



EAST USAMBARA FOREST LANDSCAPE RESTORATION PROJECT

**TRAINING AND COLLECTION OF BASELINE MONITORING DATA
FOR NINE VILLAGE FOREST RESERVES IN THE EAST USAMBARA
MOUNTAINS FOREST LANDSCAPE RESTORATION PROJECT**



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Executive summary

The forests of the East Usambaras are among the most important for biodiversity conservation in Africa. Research on the distribution of forests in the East Usambaras indicates that if the forests become too fragmented and isolated then a number of the species known only to exist from this area will become globally extinct. Since 2004, with support from the Ministry of Foreign Affairs of the Government of Finland, WWF-Finland has been leading a partnership project (East Usambara Forest Landscape Restoration (EUFLR)) within 28 villages in Muheza and Mkinga Districts that aims at reducing the loss of globally important biodiversity, improve livelihoods and restore a multi-functional landscape in the area. The project is implemented in the field by the Tanzania Forest Conservation Group (TFCG) with technical support from WWF Tanzania Programme Office. Considerable progress has been made towards achieving the project goals.

This consultancy was therefore developed to provide training and document baseline data for a community-based monitoring programme to measure the impact of project activities. The project requires a monitoring programme that is cost effective and can be carried out by Village Environment Committees and District Forest Officers to measure the impact of the project on biodiversity conservation in the East Usambara Mountains. The monitoring programme includes disturbance transects, the Management Effectiveness Tracking Tool (METT), Threat Reduction Assessments (TRA), and the National Forestry and Beekeeping Database (NAFOBEDA).

The TFCG field officers, District Forest Officers for Muheza and Mkinga, and Members of nine Village Environment Committees (VECs) of Mgambo, Zirai, Kwezitu, Shembangeda, Kiwanda, Kizerui, Kuzekibago, Kambai and Kwetango, were trained to conduct disturbance transects to monitor forest disturbance and condition. Standard methodology used elsewhere in Tanzania was employed. In the course of the training baseline data were collected using disturbance transects in each of the nine villages' Village Forest Reserves. Committee members then completed TRA, METT and NAFOBEDA assessment forms for their respective Reserves with facilitation from the consultants. Work plans and schedules were compiled and agreed upon for continued monitoring by the VECs, with support from project officers, including the planning of further disturbance transects within each forest. All these activities relate to purpose three of the EUFLR project, which involves assessing the impact of the project through close monitoring and evaluation and the dissemination of lessons learnt.

Forest threats listed in almost all assessed forests included forest fires, pit sawing, pole cutting, timber cutting, encroachment for agriculture, animal trapping/hunting and grazing. However, most of these threats appear to have been reduced significantly, with preliminary Threat Reduction Assessments producing indices of between 80-100%. In particular, it was reported that in most village forest reserves cutting of poles and timber have been reduced and this was also supported by the preliminary transect data on freshly cut poles and timber from most of the assessed forests. Management effectiveness results also indicated a reasonable score (above 50%) in most of the forests assessed. These results suggest a positive effect of project interventions to date towards forest conservation in the East Usambara Mountains.

Several recommendations are provided, including that the METT form should be reduced to enhance appropriateness for VFR exercises, and that both the METT and TRA forms be translated into Swahili. In general, we found that all the monitoring tools employed here were well received by the VECs, and have the potential to be useful in the long-term to the communities managing their VFRs. However, ongoing support by project officers is likely to be critical to continued success of the project.

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Abbreviations

DT	Disturbance Transect
EUFRL	East Usambara Forest Restoration Landscape
GPS	Geographical Positioning System
METT	Management Effectiveness Tracking Tool
NAFOBEDA	National Forest and Beekeeping Database
TFCG	Tanzania Forest Conservation Group
TRA	Threat Reduction Assessment
VEC	Village Environment Committee
VEO	Village Executive Officer
VFR	Village Forest Reserve
WWF	World Wide Fund for Nature

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We also wish to recognize the participation in training and data collection of Village leaders and Executive Committee Members of Mgambo, Kambai, Kuzekibago, Kwezitu, Kizerui, Zirai, Kwetango, Shembangeda and Kiwanda villages.

Front Cover photos

Photo 1: Left: members of the Mgambo VEC, aligning disturbance transect in Handei VFR

Photo 2: Top, right: Facilitator training District Officers

Photo 3: Below, right: Data collection by Mgambo VEC members in Handei VFR

1 Introduction

The forests of the East Usambaras are among the most important for biodiversity conservation in Africa. They are also home to communities of poor people who need to utilise natural resources to survive. Research on the distribution of forests in the East Usambaras indicates that if the forests become too fragmented and isolated then a number of the species known only to exist from this area will become globally extinct. Forest loss will also disrupt the ecological services currently provided by the forests to the villages and towns in the vicinity of the East Usambaras.

Policy and legal changes in Tanzania over the past ten years have provided an enabling framework for engaging local communities in forest protection, sustainable management, restoration and monitoring. Projects in Tanzania are now exploring how to use these legal changes both to improve the prospects for the conservation of globally important forest resources and also to increase the livelihood opportunities for people living in the same areas.

Since 2004, with support from the Ministry of Foreign Affairs of the Government of Finland, WWF-Finland has been leading a partnership project that aims to reduce the loss of globally important biodiversity, improve livelihoods and restore a multi-functional landscape in the area. The project is implemented in the field by the Tanzania Forest Conservation Group (TFCG) in partnership with Muheza District Council. The WWF Tanzania Programme Office provides overall leadership to the project in Tanzania. Considerable progress has been made towards achieving those goals. Currently the project is working in 3 divisions including 28 villages with a total population of 135,000.

This consultancy aimed to work with nine villages in their village forest reserves, to train project members of each Village Environment Committee in monitoring and assessment techniques, and to provide baseline data that can be used to monitor the impacts of this project in the area as far as forest disturbances are concerned. The work was carried out by two consultants. A third consultant led the training of project staff, partners and standardized the methodologies to be used by rest of the team and tested the methodologies in Mgambo village.

2 The Overall Project Objective

To prevent the loss of globally important biodiversity values, improve the livelihoods of the local population and restore and maintain the multiple functions of forests in the East Usambara Mountains.

2.1 Project's Purpose

The project's purpose can be broken down into three elements:

- 1) To enhance connectivity between remaining forest areas in the East Usambara Mountain landscape;
- 2) To improve livelihoods, especially through enhanced income generating opportunities based on sustainable utilisation of forest goods and services;
- 3) To increase recognition of the values and importance of forests and proper land use.

3 About this consultancy work

The aim of this consultancy was to train villagers and project officers in disturbance monitoring and forest management assessment techniques, and to document a monitoring baseline for nine village forest reserves in the East Usambara Mountains. This was closely related to purpose three of the project which was to assess the impact of the project with close monitoring and evaluation and the dissemination of lessons learnt.

3.1 Specific consultancy activities

3.1.1 To conduct training for District staff and members of 9 Village Environmental Committees (VECs) on the four monitoring tools. These monitoring tools are disturbance transects, Threat Reduction Assessments, Management Effectiveness Tracking Tool, and the National Forest and Beekeeping Database (NAFOBEDA).

3.1.2 Application of each of the tools in the collection of baseline data for 9 Village Forest Reserves.

3.2 Description of the Monitoring Methodologies

3.2.1 Disturbance transects¹

Levels of disturbance are measured along transects distributed through the forest based on a stratified sampling strategy. The levels of pole cutting, timber extraction, trapping, encroachment and other human disturbances are assessed. For the purposes of this survey, poles are defined as all trees with straight stems at least 2 m in length and with a circumference at breast height (cbh) of 15.7 – 47 cm. Timber trees are defined as all trees with straight stems at least 3 m in length and exceeding 47 cm cbh. The level of disturbance is assessed in terms of the number of incidences of pole cutting, timber cutting, traps and other disturbances in a 10 m strip (5 m either side of the transect line) along each transect. The disturbance transect is sub-divided into 50 m sections and data is recorded separately for each section. ¹The longitude, latitude and altitude of the start and end points of each disturbance transect are carefully measured using a GPS and recorded. The team also record other disturbance events observed during the survey including descriptions of the kind of activity and the location of the 'event'. This provides a more comprehensive overview of disturbance occurring within the forest.

Having located the start point of the transect using the GPS, the correct bearing is followed using a compass. The team uses a 50 m rope to measure out 50 m sections along the 1 km transect. Records are taken separately for each 50 m section. All disturbances and all live or naturally dead poles and trees within 5 m either side of the transect line are recorded. Where there is uncertainty regarding the circumference of a tree or pole, rope of known length is used to determine the circumference. Data are recorded in note books and transcribed onto data sheets at the end of the day's fieldwork. In case of rain, it is preferable to use a pencil for recording the data. Fallen tree trunks or branches are not counted, only stumps. This reduces possible duplicate counts by ensuring that the trunk and branches are not counted as separate 'events'. Trees killed by fire should be recorded under the 'miti iliyokufa' column, and a note made that they were killed by fire. Records of other human disturbance seen along each 50 m section of the transect are made including the number of traps, pitsaws, cultivated areas or burnt areas. For each of these disturbance types notes are made on the nature of the disturbance. For example this might include information on the kind of trap; the type of crop being cultivated; the area being cultivated or the extent of a burnt area.

Data obtained through disturbance transects are analyzed primarily by observing changes over time in ratios of live poles or trees versus freshly cut poles or trees along the same transects. The datasheets also allow for simple evaluation of trends in other forms of disturbance such as pitsawing and hunting, and rapid identification of areas of each forest under intense current pressure. When teaching this

¹ Adapted from Doggart, N. (Ed), 2006. Filling the knowledge gap: Methods Manual. Tanzania Forest Conservation Group / Museo Tridentino di Scienze Naturali, Dar es Salaam, Tanzania. Pp. 1 -79

method to VECs, simple evaluation techniques were explained, and the direct usefulness of the data collected to the Village Forest Reserve management goals were elucidated and emphasised.

Equipment used is listed below:

- a) 50 m rope
- b) Spare rope for measuring 5m, circumferences of poles and timbers
- c) Tape measure
- d) Notebooks and pencils
- e) Datasheets
- f) Compass
- g) Garmin Etrex GPS unit
- h) Batteries for GPS unit
- i) List of coordinates of all transects

3.2.2 Threat Reduction Assessment

Threat Reduction Assessment (TRA) monitoring protocol monitors the impacts a project makes on reducing threats on a project site. It is an indirect measurement of conservation success that does not employ biological indicators. Instead, an assumption is made that biodiversity conservation is improved where threats have been reduced.

TRA methodology was developed in response to the need for a way of measuring project impacts that were 1) cost-effective; 2) based on data collected using simple techniques 3) directly related to project interventions; and 4) readily interpreted by project staff. Unlike biological indicator monitoring, the TRA methodology can measure project impact over short periods of time; this is desirable as many projects are run over a three to five year timeframe.

Calculating the Threat Reduction Index of a project site is the result of identifying threats, ranking them according to specific criteria, and assessing progress in reducing each of them. The TRA Index is a single figure result (mostly given in percentages) enabling managers to easily interpret the degree to which threats to biodiversity of a project site have been reduced.

TRA makes three key assumptions²:

- 1) *All destruction of biodiversity is human-induced*: Losses of species or habitats due to natural processes are not considered threats to biodiversity. However, human-caused increases in the magnitude or frequency of natural catastrophic events can be considered as threats.
- 2) *All threats to biodiversity at a given site can be identified*: At any given point in time, a project can determine all the direct threats to biodiversity that exist at the project site. A project can separate the effects of different threats and rank them in terms of the area they affect, the severity to which the threat affects the habitat, and the urgency of the threat.
- 3) *Changes in all threats can be measured or estimated*: A project can systematically, either quantitatively or qualitatively, assess the degree of reduction of all threats at any given time.

3.2.3 Management Effectiveness Tracking Tool

The Management Effectiveness Tracking Tool (METT) was developed by WWF and the World Bank, and it entails completing a simple form that uses a scoring system to assess how well an area is managed. The METT form covers issues ranging from the Legal Status of a reserve, to protected area boundary demarcation, to Staff numbers and Budgets. For each issue there is a choice of criteria. The

² Margoluis, R. and Salafsky, N.: *A Guide to Threat Reduction Assessment*, Biodiversity Support Program. 1-52pp.

task of the personnel completing the METT is to decide amongst them which criteria best fits the protected area being assessed by circling the corresponding score. The METT includes 30 issues. Once a suitable criteria score has been selected for each issue the score simply has to be summed, divided by the maximum score possible and multiplied by 100 to convert the resulting score into a percentage.

3.2.4 National Forest Beekeeping Database

The National Forest & Beekeeping Programme Database (NAFOBEDA) is the Management Information System for the Ministry of Natural Resources and Tourism; Forestry and Beekeeping Division. The software is designed to improve the reporting system between the Districts and National level in the management and status of forest information within Tanzania. There are two types of NAFOBEDA software; NAFOBEDA district and NAFOBEDA national, designed to be used at District and National level respectively.

The consultants installed the NAFOBEDA software into both project and district computers. Muheza window page was created and general password ('forest') was agreed to be used. All forest reserves (both national and village forests) were entered into the database (Appendix 23). However, FBD will provide training at the district level.

4 Training District Officers

In-house training was conducted for three district officers from Muheza district and one officer from Mkinga district. The aim of this training was to provide a thorough understanding of the Threat Reduction Assessment (TRA), Management Effectiveness Tracking Tool (METT), Disturbance Transect methodology, and provide an introduction to the National Forestry and Beekeeping Databases.

The District Officers had varying degrees of knowledge on the standard methods used for forest monitoring, thus it was important to give training on the specific methodology of disturbance transects. After explaining the concept and applications of disturbance transects, training was given on the use of all equipment, including GPS units (Garmin Etrex) and compass, 50 m and 5 m ropes, and jute rope of 15 cm and 45 cm for measuring poles and trees respectively. Other sessions were given on spatial design of transects, planning a long-term community-based programme and data analysis and evaluation for adaptive forest management.

Use of TRA and METT were explained in separate sessions through use of practical examples from forests that the DOs knew well. Documents for the four methodologies were given to the trainees and the NAFOBEDA software was installed in their computers/laptops. The Muheza District NAFOBEDA window was installed and reactivated with both national and village forest reserves. The nine targeted VFRs were posted in the Muheza NAFOBEDA District window. The District Natural Resources Officer, Mr. Lyawere, was asked to contact the Forest and Beekeeping Division to report on official launching of the district database.

5 Training Village Environment Committee members (VECs)

Training on data collection for disturbance assessment, TRA, METT and NAFOBEDA were conducted for all nine villages. Briefing meetings were held in all nine villages for village leaders and Village Environment Committees. In these training sessions participants received an introduction on the general objectives of the project and the importance of monitoring changes within their forest reserves. The number and names of participants trained in each village is shown in appendices 23-31.

