

Government Cooperative Program: Zambia
Donor: Embassy of Finland
Government/Partner Agency:
Ministry of Tourism, Environment and Natural Resources
National Integrated Land Use Assessments
(July 2007-October 2008)

1 BACKGROUND

Zambia's natural resources continue to be on the decline both in quality and quantity, in particular the forest cover. This decline is caused by a combination of factors such as extensive practices of shifting cultivation and slash and burn; ever-increasing demand for wood-based energy (firewood and charcoal); continued utilization of the few known commercial indigenous tree species on unsustainable basis; over-grazing and forest fires. In addition, poverty affects particularly the rural population in the country and is caused by inadequate resources, loss of soil fertility and unstable income. The correlation of poverty with deforestation and resource depletion is high in Zambia, especially in areas near urban centres.

2. RATIONALE

The need for up-to-date information on the utilization and growing stock of natural resources has been expressed by the Government of Zambia to assist them in planning and managing land resources on a sustainable basis. This has not been reached due to inadequate resources, lack of inventory equipment and low staff capacity to carry out resource assessments. In addition, there is no integrated land use system in the country which would support the use of natural resources based on developmental plan system. The Government's focus of interest concerning land use is to put in place an integrated land use assessment system that will improve the management of land resources in order to contribute to poverty alleviation. Integrated land use assessments will also bring and enhance cross sectoral coordination and collaboration between land use management institutions in the country by bringing all stakeholders together.

Therefore, the Government of Zambia through the Ministry of Tourism, Environment and Natural Resources, in its effort to reduce poverty and promote economic growth and to fill in existing human capacity gaps, has requested FAO technical and financial assistance to design and implement integrated land use assessment system. A FAO Technical Cooperation Programme (TCP) project was initiated in 2005. The TCP is supported with additional funding provided by the FAO-Netherlands Partnership Program (FNPP) and by governmental counterpart funds. Main activities included capacity building needs assessment, capacity reinforcement in integrated national land use assessment and assistance to the planning of an ILUA. The Forestry at FAO collaborated with other units in-house to jointly design and plan the ILUA. A common approach was developed for an Integrated Land Use Assessment, building on the one designed by the FAO Support to National Forest Assessment (NFA) programme. Variables related to other sectors (cropping, livestock, and environment) were included according to country specific needs and a field manual and field forms were developed. Data collection work in the field was started but additional resources are needed to complete operational, fieldwork and reporting activities.

3 PROJECT FRAMEWORK

3.1 Objectives

The main objectives of the assistance are to:

- i. Support land use institutions in developing their capacity to collect, compile, process and disseminate reliable and update information on land use to policy makers through training of national, provincial and district staff on land use assessments in line with new concepts and integrated approaches.
- ii. Assist land use institutions in planning and carrying out a national integrated land use assessment, in order to develop up-to-date and sound baseline information on state, management and use of natural resources, thus setting up a long-term resources monitoring system.

3.2 Outputs

As a result the project will:

- (i) Improve the capacity of land use institutions to plan and implement land use assessments, monitor the resources, manage the related information and contribute to enhance sustainable natural resource management;
- (ii) Define a national land use assessment methodology on the basis of the approach developed by the Support to National Forest Assessment programme of FAO and taking into account the criteria and indicators for sustainable natural resource management and the information needs for national use and international reporting;
- (iii) Set up of a monitoring system of land use resources and establish permanent registered sample plots for future surveys; implement the first nation-wide pilot integrated land use assessment by collecting base socio-economic and biophysical field data;
- (iv) Prepare an updated land use/cover map, based on nationally agreed terminology and national classification system;
- (v) Establish a national database on the land use resources and integrate it in the existing data and information management systems based on the GIS;
- (vi) Define follow-up actions in the Zambia Forestry Action Plan and institutional development strategies on resource assessment;
- (vii) Carry out cross sectoral policy analysis, review national priorities and report corresponding recommendations.

3.3 Work plan

The work plan is given in Annex 1.

