



WWF Project Technical Progress Report

Please complete and send, with Executive Summary (project Summary Progress Report), by post, fax, or e-mail, to Africa/Madagascar Regional Programme, WWF International, Avenue du Mont-Blanc, 1196 Gland, Switzerland

Project No/Activity No	TZ 0853 or 623-A-00-98-00064-00 (USAID)
Project Title	WWF Tarangire National Park Project
Activity Title(if different)	30 th September 1998 – 19 th April 2003
Reporting Period	1 ST January 2000 – 30 th June 2000

1. Introduction: Give a brief description of topic, following by a statement of the specific problem or requirement that led to the project's initiation

Tarangire National Park (TNP) which is situated in northern Tanzania covers an area of more than 2,600 sq. kms. The park (especially during the dry season) is home to one of the largest elephant populations in East Africa. TNP is unique in that, it serves as a critical dry season (July – December) refuge for wildlife through the 20,000 sq. Kms Maasai Steppes, because the Tarangire River (that flows right through the park) and the associated wetlands provide a year round source of fresh water for the animals. In the wet season, many of the animals move out of the park and stay in areas adjacent to it.

Despite its unquestionable importance, Tarangire Park and its ecosystem is faced with several constraints (including inadequate baseline data or information) which have hindered the development of a comprehensive management strategy. The Park managers have now realized that they urgently need reliable information concerning the natural resources base in and around the park, patterns of human and wildlife utilization of the resources and the extent of utilization and pressures on Tarangire and lake Manyara wetlands.

This project aims to address the above and help TNP, Lake Manyara National Park (LMNP) and Tanzania National Parks (TANAPA) as a whole integrate existing and new information into the management decision making process. The main focus of this project however, is to improve capacity of both parks in the conservation of the wetlands (i.e. Tarangire river, Lake Manyara and all other associated wetlands), ecological monitoring, vegetation and participatory land use mapping, large mammal surveys for ultimate determination of dynamics of large mammals in the Tarangire ecosystem, and to establish capacity at TANAPA headquarters on production of information materials for park visitors.

2. Objectives: As per the project contract

The overall objectives of this project are as follows:

- ◆ to improve management and conservation of Tarangire/Lake Manyara wetlands
- ◆ to improve capacity on relevant Tarangire park staff in ecological monitoring and biological resources inventories for production of ecological information that will in-turn be used to make informed and integrated park management decisions
- ◆ to produce participatory land use maps and land cover maps for Tarangire Park and its ecosystem
- ◆ to improve capacity of relevant TNP staff on use of GIS for collection, analysis, presentation and storage of environmental information.
- ◆ to establish and subsequently train a desktop publishing unit at TANAPA headquarters for production of information materials like newsletters, brochures, guide books, maps, post cards etc. that would lead into improved visitors' experience in Tarangire, Lake Manyara and other parks.

This project is expected to have the following results:

- ◆ Tarangire/Lake Manyara wetlands sustainably conserved
- ◆ Population dynamics of large mammals in the Tarangire ecosystem known
- ◆ Migratory routes and dispersal areas of elephants and other large mammals in the Tarangire ecosystem described and mapped
- ◆ Vegetation and Land – use pattern of the Tarangire ecosystem described and mapped
- ◆ GIS centre at Tarangire park established and relevant TANAPA staff trained and capable of gathering, storing, retrieving, analyzing and interpreting ecological data of the park and its ecosystem which in-turn could be used for making informed conservation and management decisions of the park and its adjacent areas.
- ◆ Capacity for desktop publishing at TANAPA headquarters established
- ◆ At least two postgraduate students trained at MSc level and their dissertations produced
- ◆ Overall management of Tarangire National Park and its natural resources improved

3. Progress: Give status of implementation of the project, in particular in relation to the objectives

According to Project objectives, the following has been accomplished during the period:

Tarangire river and Lake Manyara wetlands

- In January 2000, the project contacted several local NGOs including Friends in Development (FIDE) in Babati district, Mazingira Bora Karatu in Karatu district, Monduli District Development (MDP) in Monduli district and TANAPA's Chief ecologist for identification of activities that would enable them to collaborate with WWF in improving the conservation of Tarangire river and Lake Manyara wetlands . All rivers and slopes in the above districts drain into Tarangire river and Lake Manyara. Each of the above selected partner has been asked to prepare a mini proposal and associated budget to do the following:
 - FIDE: To rehabilitate the critically eroded slopes of Lake Babati catchment in

Babati district. FIDE will carry out activities such as reforestation of the catchment slopes, agroforestry, enrichment planting of the catchment slopes, facilitation for natural regeneration of the catchment slopes and rehabilitation of critical gullies on the catchment slopes.

