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DEVELOPMENT THROUGH CONSERVATION

IN

SOUTH-WEST UGANDA PROJECT

EVALUATION REPORT

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Final Report

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EXECUTIVE SUMMARY

DESCRIPTION AND INTENT OF THE PROJECT

Goals and Objectives

The Conservation Through Development in South Western Uganda (DTCF) was initiated under the terms of a Grant Agreement between the U.S. Agency for International Development (USAID) and the World Wildlife Fund of the United States (WWF-US) effective August 30, 1988.

The stated purpose of the grant is "...to provide support to research by the World Wildlife Fund and CARE for the environmental project in South-western Uganda." The signatories agreed that: "The project is to be undertaken by U.S.A.I.D., the World Wildlife Fund (WWF) and CARE in three counties within two districts in Southwestern Uganda."

"The primary goal of the project is to enhance the environmental quality of life for approximately 88,500 subsistence farmers in Southwest Uganda ..." over a ten-year period. This is to be done by:

- "1. Protecting the biological diversity of three remnant Afro-montane forests" located in the Bwindi, Echuya, and Nkashinga Forest Reserves, and
- "2. Promoting environmental awareness and sustainable agricultural production on adjacent land."

The four intermediate goals of the project are:

- a. Strengthening the institutional and technical capabilities of the appropriate Government of Uganda agencies, Makerere University, and subsistence farmers,
- b. Increasing communications and involvement among land users, government agencies, and non-governmental organizations,
- c. Promoting and supporting improved planning, and
- d. Maintaining the natural resource base of the three named forests.

The strategy of the DTCF is to establish and operate an infrastructure that will provide administrative, advisory, technical, and financial support to small farmers and to Government of Uganda agencies and non-governmental organizations concerned with natural resource development in South-Western

Uganda. "The project is to develop a model (emphasis added) that will link natural resource management with human needs to ensure that soil, water, species diversity and forests are conserved."

#### Assignment of Responsibility

The DTCP design assigned to USAID a substantial participating role. The terms of the agreement are clear that a project agreement and letters of understanding between the WWF-US/CARE International in Uganda (CARE-U) and the Ministry of Environment Protection and other appropriate Government of Uganda (GOU) ministries were to be signed in the first six months of the project.

Within the same six-month period, a senior Forest Department officer was to be identified and seconded to the project as Project Manager. The officer was to join a Project Coordinator in mobilizing resources for the project, including the secondment of "Activity Managers" for the Agroforestry, Ecology, and Conservation Education components of the project.

Effective September 1, 1988, full operational responsibility for the DTCP has been assigned by WWF-US to CARE-U under the terms of a sub-contract. The agreement for GOU participation was effective September 1988. The agreement contemplated a 10-year life for the project, but recognized the initial commitments were for only two years.

#### Reporting

The Grant Agreement requires the grantee, in timely fashion, to submit quarterly financial reports and up to seven types of performance reports. The most important of the performance reports are the semi-annual implementation plans, the quarterly cooperative agreement reports showing progress toward the goals and objectives, and annual activity reports.

#### Financing

The Grant Agreement provided US\$246,000 from special funds administered by the Project Officer in Washington, DC (USAID-W). The grant was contingent upon WWF-US and CARE contributing US\$153,900. CARE contributed US\$40,000 in cash; WWF contributed US\$93,800 in kind. The money was obligated for a two-year period ending September 30, 1990.

In a separate arrangement, the USAID Mission to Uganda (USAID-U) secured the approval of the GOU Ministry of Planning and Economic Development to use Uganda shillings (Ushs)159,819,600 earned by USAID in Uganda to further support the DTCP. This amount was later supplemented by mutual consent by Ushs30,752,200; a total of Ushs190,072,000.

#### Structure

The project management was to be exercised by the CARE-U Project Coordinator and the GOU Project Manager. Three technical specialty areas were identified: Agroforestry, Conservation Education, and Ecology. All three were originally components of the Impenetrable Forest Conservation Project (IFCP) financially assisted by WWF-US and others. Now Ecology Activities are shared by personnel from the two projects; Agroforestry and Conservation Education were shifted to the DTCP.

Each technical specialty was to be managed by a team made up of a CARE-U recruited Advisor and a GOU seconded Manager. The eight professionals were to collectively contribute to over-all strategy and tactics. By the end of five years, sufficient managerial and technical skills were to be transferred to the Managers that the DTCP would be operated entirely by GOU personnel for at least the remaining five years of the project.

Bwindi forest Reserve was to be the focus for the first two years. Based upon the experience gained, activities were to expand to Mgahinga and Echuya in years three to five.

The management teams were to operate from a headquarters within the two-county operating area of the project.

The major chores of the management team were to be overall planning and supervision, integrating technical inputs from participating GOU agencies and non-government organizations and coordinating project activities with other projects, and the civil administrations (Chiefs and District Executive Secretary and Resistance Committees and District Administrator).

The Conservation Education team was to organize community motivators and citizen involvement. The predecessor IFCP had recruited and begun training 17 Conservation Extension Agents. The pattern was continued. This organization was to pursue the DTCP goal of promoting environmental awareness. The technical ability to improve agricultural production was to come from the GOU extension personnel and the Agro-forestry team.

The Ecology team was to take responsibility for the conduct of work to protect the biological diversity of the forests. They would supervise inventory and research by expatriate and Ugandan professionals, train candidates for advanced degrees from Makerere University and supervise the research work done by them, and use the data to draft integrated, sustainable, multiple use management plans for the reserves.

The Agro-forestry team was to be concerned with assisting in the ecological research that had application to the farm land outside the reserves and to contribute substantive farm management information to the Conservation Extension Agents and participating GOU personnel.

## EVALUATION PROCESS

### Objective of the Evaluation

The Grant Agreement provides for an evaluation of the project sometime after the end of the first year. The evaluators were to be drawn from USAID-U, the USAID Regional Economic Development Support Office for Southern and Eastern Africa (REDSO), participating organizations, and an outside person.

A three-person team was selected. William J. Hart, an external evaluator, served as Team Leader; Paul André DeGeorges, Regional Environmental Advisor, REDSO, served as ecology expert, and Fred I. E. Kayanja, Vice Chancellor, Nbarara University of Science and Technology, also served as an ecology expert for part of the time.

The evaluation was conducted between May 28, and June 29, 1990. The members of the team spent 11 days in South-Western Uganda. They interviewed farmers, members of citizens advisory committees, CEA's, GOU personnel, Resistance Committee members and others in six Parishes, one District headquarters, and the areas in and around the Bwindi, Echuya, and Nkuringu Reserves. Two days were devoted to interviews with GOU officials in Kampala and Kasese.

The Terms of Reference were drawn by the Project Coordinator at the request of USAID-U. Inputs were requested from all interested parties. The Terms of Reference for the Team Leader direct that the evaluation Terms of Reference be used as a guide. The objective was to measure and report the progress made, the goals, objectives, and rationale for the DTCP, and make recommendations as to whether project activities should be extended to the Nkuringu and Echuya Reserves, and whether minor and/or major modifications should be made in the methods used for project operations.

#### FINDINGS AND RECOMMENDATIONS

##### Findings

The members of the Evaluation Team found:

1. The value of the Afro-forest biomes is as important as the project alleges and their existence is threatened.
2. The basic intent of the project is appropriate and commendable.
3. Accomplishments in the Reserves and on the farms has been very impressive given that the project was authorized to begin full operations only eight months ago.

Measurable progress has been made toward the goal of protecting biological diversity in the forest;

A good start has been made to raise the awareness of the rural land users about conservation, but it is too early to be able to measure any changes in agricultural production;

There are 2,225 participating farmers of the goal of 86,500 farmers whose quality of environmental life is to be improved in ten years.

4. Donor contributed funding will be exhausted by or before September 30, 1990.
5. The expected participation of the conventional GOU extension personnel was not a factor in the accomplishments reported.
6. The choice of the Ministry of Environment Protection and its Departments of Forest and Environmental Education are not appropriate to the objectives of the DTCP.
7. The current arrangement of a grant to the WWF-US and a sub-contract to CARE-U has shown no significant advantage over a single contractor for providing technical assistance.

## Recommendations

The members of the Evaluation Team recommend:

1. The GOU, assisted to the maximum extent desirable and possible by the international community, should heighten its efforts to sustain the unique assembly of plants and animals composing the Afro-montane forest biome for the benefit of all people.
2. The U.S. Agency for International Development should recognize that it is entirely justifiable to financially support projects like Development Through Conservation in South-Western Uganda in order to find workable ways to approach problems for which no completely satisfactory solutions have been found.
3. The infrastructure built during this pilot phase is excellent and should be kept in place with relatively modest adjustments in the short-run and arrangements for interim funding that will carry the project through the second U.S. fiscal quarter -- in U.S. dollars or local currency should be completed as quickly as possible.
4. Consistent with the overall intent of the project, use the experiences of the past two years as the basis for redesigning the project for the long-run.
5. Reconsider the idea of attaching to the DTCF conventional low-level extension personnel from Government of Uganda agencies.
6. Another, preferably more general, agency of the Government of Uganda be chosen to coordinate the public inputs.
7. The Grant Agreement with the World Wildlife Fund-United States should not be renewed.
8. A lead management agency should be selected for each reserve, be formally committed to participate in the planning process and to implement the agreed upon plan, and be responsible for coordinating reserve management plans with the land use plans for the surrounding Parishes.
9. Any extension of the project should include establishing a monitoring and evaluation unit attached to the project management team.
10. At a minimum, the Game and Forest Acts should be reconciled; at the maximum, Government should consider a reorganization that would place renewable resource management agencies in one ministry.
11. Consider the Parish Advisory Committees as appendages of the Resistance Committee-II's.
12. If the recommendations for extension of the project are acted upon, modest management work should continue in Ngabinga, but full scale expansion first to Ngabinga and second to Echuya should follow whatever redesign is to take place.

13. Create a permanent fund the earnings from which will support in perpetuity research and extension devoted to development through conservation.
14. The training and service to farmers aspects of the Farm Forestry component of the Forestry Rehabilitation Project should be continued in as many jurisdictions as possible, including those in which the Development Through Conservation Project is operating.
15. A concerted effort should be made to assist the Department of Agriculture re-establish the terracing by-laws and devise best possible technologies to see that the by-laws are willingly adopted by farmers in their best interest rather than being forced on them.
16. Research into the inter-relationships between the swamp complexes and lake productivity should be accelerated.
17. Emphasis in the ethnobotany work and the on-farm prescriptions for using indigenous tree species should continue in spite of arguments made for exotic species. The field of ethnobotany is thought to be sufficiently important that the Ecological Activity should consider a major push to use formally trained oral historians to make permanent records of the often well-guarded uses made of plants by local people.
18. Field verification trials should be used to follow-up the installation by farmers of such practices as scattered planting of *Sezbania* spp. throughout sorghum fields by measuring marginal increases in production, if any.
19. Careful records should be started on the fields of those farmers now using agro-forestry as part of their farming system to determine if the practices can be best offered to other farmers.
20. Additional local hire administrative assistants should be hired as soon as possible to free the technicians to perform the jobs for which they were hired.
21. It would be consistent with the intent of the DTCP for USAID-U to assist in the financing of a conference on standardization of inventory methodology and baseline data management.
22. Support should be extended to the California Academy of Sciences to permit the best of the world's authorities on East African reptiles and amphibians to train Ugandan researchers while doing the inventory and taxonomy in Bwindi Reserve.
23. That the proposed Management Steering Committee, with representatives from all of the agencies listed in the Grant Agreement included, be part of a policy dialog leading to the establishment of a National Conservation Coordinating Committee as prelude to a National Conservation Strategy. This recommendation will have particular merit if project relationships are established with the Ministry of Planning and Economic Development.

## 0.0 INTRODUCTION

### 0.1 REQUIREMENTS OF THE EVALUATION

#### 0.1.1 Terms of the Grant Agreement

The Grant Agreement between the U.S. Agency for International Development (USAID) and the World Wildlife Fund of the United States (WWF-US) creating The Development Through Conservation in South-West Uganda Project (DTCP) calls for an "end-of-year evaluation". The evaluators are to be drawn from the USAID Regional Economic Development Support Office for Southern and Eastern Africa (REDSO), USAID Mission to Uganda (USAID-U), project staff, and one or more evaluators external to the project or participating agencies.

#### 0.1.2 Terms of Reference

The evaluation of the DTCP was carried out between 27 May and 29 June 1990. The terms of reference set the objectives of the evaluation as identifying accomplishments and recommend changes/modifications which may be needed in the project's goals, strategies, and activities so as to make modifications in implementation methodology. The complete terms of reference available to the Team Leader are shown as Annex 1 of this report.

### 0.2 THE EVALUATION TEAM

The core team numbered two; a third member was able to participate for four days in the field plus two office days and time for consultation.

The members were:

- a. William J. Hart, External Evaluator, Team Leader
- b. Paul André DeGeorges, REDSO, Ecology
- c. Fred I. B. Kayanja, Mbarara University of Science and Technology, Ecology

### 0.3 EVALUATION PROCESS

#### 0.3.1 Field Schedule

The two core members of the Evaluation Team began their work on 29 May 1990 with a briefing in Kaspals by the USAID-U Technical Officer and the DTC Project Coordinator. They travelled by road through Mbarara and Kabale to Ikuaba.

One day was devoted to a trip to Kisoro and the Gorilla Gase Reserve camp on the edge of the Ngabinga Forest Reserve. Stops were also made in the Echuya Forest Reserve.

Another day was devoted to a trip to Rubuguli Parish on the south flank of the Bwindi Forest Reserve where a public meeting was held in the school yard.

This was followed by a trip to Kanungu in Masya Parish, Kayonsa and Buhosa in Buhosa Parish, and Ruhizha in Kitogo Parish. The third member joined the Team in Ruhizha for the more than two days of discussion with personnel in the Impenetrable Forest Conservation Project before going on to Nyanbale Parish.

All three Team members participated with the Project Coordinator in a day of interviews with South Kigezi District officials in Isbale.