5.1 Disturbance Transects

The lead trainers demonstrated how the methodology is done in the forest. Training on the equipment such as Compass reading, GPS reading and preparation of ropes (both 50 m and 5 m) were done. In some few forests eg Handei Village Forest Reserve, sketch maps available in their offices were used for aligning the disturbance transects. In the forests which had no maps, either GPS readings were taken in some points in order to have sketch maps or local knowledge of villagers about the forest was used for the orientation of the transect lines. Division of labour was made within the groups: two members for holding the 50 m rope; two members for recording data within 5 m each side of the transect; one member for compass reading, one member for clearing the transect line (Panga man) and one member for GPS reading. Remaining members of the VEC alternated between these tasks.

5.2 Management Effective Tracking Tool (METT)

The consultants trained Village leaders and VECs on the meaning of METT and its objective in forest conservation and management.

It was agreed in advance with the training team to cover at least 20 questions within the METT forms (but to reduce from the original total of 30 questions, since this is too many to hold participants' concentration and several of the questions are not wholly relevant to VFRs). Sessions were carried out in which collective responses from the nine VECs towards the METT issues were elicited. Discussions were held for each question before coming to a conclusion for the score. However, facilitators had to translate the questions and possible answers in Swahili to make them understood by the VECs.

5.3 Threat Reduction Assessment (TRA)

TRA forms were presented to the VEC in the meetings. The forms were explained and the members shown how to fill them in. As with the METT, facilitators translated the issues into Swahili for the members to understand and respond. VEC members were told to mention all possible threats in their forest including those that have been already arrested. Participatory discussion were conducted on the extent of threats before project intervention and the status to date. Collective conclusions were made from the discussions.

5.4 NAFOBEDA

Standard forms for quarterly reporting on VFR management and utilization and quarterly patrol forms were explained and demonstrated to the VEC members. VEC used to record patrol reports in notebooks. It was therefore agreed that the patrol crews for all nine villages will use the NAFOBEDA forms for the quarterly reporting to both project and district forest offices. Further, it was agreed that the TFCG field officers will supply enough forms to the villages. The forms will be collected monthly and submitted to the NAFOBEDA in charge at the district level. However, it was learnt that NAFOBEDA at Muheza and Mkinga districts is not operational. The VFR information was updated at the in-house training of trainers for the district officers.

6 Overall Results

6.1 Handei Village

6.1.1 Results for Disturbance transects

Handei village forest (about 156 ha) is managed by the Mgambo village communities. Previously it was open access and disturbances such as pole cutting; cultivation and grazing were taking place. Transect one (400 m) was completed on day one, while transects two (450 m) and three (650 m) were completed on day two. A total of 1,137 poles and 520 trees were recorded, including 947 live poles and 458 live trees (Table 1).

Timber harvesting has taken place in a lowland valley, but for the past three years very few disturbances have been observed, mainly cattle grazing in some adjacent patches of the forest. To the southern border 16 fresh pole cuts were observed (about 1% of total number of poles) while only one fresh tree cut was observed. The VEC agreed to conduct disturbance transect after three months, scheduled on 16th – 18th February 2008.

Table 1. Forest disturbance Transect results for Handei Village forest reserve – Mgambo village.

Transect No	live poles	Nat. Dead poles	Old cut poles	New cut poles	Live trees	Nat. dead trees	Old cut trees	New cut trees	Transect length (m)
1	322	5	34	7	137	15	11	0	400
2	233	10	63	9	131	3	10	0	450
3	392	17	45	0	190	9	13	1	650
Total	947	32	142	16	458	27	34	1	

6.1.2 Results for Threat Reduction Assessment

Four threats were identified by the VEC as significant. These are pole cutting for house construction, cattle grazing by neighbouring residents, forest fires, and agricultural encroachments on forest edges. New cut poles were observed in the forest during disturbance assessment indicating that this threat continues. Forest fires were last observed three years ago. It was reported that five years ago cattle grazing was going on in the forest but during assessment signs of animal grazing were minimum, indicating that this threat is about to be controlled. For the purposes of baseline data, a period of five years up to the present day was considered. A TRA index of 71% was calculated for Handei VFR (Appendix 12).

6.1.3 Results for Management Effectiveness Tracking Tool

A collective group response to the management effectiveness issues was carried out. A total of 31 out of 45 points were obtained for the Handei forest, giving a METT score of 69% for the VFR (Appendix 22).

6.2 Shembangeda Village

6.2.1 Results for Disturbance Transect

Shembangeda VFR (3.6 ha) is dominated by emergent trees, and *Maesopsis eminii*, is common. The forest was observed to be intact with little sign of disturbance. A total of three transects were laid with lengths of 150 m, 150m and 200m for transect 1, 2 and 3 respectively. A total of 425 poles and 222 trees were recorded in all transects including live, naturally dead, new and old cuts. In the first transect, five poles were freshly cut near forest edges (2%) and there were no freshly cut trees. On transect 2 only one freshly cut pole was observed between 50 – 100m, and one freshly cut tree cut along the transect

between 0 – 50m into the forest. Transect 3 had no freshly cut poles nor cut trees. Snakes and black and white colobus monkeys were observed on transect 1 (Appendix 4). A total of 405 live poles and 198 live trees were recorded along all three transects.

Table 2. Forest disturbance Transect results for Shembangeda Village forest reserve – Shembangeda village.

Transect No	live poles	Nat. Dead poles	Old cut poles	New cut poles	Live trees	Nat. dead trees	Old cut trees	New cut trees	Transect length (m)
1	202	3	1	5	94	6	3	0	150
2	73	4	0	1	54	10	4	1	150
3	130	6	0	0	50	0	0	0	200
Total	405	13	1	6	198	16	7	1	

6.2.2 Results for Threat Reduction Assessment

On running the TRA, only two main threats were identified by the members for Shambangeda VFR; encroachment for cinnamon cultivation and pole cutting. The VEC had put in measures for control of encroachments and the number of encroachers has remained at three farms at the eastern edge of the forest, thereby reducing the threat. The village feels that not many people are now constructing their houses using poles. Many communities are now using bricks, therefore reducing threats through poles cutting. Planting of trees along the boundary has also been done. The TRA index was calculated at 96% (Appendix 13).

6.2.3 Results for Management Effectiveness Tracking Tool

The village group comprised the VEC, and the village council participated in filling out the METT assessment for their VFR. About 20 issues and their criteria were discussed. Pertinent issues included the use of the fees from ecotourism; the village aims to promote ecotourism and has high expectations. A total of 43 points out of 65 was scored giving a METT score of 66.1% (Appendix 22).

6.3 Zirai Village

6.3.1 Results for Disturbance Transect

In Kizingata VFR (total size 3.5ha) two transects of 200 m and 300 m were assessed. A total of 230 poles and 328 trees were recorded in both transects including live, naturally dead, and cut. 197 live trees and 152 live poles were counted along the first transect, with observations of one pole and one tree freshly cut in the first 50m (Table 3). On the second transect, no trees nor poles were cut, with an observation of moths in the first 50 m. Between 50 m to 100 m, an old and abandoned cinnamon farm was observed. Overall 0.9 % of poles were old cut while 0.4 % were freshly cut. 2 % of trees were old cut while 0.3 % were freshly cut. This is an indication that forest disturbance through logging in this forest has been reduced.

Table 3. Forest disturbance Transect results for Kizingata Village forest reserve – Zirai village.

Transect No	live poles	Nat. Dead poles	Old cut poles	New cut poles	Live trees	Nat. dead trees	Old cut trees	New cut trees	Transect length (m)

1	152	2	2	1	197	14	6	1	300
2	73	0	0	0	107	2	1	0	300
Total	225	2	2	1	304	16	7	1	

6.3.2 Results for Threat Reduction Assessment

Five threats were identified; pole cutting for house construction, wildlife hunting, encroachment for cinnamon cultivation, wild fires and firewood collection. A TRA index of 96% was calculated (Appendix 14). The villagers feel that for the past three years, most of the threats have significantly reduced, except for hunting of small animals (e.g. small antelopes). It was acknowledged that threat reduction was the result of the project support. A 100% threat reduction of the mentioned threats was planned with a target that by 2008, no such threats would be happening in their VFR.

6.3.3 Results for Management Effectiveness Tracking Tool

The group participated in responding to 20 issues and related criteria within the METT. A total of 48 points were scored out of 65, giving a total score of 74% for the management effectiveness of their Kizingata VFR (Appendix 23). On the issue of training, they wanted more focused training undertaken regularly, while on the issue of visitor facilities for ecotourism, the village is preparing a business plan. On economic benefit assessment, the village acknowledges and sees the potential for economic benefits, but also recognizes the ecological functions of their forest.

6.4 Kwezitu Village

6.4.1 Results for Disturbance Transect

Kwezitu village forest reserve is a forest previously disturbed through timber harvesting and pole cutting but now left to regenerate. It is a wet forest with submontane tree species such as *Allanblackia stuhlmannii*, *Maesopsis eminii*, *Mesogyne insignis*, *Myrianthus holstii*, *Cephalosphaera usambarensis*, *Newtonia buchananii*, *Parinari excelsa*, *Sorindeia madagascariensis* etc. Two transects were established by the VEC to represent their village forest reserve. Unfortunately the forest map was not available at the village, so VEC experience was very useful for the orientation of disturbance transect lines.

A total of 399 poles and 290 trees were recorded on the 2 transects. 14 % of poles and 11 % of trees on the transects were old cut but no fresh cut poles or trees were observed (Table 4). This is evidence that disturbance through pole and tree cutting the VFR has stopped. Another disturbance noted in the forest during the transects was animal trapping. However the recorded trap was very old indicating that animal trapping in the forest is now controlled as well. It was discussed and agreed that the VEC members will repeat disturbance assessment in their forest reserve every three months in order to note any changes. It took 3 hours to complete the first transect line which was 629 m long. However, it was raining heavily so it would take less time in the dry season.

Table 4. Forest disturbance Transect results for Kwezitu VFR

Transect No	live poles	Nat. Dead poles	Old cut poles	New cut poles	Live trees	Nat. dead trees	Old cut trees	New cut trees	Transect length (m)
1	282	9	50	0	196	32	28	0	629
2	51	0	7	0	26	4	4	0	100

Total	333	9	57	0	222	36	32	0	
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6.4.2 Results for Threat Reduction Assessment

Four threats were identified by the VEC. These are pole cutting for house construction, withy cutting for the same purpose, encroachments for agriculture on forest edges and animal trapping. A TRA index of 95% was calculated (Appendix 15). This implies that project interventions have reduced forest threats at a significant level. These results are supported by the absence of fresh cut poles and timber in the forest revealed during the disturbance transects. According to VEC members, efforts for conservation/reduction of threats in this forest started in 1999, therefore this assessment covers a period of 7 years. It was learnt that there had been serious encroachment for agriculture in previous years but during assessment, the problem has been controlled at 100 %. These results are in line with the little disturbance recorded during the transects in addition to the high TRA index. Animal trapping in the forest is almost controlled. Only a few old animal traps were observed in the forest during assessment.

6.4.3 Results for Management Effectiveness Tracking Tool

In Kwezitu village, twenty questions within the METT forms were found applicable. Participatory discussions were carried out for each question and all members had an opportunity to contribute on each issue, ending with collective compromise. A total of 49 out of 66 points were obtained for Kwezitu forest giving a METT score of 74% for the VFR (Appendix 23).

6.5 Kambai Village

6.5.1 Results for Disturbance Transect

Kambai village forest reserve is a lowland forest previously disturbed through logging and pole cutting but now left to regenerate. It is a lowland dry forest with altitude range between 197 and 210m dominated by lowland coastal forest tree species such as *Lecaniodiscus sp*, *Scorodophleus sp*, *Combretum stuhlmannii*, *Milicia excelsa*, *Markhamia sp*, *Celtis sp*, *Dombeya sp*, etc. Three transects were established by VEC to represent their village forest reserve. The forest map was not available at the village so the consultant relied upon VEC experience for the orientation of transect lines in the forest. It took 3 hours to complete all three transect lines which totalled 450m. However, the forest is very small thus the maximum transect length was 150m.

A total of 117 poles and 100 trees were recorded the Kambai forest transects, including naturally dead, cut and live. No fresh cut poles or trees were observed (Table 5). However, 3% of poles and 13% of trees were old cut indicating that the forest was logged in past years and providing evidence that disturbance through pole and tree cutting in Kambai VFR has stopped. Other disturbances noted in the forest were animal trapping and fire. However, most of the fire incidences were old and according to the VEC, there have been no fires for over a year.

Table 5. Forest disturbance Transect results for Kambai Village Forest Reserve.

Transect No	live poles	Nat. Dead poles	Old cut poles	New cut poles	Live trees	Nat. dead trees	Old cut trees	New cut trees	Transect length (m)
1	35	1	2	0	28	3	0	0	150
2	28	2	1	0	26	0	0	0	150
3	47	0	1	0	30	0	13	0	150
Total	110	3	4	0	84	3	13	0	

6.5.2 Results for Threat Reduction Assessment

Four threats were identified by the VEC. These are forest fires, pole cutting for local house construction, withy cutting for the same purpose and animal trapping. None of the four threats mentioned were commercial. According to VEC members efforts for conservation / reduction of threats in this forest started in 2000, therefore this assessment covers a period of 6 years. A TRA index of 80 % was calculated (Appendix 18) implying that project interventions have reduced forest threats to a significant degree. These results are supported by the absence of fresh cut poles and timber in the forest observed during the disturbance transects. Forest fires were a serious problem in Kambai Village Forest Reserve in previous years. Some of the areas in the forest were dominated by *Dombeya* sp which is an indicator of fire prone areas. Animal trapping/hunting was identified as a threat and old traps were found in the forest during the disturbance transects. This threat, however, has been addressed with the use of by-laws and the creation of awareness of the importance of animals in the forest. It was agreed collectively that the TRA should be done again in a year's time in order to be able to detect any changes.

6.5.3 Results for Management Effectiveness Tracking Tool

In Kambai village, twenty questions within the METT forms were found applicable for Kambai Village Forest Reserve. A total of 37 out of 60 points were obtained giving a METT score of 62% (Appendix 23). This score is relatively low in comparison with Kwezitu, contributed to by low scores for a number of issues; protected area boundary demarcation, lack of forest research, training, education and awareness program and monitoring and evaluation.

6.6 Kizerui Village

6.6.1 Results for Disturbance Transect

Mzungui village forest reserve is intact forest previously disturbed through timber harvesting and pole cutting. It is a lowland forest dominated by coastal forest tree species such as *Milletia* sp, *Scorodophleus* sp, *Markhamia* sp, *Milicia* sp, *Albizia* sp, *Celtis* sp, *Bombax* sp, *Antiaris* sp etc.

Two transects were established by VEC to represent their village forest reserve. As in Kwezitu and Kambai Villages, the forest map was not available at the village, so the consultant used the VEC's experience for the orientation and location of transect lines. It took 1 hour to complete the first transect line which was 200m and 1.15 hours to complete the second transect line which was 450m long.