- MDP: To implement activities that will facilitate preparation of participatory land-use plans for two wetland areas that is Miwaleni and Selela villages in Monduli district. These two villages also have community forests.
 - TANAPA's Chief ecologist: To carry out monitoring of water quality and flow regimes of rivers, springs and lake levels within the Tarangire/Lake Manyara catchment basin.
 - Mazingira Bora Karatu: To carry reforestation activities and to rehabilitate all degraded areas along the rift valley wall and Kirongozi valley in Karatu district.
- Although all the above prospective partners have submitted their proposal, contracts in this regard will not be prepared until after July 1st 2000 when the management of WWF-TPO will shift from WWF-US to WWF-International.

Regular ecological monitoring and biological resources inventories

- National Herbarium of Tanzania (NHT) has continued to carry out the inventory of plants in the Tarangire ecosystem as stipulated in the contract. This exercise is carried out in order to identify plants commonly found in Tarangire with the final objective of producing a guide book of plants for Tarangire Park and its ecosystem.
- The five Tarangire elephants that were captured in February 1999 and collars with GPS put on, were persistent tracked using both ground and aerial techniques in order to download data on their movement pattern according to seasons. Unfortunately, within four months of capture, the exercise started facing problems:
 - The two collars (of elephant Kikoti and Bella) worked properly until June 1999 when they started to develop GPS problems. The tracking of these two elephants continued with the normal VHF radio - tracking procedure. The VHF radio was used to have a fix (latitude-longitude position) every two weeks.
 - The third collar, of elephant Silale failed completely in March 1999. This made the search to only be possible by sight. The animal was spotted only few times, despite the big effort, in Silale swamp and along the northeastern side of Tarangire River.
 - The remaining two elephants, belonging to the southern population, were unfortunately, poached between May and August 1999.

The malfunctioning of the collars attached to above elephants necessitated mounting a recapture operation to remove the collars. Such recapture exercise was initially planned for March, 2000 but due to unavoidable circumstances the operation failed to take place. It was in June, 2000 when the exercise was successfully carried out as all the three defaulted collars from the three elephants were recovered within a day.

- Data on collared elephants were collected and a draft report on the location and sizes of home ranges for the seven tracked groups of elephants has been prepared basing on the two years records of elephant radio-tracking activity (November 1997- November 1999). Moreover, a new set of maps showing the home ranges of the single collared elephants, based on GPS radio-tracking data, has been produced (for more details see Annex 6 of the OIKOS report).
- The elephants captured in the southern part of Tarangire NP (Elephant Maajabu,

Kibonge, Kusini) never mixed with the northern ones, and migrated during the wet season southwards outside the Park, in Makame and Ndedo area (Kiteto District).

- The elephants captured in the northern part of the Park remained inside the Park the majority of time (Furaha), or migrated periodically, during the wet season, to Lolkisale GCA (Bella, Kikoti) (see maps in the Annex 6).
- There is evidence that poaching on elephants in Tarangire Park has started again. The more significant information, among others, is that on August 1999 one collar, belonging to one elephant of the southern population (elephant Kusini), was found, destroyed and buried, under the ground in Makame area (Kiteto District). The GPS collar, belonging to elephant Kusini, that was found buried under the ground, was sent to Lotek Company in order to retrieve the data stored before the death of the animal.

The data show that elephant Kusini was killed on 2 May 2000, between midnight and 4 am. It was killed in a different location, but closer to the position where the collar was found. The GPS collar was then moved on 3 May 2000, at 4 a.m. and buried between 8 a.m. and noon.