One day was devoted to meetings with the Rubanda County Chief, the Ikuaba Sub-County Chief, and the Conservation Extension Agent of Nyaruhanga Parish.

A Vicinity Map of the areas is shown as Plate 1.

As part of each Parish visit, the Team members were escorted to the farms of participating land users to see activities in place. These included a fish pond, nurseries, and in-field planting of the locally produced seedlings of indigenous species. Most impressive was the demonstration farm plot installed by the IFCP at the old tungsten mine headquarters in Ruhizha.

The ecology member of the team spent considerable time with the DTCP Ecology Advisor, the Curator of the Herbarium in Makerere University, and graduate students investigating specific parts of the Bwindi ecosystem (both within and outside the reserve boundary). The results of these investigations and their relationship to resource management are reported in Annex 4 attached to this report.

Finally, the views of the senior officers of the Agriculture, Forests, and Game Departments were solicited in Entebbe and Kampala. Also, constructive interchanges were had in Kampala with the CARE International in Uganda Director for the Farm Forestry component of the Uganda Forestry Rehabilitation Project. The views of the National Park Department were obtained from the Deputy Director while in Ruhizha.

A Partial List of Persons Contacted is shown in Annex 5 to this report.

### 0.3.2 Dependence on Interviews and Meetings

The field visits and interviews were intensive and were carried on during a 13-day period. The literature for the DTCP is very limited. The documents reviewed were: the first draft of a proposal prepared in Uganda, the Grant Agreement with attachments and appendices, the contract between WWF-US and CARE-International, the agreement between CARE-International and the Government of Uganda, an annual report for the period September 1988 to September 1989, a report for the quarter 1 January 1990 to 31 March 1990, and copies of financial reports generated by CARE-International in Uganda (CARE-U). Therefore, the information gleaned during the interviews and public meetings forms the base for this qualitative evaluation.

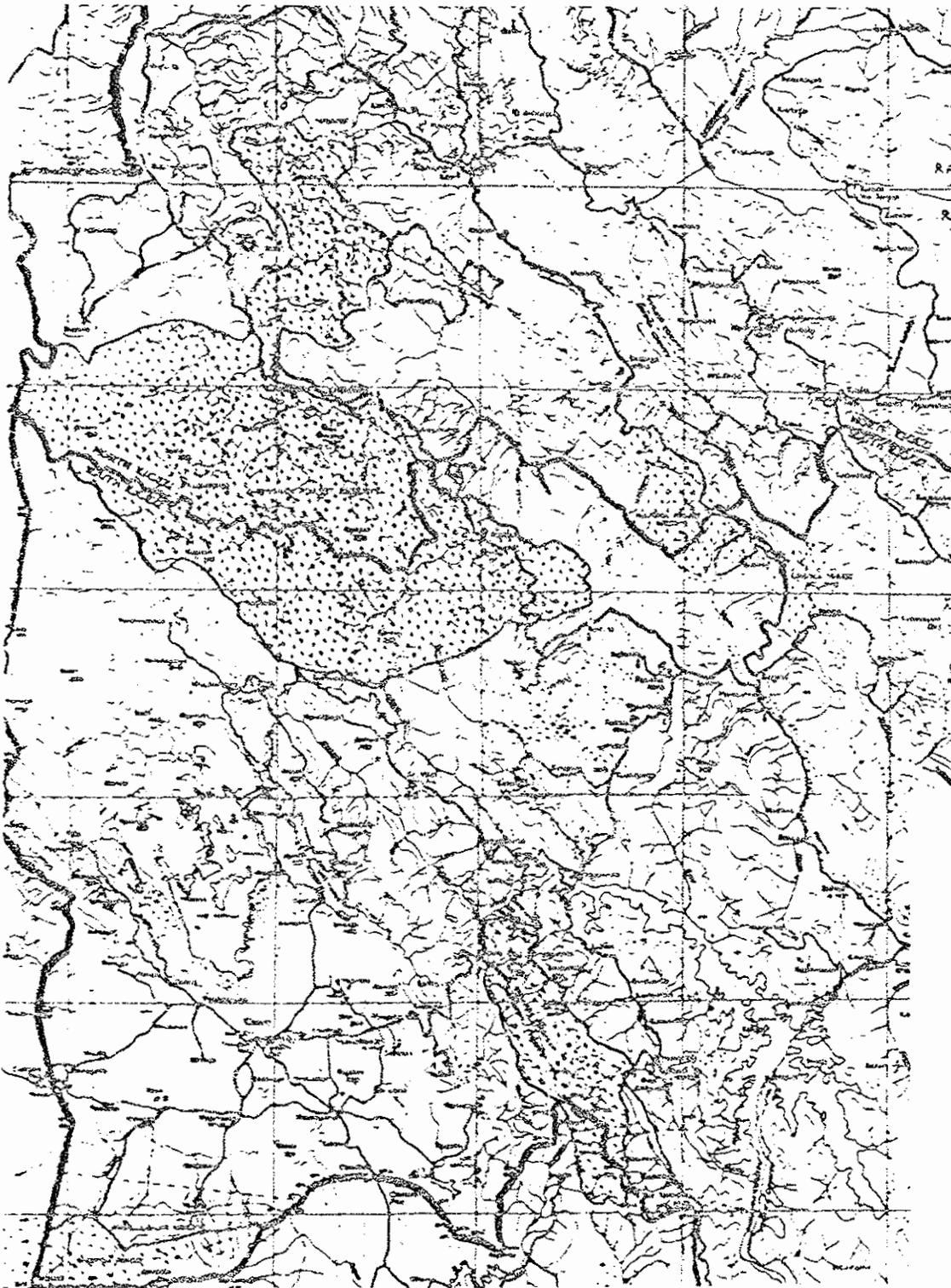


Plate 1. Vicinity map of three reserves in South-West Uganda

#### 0.4 ORGANIZATION OF THE REPORT

The report is organized in three sections: Evaluators' Understanding of the Project, Findings and Recommendations, and Lessons Learned. There are five annexes: Terms of Reference, Project Schematic - Goals, Activities, Indicators, Analysis of the Project, Natural Resources Management, and Partial List of Persons Contacted.

#### 0.5 ACKNOWLEDGEMENTS

With few exceptions, all persons contacted were hospitable, open, and helpful. The Evaluation Team members could not have functioned without such fine cooperation from all concerned; our thanks are extended to the farmers, citizens from many walks of life, officers at national, district, county, and sub-county levels who gave generously of their time and experiences.

Particularly fine cooperation and unfailing hospitality was received from all those associated with the Impenetrable Forest Conservation Project.

An extraordinary effort was made by the DTCP staff, especially the Conservation Extension Agents, who were responsible for all arrangements and logistics. Special thanks are extended to Joseph Torres, Project Coordinator, upon whom nearly the entire burden of the evaluation fell, to Maabe Karongo, DTCP Conservation Extension Manager, whose language skills made the interviews with farmers possible and who contributed mightily from his store of knowledge about local government institutions, and to Sharon Torres for hospitality and the sharing of insights into Ugandan words.

## 1.0 EVALUATORS' UNDERSTANDING OF THE PROJECT

The Evaluators' understanding of the project is based upon the following documents:

- a. Project Brief describing a "Development Through Conservation in Southwestern Uganda (D.T.C. Project)".
- b. Cooperative Agreement No. AFE-0457-A-00-8043-00 dated August 30, 1988 (with three Attachments and four Appendices) between the Agency for International Development and the World Wildlife Fund. The appendices contain a 29 page project description, a schematic with goals, activities and indicators (shown as Annex 2), a rationale for project activities, and job descriptions for all key posts.
- c. Sub-contract between the World Wildlife Fund and CARE effective September 1, 1988;
- d. Agreement between CARE-International and the Government of the Republic of Uganda dated 21 September 1989;
- e. Project Annual Report for the Period September 1988 to September 1989 prepared by CARE-International; and
- f. Quarterly report information for the period 1 January 1990 to 31 March 1990.

### 1.1 THE CONTRACT DOCUMENTS

#### 1.1.1 Initial Proposal Endorsed by U.S. Agency for International Development-Uganda

The project that was outlined would

"...help improve the standard of living of the people of SW Uganda and conserve the THF (Tropical Highland Forest) and biological diversity of the region by addressing the fundamental causes of environmental degradation. The project will integrate rural development and conservation for improved natural resource management. This synergistic approach will be accomplished through family planning, research and training, increased agricultural productivity, development of a conservation ethic, and additional soil, water, habitat, and wildlife conservation practices. Those people living within about 10 km of the three forest reserves, and in the three largest towns (Kabale, Kisoro, Bukungiri), will benefit most from this project."

The strategy outlined included:

"Contribute towards a sustainable natural resource base in Kabale and Rukungiri Districts by preserving the ecological values of the three Tropical Highland Forests and the surrounding agricultural lands. The final goal is to improve the agricultural productivity and quality of life for approximately 200,000 farmers by the year 1992 through improved management of the natural resource base.

"Activities of DTC will utilize the infrastructure established by the World Wide Fund for Nature's (WWF) existing Impenetrable Forest Conservation Project (IFCP), (e.g., conservation station, staff, training, computerized data base)."

The project financing requested was to run from July 1987 to June 1992; the cost was estimated to be US\$2,227,476.

#### 1.1.2 The Cooperative Grant Agreement

The stated purpose of the grant is: "...to provide support to research by the World Wildlife Fund and CARE for the environmental project in Southwestern Uganda."

"The project is to be undertaken by U.S.A.I.D., the World Wildlife Fund (WWF) and CARE in three counties within two districts in Southwestern Uganda."

The generalized location of the districts is shown in Plate 1.

##### 1.1.2.1 Goal Structure

"The primary goal of the project is to enhance the environmental quality of life for approximately 86,500 subsistence farmers in Southwest Uganda by:

"1) protecting biological diversity of the three remaining afromontane forests, and

"2) by promoting environmental awareness and sustainable agricultural production on adjacent land."<sup>1</sup>

The four intermediate goals of the project are:

a. Strengthening the institutional and technical capabilities of the appropriate Government of Uganda, Makerere University, and participating land users to promote and manage the integration of long term forest conservation and sustainable land use practices;

<sup>1</sup> The intent of this number can be interpreted in several ways: 86,500 farm families which, at 1.5 persons per family would be close to the 129,750 figure cited in the "Brief", or 86,500 people, which at a more realistic 7 persons per farm family would be 12,350 farm families.



b. Increasing communication and involvement among participating land users, government agencies and non-governmental organizations to improve the understanding of, and planning for, natural forest conservation and sustainable land use practices;

c. Promoting and supporting improved planning for the better management and protection of species diversity, forests, catchments and agricultural lands; and

d. Maintaining the natural resource base of the three forests and adjacent lands for the sustainable utilization of species and ecosystems through appropriate on-farm activities and low consumptive practices in the forest, such as tourism, environmental education, improved beekeeping, and water catchment protection.

#### 1.1.2.2 Program Objectives

The strategy is to establish and operate an infrastructure that will provide administrative, advisory, technical and financial support to the participating land users and to Government of Uganda agencies and non-governmental organizations concerned with natural resource development and conservation in Southwestern Uganda. The project will develop a model that will link natural resources management with human needs to ensure that soil, water, species diversity and forests are conserved.

#### 1.1.2.3 Assignment of Responsibility

The Grant Agreement includes a "substantial involvement understanding." Explicitly: "USAID/Uganda, AFR/TE/ARD project officer and personnel from the Ministry of Forestry and Environment, Government of Uganda will closely monitor the project throughout its two year life.<sup>1</sup> The USAID Mission will bear the responsibility for comprising a joint committee consisting of, but not limited to, personnel from the above mentioned agencies." In the Tentative Implementation Schedule, the joint committee is named: National Managerial Committee.

The grant agreement also commits USAID to respond to requests for assistance from the grantee(s).

In the first six months of the project, a "project agreement and letters of understanding" were to be signed between CARE International and the "Ministry of Forestry and Environment and other Government Ministries."

In the same period, project staff was to be hired and "GOU employees who will be working with project staff" are to be identified.

The job descriptions annexed to the Grant Agreement include descriptions of a "Project Manager" who is to be a senior level GOU employee from the Forest Department, and Activity Managers for Agroforestry, Ecology, and Conservation Education Activities who are to be recruited by GOU.

#### 1.1.2.4 Office and Housing

<sup>1</sup> It should be pointed out that there is not and never has been a "Ministry of Forestry and Environment" in the Government of Uganda.

Construction of a project office and project housing is an explicitly recognized activity in the Tentative Implementation Schedule.

#### 1.1.2.5 Inconsistency

Although the basic document, including financial obligation and Tentative Implementation Schedule cover a two year time frame, the detailed project description and the project schematic annexed to the agreement are for a five-year period and some goals are to be measured on a ten-year time scale.

#### 1.1.3 World Wildlife Fund/CARE International Sub-Contract

Under the terms of this contract, WWF delegated to CARE-International in Uganda (CARE-U) full responsibility for the performance of the project as described in the Program Description which was Attachment 1 to the Grant Agreement. Even though not executed until December 1988, the contract's effective period is September 1, 1988 to September 30, 1990.

CARE-U is contribute from its own sources US\$60,000 and "...provide professional services in the performance of the activities described in Attachment 2 (Program Description) which ...(was) appended..."<sup>2</sup> Other responsibilities are deduced from the budget. The only thing WWF has responsibility for is payment, from its own funds, the costs of the Impenetrable Forest Conservation Project (IFCP). CARE is to pay for a Project Coordinator, Ecology Advisor, and Conservation Advisor, for off-shore and local procurement of specified equipment, and for constructing an office and housing.

#### 1.1.4 Agreement Between CARE-International and Government of Uganda

The agreement was entered into by the Ministry of Environment Protection, acting for the Government of Uganda, and was effective 21 September 1989. Article I of the agreement quotes the goal structure from the Grant Agreement. Article II refers to program support in Uganda shillings (Ushs) that are to "...be made available by USAID through the Ministry of Planning and Economic Development from funds locally generated by USAID."