A total of 209 poles and 366 trees were recorded in Mzungui VFR. Of these 2 were (1%) fresh cut poles (Table 6). No fresh cut trees were recorded and 10 % of poles and 5 % of trees were old cut. This is evidence of reduction in forest disturbance in Mzungui VFR and implies that logging has stopped. Other disturbances noted in the forest were fire and animal trapping. There was signs of fire along the whole area covered in transect No 2 (Appendix 9) although there were have been no new fires this year according to VEC members. A fresh animal trap (kuhe) was recorded in transect No 2 implying that animal trapping in the forest continues.

Table 6. Forest disturbance Transect results for Mzungui Village Forest Reserve.

Transect No	Live poles	Nat. Dead poles	Old cut poles	New cut poles	Live trees	Nat. dead trees	Old cut trees	New cut trees	Transect length (m)
1	50	9	13	2	102	16	8	0	200
2	107	21	7	0	180	48	12	0	450
Total	157	30	20	2	282	64	20	0	

6.6.2 Results for Threat Reduction Assessment

Six threats were identified by the VEC. These are forest fires, pole cutting for local house construction, pit sawing, encroachment for agriculture, grazing and animal trapping. Except for pit-sawing none of these threats are commercial. A TRA index 89 % was calculated implying a significant threat reduction in Mzungui VFR (Appendix 17). These results are in line with limited fresh pole cutting and the absence of fresh cut timber in the forest revealed during disturbance assessment. According to VEC members efforts for conservation/reduction of threats in this forest started in 2000, therefore this assessment covers a period of 6 years. Forest fires were a serious problem in Mzungui VFR in the past. Almost all 50m portions assessed in transect 2 had signs of fire. Pole cutting has been a threat in the past as most of the houses in Kizerui Village were built using poles and withies. Pit sawing was one of most serious threats in the past as it was determined by timber prices in the cities. No mature commercial timber trees were observed in the forest during the disturbance transects implying that timber trees with high commercial values no longer exist in Mzungui VFR. Animal trapping/hunting was mentioned as one of the threats and was substantiated by a fresh animal trap observed in the forest in transect No 2 (Appendix 9). According to VEC, there is a significant reduction of people who were farming in the forest and very few people remained that extend their farms towards the village forest reducing the threat of agricultural encroachment. Efforts to stop further encroachment for agriculture in Mzungui Village Forest Reserve are under way. It was also reported that grazing of animals in the forest had been a big problem in the past but is now controlled through project interventions at 100 %. It was discussed and agreed collectively that the TRA should be carried out annually.

6.6.3 Results for Management Effectiveness Tracking Tool

In Kizerui twenty one questions within the METT forms were found applicable for Mzungui Village Forest Reserve, they were discussed in the same meeting with TRA. The consultant translated the questionnaires in Swahili to enable the VEC members to understand. The questions were discussed, each VEC member giving their views on a particular question and consensus conclusion was reached. A total of 45 out of 63 points were obtained for Mzungui forest giving a METT score of 71.4% for the VFR (Appendix 23).

6.7 Kiwanda Village

6.7.1 Results for Disturbance Transect

Bomani community forest reserve is a lowland forest located in Kiwanda village, previously disturbed through logging and pole cutting. The forest is dominated by rubber trees but there is also regeneration of other tree species such as *Sorindeia madagascariensis*, *Milicia excelsa*, *Antiaris toxicaria*, *Celtis sp*, *Milicia excelsa* etc. Two transects were established by the VEC to represent their village forest reserve. It took 1.15 hours to complete the first transect, 300m, and 30 minutes to complete the second transect which was 150m long.

A total of 279 poles and 273 trees were recorded in the whole forest including live, naturally dead and cuts. 1 (0.4%) fresh cut pole and 3 (1.1%) fresh cut trees in were recorded (Table 7). 2% of the poles observed and 7% of the trees were old cut, indicating that the forest has been logged in the past. Pole and tree cutting has been significantly reduced over the past few years indicating positive management of the Bomani Community Forest Reserve.

Table 7. Forest disturbance Transect results for Bomani VFR -Kiwanda.

Transect No	live poles	Nat. Dead poles	Old cut poles	New cut poles	Live trees	Nat. dead trees	Old cut trees	New cut trees	Transect length (m)

1	190	6	3	1	153	9	12	3	300
2	69	8	2	0	80	11	7	0	150
Total	259	14	5	1	233	18	19	3	

6.7.2 Results for Threat Reduction Assessment

A Threat Reduction Assessment was conducted collectively with the VEC under facilitation of the consultant. Five threats were identified by the VEC for Bomani Community Forest Reserve. These are forest fires, agriculture encroachment, pit sawing, pole cutting and hunting/animal trapping. Except for pit sawing none of these threats are commercial. A TRA index 98% was calculated (Appendix 16). This figure indicates a significant reduction of threats in the Reserve. According to VEC members efforts for conservation/ reduction of threats in this forest started in 2000, therefore this assessment covers a period of 6 years. Forest fires have been a serious problem in Bomani Community Forest Reserve in the past but during assessment they were reduced by 100%. In the past illegal pit sawing for commercial purpose was a big problem in the VFR, the main species extracted being *Milicia excelsa* and was determined by timber prices in the city. However, this has been controlled as well. No new pit sawing sites were recorded during the disturbance transects. However, there were no mature commercial timber trees recorded in Bomani Forest. Encroachment for agriculture remained in few areas bordering the forest where some farmers use to extend their farms towards the forest. The final threat, animal trapping/hunting, was a result of some local people setting traps in the forest to catch animals for subsistence. Others hunted wild animals using local weapons such as arrows. This has also been brought under control. It was discussed and agreed collectively that Threat Reduction Assessments should be carried out annually, therefore reassessment is scheduled for November 2008.

6.7.3 Results for Management Effectiveness Tracking Tool

In Kiwanda, 22 questions within the METT forms were found suitable for Bomani forest. The questions were discussed and responded to collectively by all VEC members in a meeting under facilitation of the consultant. They were translated into Swahili to enable the VEC members understand the issues. Response to the questions was in the forms of discussion. Each VEC member was given an opportunity to contribute on the METT issues followed by consensus conclusions after discussion. A total of 40 out of 69 points were obtained for Bomani forest giving a METT score of 58% (Appendix 23). The low METT score for Bomani was contributed to by low scores in the following areas; management plan, resource assessment, training, education and awareness program, tourism fees and access assessment

6.8 Kuzekibago Village

6.8.1 Results for Disturbance Transect

Due to lack of a forest map, two members were asked to go around the forest boundary and take GPS readings. Using a sketch map, two transects were determined. The transects were 100 m and 130 m long respectively (Appendix 11). Time spent for the transect work (working on the transects only) was 26 min, transect 1, and 24 min for transect 2. Disturbance transect data were analyzed.

Forest condition for Kwemnyese VFR was considered to be good. No recent disturbance was observed contributing to the 100% TRA score. The communities are now fully aware about protecting their forests resources. There were no new cut poles or trees in Kwemnyese forest (Table 8).

Table 8. Forest disturbance Transect results for Kwemnyese Forest Reserve - Kuzekibago village.

Transect No	live poles	Nat. Dead poles	Old cut poles	New cut poles	Live trees	Nat. dead trees	Old cut trees	New cut trees	Transect length (m)
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1	51	3	0	0	35	0	3	0	150
2	34	3	4	0	32	13	7	0	150
Total	85	6	4	0	67	13	10	0	

6.8.2 Results for Threat Reduction Assessment

Three main threats were identified by the VEC members. These are wild fires, pole cutting and clearing forest for agricultural activities. For at least three years, none of these threats have been observed. However, in the past, members ranked clearing forest to create farms was the biggest threat, followed by wild fires then pole cutting. As none of these threats are presently occurring, Kwamnyese VFR scored a TRA index of 100% (Appendix 20).

6.8.3 Results for Management Effectiveness Tracking Tool

Out of 30 issues only 18 were relevant to Kwemnyese community forest. Collective group responses towards the METT issues were gathered. A total of 45 point score out of 60 were scored for Kwemnyese forest, giving a METT score of 75% (Appendix 23).

6.9 Kwetango Village

6.9.1 Results for Disturbance Transect

There was no map for the village forest, therefore a sketch map was prepared using local knowledge, and transects were planned on the flipchart. Two disturbance assessment transect lines were established measuring 350 m and 400 m. (Table 9). Disturbance data were analyzed.

Kwemazagati VFR managed by Kuzekibago village, forms an important well stocked forest, with little or no disturbance. Previous threats to the forests have been contained, controlled and regulated by village bye laws. A total of 519 poles and 569 trees were recorded in this forest. No cut poles were observed on the transects and 6 cut trees (1%) were recorded in transect 1 (Table 9).

Table 9. Disturbance Transect results for *Kwemazagati* Forest Reserve - Kwatango village.

Transect No	live poles	Nat. Dead poles	Old cut poles	New cut poles	Live trees	Nat. dead trees	Old cut trees	New cut trees	Transect length (m)
1	317	0	0	0	282	9	0	6	450
2	202	0	0	0	257	7	0	0	400
Total	519	0	0	0	539	16	0	6	

6.9.2 Results for Threat Reduction Assessment

In the past, when the forest was not protected by by-laws, the village observed many threats to their forest. They identified four main threats which impacted at varying degrees of area and intensity; wild fires, mineral mining, slash and burn cultivation and the harvesting of timber. In the past three years, none of the listed threats have been observed, giving a TRA score of 100% (Appendix 19).

6.9.3 Results for Management Effectiveness Tracking Tool

The VEC and village council members collectively responded to the METT. Only 30 issues and corresponding criteria were applicable for Kwatango village. A score of 49 out of 65 points gave a METT score of 75%. (Appendix 23).

6.10 Results for NAFOBEDA

NAFOBEDA standard forms for quarterly reporting on forest management and utilization and quarterly patrol forms were explained to all VEC members and village leaders. Until now some of the villages' patrol teams had used a log book or note books/papers, while in some villages there was no proper reporting and feedback on their surveillance. Therefore it was agreed that the villages will now use the NAFOBEDA forms (Appendix 25), for quarterly reporting to both the project and district forest offices.

7 Conclusion and Recommendations

This consultancy was conducted to train district staff (Muheza and Mkinga) and members of Village Environment Committees for 9 villages on four monitoring tools; Disturbance Transects, Threat Reduction Assessment, Management Effectiveness Tracking Tool and the National Forest and Beekeeping database, and their application for data collection for forest development monitoring.

Generally, it was found that in most village forest reserves there was a significant reduction of forest disturbance through poles and timber cutting. This is supported by a lack of fresh poles and timber cutting in most of the assessed forests.

Forest threats listed in most of villages include forest fires, pit sawing, poles cutting, withy cutting, encroachment for agriculture, animal trapping/hunting and grazing. Most of these threats have been reduced at a significant level with threat reduction index often between 80-100%. This is an indication of success of project interventions towards forest conservation in the East Usambara Mountains.

Management effectiveness results indicate a reasonable score (above 50%) in most of the forests assessed. However, this needs to be improved as some of the forests received a low score.

NAFOBEDA training offered to the district staff was found very useful. However, DFO-Muheza was advised to liaise with NAFOBEDA in charge at FBD in order to start the programme at Muheza Office. Important data for all 9 village forest reserves were updated in NAFOBEDA –Muheza.

7.1 Problems encountered

- No maps of the Village Forest Reserves were available. The consultants couldn't obtain topographic maps or sketch maps for most of the VFRs, therefore it was difficult to imagine the shapes of the forests.
- Some of the VFRs are located in very remote areas such as Kambai and Kizerui and the consultants walked long distances to get to those forests because of difficult road conditions.
- Some of the VEC members in Kizerui village would not commit to the work as they were demanding to be paid more money. This implies that they work in their forest because of allowances paid to them and not commitment. This is questionable in terms of sustainability.
- There was not enough time to conduct intensive training, therefore many things were taught to the villagers within a short time period. This also meant that a minimum number of transect lines were established. More transects will give better results. Plans were made with the VECs for increasing the number of transects and this will depend on the commitment of each committee.
- The field work was conducted during heavy rains. This affected work efficiency especially since the villagers had no protective raingear.

7.2 Lessons learnt

- The majority of villagers are able and ready to conduct monitoring of their forest reserves once they are facilitated.
- Most village forest reserves are too small to be gazetted at National level.
- The project to date has had a positive effect, with reduction of threats observed in all VFRs since they were gazetted.

7.3 Recommendations

- Disturbance assessment was conducted by villagers after a very short training period. Given the small sizes of the VFRs, the data collected can be employed as baseline data for monitoring. However more detailed assessment (e.g. regular assessments every 3 - 6 months) is needed to

draw sound conclusions. Repeating data collection by the VECs every 3-6 months (depending on the decision of the Committee) is recommended to keep momentum going; it is possible that methodology will be forgotten if the work is repeated less frequently. Also, this regular data collection will be useful for informing planning of patrolling activities.

- Disturbance assessment in the forest is tough work which requires protection gear such as gum boots to avoid unnecessary accidents. TFCG / WWF therefore should support those villagers who are directly involved in forest works, such as disturbance assessments and patrols, by buying them protective equipment.
- In all villages, VEC members agreed to re-assess disturbance in their forest reserves every three months. It is recommended that all important equipment (such as compass, simple Etrex GPS and ropes) for that particular work should be available at the field officer's office so that they are readily available when needed.
- METT and TRA forms should be translated into Swahili so that VEC members can understand the questions.
- There is potential forested land in Kiwanda village which is not conserved. VEC members are ready to collaborate with TFCG / WWF to conserve that land.

Appendix 1. List of village forest reserves and their respective villages.

<u>Forest name</u>	<u>Villages</u>
1. Kambai	Kambai
2. Kwemnyese	Kuzekibago
3. Kwezitu	Kwezitu
4. Mzungui	Kizerui
5. Handei	Mgambo
6. Kizingata	Zirai
7. Kwemazagati	Kwatango
8. Shembangeda	Shembangeda
9. Kiwanda	Kiwanda

Appendix 2: Implementation schedule

Date	Activity	Village & VFR
15 th November	Dar – Mgambo	
16 th November	VEC training and data collection for Handei VFR	Mgambo – Handei VFR
17 th November	Staff training / Data collection-Handei VFR	Amani / Handei VFR
18 th November	Data analysis for Handei VFR	Mgambo
19 th – 21 st November	VEC training and data collection for Shembangeda VFR	Shembangeda VFR
19 th – 21 st November	VEC training and data collection for Kizingata VFR	Zirai Village
19 th – 21 st November	VEC training and data collection for Kwezitu VFR	Kwezitu Village
22 nd – 24 th November	VEC training and data collection for Bomani VFR	Kiwanda Village
23 rd – 25 th November	VEC training and data collection for Kwatango VFR	Kwemazagati Village
25 th – 27 th November	VEC training and data collection for Kwemnyese VFR	Kuzekibago village
28 th – 30 th November	VEC training and data collection for Mzungui VFR	Kizerui village
30 th – 1 st December	VEC training and data collection for Kambai VFR	Kambai village

Appendix 3. Mgambo village, Handei VFR Transects

FOMU YA UHARIBIFU KATIKA TRANSECT

JINA LA MSITU.....**Mgambo Village**..... TAREHE.....**16 Nov 2007**.