4 IMPLEMENTATION AND MANAGEMENT ARRANGEMENTS

4.1 Inputs

- **Donor contribution**

The project will provide the services of:

- (i) One TCDC (Technical Cooperation among Developing Countries) consultant specialized in land use assessment/inventory (2 months),
- (ii) 6 national consultants: one consultant on integrated land use assessment (2 months), one consultant on information and GIS (2 months), three consultants on inter-sectoral policy analysis (2 months each), and one consultant on institutional development (two months);
- (iii) FAO backstopping: two missions from Forestry Department and one mission from Land use in Natural Resources Department.

The project will cover trainings and workshops as follows:

- (iv) Workshop on institutional strengthening within the FD;
- (v) Training for technicians on data management;
- (vi) National workshop on findings of mapping;
- (vii) Stakeholders workshop on project findings and outline of follow up programme;
- (viii) Workshop on sectoral policy analysis for further inter-sectoral policy harmonisation.

Furthermore, the project will support the following activities:

- (ix) Field survey and set up of monitoring system, including field allowances, fuel, field work supervision and validation;
- (x) Database development, data entry, processing and analysis;
- (xi) Mapping activities, including ground checking, supervision of photo-interpretation and reproduction/ printing of final maps;
- (xii) Market analysis on some major products.
- (xiii) Information and results dissemination and packaging;

- **Government contribution**

The Ministry of Environment and Natural Resources through the Forestry Department will provide physical facilities (offices for staff and Land Use Information System, training space, 13 vehicles for ten months field work, communication means etc) and the needed national counterpart staff at secretariat and professional level. The Forestry Department will provide to the project the national personnel for data collection in the field and data entry and processing.

The Forestry Department will appoint at no cost for the project a full time National Project Coordinator (NPC) and will also arrange for a quick clearance of experts, custom clearance of equipment, tax-free local purchase of project equipment and supplies.

The provincial offices will provide the staff to carry out the field survey in the selected sample sites over a period of five months. All involved institutions (forestry, agriculture, livestock and land resources etc) will contribute the field staff. For coordination purposes, the principal forestry extension officers will have full responsibility for maintaining the established permanent sample plots through periodic visits using the records of geographic location of all plots.

The technical assistance will have the duties to assist the NPC in planning the overall project activities, training the national team in all areas of land use assessment design and planning, conducting field surveys, mapping and data processing. It will help defining the needs of

national personnel and equipment and assure their deployment according to the work plan and time schedule. The NPC will have to coordinate with the principal forestry extension officers in the provinces to allocate the necessary human resources for the land use assessments in the provinces.

In order to ensure success for project, the Government is committed to put in place collaborative efforts with on-going programmes in land use, especially in the use of resources and personnel in Land Use Assessments and has committed substantial counterpart budget to meet the carrying out Land use Assessment in the country. The project also will be implemented in broader scope as key stakeholders will be involved in the project implementation.

4.2 Institutional arrangements

The FAO Representative in Zambia will be operationally responsible of the project and the Forest Resources Development Service (FOMR) will, through the Programme of Support to National Forest Resources Assessment (NFA), be responsible of coordinating the technical inputs, with other technical units as required, e.g. Natural Resources Department, Forestry Department Group of the Regional Office for Africa (RAFO).

The project will be anchored within the Forestry Department (FD) of the Ministry of Tourism, Environment and Natural Resources which will be the national counterpart in Zambia. The project implementation is carried out in close collaboration with other ministries and national institutions: Ministry of Agriculture and Cooperatives, Survey Department (Ministry of Lands); Central Statistical Office, Ministry of Finance and National Planning; ZAWA (Zambia Wildlife Authority); and Local Authorities (Councils). A National Steering Committee (NSC), made of the Permanent Secretaries from the partner ministries, whose responsibility will be to provide overall guidance for the project activities and ensure wider dissemination of results will be set. It will ensure that data generated from the project is put to good use by land use institutions for decision –making, policy formulation and development of action plans.

The Ministry of Tourism, Environment and Natural Resources will continue using the Project Task Force (PTF) composed of experts from the different sectors. The responsibility of PTF will be oversee the implementation of the project activities, facilitate inputs to the project in all phases. The PTF will be composed of representatives from: the University of Zambia (Survey Department), Copperbelt University (School of Natural Resources), Ministry of Agriculture and Co-operatives, Ministry of Lands (Survey Department), Ministry of Tourism, Environment and Natural Resources (Environment and Natural Resources Department, Planning and Information Department, Forestry Department and Zambia Forestry College), Environmental Council of Zambia, Zambia Forestry and Forest Industry Cooperation, Zambia Wildlife Authority, Fisheries Department, two NGOs, the FAO Representative and the Ministry of Finance and National Planning (National Statistics Office).