##### 1.1.4.1 CARE International Responsibilities

Under the agreement, CARE-U agreed to: "Make available for the Project qualified and experienced personnel Project Coordinator, Ecology Advisor, as outlined in the project document, which is an integral part of this agreement."<sup>3</sup> It is important to note that there is no reference to a "Conservation Advisor" as budgeted in the WWF-US/CARE contract.

##### 1.1.4.1 Government Responsibilities

<sup>2</sup> The attachment referred to was not available to the members of the Committee. Since the attachment gives that title in the Grant Agreement contains only the Tentative Implementation Schedule, team members surmise that the reference is to the 23-page appendix to the Grant Agreement with the same title. If the assumption is correct, then the discussion of "how the Project has to operate" will describe CARE's responsibility; if only the Attachment is involved, then the guidance for CARE's activity is limited to activities to be done with no guidance as to how the activities are to be done.

<sup>3</sup> Again, what was said "an integral part" of the agreement is not attached. As will be noted in Sub-section 1.4, there is variance between the most complete "Project Description" and that to be provided under this agreement.

For its part, the Government agreed to, among other things:

"1. Avail to the Project, such necessary and qualified full time Forestry staff as counterpart as specified in the project document.

"2. Pay salaries and allowances of the Forest Department and other Government of Uganda personnel seconded to the Project; provided that CARE shall provide additional topping up payments to the Government seconded personnel on the project...."

"4. Decide in consultation with CARE, on the names and locations of the parishes to be included in the Project.

"5. Coordinate the participation of GOU departments and local NGO's in carrying out project activities ...."

#### 1.1.4.2 Length of Agreement

The agreement is cognizant that there is funding obligated for only two years and provides a time definite for the two parties to examine possibilities of extending the agreement. The agreement specifies the "period of operation" to be 10 years and makes allowance for real and personal property hand-over at the end of that time.

### 1.2 REPORTING REQUIREMENTS

#### 1.2.1 Financial Reporting

##### 1.2.1.1 Care International in Uganda

CARE-U is required by the agreement with the Government of Uganda, the contract with WWF, and the joint agreement with the Ministry of Planning and Economic Development and USAID-U to report all financial activities within 30 days of the end of each calendar quarter. Each report shows the full amount to be accounted for divided into the budget line items, the expenditures made during the quarter by category code which are aggregated into the budget line items, the sums of expenditures by the same line items for the current Uganda fiscal year (1 July to 30 June) and for the project to date, and the unexpended balances remaining in each line item.

The quarterly financial reports for expenditures made from the Uganda shs accounts are sent to the Ministry of Environment Protection and to USAID-U.

The quarterly financial reports for expenditures made from the US\$ accounts are sent to CARE-United States (CARE-US) headquarters in New York.

CARE-U follows the same procedure for reporting expenditures and unexpended balances at the end of each fiscal year.

#### 1.2.1.2 CARE-United States

Pursuant to the conditions of the contract with the WWF, CARE-US consolidates the expenditures in U.S. dollars made from the accounts released to CARE-U by the WWF and the expenditures made from CARE resources and transmits them to the WWF in Washington.

Yearly summaries are provided on the same schedule as used by CARE-U.

#### 1.2.1.3 World Wildlife Fund

With the data from CARE in hand, the WWF adds to the budget line items the expenditures and balances made from the US\$37,442 of the U.S. Agency for International Development-Washington (USAID-W) grant held by WWF and from the expenditures made by WWF-US to support the IFCP (the WWF contribution in-kind to the DTCP budget). The WWF-US prepares the final quarterly and yearly financial reports.

The financial reports are sent to USAID-W, Office of Financial Management, Program and Accounting and Finance Division with three additional copies going to the Project Office AFR/T2/ARD.

#### 1.2.2 Program Performance Reporting

The Grant Agreement sets out seven reports that are to be made by the grantee(s).

a. Project Implementation Plan - prepared for the six-month intervals used in the Tentative Implementation Schedule, the CARE-U format uses a combination of the goal structure found in the Grant Agreement, combined with the activities of the implementation schedule, and the project schematic.

b. Quarterly Cooperative Agreement Reports - to be submitted on the same schedule as the financial reports. Reporting follows the same format as used in the Implementation Plans and shows the comparison of accomplishments with the goal structure and activity schedule, explains the reasons why goals were not met, and work planned for the ensuing quarter.

c. Special Reports - These reports open the door for reporting significant items that affect the timely performance of the work. Clear provision is made for the grantee(s) to make a statement of "...any A.I.D. assistance needed to resolve the situation."

d. Annual Activity Reports - to be filed within 30 days of the anniversary date of the agreement.

e. Environmental Impact - provides for notification of USAID of any actions contemplated that might cause adverse environmental impacts.

f. Trip Reports - to be filed at the completion of each international trip.

g. Final Report.

The process followed has been for CARE-U to send the requisite reports along the same channels as used for the financial reports: direct to USAID-U and GOU; to CARE-US where they are sent on to WWF-US who, in turn, send them to the Project Office.

### 1.3 FINANCES

#### 1.3.1 Grant Agreement

In the Grant Agreement, USAID obligated US\$246,000 for the two year period from the effective date to September 30, 1990. The grantee(s) was required to raise the amount of US\$153,800: a total budget of US\$399,800. The agreement states that WWF/CARE were requesting Ushs159,819,800 to cover operations during the same two-year period.

#### 1.3.2 World Wildlife Fund/CARE-International Sub-Contract

Under the contract, WWF agrees to disburse to CARE, on a reimbursable basis, US\$208,558 of the US\$246,000 USAID-W grant. CARE agrees to make perform the work and pay for it, prepare quarterly claims for reimbursement of the amounts set forth in a disbursement schedule in the body of the sub-contract, and expend from its own funds, and account for, US\$50,000 over the two year period. Thus, the face value of the contract is US\$268,558.

#### 1.3.3 Agreement Between CARE-International and Government of Uganda

The Grant Agreement correctly anticipated that USAID-U would commit Ushs159,000,000/= to the project. Agreement on the amount between the Mission and the Ministry of Planning and Economic Development is confirmed in the agreement.

### 1.4 HOW THE PROJECT WAS TO OPERATE

#### 1.4.1 Management/Performance/Training Teams

The project designers saw four two-person teams operating in concert with each other. The purposes of the teams were to collaborate on the management of the project: that is, make up the six-month work plans, budgets, and reports; to perform specialized work in the three major activity areas described in the project descriptions and the Tentative Implementation Schedule, and effect on-the-job skill training of the GOU members of the teams.

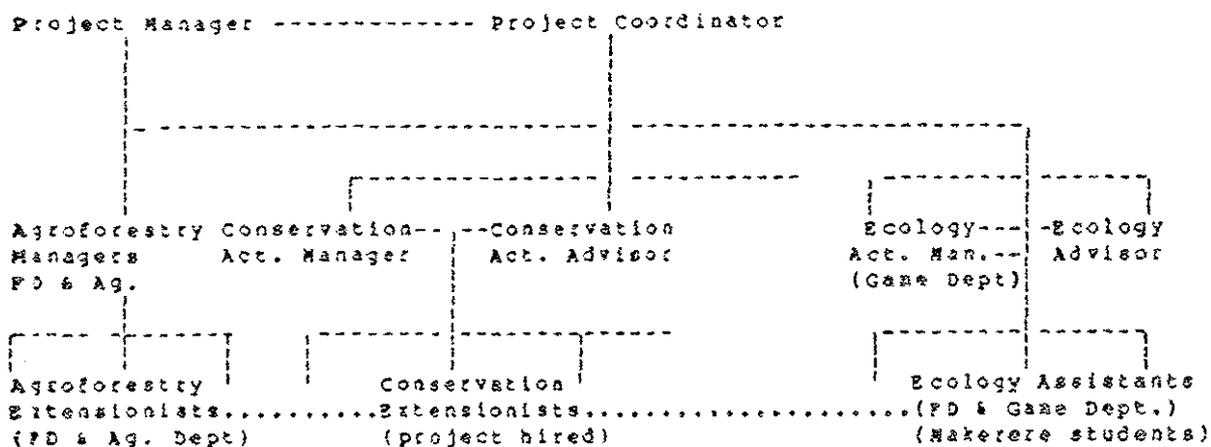
The way the designers saw the teams operating is shown in Plate 3.

##### 1.4.1.1 Project Coordinator/Manager

The Project Coordinator is to exercise overall supervision of all aspects of the project. The person is to be an international hire with advanced training in natural resource management and substantial experience in Africa. Among the duties were to be: supervising the activity advisors and managers; establishing liaison with relevant GOU departments/ ministries, Makerere University, and the local government bodies from national to village levels; networking with local and national NGO's; establishing and organizing advisory committees; taking a leading role in the training of the extension

The GOU staff are presently in place and carrying out their daily departmental activities, although on a minor scale with virtually no material nor supervisory support. Since the activities proposed by DTC are exactly the same as those which are the responsibility of the above GOU personnel, DTC will in effect contribute to strengthening the GOU departments by providing staff with updated technical information, training, and basic materials to carry out jobs.

4.2.1 Organizational Chart



The CE Agents work will be centered on promoting out-of-forest activities (agroforestry/tree planting soil conservation) and coordinating with community groups/community Advisory Committee. GOU extension agents will administratively fall under the PD Manager counterpart while receiving technical supervision by the Project Coordinator and PM. Law enforcement guards will receive technical supervision by the IPCP leader and Ecology Advisor and be directly responsible to the PD and GD Managers.

4.2.2. Job Descriptions: See Appendix C.

teas; and performing the myriad routine tasks of record keeping, leading management meetings, and reporting.<sup>1</sup>

The Project Manager is to be a senior GOU officer, preferably from the Forest Department. The officer was to share with the Project Coordinator overall project supervision with the view that at the end of five years the incumbent would assume full management of the project.

At the beginning, the Project Manager would take the lead in establishing contact with the extension officers of the several departments working in the project area. He would have primary responsibility for supervising and coordinating those agency personnel seconded to the project and worrying about the supervisory links between the project and to the parent agency. The Project Manager would deal with government related problems, such as the payment of project allowances and the work schedules of the GOU personnel seconded to the project.

#### 1.4.1.2 Ecology Activity

This team is made up of an Ecology Advisor and an Ecology Manager. They were to be responsible for the conduct of biological and physical surveys and inventories both in-reserve and out-of-reserve and for drafting, in conjunction with IFCP staff, the in-reserve management plans. The Ecology Advisor is to provide technical training in the techniques of doing multi-disciplinary survey and inventory work and the skills for managing research; the Project Coordinator is to assist with training in general management skills.

Examples of the team's work includes the design and layout of the standard transects and plots for in-reserve work in botany, birds, mammals, herpetology, butterflies and so on. They also supervise similar research work done in such out-of-reserve fields as swamp ecology, agro-forestry research, and soil conservation. They will supervise the priority research topics and assist in the selection of research personnel qualified to do the work. For those who are graduate students, the team will train the candidates in research techniques and field methods.

The Ecology Manager, as a seconded GOU officer, is to deal with the logistical support for the Ugandan research specialists, such as the Curator of the Makerere University Herbarium, and the candidates for graduate degrees from the university. The officer is to be the administrative link between the researchers and the local communities and the Project Coordinator. The Ecology Manager will look increasingly to the Project Manager for direction in the later years of the project.

#### 1.4.1.3 Conservation Education Activity

This team of Advisor and Manager has the responsibility for developing and implementing a conservation extension program. The program is to

<sup>1</sup> Some idea of the scope of the interests to be brought to bear on the problem of the participating land users may be gleaned from the listing of agencies and organizations shown in the appendices to the Grant Agreement: Ministry of Agriculture, Ministry of Environment Protection, Ministry of Local Government, Ministry of Women in Development, Forest Department, Game Department, International Education Department, Makerere University, Uganda Red Cross, Family Planning Association, and Wildlife Clubs of Uganda.

consist of collecting baseline information, technical training of field staff, networking with local groups, and producing training and extension materials.

These are the people who are to hire, manage, and supervise the substantive program of the Conservation Extension Assistants (CEA), including their training, management meetings, and paying salaries and expenses. They are to produce such media devices as newsletters, press releases and articles, radio shows, and slide shows.

The Conservation Education Manager, under the guidance of the Project Manager, is to be the direct link with the Forest and Agriculture Department extension personnel. The objective is coordinate training for them as well as their using them to train CEA's and advise farmers (participating land users).

It is interesting to note that explicit reference is made to maintaining relations with, and supporting the work of, the Uganda Family Planning Association.

#### 1.4.1.4 Agro-Forestry Activity

There are references to an Agro-forestry activity in the Grant Agreement and a component with that title was transferred from the IFCP to the DTCP at the time the WWF/CARE contract was executed (December 1988).

However, no Advisor or Manager posts have been put forward for recruiting. The slack, apparently, is to be taken up by the Project Coordinator and Project Manager, at least one of whom will be a trained forester, and the presence of a strong Farm Forestry component in the Uganda Forestry Rehabilitation Project.

#### 1.4.2 Field Operations

##### 1.4.2.1 The Conservation Extension Agent

The original project brief was vague about the physical scope of the so-called buffer zone around the reserves. By the time the Grant Agreement was signed, the zone was to be defined by Parishes (probably the result of consultation with South Kigezi Resistance Committee-V in February 1988). The CARE-U/Government of Uganda agreement calls for consultation between CARE and GOU in choosing Parishes in which the DTCP will operate.

The Parish is the basic spatial operating unit. The DTCP has set out to have in place two CEA's per Parish, although the number of such agents -- in total or per Parish -- is not spelled out in the basic project documents.

The original role envisioned for the CEA's was a supplement to the extension staffs of the several GOU departments that were to cooperate in the project. In this role, the CEA would sensitise the community about conservation issues through rallies, the formation of the advisory committee, and programs in the schools. As a result of these activities, some farmers would be motivated to try some of the conservation practices described. These farmers would be prime targets for the GOU extension agents.

It was thought that as time went by, the CEA's would, through osmosis from contact with GOO agents in the field and from training, become more proficient technically and be able to offer rudimentary advice to farmers on their own.