TRANSECT NAMBA.....**1**..... WASHIRIKI.....**Kamati ya msitu**

MWANZO (LAT/LONG)....**37M 0456961 , UTM 9444940**..... DIRA.....**315 NW**.....

MWISHO (LAT/LONG) **37M0456961 UTM 9445224** MUDA WA KUANZA..**3.29pm**.. MUDA WA KUMALIZA.....**4.12pm**.....

SEHEMU (m)	NGUZO HAI	NGUZO ILİYOKUFA	NGUZO ZILIZOKATWA		MITI HAI	MITI ILİYOKUFA	MITI ILİYOKATWA		Aina ya uharibifu / Mengineyo
			ZAMANI	KARIBUNI			ZAMANI	KARIBUNI	
0-50	30	2	6	2	9	0	3	0	Njia ya watu
50-100	56	3	5	3	7	1	0	0	mti mkubwa uliochanwa kuni
100-150	26	0	2	0	22	5	4	0	
150-200	44	0	5	1	24	2	1	0	
200-250	63	0	9	0	20	0	2	0	
250-300	40	0	5	0	8	3	1	0	
300-350	36	0	2	0	25	2	0	0	
350-400	27	0	0	1	22	2	0	0	mavi ya pimbi
JUMLA	322	5	34	7	137	15	11	0	

FOMU YA UHARIBIFU KATIKA TRANSECT

JINA LA MSITU.....**Mgambo Village**..... TAREHE.....**17 Nov 2007**.

TRANSECT NAMBA.....**2**..... WASHIRIKI.....**Kamati ya msitu**

MWANZO (LAT/LONG)....**37M 0455818/9444786**..... DIRA.....**20 NE**.....

MWISHO (LAT/LONG) **37M 0455973, UTM9445208** MUDA WA KUANZA..**11.00am**.. MUDA WA KUMALIZA.....**12.15pm**.....

SEHEMU (m)	NGUZO HAI	NGUZO ILİYOKUFA	NGUZO ZILIZOKATWA		MITI HAI	MITI ILİYOKUFA	MITI ILİYOKATWA		Aina ya uharibifu / Mengineyo
			ZAMANI	KARIBUNI			ZAMANI	KARIBUNI	
0-50	26	0	17	3	30	1	1	0	Njia ya watu watembea kwa miguu
50-100	45	1	11	1	7	0	2	0	njia ya nguruwe
100-150	30	1	6	0	6	0	0	0	
150-200	20	4	1	2	19	1	1	0	njia ya wakulima
200-250	10	1	2	0	9	0	2	0	
250-300	33	0	7	0	17	1	1	0	
300-350	11	0	6	0	14	0	0	0	
350-400	23	1	7	3	12	0	2	0	shimo refu
400-450	34	2	6	0	17	0	1	0	kuna shamba karibu na msitu
JUMLA	233	10	63	9	131	3	10	0	

FOMU YA UHARIBIFU KATIKA TRANSECT

JINA LA MSITU.....**Mgambo Village**..... TAREHE.....**17 Nov 2007**.

TRANSECT NAMBA.....**3**..... WASHIRIKI.....**Kamati ya msitu**

MWANZO (LAT/LONG)....**37M 04566126/9445214**..... DIRA.....**90 E**.....

MWISHO (LAT/LONG) **37M 0456778, UTM9445214** MUDA WA KUANZA..**12.25pm**.. MUDA WA KUMALIZA.....**2.04pm**.....

SEHEMU (m)	NGUZO HAI	NGUZO ILİYOKUFA	NGUZO ZILIZOKATWA		MITI HAI	MITI ILİYOKUFA	MITI ILİYOKATWA		Aina ya uharibifu / Mengineyo
			ZAMANI	KARIBUNI			ZAMANI	KARIBUNI	
0-50	23	0	9	0	21	2	2	1	
50-100	34	1	5	0	9	4	0	0	
100-150	42	0	8	0	20	1	2	0	mavi ya mpelele
150-200	35	0	7	0	21	0	0	0	Nyoka aina ya sungakuni
200-250	42	0	2	0	22	0	4	0	
250-300	20	3	2	0	18	0	4	0	Nyoka aina ya Moma (kifutu)
300-350	26	0	0	0	13	1	0	0	
350-400	15	2	0	0	7	1	0	0	Sehemu ya wazi kuna majabali
400-450	42	9	6	0	30	0	0	0	
450-500	36	0	1	0	16	0	0	0	
500-550	37	1	5	0	13	0	0	0	mavi ya Mpelele
550-600	24	1	0	0	0	0	1	0	
600-650	16	0	0	0	0	0	0	0	
JUMLA	392	17	45	0	190	9	13	1	

Appendix 4. Shembangeda village, Shembangenda VFR Transects

FOMU YA UHARIBIFU KATIKA TRANSECT

JINA LA MSITU.....Shembangeda Village..... TAREHE.....19 Nov 2007.

TRANSECT NAMBA.....1..... WASHIRIKI.....Kamati ya msitu

MWANZO (LAT/LONG) 37M0459196; UTM 9440536..... DIRA...140

MWISHO (LAT/LONG).37M 0459296; UTM 9440426 MUDA WA KUANZA..2.15 Asubuhi.. MUDA WA KUMALIZA 5.05 Asubuhi

SEHEMU (m)	NGUZO HAI	NGUZO ILİYOKUFA	NGUZO ZILIZOKATWA		MITI HAI	MITI ILİYOKUFA	MITI ILİYOKATWA		Aina ya uharibifu / Mengineyo
			ZAMANI	KARIBUNI			ZAMANI	KARIBUNI	
0-50	62	1	0	5	37	1	0	0	mti umeongoka
50-100	95	1	1	0	37	3	3	0	
100-150	45	1	0	0	20	2	0	0	mbega walioneka pamoja na kima. Kisiki kubwa kimeonekana. Nyoka aina ya shungankuni ameonekana
JUMLA	202	3	1	5	94	6	3	0	

FOMU YA UHARIBIFU KATIKA TRANSECT

JINA LA MSITU.....**Shembangeda Village**..... TAREHE.....**19 Nov 2007**.

TRANSECT NAMBA.....**2**..... WASHIRIKI.....**Kamati ya msitu**

MWANZO (LAT/LONG). **37M 0459248; UTM 9440414** DIRA.. **120**

MWISHO (LAT/LONG)...**37M 0459194; UTM 9440514**.MUDA WA KUANZA..**3.10 Asubuhi**.. MUDA WA KUMALIZA...**3.32 Asubuhi**

SEHEMU (m)	NGUZO HAI	NGUZO ILİYOKUFA	NGUZO ZILIZOKATWA		MITI HAI	MITI ILİYOKUFA	MITI ILİYOKATWA		Aina ya uharibifu / Mengineyo
			ZAMANI	KARIBUNI			ZAMANI	KARIBUNI	
0-50	49	0	0	0	26	10	1	1	
50-100	24	4	0	1	28	0	3	0	
100-150	0	0	0	0	0	0	0	0	
JUMLA	73	4	0	1	54	10	4	1	

FOMU YA UHARIBIFU KATIKA TRANSECT

JINA LA MSITU.....**Shembangeda Village**..... TAREHE.....**20 Nov 2007**.

TRANSECT NAMBA.....**3**..... WASHIRIKI.....**Kamati ya msitu**

MWANZO (LAT/LONG)...**37M 0459203 ;UTM.9440642**..... DIRA...**90**.

MWISHO (LAT/LONG).**37M 0459393; UTM9440624** MUDA WA KUANZA.. **5.12 Asubuhi**.. MUDA WA KUMALIZA....**5.45 asubuhi**

SEHEMU (m)	NGUZO HAI	NGUZO ILİYOKUFA	NGUZO ZILIZOKATWA		MITI HAI	MITI ILİYOKUFA	MITI ILİYOKATWA		Aina ya uharibifu / Mengineyo
			ZAMANI	KARIBUNI			ZAMANI	KARIBUNI	
0-50	46	4	0	0	18	0	0	0	
50-100	40	0	0	0	13	0	0	0	
100-150	43	2	0	0	9	0	0	0	mavi ya mpelele
150-200	1	0	0	0	10	0	0	0	Nyoka aina ya sungakuni
JUMLA	130	6	0	0	50	0	0	0	

Appendix 5. Zirai village, Kizingata VFR Transects

FOMU YA UHARIBIFU KATIKA TRANSECT

JINA LA MSITU..Kizingata. TAREHE.....20/11/2007.

TRANSECT NAMBA....1..... WASHIRIKI.....Kamati ya Msitu ya kijiji.

MWANZO (LAT/LONG) 37M 0460424; UTM9448022. DIRA.....300 NW.

MWISHO (LAT/LONG).... UTM 37M 460141; 9448188 MUDA WA KUANZA...4.45asb MUDA WA KUMALIZA.....7.02mchana.

SEHEM U (m)	NGUZ O HAI	NGUZO ILIYOKUF A	NGUZO ZILIZOKATWA		MITI HAI	MITI ILIYOKUF A	MITI ILIYOKATWA		Aina ya uharibifu / Mengineyo
			ZAMAN I	KARIBUN I			ZAMAN I	KARIBUNI	
0-50	36	2	0	1	31	2	3	1	
50-100	21	0	0	0	30	10	0	0	Jabali (Rock face)
100-150	23	0	2	0	23	0	1	0	
150-200	21	0	0	0	39	0	2	0	Jabali (Rock face)
200-250	29	0	0	0	48	2	0	0	mgomba pori
250-300	22	0	0	0	26	0	0	0	
JUMLA	152	2	2	1	197	14	6	1	

FOMU YA UHARIBIFU KATIKA TRANSECT

JINA LA MSITU.....**Kizingata** TAREHE.....**20/11/2007**

TRANSECT NAMBA....**2**..... WASHIRIKI.....**Kamati ya Msitu ya kijiji.**

MWANZO (LAT/LONG).....**37M 460169; UTM 9448317.DIRA.....120SE.**

MWISHO (LAT/LONG). **UTM 37M 460407; 9448138.** MUDA WA KUANZA **7.30 mchana** MUDA WA KUMALIZA **9.00 mchana**

SEHEMU (m)	NGUZO HAI	NGUZO ILİYOKUFA	NGUZO ZILIZOKATWA		MITI HAI	MITI ILİYOKUFA	MITI ILİYOKATWA		Aina ya uharibifu / Mengineyo
			ZAMANI	KARIBUNI			ZAMANI	KARIBUNI	
0-50	16	0	0	0	10	1	0	0	maonge (moths)
50-100	13	0	0	0	3	0	0	0	mianzi iliyooza, na shamba la iriki la zamani
100-150	0	0	0	0	17	0	0	0	
150-200	8	0	0	0	27	0	0	0	
200-250	13	0	0	0	26	1	1	0	
250-300	23	0	0	0	24	0	0	0	
JUMLA	73	0	0	0	107	2	1	0	

Appendix 6. Kwezitu village, Kwezitu VFR Transects

FOMU YA UHARIBIFU KATIKA TRANSECT

JINA LA MSITU.**Kwezitu.** TAREHE.....**20/11/2007**

TRANSECT NAMBA....**1.....** WASHIRIKI.....**Kamati ya Msitu wa kijiji.**

MWANZO (LAT/LONG) **37M0463152; UTM9449426. DIRA.160.**

MWISHO (LAT/LONG) **UTM 37M 0463336; 9448828** MUDA WA KUANZA...**5.00asb.** MUDA WA KUMALIZA. **8.00 mchana**

SEHEMU (m)	NGUZO HAI	NGUZO ILİYOKUFA	NGUZO ZILIZOKATWA		MITI HAI	MITI ILİYOKUFA	MITI ILİYOKATWA		Aina ya uharibifu / Mengineyo
			ZAMANI	KARIBUNI			ZAMANI	KARIBUNI	
0-50	18	0	5	0	17	0	2	0	
50-100	14	0	5	0	19	0	2	0	Mtego
100-150	18	0	3	0	20	1	3	0	
150-200	22	1	2	0	20	1	3	0	
200-250	21	0	0	0	12	2	2	0	
250-300	21	0	2	0	12	1	1	0	
300-350	15	0	7	0	24	3	3	0	
350-400	8	1	2	0	2	2	0	0	
400-450	26	0	2	0	16	3	1	0	
450-500	34	2	2	0	22	1	4	0	
500-550	30	4	8	0	15	3	5	0	
550-600	32	1	12	0	10	15	2	0	
600-650	23	0	0	0	7	0	0	0	
JUMLA	282	9	50	0	196	32	28	0	

FOMU YA UHARIBIFU KATIKA TRANSECT

JINA LA MSITU.Kwezitu TAREHE..20/11/2007.

TRANSECT NAMBA. 2. WASHIRIKI.....Kamati ya Msitu wa kijiji.

MWANZO (LAT/LONG).....37M 0463403;UTM 9448860. DIRA.....270.

MWISHO (LAT/LONG) UTM.37M 0463292; 9448866.MUDA WA KUANZA 8.00Mchana MUDA WA KUMALIZA.8.20mchana.

SEHEMU (m)	NGUZO HAI	NGUZO ILİYOKUFA	NGUZO ZILIZOKATWA		MITI HAI	MITI ILİYOKUFA	MITI ILİYOKATWA		Aina ya uharibifu / Mengineyo
			ZAMANI	KARIBUNI			ZAMANI	KARIBU NI	
0-50	28	0	7	0	16	1	0	0	
50-100	23	0	0	0	10	3	4	0	
JUMLA	51	0	7	0	26	4	4	0	

Appendix 7. Kambai village, Kambai VFR Transects

FOMU YA UHARIBIFU KATIKA TRANSECT

JINA LA MSITU..Kambai **VFR.** TAREHE...**24/11/2007...**

TRANSECT NAMBA..**1** WASHIRIKI. **Kamati ya Msitu wa kijiji.**

MWANZO (LAT/LONG).**37 M 0465951 ; UTM 9449014 DIRA..120**

MWISHO (LAT/LONG) **UTM 37M0466070; 9448936..MUDA WA KUANZA 5.00 Asubuhi.... MUDA WA KUMALIZA.6.00 Mchana**

SEHEMU (m)	NGUZO HAI	NGUZO ILİYOKUFA	NGUZO ZILIZOKATWA		MITI HAI	MITI ILİYOKUFA	MITI ILİYOKATWA		Aina ya uharibifu / Menginey o
			ZAMANI	KARIBUNI			ZAMANI	KARIBUNI	
0-50	8	1	2	0	9	3	0	0	
50-100	8	0	0	0	18	0	0	0	Mtego
100-150	19	0	0	0	1	0	0	0	Mtego
JUMLA	35	1	2	0	28	3	0	0	

FOMU YA UHARIBIFU KATIKA TRANSECT

JINA LA MSITU..**Kambai VFR.** TAREHE...**24/11/2007.**

TRANSECT NAMBA.**2** WASHIRIKI **.Kamati ya Msitu wa kijiji.**

MWANZO (LAT/LONG) **UTM 37 M 0465864 ; 9448968..... DIRA..150**

MWISHO (LAT/LONG) **UTM 37M 0465957; 9448866..MUDA WA KUANZA 6.00 Mchana.... MUDA WA KUMALIZA.7.00Mchana.**

SEHEMU (m)	NGUZO HAI	NGUZO ILİYOKUFA	NGUZO ZILIZOKATWA		MITI HAI	MITI ILİYOKUFA	MITI ILİYOKATWA		Aina ya uharibifu / Mengineyo
			ZAMANI	KARIBUNI			ZAMANI	KARIBUNI	
0-50	14	0	1	0	12	0	0	0	
50-100	13	2	0	0	9	0	0	0	
100-150	1	0	0	0	5	0	0	0	
JUMLA	28	2	1	0	26	0	0	0	

FOMU YA UHARIBIFU KATIKA TRANSECT

JINA LA MSITU..Kambai VFR.. TAREHE...24/11/2007.