- Continued supervising Ms Fortunata Msofe (a post-graduate student on Wildlife ecology from the university of Dar sponsored by the project) in defining her research proposal. She is expected to begin her field training and collection of data this August in TNP.
- During the period Road Transect Counts on the main species of large mammals in Tarangire National Park, were carried out in collaboration with TANAPA on a monthly basis to better investigate trends, dynamics and relative abundance of large mammals and the seasonal importance of Tarangire park. The final protocol or methodology has been defined and included in the Procedure Manual for data collection, storage and organization.
 - Since January 2000 Road transect counts of large mammals and livestock have been carried out on monthly basis in Manyara Ranch (located between Tarangire National Park and the eastern shore of Lake Manyara) area. The protocol has been found to be good for investigating trends, dynamics and relative abundance of large mammals and livestock where necessary.
 - The on-going data collection and trial testing has shown that, Manyara Ranch is an important seasonal habitat for many migrating wildlife species (between Lake Manyara Park and Tarangire Park) and livestock. Manyara ranch is located between Tarangire National Park and Lake Manyara Park just east of Lake Manyara. The list of all the species recorded during the program of Road transect counts in Tarangire ecosystem is reported (For details read OIKOS Report Annex 11).
 - Moreover, data was also collected on buffalo distribution and population structure in the northern part of Tarangire NP and in the northern sector of Tarangire ecosystem. Also a buffalo survey program was continued during the reporting period that could be used as preliminary information to set up a Ground Total Count, that was started in December 1999.
 - Night Road transect counts in Tarangire National Park has continued during the period and data collection on large carnivores also continued. Report on the same made is available.
 - During February, March, April and May 2000 Road transect counts in the northern Tarangire NP were carried out in order to collect data about distribution and trends of

large carnivores and other nocturnal mammals.

- Hands on training of TNP staff working with the Ecology department on ecological monitoring (which includes radio-tracking, ground surveys and basic computer skills) continued.

- However, during the period March-June , 2000 the Road transect count activities have continued by TANAPA staff alone in Manyara ranch as part of Tarangire NP Ecology department's AOP. The results of these counts will be presented in the next report, after OIKOS having trained TNP's ecology staff on data entry and analysis.

- Duly filled USAID's Environmental Screening Forms for the construction of the GIS centre in Tarangire National Park and forwarded them to USAID for approval. The approval of these forms has just been done and the tender for the design work for the centre (after having been advertised) has been won by WEGS Consultants of Arusha. We are at the moment preparing the agreement with WEGS so that the design work on the centre could start.

Participatory land-use maps and land cover maps for Tarangire Park and its ecosystem

The following has been accomplished on this objective:

- Work has continued on assessment of the existing main vegetation types and land use changes in the Tarangire ecosystem
- Continued making comparison between the agricultural activities due to large farms using Landsat satellite images dated October 1988 and September 1995
- Continued preparing Participatory Land Use Maps (PLUMs) and database for areas outside Tarangire Park that are suitable for gazettement as Wildlife Management Areas (WMAs).
- Mr. Aloyce Porokwa with background in Community Conservation was hired on January 1st 2000 to work full time with Institute OIKOs in participatory land use mapping.
- The Community Conservation warden Mr. Porokwa was given a short training in the use of Microsoft Word, Excel and e-mail. He is now completely autonomous in preparing simple Word and Excel documents.
- The methodology for the production of PLUMs was finalized and the new data collection forms were field tested
- Several meetings were held in Arusha town and Monduli District to coordinate project activities in the targeted villages, most important the harmonization of activities of different other stakeholders involved. These meetings have enhanced and strengthened the cooperation with the Community Conservation Service of TNP and TANAPA, Monduli District, Inyuat e Maa (local Maasai NGO), other partners and local communities
- With the help of FAO Africover – Nairobi, the digitization of the Land Cover Map has been finalized. The digitized map derived from the interpretation of 16863 Landsat satellite image was checked and the consistency and matching with the surrounding

images were controlled. A draft land cover map for Tarangire National Park and surrounding areas has been produced and printed in Arcview format at scale 1:200,000. The map is the result of the cooperation agreement established by Institute OIKOs and the University of Insubria with the FAO funded program Africover East Africa. The map also has a detailed description of the Legend, basing on FAO Land Cover Classification System.

- Continued supervising Mr. Kimolo (a post-graduate student on land use from UCLAS sponsored by the project) in defining his research proposal. He is expected to begin his field training and collection of data this September in TNP.