#### 1.4.2.2 Advisory Committees

One of the first jobs given to the CEA's was to organize Advisory Committees in each Parish. The Advisory Committee is simply the grass roots unit of the advisory committee structure set out in the Grant Agreement. The hierarchy starts with the National Management Steering Committee and includes regional advisory committees. Besides stimulating community awareness, it was through that the committees would be instrumental in preparing the community land use plans; to do so would mean involvement in what the project documents refer to as baseline surveys. The regional advisory committee's defined job is to oversee the preparation of a regional land use plan.

At each of the levels, it is clear that there should be representation on the committees of appropriate officers of the GOO agencies participating in the DYC. Thus, a Forest Guard residing in Parish "X" would, ex officio, be a member of the Parish Advisory Committee and the Regional Forest Officer would, ex officio, be a member of the Regional Advisory Committee.

### 1.5 A CONFUSED PATTERN HAS EMERGED

#### 1.5.1 It Took Three Years For The Project to Emerge

The time span is quite long, but not unheard of in development circles. The significance of the long elapsed time from conception of the idea to the authorization of work in the field is the number of individuals, organizations, and agencies that became involved in the process. The record indicates that each one had a particular view or motive for involvement. In the process, the character of the project changed significantly. So much so that it was (and continues to be) a chore for the Evaluators to state with certainty what is the project.

This phenomenon is shown in the sequence of events that took place between August 1987 and October 1989. The sequence is shown by date and event in Table 1.

#### 1.5.2 The Changes Submerged Vital Points

The illustrations of this phenomenon are cited. The first is the Cooperative Grant Agreement. A major attachment is called the Project Description. It is not. One has to thoroughly examine all of the appendices to the Grant Agreement to determine, in general, what is expected. For example, the "Monitoring and Evaluation" section of Attachment 1 calls only for an end of year project evaluation and evaluation of training sessions to be done by "project staff and regional advisory committee." It is not until one reads in the "Project Description" appended to the Grant Agreement that it is clear that an elaborate monitoring and evaluation program is to take place. The program, after lengthy descriptions of the data to be collected, is tied to the goal-oriented CARE Program Implementation and Evaluation format. The goals, activities, and indicators are those shown in another appendix.

Second, only people very close to all of the details are conversant with the fact that the Conservation Advisor is to be a CARE-U hired Ugandan national. None of the agreements mention this fact until one finds a table in the appendix to the Grant Agreement that suggests that the Conservation Advisor should be a "Qualified National hire".

Table 1. Project formulation sequence

Date	Event(s)
August 1987	: Dr. Butynski, Mr. Torres, and Senior Forest Department official collect in the field information for project concept
August 1987	: Representatives of Forest Department, CARE, <sup>a</sup> USAID, <sup>b</sup> and WWF <sup>c</sup> travel to proposed project site to formulate strategies
January 1988	: First draft proposal for project to WWF and CARE
February 1988	: Report of trip to Kabale area basis for review of draft proposal by USAID, WWF, and CARE : Ministry of Environment Protection (MEP), Government of Uganda (GOU), informs USAID that the project is registered with the MEP and is consistent with MEP strategy
July 1988	: Project proposal reviewed in Kabale with District Forest Officer and members of RC-Y <sup>d</sup> : Local currency contribution approved by USAID : Draft of agreement between CARE and GOU sent to Forest Department and Ministry of Environment Protection (MEP), Government of Uganda (GOU)
August 1988	: USAID authorizes project grant agreement with WWF
October 1988	: WWF/CARE meeting (with Butynski and Torres present) in Washington to negotiate sub-contract
November 1988	: Dr. Kalina and Ms Torres begin DTCP <sup>e</sup> in-reserve ecological and out-of-reserve conservation work : Period marked by intense budget writing and re-writing

<sup>a</sup> CARE International in Uganda

<sup>b</sup> U.S. Agency for International Development

<sup>c</sup> World Wildlife Fund of the United States

<sup>d</sup> Resistance Committee at the District level

<sup>e</sup> Development Through Conservation in SouthWest Uganda Project

December 1988 : Sub-contract between WWF and CARE signed

: CEA's<sup>1</sup> shifted from IFCPs to DTCP although no salaries can be paid through DTCP due to MEP instruction to keep implementation on hold until CARE/GOU agreement is signed

: Request MEP to act on draft agreement of July 1988

January 1989 : USAID writes to Ministry of Planning urging approval of GOU agreement with CARE for DTCP

: Forest Department gives verbal comments on draft and says matters rest with MEP

: Ikumba selected as headquarters site and construction materials begin arriving on site

February 1989 : MEP requests Ministry of Planning to clarify the position of the project in the national plan and whether the project is registered

March 1989 : MEP writes to CARE requesting a full review of the details of the project and draft agreement

: Ministry of Planning informs MEP that the project is registered in the RDP and that a ten-year planning horizon poses no problem

April 1989 : CARE requests MEP approval to proceed with "infrastructure" activities which is granted

: Started payment of CEA salary from local currency

May 1989 : Construction begins on Ikumba headquarters

: CARE representatives meet with MEP and Forest Department officials to review the proposed agreement

: CARE sends a revised draft agreement that follows entirely Annex "A" of the WWF/USAID project agreement to MEP

July 1989 : Botany and other inventory bases for in-reserve and out-of-reserve areas begun

September 1989 : Contract between GOU and CARE signed

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<sup>1</sup> Conservation Extension Agent

<sup>2</sup> Impenetrable Forest Conservation Project

October 1989 : Implementation begins in spite of personnel shortages

November 1989 : Office, warehouse and residence in Ikusaba completed

June 1990 : Evaluation of project

## 2.0 FINDINGS AND RECOMMENDATIONS

From an examination of the documents, and from field analyses, we find and recommend as follows:

**FINDING 1: THE VALUE OF THE AFRO-MONTANE FOREST BIOME IS AS IMPORTANT AS THE PROJECT ALLEGES AND THE EXISTENCE OF THE RESERVES WHERE THEY OCCUR IS THREATENED.**

2.1.1 The surveys and inventories supported by the Development Through Conservation in South-Western Uganda Project (DTCP) confirm the enormous bio-diversity to be found in the biome. Loss of the biome would mean the loss of species, some still not described, that are found nowhere else in the world.

2.1.2 Population growth in the districts in which the DTCP is to operate has, since the 1940's, placed increasing pressure on the remaining forest resource base. This pressure is, from all accounts, increasing. This hunger for land, coupled with comparable demand for other products of the forest biome, such as high grade timber and minerals, could easily over-run the reserves and their managers.

**RECOMMENDATION 1: THE GOVERNMENT OF UGANDA, ASSISTED TO THE MAXIMUM EXTENT DESIRABLE AND POSSIBLE BY THE INTERNATIONAL COMMUNITY, SHOULD HEIGHTEN ITS EFFORTS TO SUSTAIN THIS UNIQUE ASSEMBLY OF PLANTS AND ANIMALS FOR THE BENEFIT OF ALL PEOPLE.**

**FINDING 2: THE BASIC INTENT OF THE PROJECT IS APPROPRIATE AND COMMENDABLE**

2.2.1 The objective of the U.S. Agency for International Development Washington Project Officer's (USAID-W) grant to the World Wildlife Fund-United States (WWF-US) is to support research into ways that the application of conservation practices, both within a public reserve and on the privately operated adjacent lands, can benefit both the protection of unique flora and fauna, and those people who use the adjacent land and water resources. Two-years' of experience shows that this objective was correct, and that significant lessons have been learned which can contribute to the explicit goal of developing a useful model.

2.2.2 Some of the uniqueness and commendable character of the project have been compromised by the volume and specificity -- and sometimes conflicting character -- of the material incorporated into the Grant Agreement. There are places where it was difficult for the Evaluators to divine what the implementers were expected to do. (The Project Schematic, attached to the report as Annex 2, is indicative of the detail involved.)

RECOMMENDATION 2: THE U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT SHOULD RECOGNIZE THAT IS ENTIRELY JUSTIFIABLE TO FINANCIALLY SUPPORT PROJECTS LIKE DEVELOPMENT THROUGH CONSERVATION IN SOUTH-WESTERN UGANDA IN ORDER TO FIND WORKABLE WAYS TO APPROACH PROBLEMS FOR WHICH NO COMPLETELY SATISFACTORY SOLUTIONS HAVE BEEN FOUND.

2.2.3 When there is a clear need to test approaches and develop a model that will have general application, there should be more emphasis on process and top level evaluation rather than on the goals, observable physical targets, and impacts associated with more conventional development projects.

FINDING 3: ACCOMPLISHMENTS IN THE RESERVES AND ON THE FARMS IS VERY IMPRESSIVE.

#### 2.3.1 Project Management

The accomplishments within this activity include the following:

- a. Maintained cooperative relations with the Impenetrable Forest Conservation Project (IFCP) so that collaborative use could be made of the Conservation Education facility in Ruhizha for the training of the DTCP personnel.
- b. Made an excellent choice for the location of the headquarters complex in Ikusba for both the short- and long-runs.
- c. Selected the site for and finishing the construction of an office, warehouse, and residence in Ikusba and starting in the same site a conservation education building that will be completed before the end of the project.
- d. Selected, hired, and trained a three-person office staff in Ikusba.
- e. Established radio communications between Ikusba, Ruhizha, and Kampala and beginning to tap into an existing Roman Catholic Church radio network that will link most of the Bwindi Reserve area with Ikusba.
- f. Devised the zone system of communications and management for CEA's.

#### 2.3.2 Ecology Activity

The accomplishments within this activity include the following:

- a. The network of permanent transects, plots and trails have been laid out on the ground so as to yield statistically valid results for initial surveys and inventories and for monitoring trends over time.
- b. Comprehensive, professionally conducted, management-oriented botany, avifauna, mammal, and herpetology inventories are well advanced in the Bwindi Reserve and have been started in Mgahinga Reserve. These inventories are well coordinated with complementary studies being performed under the aegis of the IFCP. Species never before identified, cataloged, and named have been collected and added to the Makerere University Herbarium for identification and description.

c. Candidates for the Master of Science degree from Makerere University are receiving training in field methodology by participating in the studies of ferns, small mammals, ethnobotany, and swamp ecology. The studies complement the work being done under IFCP auspices for raptors, butterflies, and Mountain Gorilla. One potential degree candidate is participating in establishing agro-forestry demonstrations.

d. Game Department participation in the DTCP has been made possible by the relationship between the Ecology Activity and the IFCP.

e. An initial draft of a management plan for the Ngahinga Reserve is in preparation. It takes into account the very peculiar land tenure situation that prevails in the Parishes adjacent to the remaining forest.

d. The emphasis given to ethnobotany, that is, the identification of plants that have traditionally been used for specific purposes by different ethnic groups, is justified. This is particularly true of the work done to identify indigenous species that can be successfully propagated on farms.

### 2.3.3 Conservation Extension Activity

The accomplishments within this activity include the following:

a. There have been 36 CEA's recruited and added to the 17 CEA's that were transferred from the IFCP in December 1988 bringing the total in the field to 53.

b. The CEA's have conducted 2,500 community rallies; approximately 75,00 persons have attended all or parts of the rallies.<sup>1</sup>

c. Thirteen technical and management workshops have been held (2 on communications skills for 45 persons in each workshop; 10 workshops on conservation planning with an average of 43 persons per workshop, and one workshop on agroforestry techniques attended by 52 persons).

d. There are 26 Parish Advisory Committees organized and meeting monthly with the Parish CEA's. The average size of the committees in the five Parishes visited is 23 persons; so about 600 citizens are in some way involved with community conservation issues as a result of the DTCP.

e. Three issues of a conservation newsletter have been produced and distributed to the CEA's.

f. Community surveys, consisting of 14 family surveys in each of the 26 Parishes, were conducted by the CEA's.<sup>2</sup>

<sup>1</sup> The community rally is an accepted way of transmitting information in Uganda. In some cases, the CEA's used rallies, which gathered all of the people of a Parish in one place, to save the community select members of the Parish Advisory Committee.

<sup>2</sup> This type survey is considered in the Grant Agreement to be the equivalent of "household surveys," and GAB-3 reports use that terminology. The fact is that these surveys can in so far be considered useful for establishing a baseline that are to be seriously monitored in the future.

g. An unknown number of schools have taken up conservation projects or demonstrations.<sup>3</sup>

#### 2.3.4 Agro-Forestry Activity

The accomplishments within this activity include the following:

- a. 4,465 farmers have been contacted on-farm with an agro-forestry message.
- b. 2,225 of those contacted adopted some form of agroforestry practice.
- c. There are more than 75 cooperative/farmer nurseries established in the Parishes. An estimated 412,000 seedlings have been raised in farmer nurseries and distributed to other farmers for planting.
- d. 16 on-farm agro-forestry demonstration plots are established.
- e. 40 hectares (ha) of area has been given soil conservation treatment, mostly in the form of planting grass strips.
- f. 72 livestock projects have been started, including 16 fish ponds, 8 pig sties, and 25 rabbit hutches.

#### 2.3.5 Other

At least 14 of the 53 CEA's are female. This finding is significant for three reasons: the majority of farm work is done by females, the female CEA's are organizing regular classes/meetings of women where manufacture of handicrafts from indigenous plant materials can be started, and the women, particularly those who have attended a workshop conducted by a former Family Planning Association worker, are beginning to be more active in acting on family planning issues.

### FINDING 3A ACCOMPLISHMENTS MADE IN SPITE OF EXTRAORDINARY DELAYS

#### 2.3A.1 Accomplished in Eight Months Since October 1989

What makes this record of accomplishment even more impressive is that 80 percent of on-farm adoption, 50 percent of workshops and community contacts, and all five M.Sc. student training/research, contract ecological inventory work, advisory committee organization, and community surveys have taken place since October 1989.

#### 2.3A.2 Delay Between Proposal and Grant Agreement

Seven months elapsed between the drafting of the project proposal and the effective date of the Grant Agreement during which time the senior Forest Department official concerned with designing the project expired.

