature trails and 3 Camping Sites.	FBD through CEAMF, Communities, TANAPA and WWF	Two Nature Trails completed and one camp site constructed
8	Gazettement of two forest reserves	FBD through CEAMF and Communities	One Forest Reserve on process to gazettement [Kitonga Kihulula)

Nevertheless, there were several challenges hindering achievement of these initiatives. The challenges include: limited resources to support the necessary management (human and financial), low community benefits from the forest, scanty ecological information on the whole area, frequent forest fires, edge boundary encroachment by farmers.

The Way Forward

- a) Preparation of General forest Management Plan for each Forest Reserve
- b) Review of village management agreements and by-laws to incorporate new interventions (JFM Guidelines)
- c) Agree on the way to speed up the process of upgrading the status of the protected Udzungwa Mountain forests to a Nature Reserve for better management and national and international recognition.
- d) Boundary Management process

Questions/Comments

Buffer Zones: Hon. Castor R.S. Ligallama (MP Kilombero): Buffer zones of about $\frac{1}{2}$ - 1 km to allow for free movements and road area as well as reduce conflict with local communities

Status of establishing the Nature Reserve: Adam Kijazi (FBD): West Kilombero Nature Reserve has been confirmed and the decision has been made, what is required now is to work together in facilitating the process for establishment of the Reserve.

Participation in managing the NR: Zakiya Aloyce: how will communities participate in the process of establishing and managing the Nature Reserve with reference to education, land use planning, guidelines and coordination and whether a benefit sharing system would be developed to indicate how communities will benefit when the Nature Reserve was established? Massao: Local communities will not be restricted to carry out controlled activities in particular zones which do not jeopardize the resources in the Nature Reserve

Management of the Uzungwa Scarp Forest Reserve: Trevor Jones: Continued use of forest resources in Uzungwa Scarp Forest Reserve is critically harming the forest; if NR is

to be gazetted, it should include Uzungwa Scarp. Massao J: The aim of any conservation initiative should be to prevent further degradation.

7.0 BRIEFS FROM DIFFERENT INSTITUTIONS

Other institutions were invited to provide briefs on plans and interventions in the area:

7.1 WCST (Saidi Mbwana)

WCST has been monitoring and determining the effectiveness of forest management using the Management Effectiveness Tracking Tools (METT). There are special forms filled in by forests managers. METT is very useful in determining the effectiveness of forest management. WCST is encouraging institutions responsible in forest management to fill out these forms.

7.2 TFCG (Nike Doggart)

Nike Doggart (TFCG): CEPF secured funds to extend environmental education and information management across the Eastern Arc including the southern forests of the Udzungwa range. Some of the key activities implemented include:

- a) Publication and film production for awareness creation
- b) Environmental education programmes in schools and villages around Uluguru Mountains and the Coastal Region.
- c) Forest management and restoration in Mufindi district
- d) Facilitating preparation of Management Plan for Kigogo Forest Reserve and
- e) Preparation of education and information strategy for the Eastern Arc Mountains.

7.3 EAMCEF (Dr. Kilahama Felician)

Activities implemented by EAMCEF included:

- a) Developed Conservation Strategy for Eastern Arc Mountains in 2004
- b) Assessment of management effectiveness of the forest reserves (indicating that forests covering two million hectares 200 years ago had declined to only 0.5 million hectares today).
- c) Facilitate study on water flow and Payment for Water as an Environmental Service, the findings which can be used to influence the government to institute a mechanism for users to contribute to conservation.
- d) Valuing the Arc to assess ecological and environmental services rendered by the mountains including assessing climate change and carbon sequestration.
- e) Facilitate categorization of protected areas as Kyoto Protocol needs community to plant trees for carbon trading outside protected areas,
- f) Protected forests categorization and coding so that they are recognized globally
- g) Facilitate upgrading of protected areas.
- h) EAMCEF is keen on Landscape management and establishment of a World Heritage Site.

7.4 WCS (David Moyer)

WCS was a research and conservation NGO with projects across Tanzania that include:

- a) Carrying out research on corridors between Udzungwa Mountains National Park, Mikumi-Selous and Ruaha NP

- b) Carrying out aerial photography of the Udzungwa Mountains to assess habitat and connectivity in all the Udzungwa Forests; and in support of several research and conservation projects (including CEPF projects presented here)