Desk top Publishing

No progress was made with this objective during this period because WWF is still waiting for USAID's approval of proposed amendments on CA.

OTHER ACHIVEMENTS

- A small office has been set up in Arusha during the period and is equipped with one desktop computer with Arcview, one new desktop computer with ArcInfo NT, a printer and a digitiser. The new office in Arusha accompanied with availability of additional equipment has enhanced considerably the mapping process. Moreover, the location of the office in Arusha strengthened the Co-operation with the other Institutions and stakeholders involved in the preparation of the Land Use Maps. At the same time, Chatu Research Camp, in Tarangire NP, allows a daily co-operation and collaboration with TANAPA Tarangire NP staff.
- In order to support Tarangire ecological section to plan for the year 2000, a long term ecological monitoring protocol was determined by both, Tarangire National Park and project staff, this included a tentative analysis of the activities cost for the year 2000.
- A video titled "**Tarangire**-Tracks in the Savannah" showing project activities carried out by OIKOS and the University of Insubria in Tarangire Park under the auspices of WWF Tarangire project together with TANAPA, (since 1995) has been produced in cooperation with Media '88. The video was presented to all partners and interested parties on February 8 in Arusha and on February 10 in Dar es Salaam.
- In house training on the use of GPS was conducted in TNP during the week of 26th - 30th June 2000 in which 13 participants came from LMP and 17 from TNP.

3.1 Outputs this reporting period – e.g. report, policy documents, media articles

The following Reports, Minutes of Meetings and Maps have been produced during the reporting period:

- Land Cover Map of the Tarangire area, scale 1:200,000 (draft)
- Land Cover Map of the Tarangire Area: Legend (based on FAO Land Cover Classification System)
- Participatory Land Use Mapping: field work reports
- Participatory Land Use Mapping: data collection forms
- Participatory Land Use Mapping: field data for Esilalei, Lolkisale and Selela Villages
- Participatory Land Use Map of Selela village (draft)
- Updated report on Elephant Capture, Collaring and Radio-Tracking in Tarangire Park
- Eight maps showing the home ranges of the collared elephants and the location where one elephant was poached or killed.
- Updated report on the Road Transect Counts in the migratory corridor between Tarangire National Park and Lake Manyara
- Updated report on Road Transect Counts in Tarangire National Park
- Updated report on Monthly Road Transect Counts in Tarangire National Park
- Report on Road Transect Counts in Manyara Ranch
- List of Species recorded during the Road Transect Counts in Tarangire ecosystem
- Updated report on the Night Road Transect Counts in Tarangire National Park
- Agreement between the University of Dar es Salaam Faculty of Science (Department of Zoology and Marine Biology) and Institute OIKOs under the auspices of WWF-Tarangire project.
- Procedure Manual for data collection, storage and organization (draft)
- Video "**Tarangire** –Tracks in the Savannah"
- Report on the SRF on counting of large mammal, which was conducted in the week of 6th-10th October 1999.
- Swahili version of hand notes for training Park rangers on the use of GPS.
- Revised Annual Operation Plan and Performance Monitoring Result for 00/01. The document has been approval by the Parks Regime Working Group, crucial stakeholders and SO2 Team.

3.2 Describe the target attained and the important development during the reporting period

The following targets have been attained during the reporting period:

- Land Cover Map of the Tarangire Area.
- Draft map layout of the Tarangire National Park and surrounding areas at scale 1:200,000. The map is the result of the cooperation agreement established by Istituto OIKOs and the University of Insubria with the FAO funded program Africover East Africa.
- Draft Participatory Land Use Maps (PLUMs) and database for areas outside Tarangire Park that are suitable for gazettelement as Wildlife Management Areas (WMAs) e.g. Selela Village.
- Training of the Community Conservation worker (Mr. Porokwa) in Word and Excel software and e-mail use.
- Refinement of the methodology for the production of PLUMs. Preparation and field testing of the new data collection forms.
- Supervising two Tanzanian post graduate (MSc) students in the developing their thesis in land use and wildlife ecology respectively.
- Elephant recapture and removing the collars from them.
- Production of a set of maps showing the home ranges of the collared elephants based on GPS radio-tracking data.
- Identification through the data stored in the collar on the elephant , of the location, date and time when elephant Kusini was poached in Tarangire Park.
- Road Transect Count on the main species of large mammals in the corridor between Tarangire National Park and Lake Manyara National Park.
- Definition of the final protocol and inclusion in the Procedure Manual for Data collection, storage and organisation.
- Continuation of the monitoring activities by TANAPA staff alone, as part of Tarangire NP Ecology department's AOP.
- Road Transect Count on the main species of large mammals in Tarangire National Park
- Continuation of the monitoring activities in cooperation with TANAPA.
- Road Transect Count in Manyara Ranch on the main species of large mammals and livestock.
- Preparation of a list of all the species recorded during the program of Road Transect Count in Tarangire eco-system.