A national multidisciplinary team (NMT), an executive body of the project, will continue to provide technical guidance and supervision to project activities in the field.

The Survey Department in the Ministry of Lands will provide the existing spatial information (Landsat TM scenes) and produce maps.

5 OVERSIGHT, MONITORING, MANAGEMENT INFORMATION AND REPORTING

Progress reports: The National Project Coordinator will provide FAO and the relevant technical services through the FAOR in Zambia a Quarterly Project Implementation Report summarizing the activities performed, the progress made and outcomes of the project and a revised work plan for the next period as appropriate. FAO will then forward the Quarterly Project Implementation Report to the Donor Government with its comments.

Technical reports: Each consultant (international and national) will present at the end of each mission a technical report containing the main results, conclusions and recommendations of his/her missions.

The FAO Lead Technical Unit (FOMR), in coordination with the Forestry Department Group (RAFO) at the FAO Regional Office, Accra, will be responsible for ensuring that the technical reports of consultants are submitted in a timely manner, are technically sound and will distribute them to other FAO units participating in the project. At the end of every mission, the FAO officers providing supervisory and advisory technical services will prepare a technical report with results, conclusions and recommendations, and conduct briefings with other FAO staff as necessary.

Terminal reports: Towards the end of the project and not later than four months before the end of the project, the NPC will prepare and send to FAO a draft terminal report for technical clearance, finalization and submission to both the recipient and donor Governments. The report will assess in a concise manner the extent to which scheduled activities have been carried out, its outputs produced and progress towards achievement of immediate objectives and related development objective, it will also present recommendations for any future follow-up actions arising out of the project.

Annex 1: Work plan

Integrated Land Use Assessment work plan																																					
Activities		Jul-07				Aug-07				Sep-07				Oct-07				Nov-07				Dec-07				Jan-08				Fev-08				Mar-08			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Preparation, Training and development of methodology																																					
Output	Setting up National project task force (NPTF)	Completed																																			
	Setting up Project Steering Committee	Completed																																			
	Recruitment of International and National	Completed																																			
	Field team formation	Completed																																			
	Procurement of Inventory Equipment	Completed																																			
	Prepare report on institutional development																																				
Workshop on institutional strengthening within FD																																					
Output 1.2	Capacity Needs Assessments	Completed																																			
	Training of FD staff and related land use staff (PEOs): Supervision level	Completed																																			
	Training for Technicians																																				
Output 1.3	Workshop on information needs	Completed																																			
	National workshop on methodology of integrated land use assessment	Completed																																			
	Develop field manual and field forms	Completed																																			
	Methodology tested and field forms and manual refined	Completed																																			
Mapping (national land use / land cover map)																																					
Output 2.1	MoU between Survey & Forestry Departments Or LoA FAO-SD	Completed																																			
	Develop training material	Completed																																			
	Training of interpreters	Completed																																			
	Photo-interpretation of satellite imagery																																				
	Supervision of photo-interpretation																																				
	Field validation																																				
	Cleaning of GIS layers																																				
	Reproduction of final map																																				
	National Workshop on Findings of mapping																																				
Field Survey																																					
Output 2.2	Field survey and materialisation of monitoring system																																				

Annex 2: Terms of reference for consultants

TCDC - Integrated Land Use Assessment Consultant

Under the direct supervision of FOMR and in close collaboration with the national authorities, the national integrated land use consultant and national staff, the consultant will provide the technical assistance and support to the Forest Management and Planning Unit within the Forestry Department in training of national personnel and in the implementation of the national integrated land use assessment, including database development, data processing, analysis and reporting. The main tasks of the consultant will be to:

- Provide supervision and technical guidance to the field teams during the field survey and ensure that data collection is carried out homogeneously and thoroughly. Visits to all teams must be carried out throughout the assignment of the expert;
- Assist in organising collection, control and filing of field forms;
- Ensure quality of mapping products, in particular review and validate final land use/cover maps;
- Work closely with the national consultants to develop, test and set up a national integrated land use functional database;
- Assist in entry, cleaning, validation and storage of the field data;
- Assist in strengthening capacity of national institutions in data processing and analysis;
- Assist in reporting of findings and elaboration of the project terminal statement.