8.0 PLENARY DISCUSSION

Important issues which were raised during the discussion include:-

- a) Exclusion of Uzungwa Scarp FR from initial plans of establishing the Nature Reserve was a mistake. Necessary arrangements to include the Reserve should be done before the process reaches higher stages
- b) Lack of clearly defined laws and by-laws to protect Forest Reserves on village land as well as wildlife corridors had resulted in degradation of these areas.
- c) There was a high level of degradation in the Forest Reserves and this was related to inadequate capacities within FBD and the district councils.
- d) Growing human populations in the corridors and expanding human activities in these pathways was seen as an increasing threat to these migratory corridors and unplanned the village lands.
- e) Immigration levels (both pastoralists and agriculturalists from other regions in Tanzania) were exerting pressure on the already squeezed wildlife corridors and forest reserves including overgrazing and unsustainable agricultural practices. In this connection, there was also increasing forest-edge farming in the east and western part of the forest reserves in the Udzungwas. Absence of buffer zone between the villages/main roads and Forest Reserves and/or the National Park was seen to have led to the forest-edge farming.
- f) Scant and fragmented ecological information and poor coordination among stakeholders on information sharing was leading to duplication of initiatives and in some cases poorly developed plans. The need for information sharing was seen to be critical.
- g) Low level of awareness and inadequate environmental education among communities living adjacent to the forest reserves and in the wildlife corridors contributed to the increasing degradation of these forests.
- h) Communities' benefits and legal rights were not clearly defined and absence of land use plans in the surrounding villages limited effective participation in managing protected forests.
- i) There was inadequate stakeholders' involvement in the process of establishing the Nature Reserve.
- j) The various management options identified needed to consider financial capability, human resources needs, and practicability of the proposed options.

9.0 BREAKOUT GROUPS

Four break out groups discussed issues identified in the different presentations:

Group 1: Management options: Best option(s): Reviewing the different possibilities recommended for each area

Group 2: Village lands/corridors: Issues of Land use plans, alternative income generating activities, village forest reserves and afforestation programmes

Group 3: Local community participation: Community Participation including benefits, education and awareness, guidelines and by-laws and coordination.

Group 4: Research and dissemination of information: Information gaps, coordination and sharing of information, lead institutions, and capacity building.

9.1 Group 1: Management options

Which option? Participants suggested the number of possibilities for consideration for each area:

(a) **Corridors:** The groups identified the following corridors which were active or partly active.

Status of the corridors: Mngeta corridor (which has seasonal inhabitants), Nyanganje-Selous (active), Namawala-Selous (Active), UMNP-Mikumi (seasonally active) and Mtandika corridor (active). Participants recommended that these corridors could better be managed if categorized as Game Reserve, Village Forest Reserve, private title deed lands, Nature Reserve, or annexed into the National Park

Kitonga - Kihulula Corridor: management action was needed, as well as for Image - West Kilombero Scarp Forest Reserve Corridor.

- (b) Forest reserves - Iyondo, Matundu and West Kilombero Scarp Forest Reserves should be annexed into the proposed Kilombero Nature Reserve.
- (c) Participants agreed that Uzungwa Scarp FR and Njelela Forest Reserve should be upgraded to either Nature reserve or be annexed to UMNP.
- (d) With regard to annexation of Magombera forest reserve into SGR, the group endorsed the idea and asked WWF (Tanzania Programme Office) to facilitate the legalization process.
- (e) Buffer zones need to be considered under village land management and could be set aside as Village Forest reserves or Wildlife Management Areas.

10.2 Group 2: Village lands/Corridors:

The group made the following recommendations:

- a) Management of village land and corridors would involve key stakeholders mainly the central government, district councils, and village leaders.
- b) Land use planning process should be enhanced and carried out participatorily and coordinated by village leadership, District Councils, interested partners and NGOs.
- c) The process must be guided by National Land Policy 1995 and Village Land Act 1999.
- d) Land zonation and adjudication should include setting aside village forest reserves, plant trees as per the government directives (20 trees/year, per household) and establishment of woodlots.
- e) As part of land use planning process, active corridors should be protected as Village Forest Reserves.
- f) Communities should be discouraged from planting invasive plant species that have negative impact on the environment. Information on appropriate tree species should be prepared and disseminated to communities.
- g) Environmental friendly IGAs such as beekeeping, tree-planting, and sustainable agriculture practices should be encouraged and supported.

The group observed that these activities were a priority and should be implemented immediately to avoid unplanned developments in the village lands and wildlife corridors.

10.3 Group 3: Local Community Participation

Key aspects: Community Participation: Benefits, education and awareness, guidelines and by-laws and coordination.

Benefits: Utilization zones should be established to provide for firewood, thatching grasses, worshipping, tourism and sharing of revenue accrued should be established.

Education and awareness: Participation of communities should address environmental education in schools and surrounding communities, understanding of relevant policies and legislations, agroforestry and sustainable farming techniques, alternative sources of livelihoods, energy saving stoves, adoption of acceptable indigenous knowledge.

Guidelines and by-laws:

FBD should prepare guidelines for community participation in managing the Nature Reserve and communities should be trained on using the developed guidelines. District councils should facilitate and support villages in preparing by-laws to support implementation of village land use plans and management of resources in the Nature Reserve and wildlife corridors.

Coordination:

There was a need for setting up an institutional framework and roles of community should be clearly defined to ensure their effective participation and the district councils should be responsible in coordinating community activities.

10.4 Group 4: Research and Dissemination of Information: information gaps, coordination and sharing of information.

The group noted that FBD has already started the process of establishing a Research and Information Centre supported by EAMCEF. TANAPA (through UMNP) has also established an ecological field station at the Park headquarters. These were useful centers for information storage. It was proposed that establishment of a centralized database for Eastern Arc Mountains managed by FBD was important and Database Management Officer should be placed and be trained.