TRANSECT NAMBA.....3 WASHIRIKI.....Kamati ya Msitu wa kijiji.

MWANZO (LAT/LONG).37 M 0465921 ; UTM 9448814..... DIRA..300

MWISHO (LAT/LONG).37M 0465793; UTM9448886.MUDA WA KUANZA 6.00 Mchana.... MUDA WA KUMALIZA.7.00Mchana

SEHEMU (m)	NGUZO HAI	NGUZO ILİYOKUF A	NGUZO ZILIZOKATWA		MITI HAI	MITI ILİYO KUFA	MITI ILİYOKATWA		Aina ya uharibifu / Mengineyo
			ZAMANI	KARIBUNI			ZAMANI	KARIBU NI	
0-50	15	0	1	0	15	0	6	0	Mtego
50-100	10	0	0	0	8	0	6	0	
100-150	22	0	0	0	7	0	1	0	
JUMLA	47	0	1	0	30	0	13	0	

Appendix 8. Kiwanda village, Bomani VFR Transects

FOMU YA UHARIBIFU KATIKA TRANSECT

JINA LA MSITU..**Bomani VFR.** TAREHE...**21/11/2007.**

TRANSECT NAMBA.....**1** WASHIRIKI. **Kamati ya Msitu wa kijiji.**

MWANZO (LAT/LONG) **37 M 0467140 UTM 9439602.** DIRA.....

MWISHO (LAT/LONG) **37M0467649, UTM 9439676** .MUDA WA KUANZA **8.30** mchana

MUDA WA KUMALIZA.**8.45** mchana

SEHEMU (m)	NGUZO HAI	NGUZO ILİYOKUFA	NGUZO ZILIZOKATWA		MITI HAI	MITI ILİYOK UFA	MITI ILİYOKATWA		Aina ya uharibifu / Mengineyo
			ZAMANI	KARIBUNI			ZAMANI	KARIBUNI	
0-50	26	2	2	0	22	3	0	0	
50-100	54	0	0	0	22	2	4	3	Mtego
100-150	37	0	0	0	31	0	1	0	
150-200	31	2	0	1	12	0	3	0	
200-250	16	0	0	0	27	2	1	0	
250-300	26	2	1	0	39	2	3	0	
JUMLA	190	6	3	1	153	9	12	3	

FOMU YA UHARIBIFU KATIKA TRANSECT

JINA LA MSITU..**Bomani VFR.** TAREHE...**22/11/2007.**

TRANSECT NAMBA.....**2** WASHIRIKI.....**Kamati ya Msitu wa kijiji.**

MWANZO (LAT/LONG).**37 M 0467649 ; UTM 943967** DIRA.

MWISHO (LAT/LONG).**37M0467741; UTM9439712.**MUDA WA KUANZA **4.10** Asubuhi.... MUDA WA KUMALIZA.**4.40**
Asubuhi

SEHEMU (m)	NGUZO HAI	NGUZO ILİYOKUFA	NGUZO ZILIZOKATWA		MITI HAI	MITI ILİYOKUFA	MITI ILİYOKATWA		Aina ya uharibifu / Mengineyo
			ZAMANI	KARIBUNI			ZAMANI	KARIBU NI	
0-50	20	4	2	0	36	4	1	0	
50-100	26	4	0	0	21	4	2	0	
100-150	23	0	0	0	23	3	4	0	
JUMLA	69	8	2	0	80	11	7	0	

Appendix 9. Kizerui village, Mzungui VFR Transects

FOMU YA UHARIBIFU KATIKA TRANSECT

JINA LA MSITU..Mzungui **VFR.. TAREHE...22/11/2007.**

TRANSECT NAMBA.....**1 WASHIRIKI. Kamati ya Msitu wa kijiji..**

MWANZO (LAT/LONG).**37 M 0465202 ; UTM 9453652.. DIRA..120**

MWISHO (LAT/LONG).**37M0465366; UTM9453550.....MUDA WA KUANZA 5.00 Asubuhi.... MUDA WA KUMALIZA.6.00Mchana.**

SEHEMU (m)	NGUZO HAI	NGUZO ILİYOKUF A	NGUZO ZILIZOKATWA		MITI HAI	MITI ILİYO KUFA	MITI ILİYOKATWA		Aina ya uharibifu / Mengineyo
			ZAMANI	KARIBUNI			ZAMANI	KARIBU NI	
0-50	6	5	6	1	30	2	1	0	Mtego
50-100	22	4	6	1	38	5	2	0	
100-150	10	0	1	0	19	3	3	0	
150-200	12	0	0	0	15	6	2	0	
JUMLA	50	9	13	2	102	16	8	0	

FOMU YA UHARIBIFU KATIKA TRANSECT

JINA LA MSITU..**Mzungui VFR.** TAREHE...**22/11/2007.**

TRANSECT NAMBA.....**2** WASHIRIKI. **Kamati ya Msitu wa kijiji.**

MWANZO (LAT/LONG).**37 M 0465332 ; UTM 9453511...DIRA..270**

MWISHO (LAT/LONG).**37M0464921; UTM9453514.** MUDA WA KUANZA **6.15 Mchana....** MUDA WA KUMALIZA.**7.30**

Mchana

SEHEM U (m)	NGUZ O HAI	NGUZO ILIYOKUF A	NGUZO ZILIZOKATWA		MITI HAI	MITI ILIYOKUF A	MITI ILIYOKATWA		Aina ya uharibifu / Mengineyo
			ZAMAN I	KARIBU NI			ZAMANI	KARIBUNI	
0-50	16	2	7	0	38	10	5	0	Mtego
50-100	24	5	0	0	29	7	0	0	Moto
100-150	10	2	0	0	24	4	0	0	Moto
150-200	11	4	0	0	28	3	0	0	Moto
200-250	16	3	0	0	14	12	0	0	Moto
250-300	0	0	0	0	13	6	0	0	Moto
300-350	10	0	0	0	17	2	1	0	Moto
350-400	10	2	0	0	11	3	3	0	Moto
400-450	10	3	0	0	6	1	3	0	Moto
JUMLA	107	21	7	0	180	48	12	0	

Appendix 10. Kwatango village, Kwemazagati VFR Transects

FOMU YA UHARIBIFU KATIKA TRANSECT

JINA LA MSITU **KWEMAZAGATI** TAREHE **23/11/2007**

TRANSECT NAMBA **1** WASHIRIKI **KAMATI YA MALIASILI**

MWANZO (LAT/LONG) **37M0469763**, UTM **9446754** DIRA **160**

MWISHO (LAT/LONG) **37M0469929**, UTM **9446468** MUDA WA KUANZA **6.46** MUDA WA KUMALIZA **7.40**

SEHEMU (m)	NGUZO HAI	NGUZO ILİYOKUFA	NGUZO ZILIZOKATWA		MITI HAI	MITI ILİYOKUFA	MITI ILİYOKATWA		Aina ya uharibifu / Mengineyo
			ZAMANI	KARIBUNI			ZAMANI	KARIBUNI	
0-50	75	0	0	0	84	1	0	4	MUESE, MCHIKICHI
50-100	77	0	0	0	22	1	0	2	0
100-150	22	0	0	0	32	2	0	0	NJIA ZA NYANI
150-200	28	0	0	0	42	3	0	0	
200-250	37	0	0	0	38		0	0	
250-300	24	0	0	0	29	2	0	0	
300-350	27	0	0	0	35	0	0	0	
350-400	27	0	0	0	0	0	0	0	
400-450									
JUMLA	317	0	0	0	282	9	0	6	

FOMU YA UHARIBIFU KATIKA TRANSECT
JINA LA MSITU KWEMAZAGATI TAREHE 23/11/2007
TRANSECT NAMBA 2 WASHIRIKI KAMTI YA MALIASILI
MWANZO (LAT/LONG) 37M0469842, UTM9446412 DIRA 340
MWISHO (LAT/LONG) 37M0469618, UTM9446718 MUDA WA KUANZA 7.58 MUDA WA KUMALIZA 8.35

SEHEMU (m)	NGUZO HAI	NGUZO ILİYOKUFA	NGUZO ZILIZOKATWA		MITI HAI	MITI ILİYOKUFA	MITI ILİYOKATWA		Aina ya uharibifu / Mengineyo
			ZAMANI	KARIBUNI			ZAMANI	KARIBUNI	
0-50	22	0	0	0	50	3	0	0	MAJABALI MAWILI
50-100	20	0	0	0	34	3	0	0	
100-150	16	0	0	0	16	0	0	0	NJIA ZA NYANI
150-200	35	0	0	0	38	0	0	0	
200-250	35	0	0	0	44	1	0	0	
250-300	50	0	0	0	47	0	0	0	
300-350	20	0	0	0	24	0	0	0	MFEREJI WA MAJI
350-400	4	0	0	0	4	0	0	0	
JUMLA	202	0	0	0	257	7	0	0	

Appendix 11. Kuzekibago village, Kwemnyese VFR Transects

FOMU YA UHARIBIFU KATIKA TRANSECT

JINA LA MSITU **KWEMNYESI** TAREHE **22/11/2007**

TRANSECT NAMBA **1** WASHIRIKI KAMATI YA MSITU

MWANZO (LAT/LONG) **37M0467532, UTM9457122** DIRA **160** KUSINI

MWISHO (LAT/LONG) **37M0469533, UTM9456988** MUDA WA KUANZA **4.45** MUDA WA KUMALIZA **5.07**

SEHEMU (m)	NGUZO HAI	NGUZO ILİYOKUFA	NGUZO ZILIZOKATWA		MITI HAI	MITI ILİYOKUFA	MITI ILİYOKATWA		Aina ya uharibifu / Mengineyo
			ZAMANI	KARIBUNI			ZAMANI	KARIBUNI	
0-50	11	0	0	0	17	0	2	0	Mawe na mifereji maji kamba m.30
50-100	16	3	0	0	14	0	1	0	
100-150	24	0	0	0	4	0	0	0	
JUMLA	51	3	0	0	35	0	3	0	

FOMU YA UHARIBIFU KATIKA TRANSECTJINA LA MSITU **KWEMNYESI** TAREHE **22/11/2007**TRANSECT NAMBA **2** WASHIRIKI KAMTI YA MSITUMWANZO (LAT/LONG) **37M 0469477**, UTM **9457122** DIRA KASKAZINI KUSINIMWISHO (LAT/LONG) **37M0469533**, UTM **9456988**MUDA WA KUANZA **4.45** MUDA WA KUMALIZA **4.30**

SEHEMU (m)	NGUZO HAI	NGUZO ILİYOKUFA	NGUZO ZILIZOKATWA		MITI HAI	MITI ILİYOKUFA	MITI ILİYOKATWA		Aina ya uharibifu / Mengineyo
			ZAMANI	KARIBUNI			ZAMANI	KARIBUNI	
0-50	11	0	0	0	17	5	6	0	Mfereji mawe kamba, magogo yalioza
50-100	8	3	4	0	15	8	1		
100-150	15	0	0	0	0	0	0	0	
JUMLA	34	3	4	0	32	13	7	0	

Appendix 12: Threat Reduction Assessment for Mgambo VFR

SITE NAME: <i>Handei VFR</i>		
SITE DESCRIPTION: <i>VFR managed by the villagers of Mgambo Village</i>		
ASSESSMENT PERIOD: <i>2002</i>	TO: <i>Nov 2007</i>	COMPLETED ON: <i>18 Nov 07</i>
COMPLETED BY: <i>VEC / members / Villagers</i>		

THREATS	CRITERIA RANKINGS			TOTAL RANKING	% THREAT REDUCED	RAW SCORE
	Size of area affected	Severity of destruction to habitat	Urgency of threat			
A Pole cutting	3	3	3	9	65	5.9
B Cattle grazing	1	2	2	5	95	4.8
C Forest fires	2	1	1	4	100	4.0
D Encroachment for agriculture	4	4	4	12	55	6.6
TOTAL	10	10	10	30		21.3

TRA INDEX FORMULA	TOTAL RAW SCORE		TOTAL RANKING		CONVERT TO PERCENTAGE				TRA INDEX
TRA INDEX CALCULATION	21.3	÷	30	=	0.71	X	100	=	71 %

EXPLANATION OF THREATS	
A	THREAT: Pole cutting (subsistence)
	100 % REDUCTION = <i>No pole cutting inside Handei Village Forest Reserve</i>
B	THREAT: Cattle grazing from the nearby residents
	100 % REDUCTION = <i>No cattle grazing inside Handei Village Forest Reserve</i>
C	THREAT: Forest fires
	100 % REDUCTION = <i>No fire incidence inside Handei Village Forest Reserve</i>
D	THREAT: Encroachment for Agriculture
	100 % REDUCTION = <i>No farming activities inside Handei Village Forest Reserve.</i>

Appendix 13: Threat Reduction Assessment for Shembangeda VFR

SITE NAME: <i>Shembangeda VFR</i>		
SITE DESCRIPTION: <i>VFR managed by the villagers of Shembangeda Village</i>		
ASSESSMENT PERIOD: <i>2002</i>	TO: <i>Nov 2007</i>	COMPLETED ON: <i>20 Nov 2007</i>
COMPLETED BY: <i>VEC / members / Villagers</i>		

THREATS	CRITERIA RANKINGS			TOTAL RANKING	% THREAT REDUCED	RAW SCORE
	Size of area affected	Severity of destruction to habitat	Urgency of threat			
A Encroachment for cinnamon cultivation	2	2	2	6	97%	5.82
B Pole cutting	1	1	1	3	94%	2.82
TOTAL	3	3	3	9		8.64