<sup>3</sup> One of the most impressive school demonstrations started by the team was in the grounds of the Bryanza Public School. The teacher, Mr. Jacques Sas, had manifested an agro-forestry demonstration. What is different was that, by accident, his direct sowing of *Freziera* spp. resulted in a random arrangement of stems that, when pollarded at one meter high, will be a hedge permanently producing high nitrogen content grass hay. This did not come from a textbook.

### 2.3A.3 Delay Between Grant Agreement and WWF-US/CARE CONTRACT

Four months were required to formalize relations between WWF-US and CARE-U.

### 2.3A.4 Delay Between CARE-U Agreement With Government of Uganda

Thirteen months required to execute a contract between CARE-U and GOU's Ministry of Environment Protection.

## FINDING 3B ACCOMPLISHMENTS WITHOUT STRONG SENIOR LEADERSHIP

### 2.3B.1 Agency for International Development

USAID-W and USAID-U have not provided strong, timely professional or administrative support to the sub-contractor during the start up phases of the project or a sufficient level of staff involvement in charting strategies during the first seven months of field operation.

### 2.3B.2 World Wildlife Fund-United States

This non-governmental organization was most noticeable by its absence. There was no action from either the headquarters or the regional staffs in spite of clear reporting -- both formal and informal -- that things were not going well. No senior people arrived on the scene to determine the cause of difficulties or make a request, as provided for in the Grant Agreement, for assistance from USAID.

### 2.3B.3 CARE-International

The members of the Evaluation Team learned that the senior personnel in the Uganda office did not exert themselves to seek resolution of the problems with the Ministry of Environment Protection. This clearly is one of the major administrative failures. It was at this point that the record shows clearly that some major revisions were going to be necessary. The command line is clear: failing to secure a reasonable solution at the country level by CARE, assistance is to be requested from WWF; in the absence of assistance arriving or if the efforts of both are ineffective, then requesting assistance from USAID. It would seem that if, at this stage, no progress had been made, there was adequate ground to approach USAID to seek a re-design of the project. Either because of the confused understanding of the project or because the project was so changed by the imposition of fixed targets and objectives, sight was lost of the experimental nature of the DTCP. There were lessons to be learned before this Evaluation.

RECOMMENDATION 3: THE INFRASTRUCTURE BUILT DURING THIS PILOT PHASE IS EXCELLENT AND SHOULD BE KEPT IN PLACE WITH RELATIVELY MODEST ADJUSTMENTS FOR THE SHORT-RUN

### 2.3.7 The Conservation Extension Network

The CEA Network, made up of male and female citizens from many walks of life, who are considered casual laborers and are deployed by Parish and zone, is a firm foundation upon which to build new ways of serving

small, hill farmers and the interest of the reserves at the same time. This network should remain outside the government civil service.

Division of the area around the Bwindi Forest Reserve into zones for administrative and communications purposes is sound. In addition to easing administration, each of the zones exhibits different homogeneous characteristics that say, after further analysis, justify different interventions.

#### 2.3.7.1 Recruiting Emphasis

The current emphasis on recruiting female CEA's should be continued until there is near parity with males in each Parish. Recruiting emphasis for males should shift away from teachers and toward farmers (teachers who also farm are the ideal CEA candidate). Such a move would facilitate the formation of farmer "information trees".

#### 2.3.7.2 Increase Family Planning Activities

The CEA network should be supplied with a full range of assistance to disseminate family planning information and materials. The work should be shared by both male and female CEA's.

#### 2.3.8 Physical Facilities

The well designed conservation education buildings and offices are well adapted to conditions in rural Uganda.<sup>4</sup> They should continue to be available to serve the CEA network.

#### 2.3.9 Student Research System

Support should be continued for candidates for advanced degrees who are selected to do research in DTCP areas of interest. The existing student projects should be continued. There are additional topic areas worthy of support, such as socio-ecological work and fish culture. (Additional detail is found in Annex 4, pp. 7, 8.)

#### FINDING 4: FUNDING WILL BE EXHAUSTED BY THE END OF THE PROJECT PERIOD

The Evaluators found the financial records maintained by CARE-U to be in good order. All financial records were the subject of an external audit during the period of the evaluations. The most recent complete data were for the quarter ending 31 March 1990. The records are maintained in a computer data base, so special runs could be made to update the records, but the software is not yet programmed to provide complete status reports more frequently than quarterly.

<sup>4</sup> This refers to the headquarters complex in Kabale. An office, warehouse, and residence have been complete at this site and a conservation education building is under construction. Training to the date of this evaluation was conducted in the DTCP Conservation Education Building in Kibale.

#### 2.4.1 World Wildlife Fund/CARE-International Contract

There are two U.S. dollar funds involved: US\$208,558 from the USAID-W grant and US\$60,000 contributed by CARE-US. As of 31 March 1990, US\$151,012 had been spent from the grant and US\$46,771 spent from CARE's cost-sharing contribution. At the current burn rate, the grant funds are drawn down between US\$25,000 and US\$30,000 per quarter. With two quarters to go, it is forecast that less than US\$5,000 could remain unexpended on 30 September. With the CARE contribution, the burn rate is about US\$5,000 per quarter. Projected to 30 September, something less than US\$3,000 might be expected. These are small enough sums to assure they will be completely disbursed by the end of the project.

#### 2.4.2 Agreement between CARE-International and Government of Uganda

The amount shown in the agreement has been increased by Ushs30,752,200; the total available to support the DTCP is Ushs190,072,000. Of this, Ushs116,770,073 has been expended through 31 March 1990. An additional Ushs39,943,273 has been received against estimated expenditures for the period ending 30 June 1990. If this amount is accurate, Ushs33,958,654 will remain in the account for the final quarter of operations. It is likely the balance in the account will also be zero by 30 September 1990.

**RECOMMENDATION 4: COMPLETE THE ARRANGEMENTS FOR INTELIM FUNDING THAT WILL CARRY THE PROJECT THROUGH THE SECOND U.S. FISCAL QUARTER.**

2.4.3 The funding level should be sufficient to maintain the current level of operations in and adjacent to the Bwindi Reserve and to begin to extend the emerging model to the Mgahinga Reserve.

#### **FINDING 5: CONVENTIONAL GOVERNMENT EXTENSION PARTICIPATION NOT A FACTOR**

2.5.1 The impressive record of on-farm contacts has been made with little or no formal government involvement. Forest Department extension staff (seven from Kabale and 5 from Bukungiri) were not attached to the DTCP until February 1990, and no Agriculture or any other department extension staff were attached at the time of the Evaluation. In general, the large number of farmers contacted during the evaluation reported that they seldom saw a GOU extension officer let alone have one visit their farms.

2.5.2 This is consistent with the experience of many countries in the world. For a myriad of reasons, most of which are spelled out in the development literature, conventional government extension organizations are ill-suited to reach the small, hill-side farmer that is the target of the DTCP.

One reason cited is that there are simply too few people in the field. For example, Forest Guards and Agriculture Assistants are required to cover from one to two sub-counties each. The flip side is the cost of having qualified personnel at the Parish level from each agency that has a stake in meeting the conservation needs of the land users. A study that compares the cost of such a system with one that has fewer, better trained and paid personnel would be very helpful.

2.5.3 This is not to say that government employees have not been helpful. In many cases, employees of the Forest and Game Departments participate in Advisory Committee affairs as citizens of the Parish and not as attached officers. They have helped their fellow citizens establish nurseries and find seed sources, among other things.

**RECOMMENDATION 5: RECONSIDER THE IDEA OF ATTACHING EXTENSIONISTS TO THE PROJECT**

2.5.4 Only 12 Forest Department extension personnel are now formally seconded to the DTCP. Their presence has already fueled a controversy over the payment of project allowances that the Team members understand was the subject of a high level meeting during the evaluation. No other extension personnel have been seconded to the project.

Why field extension personnel have not been seconded/attached to the DTCP can only be a matter of speculation. Part of the reason may be the simple lack of personnel -- which could be the case for the Agriculture Department which is very short handed and for other departments, such as Animal Industry, that have no extension force at all. Another part may be the matter of perquisites which is discussed below. In short, extension personnel may avoid joining the DTCP in the hope they will be attached to a project with not only "topping-up allowances", but good transport as well.

2.5.5 The provisions of the CARE-U agreement with the GOU should be re-examined, as recommended below. In the short-run, it is recommended that the current provision for seconding officers to the DTCP be held in abeyance with the view that no field level extension personnel will be seconded in the long-run.

2.5.6 This recommendation deals with extension personnel and should not be confused with management level personnel which is a separate issue.

**FINDING 6: ARRANGEMENTS WITH THE MINISTRY OF ENVIRONMENT PROTECTION AND ITS DEPARTMENT OF FOREST ARE NOT APPROPRIATE**

2.6.1 Much of the discontent expressed by CARE-U has centered upon the failure of the departments of the ministry to provide management level staff and extension personnel to the DTCP. This may, in fact be a blessing in disguise.

2.6.2 There is a close parallel between the two most significant Activities in the DTCP and the principal GOU departments: Agro-forestry to the Forest Department and Conservation Extension to the Environment Education Department. Because of this apparent disciplinary link and other circumstances, the ministry departments were chosen for lead roles. That the three reserves were originally Gazetted as Forest Reserves is also a factor.

2.6.3 The choice ignores three facts.

2.6.3.1 Meeting the primary goal of improving the environmental quality of life for small, hill farmers requires the

technical skills of many disciplines scattered among many departments. Therefore, the focus of the Project Manager should be on methods for coordinating inputs from not only those departments that have something to offer (Fisheries in Animal Industry is an example), but from university faculties, NGO's, international organizations and others. Being a Forest Officer is not necessarily an advantage in doing this job.

2.6.3.2 What is termed agro-forestry in the project documents, in application, now more resembles an exercise in farming systems. Once again, having a Forest Officer as Project Manager with responsibility for what once was an Agro-Forestry Activity misses the real need.

2.6.3.3 In addition to the breadth needed for disciplinary coordination, there is need for sufficient position and seniority to effect administrative coordination as well. The Team members were told that the Forest Department had tentatively chosen an Assistant District Forest Officer level person to be seconded as Project Manager. If this happened, the officer would be junior to all department officers in both districts -- the lowest level at which effective inter-departmental coordination can take place. In addition, the department itself has no significant leverage to influence the policies or actions of other departments.

RECOMMENDATION 6: ANOTHER, PREFERABLY MORE GENERAL, REPRESENTATIVE OF THE GOVERNMENT OF UGANDA BE CHOSEN TO COORDINATE THE PUBLIC INPUTS

#### 2.6.4 Necessary to Coordinate Disparate Technical Agencies

The principal role of the lead agency should be to ensure the coordinated use of the technical resources needed by the target small, hill-farmers possessed by the agencies of the GOU. In this connection, the Project Manager should have access to an agency colleague in the District headquarters that has the means to ensure coordination. Agencies with some control over budget or finances are most often in a position to perform binding arbitration.

#### 2.6.5 Should be Part of General Move of Government to Decentralize

Members of the Evaluation Team understand that the GOU has under active consideration schemes for planning and management decisions to be shifted to the District level. Presently, the Ministry of Planning and Economic Development serves as the coordinating agency at the national level. Whichever agency is tapped to represent this coordinative function at the District level should be the prime candidate for lead agency.

Any attempt by the GOU to decentralize to the District level coordination, planning and decision-making should receive the maximum support possible. The best interests of the DTCP are at stake and such more.

FINDING 7: THE CURRENT ARRANGEMENT OF GRANTEE AND SUBCONTRACTOR HAS SHOWN NO SIGNIFICANT ADVANTAGE FOR PROVIDING TECHNICAL ASSISTANCE

RECOMMENDATION 7: THE GRANT AGREEMENT WITH THE WORLD WILDLIFE FUND-UNITED STATES SHOULD NOT BE RENEWED

2.7.1 If the recommendation for continuing the project in the short-run is adopted and funding permits, CARE-U should be considered as the contractor to provide technical assistance to the DTCP.

2.7.2 If the DTCP is redesigned for the long-run, alternative means of providing technical and management assistance can be considered.

FINDING 8: A PROJECT FOCUS IS UPON MANAGEMENT PLANS, BUT IT IS UNCERTAIN WHO IS TO IMPLEMENT THEM IN THE RESERVES OR COORDINATE THEM WITH THE PARISH LAND USE PLANS

2.8.1 Both the Attachments and the Appendices to the Grant Agreement state that an objective of the Ecology Activity is multiple use, sustainable management plans for the three remaining Afro-montane forests. The suggested model for the plans is the UNESCO endorsed biosphere reserve concept. The model is explicitly endorsed by the Forest Department in the High-Forest Component of the Uganda Forestry Rehabilitation Project (UFRP). The Ministry of Environment Protection confirms this by stating in the CARE-U agreement with the GOU that creating "Forest Parks" -- not to be confused with National Parks -- is consistent with Ministry strategies.

2.8.2 However, the Game Department is currently more directly involved than the Forest Department in the work of the Ecology Activities team. It is not clear how two departments (that don't get along) will implement the plan. In the case of the Ngahinga reserve, management planning already contemplates future management by the National Parks Department.

2.8.3 Both planning and implementation responsibilities are poorly defined for the Parishes outside the reserves, particularly if redressing imbalances between receipt of benefits and imposition of costs is involved.

RECOMMENDATION 8: A LEAD MANAGEMENT AGENCY SHOULD BE SELECTED FOR EACH RESERVE, BE FORMALLY COMMITTED TO PARTICIPATE IN THE PLANNING PROCESS AND TO IMPLEMENT THE AGREED UPON PLAN, AND BE RESPONSIBLE FOR COORDINATING RESERVE MANAGEMENT PLANS WITH THE LAND USE PLANS FOR THE SURROUNDING PARISHES.