Duration: 2 months.

Duty Station: Lusaka, Zambia with some field trips.

Qualifications: The consultant should have at M.Sc. Natural Resources Management or equivalent with five (5) years' working experience in the tropics and a background in integrated land use assessment design, planning and competence in land use information system management and have confirmed experience in capacity building and project implementation.

Language: English.

National Integrated Land Use Consultant

Under the direct supervision of the FOMR, FAO Rome, and in collaboration with the national authorities, the National Project Coordinator (NPC), the TCDC expert and national staff, the consultant will assist the Forest Management and Planning Unit within the Forestry Department and the Survey Department in the Ministry of Lands in planning and implementing ILUA activities, in particular field data collection, mapping, data processing and analysis, and reporting of findings. The main tasks of the consultant will be to:

Support to other ILUA activities (including field data collection):

- Assist the Forestry Department and NPC in planning and servicing the workshops throughout the project and securing wide participation of different stakeholders from different land use related institutions;
- In close collaboration with TCDC expert prepare a plan of the project activities and identify timely inputs from the project and the Government;
- Provide supervision of the field teams during the survey and provide technical guidance as to homogenise data collection and best interpretation of variables and definitions. All teams should be closely followed during the fieldwork period;
- In close collaboration with NPC assistant and TCDC, oversee the logistical implementation of field work, as well as the logistical implementation of data entry;
- Control field team reports and validate these prior to data entry, and oversee the filing of field team reports;
- In collaboration with TCDC, supervise and control entry of the field data and assist in data cleaning, processing and analysis;
- In collaboration with the Information System/ GIS consultant, set up land use information system in order to link field data with RS data;
- In collaboration with other national consultant and TCDC prepare the report on project findings;
- Assist in the preparation of monthly project progress reports and of the terminal statement.

Support to land use/cover mapping activities:

- Assist to build capacity in integrated land use mapping to national personnel in the Forestry Department and Survey Department and other related institution staff;
- Update and finalise the existing preliminary version of Land Use/Mapping Training Manual;
- Oversee and finalise interpretation of satellite images and its field checking; assist in the production of a preliminary land use/cover map based on a harmonized legend to be validated by land use related institutions;
- Coordinate with land use related institutions in order to control and validate the land use / cover map;
- Validate the final image classification using the ILUA field data;
- Generate the final map layout and generate statistical results on areas of the different land use units;

- Prepare mapping storage system;
- Prepare and submit final consultancy report describing the planned mapping activities, process, methods and tools used for land use/cover mapping, training programme and beneficiaries and results of the mapping work.

Duration: 2 months, full time.

Duty Station: Lusaka and travel inside the country

Qualifications: The consultant should have at least M.Sc. in information technology or natural sciences. The consultant should have at least five years' experience in remote sensing and mapping, GIS, database management and have experience in capacity building and project implementation.

Language: English

National information and GIS Consultant

Under the direct supervision of FOMR and in collaboration with the national authorities, the national integrated land use consultant and national staff, the consultant will provide the technical assistance and support to the Forest Management and Planning Unit within the Forestry Department in training of national personnel, planning and implementing the activities in connection with the Integrated Land Use Assessment (ILUA) database and GIS-based information notably in setting up the information system and carrying out GIS data analysis. The main tasks of the consultant will be to:

- Prepare inception report and submit to Forestry Department and FAO for comments;
- Set up and test the database for the ILUA and train the national personnel from relevant institutions in its design, operation, management and maintenance;
- Assist in data entry in the developed database, validation, storage and processing;
- Work closely with the ILUA consultant in data processing and computation in the database;
- Assist in integration of the ILUA database into a GIS, GIS analysis and in preparing spatial outputs such as maps presenting key results;
- Contribute in reporting of findings;
- Prepare and submit final consultancy report.

Duration: two months.

Duty Station: Lusaka.

Qualifications: The consultant should have at least M.Sc. in information technology or natural sciences. The consultant should have at least five years experience in database management and GIS. The consultant should be conversant with the knowledge of integrated land use inventory, forest statistics and Remote Sensing.

Language: English.