TRA INDEX FORMULA	TOTAL RAW SCORE		TOTAL RANKING		CONVERT TO PERCENTAGE			TRA INDEX	
TRA INDEX CALCULATION	8.64	÷	9	=	0.96	X	100	=	96%

EXPLANATION OF THREATS	
A	THREAT: Encroachment for cinnamon cultivation
	100 % REDUCTION = <i>No cinnamon cultivation or new farms in Shembangeda Village Forest Reserve</i>
B	THREAT: Pole cutting
	100 % REDUCTION = <i>No pole cutting inside Shembangeda Village Forest Reserve</i>

Appendix 14: Threat Reduction Assessment for Kizingata VFR

SITE NAME: <i>KIZINGATA</i>		
SITE DESCRIPTION: <i>6 Ha. MONTANE RAIN FOREST.</i>		
ASSESSMENT PERIOD: <i>2000 JUNE</i>	TO: <i>NOV. , 2007</i>	COMPLETED ON: <i>20/11/2007</i>
COMPLETED BY: <i>Village Environment Committee (VEC) and Village leaders</i>		

THREATS	CRITERIA RANKINGS			TOTAL RANKING	% THREAT REDUCED	RAW SCORE	
	Size of area affected	Severity of destruction to habitat	Urgency of threat				
A	Pole cutting	5	5	4	14	100	14
B	Hunting/trapping of wild animals	1	2	5	8	80	6.4
c	Clearing forest for agriculture	3	3	1	7	100	7
D	Wild fires	4	4	2	10	100	10
E	Tree cutting for fire wood	2	1	3	6	100	6
TOTAL		15	15	15	45		43.4

TRA INDEX FORMULA	TOTAL RAW SCORE		TOTAL RANKING		CONVERT TO PERCENTAGE				TRA INDEX
TRA INDEX CALCULATION	43.5	÷	43.4	=	0.967	X	100	=	96.7%

EXPLANATION OF THREATS	
A	THREAT: Pole cutting for house construction
	100 % REDUCTION = No pole cutting inside the village land forest reserve (kizingata)
B	THREAT: Hunting/trapping of wild animals
	100 % REDUCTION = No traps and hunting signs inside the forest
B	THREAT: Clearing forest for agriculture
	100 % REDUCTION = No new farms or cleared areas for farm within the VLFR boundaries.
B	THREAT: Wild fires
	100 % REDUCTION = No fire incidence inside the protected area.
B	THREAT: Tree cutting for fire wood
	100 % REDUCTION = No cutting of trees inside the forest area.

Appendix 15: Threat Reduction Assessment for Kwezitu VFR

SITE NAME: <i>Kwezitu VFR</i>		
SITE DESCRIPTION: <i>VFR managed by the villagers of Kwezitu Village</i>		
ASSESSMENT PERIOD: <i>1999</i>	TO: <i>Nov 2007</i>	COMPLETED ON: <i>19 Nov 2007</i>
COMPLETED BY: <i>VEC / members / Villagers</i>		

THREATS	CRITERIA RANKINGS			TOTAL RANKING	% THREAT REDUCED	RAW SCORE	
	Size of area affected	Severity of destruction to habitat	Urgency of threat				
A	Pole cutting for construction of houses	4	4	4	12	95	11.4
B	Withy cutting for house construction	3	3	3	9	90	8.1
C	Encroachment for agriculture	2	2	2	6	100	6.0
D	Animals trapping/hunting	1	1	1	3	95	2.9
TOTAL		10	10	10	30		28.4

TRA INDEX FORMULA	TOTAL RAW SCORE		TOTAL RANKING		CONVERT TO PERCENTAGE				TRA INDEX
TRA INDEX CALCULATION	28.4	÷	30	=	0.95	X	100	=	95 %

EXPLANATION OF THREATS	
A	THREAT: Pole cutting (Subsistence)
	100 % REDUCTION = <i>No new pole cutting within protected area boundaries</i>
B	THREAT: Withy cutting (subsistence).
	100 % REDUCTION = <i>No new cut withies within the protected area boundaries</i>
C	THREAT: Encroachment for agriculture.

	100 % REDUCTION = <i>No any farming activity or new farm established within the protected area boundaries</i>
D	THREAT: Animal trapping/hunting
	100 % REDUCTION = <i>No animal trapping or signs of animal hunting inside the village land forest Reserve</i>

Appendix 16: Threat Reduction Assessment for Bomani VFR-Kiwanda

SITE NAME Bomani VFR-Kiwanda		
SITE DESCRIPTION: VFR managed by the villagers of Kiwanda Village		
ASSESSMENT PERIOD: 2000	TO: Nov 2007	COMPLETED ON: 23 Nov 2007
COMPLETED BY: VEC / members / Villagers /Raymond R. Killenga/Elbaric		

	THREATS	CRITERIA RANKINGS			TOTAL RANKING	% THREAT REDUCED	RAW SCORE
		Size of area affected	Severity of destruction to habitat	Urgency of threat			
A	Forest fires	5	5	5	15	100	15.00
B	Encroachment for agriculture	4	3	4	11	95	10.45
C	Pit sawing	2	2	2	6	100	6.00
D	Poles cutting	3	4	3	10	95	9.50
E	Animal trapping/hunting	1	1	1	3	100	3.00
	Total	15	15	15	45		43.95

TRA INDEX FORMULA	TOTAL RAW SCORE		TOTAL RANKING		CONVERT TO PERCENTAGE				TRA INDEX
TRA INDEX CALCULATION	43.95	÷	45	=	0.98	X	100	=	97.67%

EXPLANATION OF THREATS	
A	THREAT: Forest fires.
	100 % REDUCTION = <i>No new fire incidence inside the Village Land Forest Reserve</i>
B	THREAT: Agricultural encroachment.

	100 % REDUCTION = No any farming activity or new farms established within the protected area boundaries
C	THREAT: Pit sawing (Commercial)
	100 % REDUCTION = No any timber/tree cut for timber production in the Village Land Forest Reserve
D	THREAT: Pole-cutting (subsistence)
	100% REDUCTION = No any new pole cut inside protected area boundaries.
E	THREAT: Animal trapping/hunting
	100 % REDUCTION = No any new animal trap or signs of animal hunting in the Village Land Forest Reserve

Appendix 17: Threat Reduction Assessment for Mzungui VFR-Kizerui

SITE NAME <i>Mzungui VFR-Kizerui</i>		
SITE DESCRIPTION: <i>VFR managed by the villagers of Kizerui Village</i>		
ASSESSMENT PERIOD: 2000	TO: Nov 2007	COMPLETED ON: 21 Nov 2007
COMPLETED BY: VEC / members / Villagers /Raymond R. Killenga		

	THREATS	CRITERIA RANKINGS			TOTAL RANKING	% THREAT REDUCED	RAW SCORE
		Size of area affected	Severity of destruction to habitat	Urgency of threat			
A	Forest fires	6	6	6	18	80	14.40
B	Pole cutting	5	5	4	14	90	12.60
C	Pit sawing	3	3	5	11	100	11.00
D	Encroachment for agriculture	4	4	1	9	90	8.10
E	Grazing	1	1	2	4	100	4.00
F	Hunting/animal trapping	2	2	3	7	80	5.60
	TOTAL	21	21	21	63		55.7

TRA INDEX FORMULA	TOTAL RAW SCORE	TOTAL RANKING	CONVERT TO PERCENTAGE	TRA INDEX
TRA INDEX CALCULATION				

	55.7	÷	63	=	0.88	X	100	=	88.4 %
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EXPLANATION OF THREATS	
A	THREAT: Forest fires.
	100 % REDUCTION = <i>No any new fire incidence within the protected area boundaries</i>
B	THREAT: Pole-cutting (subsistence).
	100 % REDUCTION = <i>No any new cut pole in the Village Land Forest Reserve</i>
C	THREAT: Pit-sawing (Commercial).
	100 % REDUCTION = <i>No any new cut tree for timber production inside the Village Land Forest Reserve</i>
D	THREAT: Agriculture encroachment.
	100 % REDUCTION = <i>No any farming activity or newly opened farm in the protected area.</i>
E	Threat: Cattle grazing.
	100 % REDUCTION = <i>No any cattle grazing incidence inside the Village Land Forest Reserve</i>
F	THREAT: Hunting/animal trapping
	100 % REDUCTION = <i>No any new animal trap or signs of animal hunting within the protected area boundaries</i>

Appendix 18: Threat Reduction Assessment for Kambai VFR

SITE NAME: Kambai VFR		
SITE DESCRIPTION: VFR managed by the villagers of Kambai Village		
ASSESSMENT PERIOD: 2000	TO: Nov 2007	COMPLETED ON: 23 Nov 2007
COMPLETED BY: VEC / members / Villagers /Raymond R. Killenga		

	THREATS	CRITERIA RANKINGS			TOTAL RANKING	% THREAT REDUCED	RAW SCORE
		Size of area affected	Severity of destruction to habitat	Urgency of threat			
A	Forest fires	4	4	4	12	85	10.2
B	Pole cutting	3	3	3	9	80	7.2

C	Withy cutting	2	2	2	6	80	4.8	
D	Animal trapping/hunting	1	1	1	3	70	2.1	
	Total	10	10	10	30		24.3	
TRA INDEX FORMULA		TOTAL RAW SCORE		TOTAL RANKING	CONVERT TO PERCENTAGE			TRA INDEX
TRA INDEX CALCULATION		24.3	÷	30	=	0.81	X 100 = 81 %	
EXPLANATION OF THREATS								
A	THREAT: Forest fires.							
	100 % REDUCTION = No any new fire incidence within the protected area boundaries							
B	THREAT: Pole cutting (subsistence)							
	100 % REDUCTION = No any new cut pole within the protected area boundaries							
C	THREAT: Withy cutting (subsistence).							
	100 % REDUCTION = No newly cut withies in the Village Land Forest Reserve							
D	THREAT: Animal trapping/hunting							
	100 % REDUCTION = No any new animal trap or signs of animal hunting within the protected area boundaries							

Appendix 19: Threat Reduction Assessment for Kwemazagati VFR

SITE NAME: KWEMAZAGATI VLFR.	
SITE DESCRIPTION: 25 Ha. Coastal Forest on the gentle slope.	
ASSESSMENT PERIOD:	TO: COMPLETED ON: 23/11/2007
COMPLETED BY: VEC KWA TANGO ATTENDED By: 11 VEC MEMBERS	

	THREATS	CRITERIA RANKINGS			TOTAL RANKING	% THREAT REDUCED	RAW SCORE
		Size of area affected	Severity of destruction to habitat	Urgency of threat			
A	Wildfires	4	1	2	7	100%	7
B	Mineral mining	1	4	3	8	100%	8

C	<i>Slash and burn farming</i>	3	3	1	7	100%	7
D	<i>Illegal timber harvesting</i>	2	2	4	8	100%	8
	TOTAL	10	10	10	30		30

TRA INDEX FORMULA	TOTAL RAW SCORE		TOTAL RANKING		CONVERT TO PERCENTAGE				TRA INDEX
TRA INDEX CALCULATION	30	÷	30	=	1	X	100	=	100%

EXPLANATION OF THREATS	
A	THREAT: Wildfires
	100 % REDUCTION = <i>No fire incidence observed inside VFR</i>
B	THREAT: Mineral Mining
	100 % REDUCTION = <i>No Mining activities recorded inside the VFR</i>
C	THREAT: Slash and burn farming
	100 % REDUCTION = <i>No new farms inside the forest area</i>
D	THREAT: Illegal timber harvesting
	100 % REDUCTION = <i>No harvesting of timber inside VLFR</i>

Appendix 20: Threat Reduction Assessment for Kwemnyese VFR

SITE NAME: KWENYEZI		
SITE DESCRIPTION:		
ASSESSMENT PERIOD:	TO: Nov 2007	COMPLETED ON: 22/11/2007
COMPLETED BY: VEC / members / Villagers		

THREATS	CRITERIA RANKINGS			TOTAL RANKING	% THREAT REDUCED	RAW SCORE
	Size of area affected	Severity of destruction to habitat	Urgency of threat			
A Fires	3	2	1	6	100	6
B Pole cutting	1	1	3	5	100	5
C Clearing forest for Agriculture	2	3	2	7	100	7
TOTAL				20		20

TRA INDEX FORMULA	TOTAL RAW SCORE		TOTAL RANKING		CONVERT TO PERCENTAGE				TRA INDEX
TRA INDEX CALCULATION	20	÷	20	=	1	X	100	=	100%

EXPLANATION OF THREATS	
A	THREAT: Fires
	100 % REDUCTION = No fire incidence inside the forest
B	THREAT: Pole cutting (subsistence)
	100 % REDUCTION = No fresh tree /pole cut in the forest
C	THREAT: Clearing forest for agriculture uses
	100 % REDUCTION = No new clear felled forest area for shamba

Appendix 21: Summary of TRA results for all nine VFRs

VFR	Pole cutting	Withy cutting	Tree Cutting	Cattle grazing	Fire	Encroachment /clearing	Hunting/trapping	Mining	TRA Index (%)
	% Reduction								
Handei	65			95	100	55			71
Shembangeda	94					97			96
Kwezitu	95	90				100	95		95
Kambai	80	80			85		70		81
Mzungui	90		100	100	80	90	80		88
Bomani	95		100		100	95	100		98
Kwemnyese	100				100	100			100
Kizingita	100		100		100	100	80		97
Kwemazagati			100		100	100		100	100

Appendix 22: Management Effectiveness Tracking Tool – Form

The following form was used to assess Management Effectiveness in each village.