2.8.4 The recommendation takes account of three things:

a. The need to develop a flexible model that will work in all reserves where the collaboration of neighboring people is necessary for the sustainability of the resources within the reserve; that is, the model should work whether the reserve is forest, game, or park.

b. The need to formalize the recognition of the symbiosis between the management of the resources within and outside the reserve which should

be based upon the same ecological data base. A concomitant is the need for more ecologically oriented inventory data upon which Parish land use plans can be based.

c. The possibility that the plans made by people in the surrounding Parishes will conflict with those for the reserve.

2.8.5 In practical current terms, the Bwindi Reserve would be managed by a single reserve administrator and not two Forest Officers each reporting to a different District Forest Officer.

**FINDING 9: IT WILL BE DIFFICULT TO DO GOOD PLANNING AND/OR IMPACT ANALYSES WITHOUT PRIOR BASELINE INFORMATION**

2.9.1 The design of the DTCP, as reflected by the tentative implementation schedule, was not preceded by even a rapid rural appraisal that would allow correlation of resource condition with social and economic factors.

2.9.2 As noted before, the only baseline survey activity is the community surveys recently completed by the CEA's. This is in spite of the agreement between CARE-U and the GOU, to wit: "Carry out, using CARE and Government staff, a baseline survey on sociological and environmental conditions before commencing activity implementation in the project area, and subsequently carry out follow up surveys to determine the effects of operations ..." Also, the WFP-US/CARE contract contains budget line items for "Consultants, baseline study, population" and "Database/monitoring system establishment."

In recognition of these shortcomings, the project management has requested that a project amendment be proposed that would provide money and expertise to conduct technically competent surveys to establish baselines.

**RECOMMENDATION 9. ANY EXTENSION OF THE PROJECT SHOULD INCLUDE ESTABLISHING A MONITORING AND EVALUATION UNIT ATTACHED TO THE PROJECT MANAGEMENT TEAM.**

2.9.3 The recommendation simply reflects good management practice. It is logical for any manager to know current conditions and to be able to measure the cause/effect relationships of his/her actions. These baseline studies should be undertaken in exactly the same way that the ecological studies are: identify key indicators and ways to measure them in cost effective ways, and take the readings on regular schedules.

2.9.4 The project design assigns responsibility for baseline survey work to the Conservation Extension Activity. The basic management data collected during baseline and monitoring work applies to all activities of the project and not a single component of the project.

**FINDING 10: GRANT AGREEMENT EXPECTATIONS FOR RESERVE MANAGEMENT ARE DIFFICULT OF ACHIEVEMENT IN THE FACE OF CONFLICTS BETWEEN FOREST AND GAME DEPARTMENTS.**

2.10.1 Both the Bwindi and Ntahangwa forests are Gazetted as both Forest and Game Reserves/Sanctuaries. The Grant Agreement documents assume

cooperation between the field personnel of the two departments to achieve a common goal.

2.10.2 The Team members were told by farmers and by employees of both departments that animosity between the personnel of the two agencies runs very high.

RECOMMENDATION 10: AT A MINIMUM, THE GAME AND FOREST ACTS SHOULD BE RECONCILED; AT THE MAXIMUM, GOVERNMENT SHOULD CONSIDER REORGANIZATION TO INCLUDE RENEWABLE RESOURCE AGENCIES IN ONE MINISTRY.

2.10.3 Since many of the conflicts are caused by differences in the Acts and, naturally, in the rules and regulations issued to implement them, such as the procedures for the apprehension and punishing of violators, it will be helpful to the success of DTCP-type interventions if the provisions and objectives of the Acts are reconciled so field officers act in concert rather than in conflict.

2.10.4 Substantial support was voiced in many circles for the idea of combining the Forest, Game, Parks, and parts of Fisheries into a single ministry. This recommendation urges GOU to consider this option as part of a larger DTCP-oriented resource management strategy.

FINDING 11: THE POSITION OF THE PARISH ADVISORY COMMITTEES IN THE POLITICAL SPECTRUM IS NOT CLEAR.

2.11.1 The members of each Parish Advisory Committee that met with the Evaluators were asked, "Who does the Advisory Committee advise?". No two answers were the same.

2.11.2 The lack of consistency probably should not be surprising. Many new political devices are being tried and final arrangements, as is true with the DTCP, are evolving.

RECOMMENDATION 11: CONSIDER THE PARISH ADVISORY COMMITTEES AS APPENDAGES OF THE RESISTANCE COMMITTEES-II'S.

2.11.3 In theory, the Resistance Committees (RC) represent a political hierarchy that extends from the ordinary citizen, as a Village Councilor, to the National Resistance Council. As noted earlier, a very significant level for planning and activity integration is the District. The political structure is represented at that level by the RC-V and the District Administrator.

2.11.4 The nine persons sitting on the RC-II accept responsibility for specific functions; a female member for women's affairs, for example. Many with whom the Team members discussed this matter perceive the RC-II as the effective grass-roots planning body. There is also thought being given to forming RC-II planning committees.

2.11.5 This recommendation envisions that the Parish Advisory Committee become, in effect, the RC-II Planning Committee. In this way there is in the political chain an RC-III where Parish plans can be aggregated and reconciled, and RC-IV where Sub-County plans are aggregated and reconciled, and the RC-V where County plans are aggregated and reconciled.

and where sit the District Development Committee, composed of the resident district officers of all GOV departments, chaired by the District Administrator.<sup>5</sup> It is at this level that the political chain and the technical chain interface; it is this level that the Project Manager and his/her parent agency must be able to exert influence on the allocation of resources.

**FINDING 12: THE SETTINGS OF THE MGAHINGA AND ECHUYA RESERVES ARE DIFFERENT FROM EACH OTHER AND FROM BWINDI RESERVE.**

**2.12.1 Characteristics of the Forest Are Different**

The Bwindi Reserve is dominated by nearly closed canopy tropical hardwoods. There is very little of this type in the Mgahinga or Echuya Reserves; they are dominated by bamboo with small showings of tropical hardwood groves.

**2.12.2 Configuration and Topography Are Different**

Even though small in absolute terms, Bwindi is made up of two fairly self-contained blocks of land. The topography is broken and extremely rough and steep (hence the nickname "Impenetrable"). Road access is limited and very poor. On the other hand, the remaining Mgahinga forests occur on the smooth slopes of three volcanoes. The remaining forest is easily penetrated. There is no road access, but the area is criss-crossed with trans-border trails. The reserve to be managed is a rectangular strip between the reserve boundary and the international border with Swanda.

Echuya is only 2 km wide at one place. It runs down the east and west facing slopes of a central ridge. The topography is steep, but not broken. The forest is easily penetrated from any direction. Access is easy, particularly from the main Kabale-Kisoro road which passes through the narrow neck.

**2.12.3 Land Use Patterns Are Different**

The boundaries of the Bwindi Reserve are well removed from any urban center -- Kabale is the nearest one. Other than in the tea belt in the northwest, the agriculture is made up of small plots climbing the hill-sides with fallows depending on the degree of pressure. Except in one place where recent mixed management signals have resulted in clearing by new claimants, there are no incursions within the Forest/Game boundaries. At Mgahinga, the forest is within sight of Kisoro, a small urban center. Further complicating things, there are three lines that can be considered boundaries: the line of the present Forest Reserve within which no permanent clearing has taken place; a former Forest Reserve/Game Reserve boundary from which to the present forest reserve boundary there has been nearly complete clearing, but very little permanent settlement; and an original Forest Reserve boundary which marks the

<sup>5</sup> In 1977, experience to date, the DDC is considered superficial. The County is too large a unit where the conservation concerns of a relatively few Parishes would be lost or, more importantly, not be able to influence government agencies. Thus, the line has been largely at the office of the District E-1, from E-II, to E-III, to E-I.

limits of the present Gazetted Game Reserve. In the zone between the two latter lines there is complete clearing, cultivation, and some settlement. None of the people residing and/or farming in the zones between the Game Reserve and most recent Forest Reserve boundaries have legitimate land titles.

At Echuya, the Tea members are not sure where is the Gazetted boundary in relation to the forest vegetation. There are reported incursions from outside and there is a visible incursion from the inside along the west side of the swamp. There are reported regular incursions that are taking place along the international border. The reports indicate that as the resource becomes more depleted on the Rwanda side, the greater the frequency of the incursions.

#### 2.12.4 Uncertain Administration

There is uncertainty about which agency will have primary management responsibility for the three forests. Presently, the Forest Department is the original management agency in all three, although as noted, management is shared with the Game Department in Ngahinga and Bwindi. The likelihood that Ngahinga will soon be Gazetted a National Park seems strong; a similar move is possible with respect to Bwindi; and continued Forest Department management in Echuya is unquestioned.

RECOMMENDATION 12: IF THE RECOMMENDATIONS FOR EXTENSION OF THE PROJECT ARE ACTED UPON, MODEST MANAGEMENT WORK SHOULD CONTINUE IN NGAHINGA BUT FULL SCALE EXPANSION FIRST TO NGAHINGA AND SECOND TO ECHUYA SHOULD FOLLOW WHATEVER REDESIGN IS TO TAKE PLACE.

#### 2.12.5 Priority Ngahinga Issues

There are two issues within the scope of the DTCP that must be quickly considered. The first is the issue of developing a plan that can rationalize the development of physical infrastructure to accommodate visitors drawn to the area by the presence of the Mountain Gorilla. The second is devising ways to deal with those who are illegally occupying land within the Game Reserve. This issue will be particularly acute if the proposed National Park uses the Game Reserve as the boundary for the park.

FINDING 13: IT IS QUESTIONABLE THAT THE STRUCTURE DESCRIBED IN THE PROJECT AGREEMENT CAN BE SUSTAINED

#### 2.13.1 Institutional Sustainability As Important As Biological Sustainability

The DTCP properly accords considerable importance to making the cultural practices installed sustainable. However, the institutional arrangement is quite conventional. Within the first five years the managers seconded to the project are to be able to operate the project for another five years. In the same time, the extension personnel of numerous departments are to have learned to work with each other through the CEA's and Parish Advisory Committees.

In the collective experience of the Team members, we find that it is likely that when project financing ends so will development through conservation on small, hill farms adjacent to the Afro-montane forest reserves. Without project perquisites, the establishment personnel will turn their attention to other projects where such amenities are available or return to more conventional activities. In fact, questions being raised by the most directly concerned Government of Uganda (GOU) departments -- and, in fact, by some Conservation Extension Agents -- reflect a conception of the DTCP as just another little development project that should supplement allowances and provide transport and living amenities.

The CEA's, cut off from the source of technical input to transmit to the farmers will lose relevance even if they -- as some say they will -- stay on without pay.

#### 2.13.2 Equity Issues

Protection of the unique flora and fauna of the South-Western Uganda reserves has value to not just Uganda, but to the world community in the same way "wilderness" has value to the U.S. national community. The commitment of the United States to invest in finding ways to protect these resources is an expression of an international willingness to pay for the knowledge that the biota will continue to exist. Such transfers from those who benefit to those who pay should not be limited to the term of a project.

The bulk of the returns realized from use of the resources of a forest seldom accrue to the local communities. Receipts from sawn lumber are realized by the logger, miller, and central treasury; local people receive day wages. Receipts from tourist visitation accrue to the lodge owners, hotels, and tour operators; local people are deprived of their traditional forest products and receive day wages if they are lucky.

#### 2.13.3 Capitalize Some of the Benefits

If the benefits, real and perceived, of the forests were capitalized, it would be possible to derive a stream of income that would support at least the CEA Network, as recommended above, and provide those Parish level motivators with a reasonable level of operating support and continued technical inputs.

A start could be made if one or more donors created a development through conservation trust fund of sufficient size to yield an annual income stream equal to the costs of maintaining the network.

Further capital might come from earmarking some portion of the gross revenues derived from using the resources. Such a policy should be the outcome of an examination of the the distribution of direct receipts from resource use.

#### 2.13.4 A Neutral, Established Development Institution Needed

What is needed is an institution that has the capacity to understand, develop, and use an extension system that is dedicated to serving small

farmers who operate in close proximity to reserves of national importance. The institution should also have access to multi-disciplinary teams in the biological, physical, and social sciences.

RECOMMENDATION 13: CREATE A PERMANENT CAPITAL FUND THE EARNINGS FROM WHICH WILL SUPPORT IN PERPETUITY RESEARCH AND EXTENSION DEVOTED TO DEVELOPMENT THROUGH CONSERVATION.

#### 2.13.5 The University System

The members of the Team are unanimous in their belief that one or more units of the Uganda university system would meet the criteria for "a neutral, established development institution." Further, the universities either have or are in the process of forming, quasi-independent institutes that have interests that parallel those of the DTCP. Examples are the Institute of Environment and Natural Resources in Makerere University and the proposed Institute of Tropical Forest Conservation in Mbarara University of Science and Technology. The strengths of both of these institutes would have to be complemented with comparable strengths in the social sciences, including adult education and agricultural communications.

#### 2.13.6 Possible Administrative Arrangement

There would be two professional institutes: one dealing with the biological and physical aspects of conserving through management the tropical forest resources of Uganda and one dealing with the social, economic, and institutional aspects of the same problem.

Policy for the two institutes, within the statutes of the university administration, would be set by a large advisory committee made up of university officials, senior government officials, non-governmental organizations, and representative National Resistance Movement members, such as EC members for women's affairs.

Each of the institutes could have a management committee. One role for the management committees would be to recommend to the advisory committee the budgets derived from the income from the trust fund. The first priority for these funds would be the maintenance of the activities presently being conducted by the IFCP and the DTCP. The trust fund income should not be diverted for the purpose of capital developments for the host university or the institutes.

#### 2.13.7 Relations With This Or Any Project

The staffs of the institutes should have three roles. First, they would handle the administration of the CEA Network. By this we mean recruiting and training the staffs of the Parishes and assisting them in their work with Advisory Committees and area-wide planning as is the case with the CARE-U system as it operated for the last two years. Second, they would arrange for the technical inputs that would be disseminated by the Network to farmers on their farms. This could be the results of research in the university, from the international research centers, and from the agencies of the GOU, whether project

supported or not. Third, they would perform an advisory function in the preparation of reserve management plans assigned to single lead agencies, as described above.