National Institutional Development Consultant

Under the direct supervision of FOMR and in collaboration with the national authorities, the national integrated land use consultant and national staff, the consultant will assist the Forest Management and Planning Unit within the Forestry Department and related land use institutions in training the national personnel, planning and implementing the activities in defining and putting in place mechanism for implementing periodic land use monitoring and assessments. The main tasks of the consultant will be:

- Review the mandates of the Forestry Department (FD), related national and sub-national institutions working on land use or natural resources and the Provincial Development Services;
- Work with the Director of the FD to propose improvements of Forest Management and Planning Unit, related land use institutions and the Provincial Development Services mandates as to extend to resources monitoring and assessment;
- Propose a new organization of the Forest Management and Planning Unit within the FD and strengthening of the Provincial Development Services encompassing the new mission regarding land use monitoring and assessments;
- Define human and financial resources needed by the FD and the Provincial Development Services to implement continuous resources monitoring programme and carry out periodic assessment;
- Assist the FD in defining implementation procedures of the recommendations of the consultancy and prepare a draft report for discussion during a workshop on institutional development;
- Assist in organising the workshop on institutional strengthening and finalise the report based on the workshop's recommendations and conclusions;
- Submit a final report at the end of the mission.

Duration: two months.

Duty station: Lusaka

Qualifications: The consultant should have at least ten years' experience in institutional support and administrative management. Fluency in English is required.

National Inter-sectoral Policy Analyst Consultants

Under the direct supervision of FOMR and in collaboration with the national authorities, the national integrated land use consultant and national staff, the consultant will assist the Forest Management and Planning Unit within the Forestry Department and related land use institutions in the areas of policy impact analysis involving wide range of institutions concerned. The main tasks of the consultant will be to:

- Undertake review of policies dealing with forestry, agriculture, livestock, rangeland, soil and water conservation, biodiversity, environment, etc;
- Carry out analysis of the natural resources sectors in terms strengths, weaknesses, opportunities and threats. Said analysis will be carried out based on ILUA project findings, and existing literature;
- Prepare recommendations to improve policy on natural resources and to engage inter-sectoral dialogue among national institutions to harmonise the policy framework;
- In close collaboration with the NPC, the FOMR Expert, the National Consultant on ILUA and TCDC Consultant, convene a workshop to present and discuss results of the review of the different land use management policies, the natural resources policy analysis and the recommendations for harmonisation among the economic sectors;
- Prepare a report of the workshop that should define areas of harmonisation between policies and follow up actions to consolidate the national dialogue on policy harmonisation;
- Prepare and submit final consultancy report.

Duration: 2 months (for 3 consultants)

Duty station: Lusaka.

Qualifications: The consultants should have at least a M.Sc. degree in policy and planning with a minimum 10 years experience in activities related to policy and planning.

Language: English required.

Advisory Technical Services from FAO
(two missions for a total of four weeks from FOMR
and one mission of two weeks for NRLA)

Under the supervision and technical direction of FOMR and in collaboration with the national authorities, the backstopping Officers from FOMR and NRLA and will undertake missions in support of the project as foreseen in the work plan. The Backstopping Officers will also provide technical assistance and guidance to the National Project Coordinator and international/national consultants on aspects in connection with:

- Integrated land use assessment methodology development including sampling design, classification system harmonisation and variables, analysis, processing and reporting;
- Land use mapping;
- Data processing, information system development and reporting;
- Supervise and interact with international staff on the local training courses;
- Overall technical supervision of project implementation and delivery at the national level;
- Integration of resources in policy analysis on the basis of the project findings;
- Assure integration of the general approach to natural resources assessments and policy analysis
- Technical editing and clearance of project reports including the terminal statement.

National Project Coordinator (NPC)

Under the supervision of the Director of Forestry, the NPC will work with the international experts and national consultants to supervise the implementation of all project activities, including coordination, supervision and organization of national staff in Headquarters as well as in the provinces and districts. He/she will:

- Coordinate interventions of the national institutions and individuals involved in the project;
- Facilitate training of the team members;
- Oversee fieldwork and secure timely deployment of the necessary logistical support to the field teams;
- Participate in the design and development of the land use information system, processing the field data and reporting of the project findings;
- Convene meetings of the National Steering Committee and other project meetings and workshops.