- Preliminary data collection about buffalo distribution and population structure in the northern part of Tarangire NP and in the northern sector of Tarangire ecosystem.
- Data collection on large carnivores through Night Road Transect Count in the northern part of Tarangire NP.
- Training of TNP Ecology department's staff on regular wildlife monitoring, radio-tracking techniques, ground surveys and basic computer skills.
- Provide a six weeks training course (1 June – 30 July, 2000) to Ms Msoffe on basic GIS at UCLSA in Dar-es-Salaam.
- Setting up of an office in Arusha and equipment with one desktop computer with Arcview, one new desktop computer with ArcInfo NT, a printer and a digitiser.
- Production of the video "**Tarangire** – Tracks in the Savannah" and Organisation of a presentation to all the interested parties on February 8 in Arusha and on February 10 in Dar es Salaam.
- Participated in Revising a joint Annual operation Plan (AOP) for the year 2000/ 01 as well as indicating costs to activities as per the operations to be conducted by all partners (i.e. TANAPA, AWF, DOI, GreenCOM and WWF).
- Continued with survey or inventory of plants in the Tarangire ecosystem with the aim of producing a Guide book of plants for TNP.
- First in house training for Park rangers of both TNP and LMNP on the use of GSP was conducted during the week of 26-30 June, 2000
- Soon after the approval by USAID of the Environmental Screening Forms for the construction of the GIS centre in Tarangire National Park, a tender for the design of the same was advertised and WEGS Consultants of Arusha have won it. We are at the moment preparing the agreement with WEGS so that the design work of the centre could start.

3.3 Target not attained: Please note constraints and obstacles in the progress described

During the reporting period the following could not be attained:

- Construction of the GIS Centre in Tarangire National Park. Approval of the Environmental Screening Form by USAID was still being awaited.
- Hands on training of relevant TANAPA staff on desk top publishing. Approval by USAID of the proposed amendments on the CA is still being awaited.
- Approval of the proposed amendments on our CA with USAID. The approval is still being awaited to-date because of USAID's bureaucracy despite WWF's repeated reminders and clarifications on the proposed amendments.
- Local NGOs to start collaborating with WWF on implementation of activities for sustainable conservation of Tarangire river and Lake Manyara wetlands. The long process of screening for good local NGOs to collaborate with WWF in this regard was the main cause of the delay.

3.4 Action(s) taken to overcome constraints and obstacles

The following actions have been taken to overcome obstacles:

- A new and more competent GIS technician has been hired to replace Mr Njau. Moreover, the availability of a digitizing tablet will make OIKOs independent, in the digitising work, from other institutions, such as FAO or UCLAS. OIKOs has also decided to hire a GIS trainee who will be trained on Arcview software, digitising procedures and map production.
- Continue with radio tracking of the collared elephant using radio communication every two weeks since the signal of Kikoti and Bella collars is still working. The elephant capture operation, originally planned for March 2000, had been postponed to June 2000. The elephant recapture was carried out in June 2000 and all the collars have finally been removed from the elephants.
- WWF is still making a follow up with USAID's Agreement Officer on the approval of the proposed amendments on WWF's CA with USAID.
- Park Regime Working (PRWG) meetings held between partners has helped bridge the gap and to a greater extent increased the understanding of the whole project.

3.5 Prospects for the accomplishment of the project's objectives

Besides delays in approving the proposed amendments on the CA, the implementation of the rest of the project activities is proceeding well. If no further delays would be made in this regard, then prospects for accomplishment of the project's objectives are very high.