#### 2.13.8 Preference For Mbarara

The three Team members are also unanimous in favoring Mbarara University of Science and Technology as the institution within which the infrastructure for administering the trust funds would be administered. This is because of the intention to educate and train people for service in rural Uganda, and because it is a new university where there are fewer ties to old ways of doing things. In short, it represents a new start for what is to us a bold initiative.

FINDING 14: THE FOREST DEPARTMENT PROPOSES TO WITHDRAW THE FINANCIAL AND INFRASTRUCTURE SUPPORT OF THE FARM FORESTRY COMPONENT, FORESTRY REHABILITATION PROJECT FROM JURISDICTIONS INCLUDED IN THE DEVELOPMENT THROUGH CONSERVATION PROJECT.

2.14.1 The Evaluators find that there is no conflict or overlap with the Farm Forestry component of the Uganda Forestry Rehabilitation Project (UFRP) that is financially assisted by DANIDA and CARE-U. The Farm Forestry component is intended to strengthen the Forest Department's ability to perform in the field; DTCP is intended to assist farmers install conservation practices in the interest of the adjacent reserves.

RECOMMENDATION 14: THE TRAINING AND SERVICE TO FARMERS ASPECTS OF THE FARM FORESTRY COMPONENT OF THE FORESTRY REHABILITATION PROJECT SHOULD BE CONTINUED IN AS MANY JURISDICTIONS AS POSSIBLE, INCLUDING THOSE IN WHICH THE DEVELOPMENT THROUGH CONSERVATION PROJECT IS OPERATING.

FINDING 15: EXPECTATIONS FOR REDUCTION OF SOIL EROSION FROM DEVELOPMENT THROUGH CONSERVATION ACTIVITIES ARE OVERBLOWN.

#### 2.15.1 Erosion Is Massive

The movement of the soil down the slopes is visible, particularly on the upper slopes. There is gully erosion, but the more serious loss is occurring as the fields slump and, essentially, slide down hill. Even the effect of maintaining the closed canopy of Bwindi Reserve has a relatively minor impact on the silt load being sent to the Ishasha River system.

#### 2.15.2 Farmers Aware, But Feel Powerless

The members of the Team found in every meeting that the farmers are aware of declining crop yields and soil loss. They have demonstrated that they are willing to try establishing tree-based rows on the contour to start terrace formation. But these will take a great deal of time to even begin to show results.

RECOMMENDATION 15: A CONCERTED EFFORT SHOULD BE MADE TO ASSIST THE DEPARTMENT OF AGRICULTURE TO RE-ESTABLISH THE TERRACING BY-LAWS AND DEVISE BEST POSSIBLE TECHNOLOGIES TO SEE THAT THE BY-LAWS ARE WILLINGLY ADOPTED BY FARMERS IN THEIR BEST INTEREST RATHER THAN BEING FORCED ON THEM.

2.15.3 There is now far better technology for creating inward sloping terraces, for using the risers and bunds productively, and for protecting the excess water run-off routes than was available 50 years ago. The intent of this recommendation matches exactly the intent and approach of the DTCP.

FINDING 16: MAINTENANCE OF SWAMPS MAY BE MORE IMPORTANT THAN REALIZED

2.16.1 The fast dwindling supply of swamps has been overlooked in plotting DTCP strategy. The role of the swamps in the complex system in South-west Uganda is little understood. There were very little data available to the Tesa members on former productivity. It is recognized that the deep, steep sided lakes have little internal sources of nutrients and are often low in dissolved oxygen at depth. Maintenance of healthy swamp systems may be related to fishery production in the large and very deep lakes in the area. At current rates, there is very little time to keep the remaining swamps from being cleared and drained. If the hypothesis that the swamps contribute to lake productivity is correct, loss of the swamps would mean the end of the lakes as productive fisheries.

RECOMMENDATION 16: RESEARCH INTO THE INTER-RELATIONSHIPS BETWEEN THE SWAMP COMPLEXES AND LAKE PRODUCTIVITY SHOULD BE ACCELERATED.

2.16.2 Accelerated research and protective measures should take place in close collaboration with the International Union for Conservation of Nature and Natural Resources' (IUCN) Wetlands Project in Uganda. There are many areas for student research that could be supported by the DTCP.

FINDING 17: THE PROPOSED ROLE FOR THE HIGH-LEVEL MANAGEMENT STEERING COMMITTEE WOULD BE UNDER-USING AN IMPORTANT ASSEMBLY OF OFFICIALS.

RECOMMENDATION 17: THE PROPOSED MANAGEMENT STEERING COMMITTEE, WITH REPRESENTATIVES FROM ALL OF THE AGENCIES LISTED IN THE GRANT AGREEMENT INCLUDED, BE PART OF A POLICY DIALOG LEADING TO THE ESTABLISHMENT OF A NATIONAL CONSERVATION COORDINATING COMMITTEE AS PRELUDE TO A NATIONAL CONSERVATION STRATEGY. THIS RECOMMENDATION WILL HAVE PARTICULAR MERIT IF PROJECT RELATIONSHIPS ARE ESTABLISHED WITH THE MINISTRY OF PLANNING AND ECONOMIC DEVELOPMENT OR AT HIGHER LEVEL.

18: MISCELLANEOUS FINDINGS

2.18.1 On-farm Nutrient Cycling Sound

The on-farm approaches are sound because they are farmer generated and stress recycling of nutrients from plant and animal resources on individual farms. The emphasis on using indigenous species of trees is commendable.

#### 2.18.2 Measurement of Effect of Trees On Crop Yields Needed

No start has been made to begin to measure the incremental differences in crop yield that may be attributed to the adoption by farmers of the prescribed practices.

#### 2.18.3 Farmers Already Practice Advanced Agro-Forestry

Farmers are already practicing sophisticated multi-storied cropping systems. Some of the systems have greater promise than the simple agro-forestry interventions encouraged under the project.

#### 2.18.4 The Is Insufficient Administrative Support

The DFCP Coordinator and IFCP Director are overburdened with administrative details that impedes their effectiveness as program innovators.

### 19: MISCELLANEOUS RECOMMENDATIONS

#### 2.19.1 Emphasize Ethnobotany Work

Emphasis in the ethnobotany work and the on-farm prescriptions for using indigenous tree species should continue in spite of arguments made for exotic species. The field of ethnobotany is thought to be sufficiently important that the Ecology Activity should consider a major push to use formally trained oral historians to make permanent records of the often well-guarded uses of plants.

#### 2.19.2 Measure Marginal Impact of Trees on Crops

Field verification trials should be used to follow-up the installation by farmers of such practices as scattered planting of *Sesbania* spp. throughout sorghum fields by measuring marginal increases in production, if any.

#### 2.19.3 Study Indigenous Agro-Forestry Systems

Careful records should be started on the fields of those farmers now using agro-forestry as part of their farming systems to determine of the practices can be best offered to other farmers.

#### 2.19.4 Add Local Hire Administrative Help

Additional local hire administrative assistants should be hired as soon as possible to free the technicians to perform the jobs for which they were hired.

#### 2.19.5 Sponsor Conference of Baseline Data Systems

It would be consistent with the intent of the DFCP for USAID-U to assist in the financing of an international conference on standardising inventory methodology and baseline data management.

2.17.10 Support Research in Reptiles and Amphibians

Support should be extended to the California Academy of Sciences to permit the best of world's authorities on East African reptiles and amphibians train Ugandan researchers while doing the inventory and taxonomy in Bwindi Reserve.

### 3.0 LESSONS LEARNED

#### 3.1 IMPLEMENTING A COMPLEX PROJECT REQUIRES STRONG LEADERSHIP

##### 3.1.1 The Final Design Is Complex

For whatever reasons, the design that is incorporated in the Grant Agreement is complex. It is assumed that relationships between the two grantees would be quickly settled, that an agreement with the Government of Uganda would be quickly signed, that a well-qualified expatriate staff of advisors would be recruited and posted, that the very difficult problems of erecting a headquarters complex in a remote area would be easily solved, and that extension staff, well endowed with requisite technical skills, of uncertain number from at least two major, old-line agencies would be made available.

None of the assumptions worked out easily or in timely fashion. Normally, the grantee should be responsible for ensuring the terms of the Grant Agreement are scrupulously met. Grantee management was far removed from the scene of the action; it was assumed that the contractor, chosen because of an administrative structure on the ground and an existing relationship with the Government of Uganda (GOU), would act for the grantee. Only the Project Coordinator did, and that person had no leverage.

##### 3.1.2 Correlation Between Money and Power

The Project Officers who control the money are those usually in the best position to effect change. In this case, the manager of most of the project money was located in the U.S. Responsibility for the local currency contributions made by the donor in Uganda was in the Office of Program; the substantive line of authority from the Project Officer was connected with the Office of Agriculture.

##### 3.1.3 No One Was In Charge

The lesson is that some one should have been acknowledged by everyone as the person in charge and that person should have the authority to interrupt the flow of money. In the absence of such an assignment at the beginning, and project-threatening delays can and will take place.

#### 3.2 FARMERS WILL RESPOND IF NEW OPTIONS ARE PRESENTED THROUGH A PEER NETWORK

##### 3.2.1 A Separate Extension System Worked

A plausible hypothesis that emerges from about 12 months' experience is that farmers respond well to information passed by people they consider peers, who come from the same locality as they do, and have information that is intended to help them. The DTCP, whether consciously or by accident, has developed just such a system by establishing a network of Conservation Extension Agents (CEA). With such a network, technologies and approaches can be channeled directly to farmers. This is an exciting development.

There is little question in the minds of the Evaluators from their discussions with small farmers in the hills of Kigezi that the farmers are painfully aware of the problems outlined in the DTC Project. They know their yields are declining; they know the soil is going down hill; and they know that once easily accessible forest products, such as swamp grass for making mats and baskets, are farther away. They are eager for new ideas that offer relatively quick returns with least risk (read change from what they are doing).

What seemed to be working is fairly simple technology that required little change and was introduced by fellow residents of the same Parish. For example, no one suggested giving up planting a hill plot in sorghum; it was only suggested that they plant *Sesbania* spp. within the field and some other indigenous species along the field boundaries. Very little risk; prospects of good improvements. When greater change was suggested -- shift from bush beans to climbing beans, for example -- the resistance was such higher even though the possible returns were such higher: some one has to find and cut poles in what the farmers said. Without household data, there is no way of knowing what is his opportunity cost of labor.

### 3.2.2 The Alternative Is Conventional Extension

Few, if any, economically developing countries have been able to deliver competent, farming systems-oriented service to small farmers in remote areas. This is because most of the attempts have, by force of government to government agreements, worked through one or more large-scale pyramidal bureaucracies. The lowest person in the pyramid is the youngest, least experienced, least paid, and worst equipped in the organization. Even though large in total numbers, there are seldom enough of them to make their presence known in the farming communities they are to serve. Often they are assigned to areas in which they are strangers -- even not speaking the same language. And of particular import to the DTCP, few of them have received any training in farming systems. Yet it is exactly these people who are to have face-to-face contacts with farmers. They are to motivate the farmers with very narrow margins for error to install new technologies. And they are to do it on a very wide scale. The reward: promotion and transfer away from the farmers with whom they are to have established rapport.

The list of what it will take to make such a system work is the subject of many agricultural development projects. Among them are improving the quantity and quality of agricultural college graduates, pressuring the civil service authorities to create more posts, build accommodations as incentives to serve in communities where they don't want to be, provide transport, and so on.

### 3.2.3 Some Resemblance to U.S. System

The system of male and female CEA's in the Parishes has an uncanny resemblance to the U.S. county agents and home economists. Both tend to be generalists who specialize in receiving from specialist sources new agricultural information that is transmitted to working farmers through a network of farmers. There is little change: the agent tends to remain in his community for long periods of time. The so-called home economist is concerned with not only food and nutrition, but with most affairs of the family: sewing, handicrafts, health.

### 3.3 PROVIDING TECHNICAL INPUTS TO CEA NETWORK IS MOST SERIOUS PROBLEM

#### 3.3.1 Disciplines, By and Large, Mean Agencies

The organization of government agencies strongly tend to follow disciplinary lines. Thus, when the number of disciplines represented in the activities encountered on one farm is considered -- crops, livestock, fuelwood, handicrafts, child health and nutrition, forage and fodder, water supply, implement procurement and repair, and so on -- a large number of government line agencies are involved. The number is increased slightly if the farms are adjacent to a park or game reserve.

Most of the disciplines represented by the agencies have valuable information to impart to farmers. But the information from each agency should take into account the information from all the other agencies so that the entire farming operation is taken into account. To do this requires inter-agency coordination.

But not all of the best technology is in the hands of the government agencies. University research stations, the international research centers, and non-governmental organizations are representative of potential sources of help for farmers.

#### 3.3.2 Coordination of Sources Best Which Is Closest To Farm

A lesson learned from the DTCP is that the personnel with the best understanding of local problems are those closest to the problems. The lowest administrative level at which nearly all the relevant government agencies are represented is the District. It is also at this level that research organizations, such as the International Center for Bean Research (C.A.I.T) and the International Council for Research in Agro-Forestry (ICRAF), choose to enter the field. From this standpoint, coordination at the District level makes sense.

In addition, the district alignments define areas that are quite homogeneous and are natural administrative units -- a fact recognized by royal and colonial administrators. Most often, people are identified by means of the district from which they come.

#### 3.3.3 The Agencies Retain A Strong Tendency to Vertical Decision-Making

The GOG has recognized the District as a unit with many common foci: District Executive Secretary for the system of Chiefs, District Administrator for the system of Resistance Councils, and District officers for most of the agencies. In theory, the RC political bodies are to coordinate the field personnel of the line agencies through a chain of development committees stretching from the Parish to the District.

The system is evident at the District level. The District Administrator chairs the District Development Committee (DDC). The Committee is made up, *ex officio* of all the sitting district officers, two representatives from each Sub-County, and the Chairman of the RC-V. In discussing the role of the DTCP Advisory Committees, no one -- not Advisory Committee Chairmen, members or

Chairmen of RC-II's or members of RC-III's mentioned the development committees at those levels.