Issue	Criteria	Score	Comments	Next steps
1. Legal status Does the protected area have legal status?	The protected area is not gazetted	0		
	The government has agreed that the protected area should be gazetted but the process has not yet begun	1		
	The protected area is in the process of being gazetted but the process is still incomplete	2		
	The protected area has been legally gazetted (or in the case of private reserves is owned by a trust or similar)	3		
2. Protected area regulations Are inappropriate land uses and activities (e.g. poaching) controlled?	There are no mechanisms for controlling inappropriate land use and activities in the protected area	0		
	Mechanisms for controlling inappropriate land use and activities in the protected area exist but there are major problems in implementing them effectively	1		
	Mechanisms for controlling inappropriate land use and activities in the protected area exist but there are some problems in effectively implementing them	2		
	Mechanisms for controlling inappropriate land use and activities in the protected area exist and are being effectively implemented	3		
3. Law enforcement Can staff enforce protected area rules well enough?	The staff have no effective capacity/resources to enforce protected area legislation and regulations	0		
	There are major deficiencies in staff capacity/resources to enforce protected area legislation and regulations (e.g. lack of skills, no patrol budget)	1		
	The staff have acceptable capacity/resources to enforce protected area legislation and regulations but some deficiencies remain	2		
	The staff have excellent capacity/resources to enforce protected area legislation and regulations	3		

Issue	Criteria	Score	Comments	Next steps
4. Protected area objectives Have objectives been agreed?	No firm objectives have been agreed for the protected area	0		
	The protected area has agreed objectives, but is not managed according to these objectives	1		
	The protected area has agreed objectives, but these are only partially implemented	2		
	The protected area has agreed objectives and is managed to meet these objectives	3		
5. Protected area design Does the protected area need enlarging, corridors etc to meet its objectives?	Inadequacies in design mean achieving the protected areas major management objectives of the protected area is impossible	0		
	Inadequacies in design mean that achievement of major objectives are constrained to some extent	1		
	Design is not significantly constraining achievement of major objectives, but could be improved	2		
	Reserve design features are particularly aiding achievement of major objectives of the protected area	3		
6. Protected area boundary demarcation Is the boundary known and demarcated?	The boundary of the protected area is not known by the management authority or local residents/neighbouring land users	0		
	The boundary of the protected area is known by the management authority but is not known by local residents/neighbouring land users	1		
	The boundary of the protected area is known by both the management authority and local residents but is not appropriately demarcated	2		
	The boundary of the protected area is known by the management authority and local residents and is appropriately demarcated	3		
7. Management plan Is there a management plan and is it being	There is no management plan for the protected area	0		
	A management plan is being prepared or has been prepared but is not being implemented	1		

Issue	Criteria	Score	Comments	Next steps
implemented?	An approved management plan exists but it is only being partially implemented because of funding constraints or other problems	2		
	An approved management plan exists and is being implemented	3		
Additional points	The planning process allows adequate opportunity for key stakeholders to influence the management plan	+1		
	There is an established schedule and process for periodic review and updating of the management plan	+1		
	The results of monitoring, research and evaluation are routinely incorporated into planning	+1		
8. Regular work plan	No regular work plan exists	0		
Is there an annual work plan?	A regular work plan exists but activities are not monitored against the plan's targets	1		
	A regular work plan exists and actions are monitored against the plan's targets, but many activities are not completed	2		
	A regular work plan exists, actions are monitored against the plan's targets and most or all prescribed activities are completed	3		
9. Resource inventory	There is little or no information available on the critical habitats, species and cultural values of the protected area	0		
Do you have enough information to manage the area?	Information on the critical habitats, species and cultural values of the protected area is not sufficient to support planning and decision making	1		
	Information on the critical habitats, species and cultural values of the protected area is sufficient for key areas of planning/decision making but the necessary survey work is not being maintained	2		
	Information concerning on the critical habitats, species and cultural values of the protected area is sufficient to support planning and decision making and is being maintained	3		

Issue	Criteria	Score	Comments	Next steps
10. Research Is there a programme of management-orientated survey and research work?	There is no survey or research work taking place in the protected area	0		
	There is some <i>ad hoc</i> survey and research work	1		
	There is considerable survey and research work but it is not directed towards the needs of protected area management	2		
	There is a comprehensive, integrated programme of survey and research work, which is relevant to management needs	3		
11. Resource management Is the protected area adequately managed (e.g. for fire, invasive species, poaching)?	Requirements for active management of critical ecosystems, species and cultural values have not been assessed	0		
	Requirements for active management of critical ecosystems, species and cultural values are known but are not being addressed	1		
	Requirements for active management of critical ecosystems, species and cultural values are only being partially addressed	2		
	Requirements for active management of critical ecosystems, species and cultural values are being substantially or fully addressed	3		
12. Staff numbers Are there enough people employed to manage the protected area?	There are no staff	0		
	Staff numbers are inadequate for critical management activities	1		
	Staff numbers are below optimum level for critical management activities	2		
	Staff numbers are adequate for the management needs of the site	3		
13. Personnel management Are the staff managed	Problems with personnel management constrain the achievement of major management objectives	0		
	Problems with personnel management partially constrain the achievement of major management objectives	1		

Issue	Criteria	Score	Comments	Next steps
well enough?	Personnel management is adequate to the achievement of major management objectives but could be improved	2		
	Personnel management is excellent and aids the achievement major management objectives	3		
14. Staff training	Staff are untrained	0		
Is there enough training for staff?	Staff training and skills are low relative to the needs of the protected area	1		
	Staff training and skills are adequate, but could be further improved to fully achieve the objectives of management	2		
	Staff training and skills are in tune with the management needs of the protected area, and with anticipated future needs	3		
15. Current budget	There is no budget for the protected area	0		
Is the current budget sufficient?	The available budget is inadequate for basic management needs and presents a serious constraint to the capacity to manage	1		
	The available budget is acceptable, but could be further improved to fully achieve effective management	2		
	The available budget is sufficient and meets the full management needs of the protected area	3		
16. Security of budget	There is no secure budget for the protected area and management is wholly reliant on outside or year by year funding	0		
Is the budget secure?	There is very little secure budget and the protected area could not function adequately without outside funding	1		
	There is a reasonably secure core budget for the protected area but many innovations and initiatives are reliant on outside funding	2		
	There is a secure budget for the protected area and its management needs on a multi-year cycle	3		

Issue	Criteria	Score	Comments	Next steps
17. Management of budget Is the budget managed to meet critical management needs?	Budget management is poor and significantly undermines effectiveness	0		
	Budget management is poor and constrains effectiveness	1		
	Budget management is adequate but could be improved	2		
	Budget management is excellent and aids effectiveness	3		
18. Equipment Is equipment adequately maintained?	There is little or no equipment and facilities	0		
	There is some equipment and facilities but these are wholly inadequate	1		
	There is equipment and facilities, but still some major gaps that constrain management	2		
	There is adequate equipment and facilities	3		
19. Maintenance of equipment Is equipment adequately maintained?	There is little or no maintenance of equipment and facilities	0		
	There is some <i>ad hoc</i> maintenance of equipment and facilities	1		
	There is maintenance of equipment and facilities, but there are some important gaps in maintenance	2		
	Equipment and facilities are well maintained	3		
Issue	Criteria	Score	Comments	Next steps
20. Education and awareness programme Is there a planned education	There is no education and awareness programme	0		
	There is a limited and <i>ad hoc</i> education and awareness programme, but no overall planning for this	1		
	There is a planned education and awareness programme but there are still serious gaps	2		

Issue	Criteria	Score	Comments	Next steps
programme?	There is a planned and effective education and awareness programme fully linked to the objectives and needs of the protected area	3		
21. State and commercial neighbours Is there co-operation with adjacent land users?	There is no contact between managers and neighbouring official or corporate land users	0		
	There is limited contact between managers and neighbouring official or corporate land users	1		
	There is regular contact between managers and neighbouring official or corporate land users, but only limited co-operation	2		
	There is regular contact between managers and neighbouring official or corporate land users, and substantial co-operation on management	3		
22. Indigenous people Do indigenous and traditional peoples resident or regularly using the PA have input to management decisions?	Indigenous and traditional peoples have no input into decisions relating to the management of the protected area	0		
	Indigenous and traditional peoples have some input into discussions relating to management but no direct involvement in the resulting decisions	1		
	Indigenous and traditional peoples directly contribute to some decisions relating to management	2		
	Indigenous and traditional peoples directly participate in making decisions relating to management	3		
Issue	Criteria	Score	Comments	Next steps
23. Local communities Do local communities resident or near the protected area have input to management decisions?	Local communities have no input into decisions relating to the management of the protected area	0		
	Local communities have some input into discussions relating to management but no direct involvement in the resulting decisions	1		
	Local communities directly contribute to some decisions relating to management	2		
	Local communities directly participate in making decisions relating to management	3		

Issue	Criteria	Score	Comments	Next steps
Additional points	There is open communication and trust between local stakeholders and protected area managers	+1		
	Programmes to enhance local community welfare, while conserving protected area resources, are being implemented	+1		
24. Visitor facilities	There are no visitor facilities and services	0		
Are visitor facilities (for tourists, pilgrims etc) good enough?	Visitor facilities and services are inappropriate for current levels of visitation or are under construction	1		
	Visitor facilities and services are adequate for current levels of visitation but could be improved	2		
	Visitor facilities and services are excellent for current levels of visitation	3		
Issue	Criteria	Score	Comments	Next steps
25. Commercial tourism	There is little or no contact between managers and tourism operators using the protected area	0		
Do commercial tour operators contribute to protected area management?	There is contact between managers and tourism operators but this is largely confined to administrative or regulatory matters	1		
	There is limited co-operation between managers and tourism operators to enhance visitor experiences and maintain protected area values	2		
	There is excellent co-operation between managers and tourism operators to enhance visitor experiences, protect values and resolve conflicts	3		
26. Fees	Although fees are theoretically applied, they are not collected	0		
If fees (tourism, fines) are applied, do they help protected area management?	The fee is collected, but it goes straight to central government and is not returned to the protected area or its environs	1		
	The fee is collected, but is disbursed to the local authority rather than the protected area	2		
	There is a fee for visiting the protected area that helps to support this and/or other protected areas	3		

Issue	Criteria	Score	Comments	Next steps
Issue	Criteria	Score	Comments	Next steps
27. Condition assessment Is the protected area being managed consistent to its objectives?	Important biodiversity, ecological and cultural values are being severely degraded	0		
	Some biodiversity, ecological and cultural values are being severely degraded	1		
	Some biodiversity, ecological and cultural values are being partially degraded but the most important values have not been significantly impacted	2		
	Biodiversity, ecological and cultural values are predominantly intact	3		
Additional points	There are active programmes for restoration of degraded areas within the protected area and/or the protected area buffer zone	+1		
28. Access assessment Are the available management mechanisms working to control access or use?	Protection systems (patrols, permits etc) are ineffective in controlling access or use of the reserve in accordance with designated objectives	0		
	Protection systems are only partially effective in controlling access or use of the reserve in accordance with designated objectives	1		
	Protection systems are moderately effective in controlling access or use of the reserve in accordance with designated objectives	2		
	Protection systems are largely or wholly effective in controlling access or use of the reserve in accordance with designated objectives	3		
29. Economic benefit assessment Is the protected area providing economic benefits to local communities?	The existence of the protected area has reduced the options for economic development of the local communities	0		
	The existence of the protected area has neither damaged nor benefited the local economy	1		
	There is some flow of economic benefits to local communities from the existence of the protected area but this is of minor significance to the regional economy	2		

Issue	Criteria	Score	Comments	Next steps
	There is a significant or major flow of economic benefits to local communities from activities in and around the protected area (e.g. employment of locals, locally operated commercial tours etc)	3		
30. Monitoring and evaluation	There is no monitoring and evaluation in the protected area	0		
	There is some <i>ad hoc</i> monitoring and evaluation, but no overall strategy and/or no regular collection of results	1		
	There is an agreed and implemented monitoring and evaluation system but results are not systematically used for management	2		
	A good monitoring and evaluation system exists, is well implemented and used in adaptive management	3		
	<p style="text-align: center;">TOTAL SCORE</p> <p><i>(Add up all scores circled = TOTAL SCORE then divide by 96 (maximum score possible). Multiply this value by 100 to get a percentage (%) score.</i></p>			% score

Appendix 23: Management Effectiveness Tracking Tool – Results

The following table summarises baseline METT data for the nine VFRs covered.

	<i>Handei</i>	<i>Shemba -ngeda</i>	<i>Kwezitu</i>	<i>Kambai</i>	<i>Mzungui</i>	<i>Bomani</i>	<i>Kwemnyese</i>	<i>Kizingata</i>	<i>Kwemaz -agati</i>
1. Legal status	2	2	2	2	2	2	3	3	3
2. Protected area regulations	3	2	3	3	3	2	3	3	3
3. Law enforcement	3	3	3	3	3	2	3	3	3
4. Protected area objectives		3	3	3	3	3	3	3	3
5. Protected area design	3	3						3	
6. Protected area boundary demarcation	3	3	3	2	3	3	3	3	3
7. Management plan	3	3+1+1	3+1	2	3+1	1	3+1	3+1	3+1
8. Regular work plan	3	0	3	1	3	3	3	3	3
9. Resource Inventory		3	3	3	2	1	2	2	3
10. Research	2	1		0	1	2	1	1	1
11. Resource management								3	
12. Staff numbers					3	3	3		3
14. Staff training	1	2	1	1	1	1	2	2	2
15. Current budget		0		2	2	2			0
16. Security of budget									0
17. Management of budget	2	2	0	2	2	2	1	2	2
20. Education and awareness programme	1	1	3	1	1	1	1	1	1
21. State and	1	0	3	3	1	3	0	3	3

	<i>Handei</i>	<i>Shemba -ngeda</i>	<i>Kwezitu</i>	<i>Kambai</i>	<i>Mzungui</i>	<i>Bomani</i>	<i>Kwemnyese</i>	<i>Kizingata</i>	<i>Kwemaz -agati</i>
commercial neighbours									
22. Indigenous people									
23. Local communities		3+1+1	3	2	3	2	3+1	3+1	3+1
24. Visitor facilities	2	0	2	2	2	2	0	1	0
25. Commercial tourism									
26. Fees	3	3	3	3	3	3		1	0
27. Condition assessment		3	3	2	2	2	3	3	3
28. Access assessment	3	3	3	3	1	1	3	3	2
29. Economic benefit assessment		3	2	2	2	2	3	3	1
30. Monitoring and evaluation		0	1	1	1	1			2
TOTAL SCORE	31/45 x 100 = 69%	43/65 x 100 =66.1%	49/66 x 100 = 74%	37/60 x 100 = 62%	40/69 x 100 = 58%	40/69 x 100 = 58%	45/61 x 100 = 74	53/67 x 100 = 79%	52/76 x 100 = 68%

Appendix 24: NAFOBEDA – Muheza District forest reserves lists

Muheza District, Tanga Region Muheza District, Tanga Region Muheza District, Tanga Region Muheza District, Tanga Region

Forest/Bee Reserve Name	Jobno	Forest Area (ha)	IUCN Protected Area Category	Namba ya tangazo la Serikali	Tangazo la badiliko la serikali I	Nambari ya serikali ya kufuta	Matumizi ya ardhi ya msitu	Ubora wa ardhi	Aina ya uoto	Ukanda ya Ikolojia	Usimamizi	Year of Man. Plan Management Plan
Aina ya msitu												
Bassi	531/805	1,197.50		Cap. 132 p. 1947					Plantation			
Kwamkoro	796	2,209.60		24/20/1/1961					Plantation			
KUZE-KIBAGO									Plantation			
Kolekole	427/807	301.00		411/22/8/1958					Natural Forest			
KIZINGATA									Plantation			
KIZEE									Natural Forest			
Kilanga	29/270	379.20		154/25/5/1956					Plantation			
Kihuhwi Teak	205	26.30		194/3/6/1955					Natural Forest			
Kihuhwi Sigi	302			43 of 1934					Plantation			
Kihuhwi	802/803	488.50		105 of 1941					Natural Forest			
Tongwe	271	1,560.00		249 + 288 of 1956					Plantation			
Bwiti	313	3,006.70		Cap. 132 p. 1947		207/17/5/1963			Natural Forest			