4. Lesson learned during the period under review

Include, if appropriate, an assessment of methods used

- When project staff work closely with Tarangire Park staff especially those in the field makes them realise that the project and associated Annual Operation Plan (AOP) are just management tools of their park and that both parties need to work together as a team if goals and results of the project and the park itself are to be archived.
- Periodic holding of Parks Working Regime Group meetings are important in that they provide a forum where all stakeholders come together and discuss critical issues relevant to the implementation of the project
- Cooperation and collaboration among implementing partners and with all stakeholders has enhanced and eased implementation and achievement of project activities and objectives respectively.
- TNP management staff have limited understanding on the importance of adhering to and using the Annual Operation Plan as a tool for monitoring performance of all project implementing partners. This problem is being addressed in all the Parks Regime Working Group meetings.

5. Planned targets and activities for the next reporting period

The following targets and activities are planned for next reporting period:

- Complete the field works on participatory land use mapping in Esilalei, Lolkisale and Selela.
- Complete the data analysis for Esilalei, Lolkisale and Selela and prepare the Participatory Land Use Maps for these three villages.
- Make the final revision of the data collection forms based on the feedback from the villagers.
- Prepare the final version of the Land Cover Map of the Tarangire ecosystem.
- Assess the main vegetation and land use changes that have taken place in the Tarangire ecosystem over a ten-year period.
- Continue supervising two MSc students (Mr. Kimolo and Ms Msoffe) in the development of their dissertations on land use and wildlife ecology respectively.
- Hire a new GIS technician and a GIS trainee.

- Continue with the Road Transect Counts of large mammals and livestock in the migratory corridor of Kwakuchinja and Manyara ranch (an area between Tarangire NP and the L. Manyara National Park.
- Continue with the Road Transect Counts of large mammals in Tarangire NP.
- Continue with nocturnal Road Transect counts of mammals in the northern part of Tarangire NP.
- Continue with the monthly Road Transect Counts in Manyara Ranch.
- Continue with the monthly Road Transect Counts in Tarangire NP.
- Continue with data collection about buffalo distribution and population structure in the northern part of Tarangire NP and in the northern sector of Tarangire-Manyara ecosystem, that could be used as preliminary information to set up a Ground Total Counts.
- Continue with hands on training of relevant TNP staff on wildlife monitoring and data analysis.
- Float tender and supervise construction of GIS centre in Tarangire Park.
- Continue with plant inventory or identification in Tarangire for preparation of a guidebook on Plants for Tarangire Park.
- Establish and start training the desktop publishing unit of TANAPA
- Carry out an inventory of birds, amphibians and reptiles, fish and butterflies in the Tarangire ecosystem.
- Contract FIDE, Mazingira Bora Karatu and Monduli Development Programme and the TANAPA's Chief ecologist to collaborate with WWF in implementing activities for sustainable conservation of Tarangire river and Lake Manyara wetlands.

6. Other comments.

Unfortunately, it takes a very long time to get USAID's approval on any requests for purchases or amendment on the CA. Consequently, the implementation of some project activities has been seriously delayed.

Would be very grateful if this problem is addressed in time in order to avoid any further delays in implementing some crucial activities of the project.

Acronyms.

Avoid the use of acronyms if possible, but list those use (e.g. WTO – World Trade Organization)

- AOP Annual Operation Plan (Plan showing activities of all partners)
- CA Cooperation Agreement
- DOI Department of Interior (USA)
- GCA Game Controlled Area
- GIS Geographical Information system
- GPS Global/Geographical Positioning System
- LMNP Lake Manyara National Park
- NGO Non Governmental Organisation
- NHT National Herbarium of Tanzania
- MSc. Masters in Science
- PLUMs Participatory land use Maps
- SRF Systematic Reconnaissance Flight
- TANAPA Tanzania National Parks
- TCP (OIKOS) Tarangire Conservation Programme
- TNP Tarangire National Park
- TPO Tanzania Programme Office (WWF)
- UCLAS University Collage of Land, Architect and Survey
- USAID United States Agency for International Development
- WMA Wildlife Management Areas
- WWF World wildlife Fund

Acknowledgements – as required

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