Scanty information: The group noted that besides some areas having being quite researched, some gaps existed and therefore encouraged further research projects and sharing of information among stakeholders.

Institutions: Leading institutions identified were COSTECH, TAWIRI, TAFORI, MNRT, TANAPA, and FBD. These responsible institutions need to enhance communication and coordination among themselves. FBD should communicate with COSTECH and TAWIRI on the aspect of issuing research permits which seem to be unclear.

11.0 RECOMMENDATIONS AND ACTION POINTS

Management Options (Corridors and Forest Reserves)

- a) Iyondo, Matundu and West Kilombero Scarp Forest Reserves should be annexed into the proposed Kilombero Nature Reserve.
- b) USFR/Njelela Forest Reserve should be upgraded to either Nature reserve or be annexed to Udzungwa Mountains National Park but this needs more planning and discussion.
- c) Carry out a study to determine whether the Kitonga - Kihulula and Image–West Kilombero Scarp Forest Reserve Corridors were active.
- d) WWF -Tanzania Programme Office to facilitate the legalization process for annexation of Magombera Forest Reserve into SGR.
- e) Buffer zones need to be considered under village land management.

Village lands/corridors

- a) Environmental friendly IGAs such as beekeeping, tree planting, and intensive sustainable agriculture practices should be encouraged and supported.
- b) Land use planning process should be participatory and coordinated by village leaders, District Councils, interested partners and NGOs.
- c) Land zonation and adjudication should include setting aside village forest reserves, plant trees as per the government directives (20 trees/year, per household) and establishment of woodlots.
- d) Communities should be discouraged from planting invasive plant species that have negative impact on the environment. Information on appropriate tree species should be prepared and disseminated to communities.

Local community participation

- a) FBD should prepare guidelines for community participation in managing the Nature Reserve and communities should be trained on using the developed guidelines.
- b) District councils should facilitate and support villages in preparing by-laws to support implementation of village land use plans and management of resources in the Nature Reserve and wildlife corridors.
- c) Management Plans for Nature Reserves should include utilization zones to provide for firewood, thatching grasses, worshipping, tourism and sharing of revenue accrued should be established using clearly defined MOUs between the parties.
- d) Promote environmental education, agroforestry, sustainable farming techniques, alternative sources of livelihoods, energy saving stoves, and adoption of acceptable indigenous knowledge.

Research and dissemination of information

- a) Establish a centralized data base for Eastern Arc Mountains to be managed by FBD and Data Base Management Officer should be appointed and trained.
- b) Institutions operating in the Eastern Arc should enhance communication and coordination to facilitate information exchange.
- c) FBD to communicate with COSTECH and TAWIRI to agree on the on issues of research permits.

12.0 CLOSURE OF THE WORKSHOP - HON. HALIMA KASUNGU, RC- IRINGA

The workshop was closed by Hon. Halima Kasungu, Regional Commissioner- Iringa noting that this was her first time to attend this kind of a workshop expressing that she loves conservation. She indicated that though Iringa region was endowed with natural resources, research in natural resources management was limited and hoped that these developments will thus benefit Iringa Region as well.

Hon. Kasungu observed that there were so many pertinent issues raised during the workshop that need collaborative efforts. These included land use planning, alternative sources of livelihoods, and research and information sharing. She stressed that the Eastern Arc Mountains were extremely important and therefore necessary steps need be taken to rescue these forests which are facing great pressure. She noted that the government had limited funding to support all these activities and thus called partners to provide the necessary support. She insisted on stakeholders improving the information communication and dissemination.

She thanked WWF, CEPF, MTSN, FBD, TANAPA, Researchers and all other partners for their interest and support in conservation work in Tanzania. She noted that the current government was keen in supporting conservation activities as this has proved to be an entry point in alleviating poverty in the country. She insisted that participatory land use planning was very important if we wanted to bring about sustainable resources management and conservation and hoped that all issues discussed and the planned actions would be realized and implemented.

13.0 APPENDICES

A: List of Participants

B: Workshop programme

C: Speech of the Guest of Honor, Dr. Alois Tango

D: Conservation and Management of Southern Udzungwa-The way forward, Stephen Mariki, WWF Tanzania Programme Office

E: Conservation status, connectivity and options for improved management of southern Forest Reserves in the Udzungwa Mountains of Tanzania, Francesco Rovero Trento Museum of Natural Sciences, Italy

F: Improving the Management of Udzungwa Mts. Natural Resources including socio-economic aspects around southern forest reserves - Zakiya M. Aloyce, WWF- TPO.

G: Maintaining connectivity between the Udzungwa and Selous Ecosystems: A last chance - Trevor Jones, Anglia Ruskin University, Cambridge, UK

H: Ongoing and Future Plans for Conservation of Catchment Forest Reserves (J. Massao – Regional Manager Catchment forests – Iringa).

G: Reports from group work

14.0 REFERENCES

Conservation and Management of the Southern Udzungwa Mountains: Way Forward? (CEPF/WWF-TPO March 2007)

(Follow up to matters/projects arising from Udzungwa workshop Dec 2004)