Forest/Bee Reserve Name	Jobno	Forest Area (ha)	IUCN Protected Area Category	Namba ya tangazo la Serikali	Tangazo la badiliko la serikali I	Nambari ya serikali ya kufuta	Matumizi ya ardhi ya msitu	Ubora wa ardhi	Aina ya uoto	Ukanda ya Ikolojia	Usimamizi	Man.Plan	Year of Management Plan
<u>Aina ya msitu</u>													
Kwamrimba	189			Sch.					Natural Forest			<input type="checkbox"/>	
Bamba Ridge	393	1,109.00		409/22/9/1958					Natural Forest			<input type="checkbox"/>	
Amani West	217	144.20		196/3/6/1955					Plantation			<input type="checkbox"/>	
Amani Sigi	505	1,141.00		43 of 1934					Natural Forest			<input type="checkbox"/>	
Amani Nature Reserve	2260	8,380.00		152/8/5/1997					Plantation			<input type="checkbox"/>	
Amani East	216	99.00		111/25/3/1955					Natural Forest			<input type="checkbox"/>	
MZUNGUI		57.00							Natural Forest			<input type="checkbox"/>	
MATEMBONI		45.00							Plantation			<input type="checkbox"/>	
KWEZITU		70.00							Natural Forest			<input type="checkbox"/>	
KIGANGUTA		23.00							Plantation			<input type="checkbox"/>	
HANDEI		156.00							Plantation			<input type="checkbox"/>	
Gombero	B/Print	2,399.10		Cap. 389 Vol VI		166/20/5/1960			Plantation			<input type="checkbox"/>	
Mgambo	2291	1,346.00		546/28/8/1998					Plantation			<input type="checkbox"/>	

Forest/Bee Reserve Name	Jobno	Forest Area (ha)	IUCN Protected Area Category	Namba ya tangazo la Serikali	Tangazo la badiliko la serikali I	Nambari ya serikali ya kufuta	Matumizi ya ardhi ya msitu	Ubora wa ardhi	Aina ya uoto	Ukanda ya Ikolojia	Usimamizi	Man.Plan	Year of Management Plan
Aina ya msitu													
Steinbruch	268	353.30		155/25/5/1956		145 of 1976			Natural Forest			<input type="checkbox"/>	
Sigi Knee	B/Print	779.40		Sch. 1951					Plantation			<input type="checkbox"/>	
SHAMBANGEDA									Natural Forest			<input type="checkbox"/>	
Semdoe/Msige	2261	980.00		547/28/8/1998					Plantation			<input type="checkbox"/>	
Segoma	220	1,100.00		113/25/3/1955					Natural Forest			<input type="checkbox"/>	
Nkombola	325	191.80		38/1/2/1957					Plantation			<input type="checkbox"/>	
Nilo	2229	1,698.00		547/28/8/1998					Natural Forest			<input type="checkbox"/>	
MTAI	2241	3,107.00		306 of 1967	25/26/1/1968				Plantation			<input type="checkbox"/>	
Mlungui F. R.	2247	200.00							Natural Forest			<input type="checkbox"/>	
Kwamgurni	204			195/3/6/1955					Natural Forest			<input type="checkbox"/>	
Mleni	2095	95.00							Natural Forest			<input type="checkbox"/>	
Kwamsambia	1583			95/23/4/1954					Plantation			<input type="checkbox"/>	
Mangroves Block 1	B/Print	12,931.00		Sch.					Natural Forest			<input type="checkbox"/>	

Forest/Bee Reserve Name	Jobno	Forest Area (ha)	IUCN Protected Area Category	Namba ya tangazo la Serikali	Tangazo la badiliko la serikali I	Nambari ya serikali ya kufuta	Matumizi ya ardhi ya msitu	Ubora wa ardhi	Aina ya uoto	Ukanda ya Ikolojia	Usimamizi	Year of Man. Plan Management Plan
Aina ya msitu												
MANGA	2282	1,635.00		112/25/3/1955					Natural Forest			
Magoroto	2270	1,124.00							Plantation			
Magogoni Msaimbazi	B/Print	3,396.20		Cap. 389 p. 139	146/28/4/1961				Natural Forest			
Magogoni	514	2,541.50		Cap. 389 p. 138	146/28/4/1961	204/17/5/1963			Plantation			
Longuza	115	1,541.50		194/9/7/1954					Natural Forest			
KWEVUMO									Plantation			
KWETANGO									Natural Forest			
KWANI / TOGWE									Plantation			
Kwani	271	2,545.10		248/28/8/1956					Natural Forest			
Mlinga	2213	840.00		443 of 6/12/1996					Plantation			

TOTAL 59,196.90

Aina ya msitu	Local Authority Forest Reserve										
Mpanga	2273 24.00		542/28/8/199 8				Natural Forest				

TOTAL Local Authority Forest Reserve 24.00

Aina ya msitu	National Forest Reserve										
Kambai	2100 1,050.00		310/12/8/199 4				Plantation				

Appendix 25: NAFOBEDA Forms for quarterly reporting and patrols



United Republic of Tanzania

Wizara ya Maliasili na Utalii

Muheza District, Tanga Region

Taarifa ya Robo mwaka ya ufuatiliaji Misit				
Msitu		Robo		Mwaka
Mfanikio halisi kwa robo mwaka huu				
Upanidaji wa miti mipakani		Ufyekaji wa mipaka	Kusembua barabara za moto	
kilomit		kilomita	kilomita	
Spishi/jamii		Mahali	Mahali	
Nafasi				
Idadi ya misitari				
Kiwango cha				
Weka alam	Shughuli nyingine zilizokamilika kipindi hiki cha robo mwaka			
	Shughuli	Ongeza maelezo/ eleza zaidi		
	Orodha miti			
	Uchoraji ramani			
	Upimaji wa mipaka			
	Utafiti wa Bioanuwai			
	Uchimbaji wa maboya			
	Urejesho wa uso wa nchi			
	Ukataji wa matambala			
	Nyingine			
Maoni				
Kumbukumbu za uzalishaji				
Maza o timbao	Kipimo	Kiasi/ idadi	Idadi ya Vibali	Mapato Tshs.
Magogo ya kupasua	m3			
Nishati ya Timbao	m3			
Mkaa	bags			
Nguzo	running metre			
Miti ya krisimasi	Idadi ya			
Nyingine				
Maza o ya siyotimbao	Kipimo	Kiasi/ idadi	Idadi ya Vibali	Mapato Tshs.
Asali	kilogramu			
Nta	kilogramu			
Utomvu na ubani	kilogramu			
Malighafi ya kutengeneza vika				
Mimea ya dawa				
Wageni walipaji	Hapana/ sivyo			
Uwindaji				
Kulima	ha			
Kuchunga/ malisho				
Uchimbaji madini	ha			
Faini				
Mauzo ya bidhaa iliyotafishwa				
Vibali vya tafiti				
Nyingine				
Tarehe		Date entered into NAFOBEDA		
Saini Meneja wa Msitu		Saini Ofisi ya Wilaya inayoshughulikia ufuatiliaji		



United Republic of Tanzania

Wizara ya Maliasili na Utalii

Muheza District, Tanga Region

Quarterly Forest Patrol Report

	Hatua iliyochukuliwa						
Nyingine	Idadi ya maeneo						
Uchimbaji madini	Eneo lililoathirika(ha)						
	Idadi ya maeneo						
Moto wa mstuni	Eneo lililoathirika(ha)						
	Idadi ya maeneo						
Kuchung'al malisho	Idadi ya Wanyama						
	Idadi ya maeneo						
Kuilina	Eneo (ha)						
	Idadi ya maeneo						
utafutaji wa asali porini	Idadi ya maeneo						
	Idadi ya maeneo						
Uwindaji/ utegaji wanyama	Idadi ya maeneo						
	Mlia za Ujazo zilizopatikana						
Usanyaji wa kuni	Idadi ya maeneo						
	Magunia yaliyopatikana						
Utengenezaji wa mkaa	Idadi ya maeneo						
	Vipande vya mbaao vilivyopatikana						
Upasujaji wa mbaao wa mkono na upasujaji mbaao wa mashine	Idadi ya maeneo						
	Idadi ya Magogo/ nguzo zilizoapatikana						
Ukataji miti	Idadi ya maeneo						
	Idadi ya maeneo						
Muda uliotumika mstuni	Muda uliotumika mstuni						
	Vifupisho vya kamati ya Doria						
	Tarehe ya Doria						

Appendix 26: List of participants

Attendance Mgambo Village

1. Zuberii Maneno – Chairman of the VEC
2. Shabani Mwasoni – Member
3. Eliza Hassani – Member
4. Zaituni Iddi – Member
5. Amina Ismail – Member
6. Abdalah Juni – Member
7. Shabani Ngoma – Member
8. Mganga Raphel – Member
9. Shafiri Maneno – Member
10. Juma Kheri – Member
11. Abdallah Bugha – Member
12. Miraji Saidi – Chairman of the village
13. Mwajuma Bhakari – Member
14. Asha Sheshe – Member
15. Tabia Yahaya – Member
16. Mariamu Mohamed – Member
17. Tobias Fungo – Village Executive Officer

Attendance Shembangeda Village

1. Mussa Kipingu – Ag. Villlage Chairman
2. Said Kombo – Village Executive Officer
3. Fransisi Mhilu – Village council & VEC member
4. Juma Salimu – Village council & VEC member
5. Richard Kwenga – Village council & VEC member
6. Yambazi Salimu – Member VEC
7. Hadija Ally – Village council
8. Saidi Mtunguja – Village council
9. Mussa Amiri – Village council
10. Ramadhani Selemani – Village council
11. Rehema Kileo – Village council & VEC member
12. Asha Omary– Village council & VEC member
13. Farida Kwenga– Village council & VEC member
14. Rukia Shabani - member VEC
15. Sharifa Amiri – Village council & VEC member
16. Rashid Ziggi – Chairman of the VEC
17. Amiri R. Mzonge – member VEC

Attendance Kwezitu Village

1. Christopher Juma-Chairperson
2. Salim Bughe-Secretary
3. Richard Sheshe-VEO
4. Francis Kalaghe-Member VEC
5. Juma Rashid-Forest Guard-Member VEC
6. Yohana Chamungwana-Member VEC
7. Victoria Kiku-Member VEC
8. Elizabeth Shetui-Member VEC
9. Salome Kalaghe-Member VEC

10. Zuhura B. Hussein-Member VEC
11. Fatuma Gillah- Member VEC
12. Anna B. Juma-Member VEC
13. Bihija Sozi- Member VEC
14. Katherine Kimweri- Member VEC

Attendance Kizerui Village

1. Thabiti Mbuguni-Chairperson-VEC
2. Petro Mkinda Chairperson-Village
3. Michael Kingazi Secretary-VEC
4. Denis Kusaga-VEO
5. Juma Mkuninga-Member VEC
6. Joseph Emanuel-Member VEC
7. Hamisi Rajabu-Member VEC
8. Paulo Maneneo-Member VEC
9. Ramadhani Zungo-Member VEC
10. Hassani Chaka-Member VEC
11. Marry Charles-Member VEC
12. Monika Makange-Member VEC
13. Stella George-Member VEC
14. Lilian Christopher-Member VEC
15. Marther Ng'wayeni-Member VEC

Attendance Kambai Village

1. Dismas Msumi- Chairperson-VEC
2. Martin John- Secretary-VEC
3. Zulumano Omari- Member
4. Steven Mkufya- Member VEC
5. Damian Mponda- Chairperson-Village
6. Edward Lukas- Member VEC
7. Hatibu Shemdoe- VEO
8. Jofrey Rodrick- Member VEC
9. George William- Member VEC
10. Asha Athumani- Member VEC
11. Marry Kiswago- Member VEC
12. Karolina Leo- Member VEC
13. Malla Rajabu- Member VEC
14. Christopher Kiswaga- Member VEC
15. Rosemarry Andrew- Member

Attendance Kiwanda Village

1. Dismas Mhina Chairperson
2. Hassani Chakusaga VEO
3. Peter Andrea Secretary Mshikamano
4. Charles Mjata Vice Chairperson
5. Charles Mhando Secretary-Mshikamano
6. Ramadhani Mbaruku- Treasurer-Mshikamano
7. Saidi Zayumba- Secretary-Mazingira
8. John Chambo- Member VEC
9. Said Juma- Member VEC

10. Ernest Barua- Member VEC
11. Thomaso Ally- Member VEC
12. Francis Kipingu- Secretary-Mazingira
13. Anaseli Kiwelu- Member VEC
14. Catherine Charles- Member VEC
15. Elizabeth Francis- Member VEC
16. Marry Mdachi- Member VEC
17. Annert Makame-Member VEC
18. Bakari Juma- Member VEC
19. Hilda Mhando- Member VEC
20. Selestina Charles- Member VEC
21. Magreth Zakaria- Member VEC
22. Zubeda Lukindo- Member VEC
23. Grace William- Member VEC
24. Emanuel Said- Member VEC

Attendance Kuzekibago Village

1. Fidelis Mwaifwami-Member VEC
2. Hamisi Choya- Member VEC
3. Salimu Omari-Member VEC
4. Shabani Hassani-Member VEC
5. Goodlack Silas-Member VEC
6. Silas Almasi-Member VEC
7. Wilfred Sengando-Member-VEC
8. Mwanahamisi Sembe-Member VEC
9. Fatuma Shabani-Member VEC
10. Marry Goodlack-Member VEC
11. Sarrah Ramadhani-Member-VEC
12. Ramadhani Hassani-Member VEC

Attendance Zirai Village

1. Abdani Issa Chairperson-Village
2. Habil Shetui-VEO
3. Ramadhani Shemzigwa-Member
4. Abdi Mhina Secretary-VEC
5. Maimuna Abdallah Treasurer-VEC
6. Hatibu Shemzigwa-Member VEC
7. Docus Yakobo-Member VEC
8. Saidati Halidi-Member VEC
9. Halima Hamdani-Member VEC
10. Zubada Halidi-Member VEC
11. Asia Rashidi-Member VEC
12. Sophia Zuberi-Member VEC
13. Juma Issa-Member VEC
14. Yahaya Issa- Forest Guard-Member VEC
15. Omari Ramadhani-Member-VEC
16. Kassimu Hassani-Member VEC
17. Salimu Amir-Member VEC

Attendance Kwetango Village

1. Edith John-Member VEC
2. Edith John-Secretary
3. Thoas Makuu-Member VEC
4. Halima Hamisi-Member VEC
5. Omari Chanyega-Member-VEC
6. Dominick Ngoda-Member VEC
7. Almasi Ayubu-Member-VEC
8. Almasi Ayubu-Member-VEC
9. Zainabu Ayubu- Member VEC
10. Salimu Zunda-Member VEC
11. Salimu Hassani-Member VEC
12. Nuhu Akida-Member VEC