The lessons learned in the DTCP are that the District is an appropriate level to seek coordination among the several government agencies and external sources of technical inputs, and that conflicts and other coordinative problems may surface in the DDC, but most of them are still referred to Kasapa for resolution.

#### 3.3.4 Modern Trend toward Decentralization Could Aid Coordination

The Evaluators were told on several occasions that senior Ministry of Planning and Economic Development officials have tabled the proposition that there be District Planning and Economic Development officers. The rationale is stated as being to effect coordination between the flow of financial resources from the center -- donor assistance as well as revenues received by the Treasury -- with the local tax revenue to be budgeted by the development committees. In addition, it was contended that the posting of such officers to extend the coordinative authority of Planning and Economic Development is part of a GOU strategy to decentralize decision-making to the district level. The officer would be able to reduce the number of issues referred to the center for resolution.

From the lessons learned in the DTCP, any such move by the GOU should be supported and taken advantage of.

#### 3.3.5 Avoid Making DTCP a General Development Project

There is one major note of caution that should be observed. When asked about the major problems facing their Parishes, the members of the Advisory Committees included a list of general problems. The most common one mentioned was the lack of road transport. A more thorough interrogation might reveal that lack of schools and health posts is also a major problem.

The DTCP was, and should continue to be, designed to use conservation practices to improve the sustainable productivity of the individual farms and the afro-montane forests. The lesson learned is that it may be too easy to lose sight of the sub-goals in the rush to improve the income of the farm families.

### 3.4 NEW APPROACHES REQUIRE FLEXIBLE DESIGNS

#### 3.4.1 New Approach to Old Problems Recognized At The Outset

The chronology of the project makes clear that the idea for the project came from those facing the enormous task of protecting the little that is left of the Afro-montane forest. The logical shift of attention to those perceived as the most direct threat -- the people immediately adjacent to the reserve boundaries -- represented a new approach. It should have been clear that the ability to predict outcomes was very limited.

#### 3.4.2 Someone Needed Hard Accomplishments

The final project documents give the clear picture that the outcomes were well known. Some of the justifications are gross expectations expressed

in general school textbook terms: forests are good because they increase precipitation, protect catchments, and maintain or increase the flow of streams and springs. Whether Echuya or Mgahinga, or even Bwindi are large enough to influence any of these things is open to considerable question.

A major factor emphasized in the findings is soil erosion. In a search for an effect that is visible, easily attributable to forest protection, and, in theory, objectively measurable, reduction of soil erosion is given prominent place in the project's expected results.

At a second level, a series of problems facing farmers and forest conservation are factually listed followed by proposed solutions. The solutions are heavily influenced by the field operating successes of the CARE apiculture and farm forestry projects. Whether knowing about the number of bee hives to be hung in trees planted as reserve boundary markers is significant to the success of a new approach to forest protection is also open to considerable question.

At the third level, some conventional project devices were put forward with little latitude for project management to take advantage of opportunities. The committee hierarchy is an example: project management are to be judged on whether a regional advisory committee or a national project steering committee are established. The Evaluators regret having to use the latter as an example to fault strong leadership because leadership is the issue and not whether there should or should not be such a committee.

#### 3.4.3 Flexible Design Tied to Strong Leadership

In the judgment of the Evaluation Team members, as reflected in the Recommendations, strong leadership in a flexible design should have been given a mandate to examine the feasibility and use of advisory committees. It would have been refreshing to find that the project management, after examining the pros and cons, decided to drop regional advisory committees and to take advantage of an opportunity to begin a dialog on the larger issue of coordinating national conservation policy.

The lesson learned is very simple: piling up numbers where none exist places the management of experimental projects in a position where tangible results must be shown and, as a consequence, the opportunities to innovate are lost.

### 3.5 PROJECTS LIKE THE DTCP SHOULD BE PRECEDED BY BASELINE SURVEYS

#### 3.5.1 Simply Understand Enough to Plot Tactics

In claiming for the DTCP the ability to improve the environmental well-being of an interesting number of land users, the project assumed that all were subsistence farmers. The Evaluators, as reported elsewhere, found a high interest in vegetables and cash crops. This is not the behavior of subsistence farmers.

A intervention tactics for subsistence farmers will probably not be the same as for those with substantial cash income from remittances received from family members. Two well informed sources gave the Evaluators conflicting stories about young wage earners who left the farms for cash wages. Both

claimed the practice is prevalent, but one informant said that the cash sent had no strings attached while the other source said that the absentees sent little money but expected grand parents to care for their infants. Project management has no basis in fact to know which, if either, condition prevails. In spite of this, one of the requests made on the Evaluators was to determine if there had been a measurable impact of the project on levels of farm family income.

The lesson learned here is that expectations for some sort of detailed target setting ought to be based upon sufficient facts to merit the selection of the actions and the targets.

### 3.5.2 Resources For Monitoring and Evaluation Should Be Built In

Even if a preliminary socio-economic appraisal equal to the ecological survey information generated by the Impenetrable Forest Conservation Project (IFCP) staff in 1984, it is not sufficient for plotting strategy. Further, it is standard practice for experimental or trial enterprises to monitor what has happened. This is true not only for reporting progress, but for management to consider changes in both tactics and strategy.

The lesson learned is that strong leadership and flexible design will both, in the long run, depend upon reliable data upon which to base decisions. These data were and are not available for the DTCP. No one should expect impact evaluations without them.

## 3.6 THERE IS NO BASIS FOR DETERMINING WHETHER THE NUMBER OF CEA'S IS PROPER

### 3.6.1 Estimated Strength For CEA Network

The effect of the origins of the CEA Network in the IFCP is still evident. The main purpose of the CEA's, as restated in the DTCP goal structure, is to raise the conservation awareness of the land users. Technical inputs were to come from the GCU extension staffs. It seems to be assumed that two CEA's per Parish will do the job.

In the six Parishes visited, the CEA's and Chairmen estimated that about 500 farm family units worked the land.<sup>1</sup> These families live in around seven villages per Parish.

Since the CEA's are part time, about 22 person days are available to two CEA's in a Parish for public events and school work and on-farm contacts. If it is assumed that 50 percent of the time is spent in public events, schools, and administration (reports and training sessions), then 11 person days are available for on-farm contacts work. At this rate, it would take 55 calendar months to reach each farmer for one day on his farm.

The situation is complicated by having female CEA's. Their area of work is not the same as the male agents, so there are fewer agents handling work in the fields because some of the CEA's are concentrating on the work in the houses and yards of the farms. This is really not very practical.

<sup>1</sup> It is not certain how many people this means. The range of persons per farm family unit ranged from 5.5 to 10. There is also uncertainty about how to account for widows; that is, whether each wife is a farm family unit or whether the male and all assets are the farm family unit.

### 3.6.2 Establish A Farmer Tree Organization

A lesson learned from the DTCP so far is that the male and female CEA's should be considered complementary members of the same team. Therefore, whatever the number of CEA's are needed to provide adequate service to the farming families, it should be doubled: one male and one female. They should conduct on-farm contacts together to the extent that local custom will permit, and they should collaborate on other activities as well; for example, handicrafts so the men know the problems of obtaining and carrying swamp grasses and the problems of marketing.

If there are 85 farm families per village and a reasonable span of control is 10, then eight or nine CEA-type people will be needed to make demonstrations/field verification trials and on-farm contacts per village. This would be 56 to 63 persons to be linked by CEA-type persons at the next level up. This would translate into five or six such persons.

If CEA work is again assumed to be 50 percent public and 50 percent on-farm, then two pairs of DTCP-style CEA's could serve each Parish. Each pair of CEA's would concentrate on three lead farmers located so as to serve a cluster of villages; each of the lead farmers would be responsible for a group of seven farm families, one in each village; and these seven, in turn, would seek ten farmers in their village as cooperators.

In this idealized "tree", the CEA's continue to receive training in Ikumba (or elsewhere), return to offer the new technology to the lead farmers who through demonstration, not training, would pass the information to the village farm level.

The lesson learned from the DTCP experience is that the rate of adoption is limited by the number of people involved in passing on the technology. As long as it is only the CEA's and the even more limited government agent, the impact of the project will be small.

The second lesson learned is that there is now no formal measure of the work the CEA's do. This may also be a product of having set targets to reach: the reporting concentrates on how many people are in rallies and so on. It is not possible to know how many person hours of effort are required to achieve one innovative adoption.

### 3.6.3 There are Two Further Lessons

A cautionary lesson that comes from both DTCP experience and from extension experience elsewhere. There is a tendency when selecting lead farmers and cooperators to choose the larger, more wealthy farmers. Demonstrations on the large farms of a relatively well-to-do farmer is as effective as a demonstration on a government experiment station. Many of the farms to which the Evaluators were taken were not the property of poor subsistence farmers. The lesson is: if the transfer of technology is to benefit a large number of farmers, extraordinary effort has to be expended on making sure the smaller, poorer farmers are included.

The second lesson from the DTCP is that much is made of the number of people who have attended public rallies, meetings, and lectures. The Evaluators have already recorded their high regard for the accomplishment. However,

as the newness wears off, there is every reason to believe that the number of both public meetings, lectures, and events will decrease and that the number of people attending each one will decrease as well. The high initial attendance is to some degree attributable to novelty; novelty wears off quickly.

### 3.7 LAW ENFORCEMENT IS AN ESSENTIAL PART OF PROJECT DESIGN

#### 3.7.1 The Amount of High Forest Left is Marginal

There is no clear evidence that the Afro-montane biome can be sustained with the very small blocks of it that remain. This makes it extremely important that no more of it be converted to other uses or seriously tapered with.

The project documentation implies that collaborative Forest Department and Game Department guards would contribute to maintaining the forest.

The lesson learned is that the role of rigorous enforcement of the law of Uganda is essential to the short-run existence of the forests.

### 3.8 START SMALL AND ESTABLISH A FIRM FOUNDATION

#### 3.8.1 Impenetrable Forest Conservation Project is Example

The IFCP is an example of a project that started on a shoe-string and, by applications of sound development principles, became a firm base of operations for larger and more influential activities.

The principles are similar to those used to plot tactics and strategies in communities and on farms. First, find something that everyone can agree on and attack it. Second, in the process, methodically accumulate basic information and identify those with integrity and skill. Third, use the information and experience gained in dealing with the first problem to identify other problems and issues for the solutions to which support can be mobilize wider circles of support.

The IFCP started with the interest of one man in maintaining the remnants of a scientifically important biome. The feature in the biome that everyone could agree upon was the Mountain Gorilla. Work with forest creatures requires a research station; protection of habitat requires an honest, loyal force of guards to curb illegal activities; the research station requires top Ugandan scientists and technicians. Adding a Development Through Conservation project was a logical next step. Moving toward a two-institute arrangement to promote sustainability is a progression based on the cumulative experience of all that went before.

#### 3.8.2 Basic Infrastructure

A direct benefit to the DTCP is that for the entire delayed start-up period there was available physical facilities from which DTCP-assisted scientists could conduct biological and physical surveys in the forest and in which CEA's could assemble for training. Without this infrastructure, it is not probable that the DTCP record would look nearly as impressive.

An important store of capital that builds up with experience is knowledge about people: people who will work, people who will be enemies, people in

whom to place trust, people in pivotal positions who can get things moving. This sort of information, gained from starting small and learning from experience, was available to the DTC Project Coordinator as soon as he came on the job.

### 3.9 NOT SUFFICIENT ATTENTION TO ALTERNATE WOOD SOURCES

In Section 3, "Analysis of the Project," it is suggested that the stagnant wood in plantation forests be converted manually. This position is taken because any source of wood products available to the farming community in the target Parishes should reduce cutting pressure on the forest and the alternate source of income would reduce dependence on the few pit sawyers now operating in Bwindi Forest Reserve.

There is another source of wood, some of it likely to be high grade. There are still remnant stands of Afro-montane forest in pockets, most along stream beds, on the northern flanks of the forest. These pockets are rapidly being felled and the land converted into hill side agriculture. In "slash-and-burn" tradition, the felled trunks are left lying and burned. Much of this hardwood could be salvaged with small, portable skyline equipment and pit saws.

The lessons are twofold: there are alternate sources of even hardwood that could diminish pressure on Bwindi, and concern should now begin to focus on the protection and/or establishment of more moist tropical high forest.

DEVELOPMENT THROUGH CONSERVATION  
IN  
SOUTH-WEST UGANDA PROJECT

EVALUATION REPORT

ANNEX 1:

**TERMS OF REFERENCE**

*Problems are in many  
Hant  
self*

Development Through Conservation Project

Mid - Term Evaluation

Terms Of Reference

Evaluation Period:

May 27th - June 20th 1990

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Prepared By: Joe Torres  
Submitted By: CAEZ - Uganda  
Final TOR Submitted: May 21, 1990

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Government of Uganda - CARE - World Wildlife Fund - USAID

DEVELOPMENT THROUGH CONSERVATION (DTC) PROJECT  
MID-TERM ASSESSMENT

TERMS OF REFERENCE (TOR)

Submitted To: \* Government of Uganda, Ministry of  
Environment Protection  
\* USAID-Kampala  
\* World Wildlife Fund-USA  
\* CARE-USA

Submitted By: CARE-Uganda

Final TOR Submitted: May 21, 1990

Evaluation Date: May 28th - June 9th 1990 (Field Portion  
Only)

A. Evaluation Objectives

To conduct a mid-term evaluation of the DTC Project which would identify and recommend changes/modifications which may be needed in the Project's goals, strategies, and activities. This evaluation would be process oriented, rather than impact oriented, since the project has recently begun implementation (September) 1989. If funding becomes available beyond September, 1990, for the remainder of the project, the results of the evaluation would be utilized, as appropriate, to make modifications in the implementation methodology.

B. Recommendations/Expected Outcomes

It is recommended that the evaluation report will:

1) Technical/Managerial Weaknesses:

List all of the technical and managerial weaknesses observed for each of the project's components and provide constructive recommendations for correcting all observed problems/weaknesses as well as provide recommendations for preventing potential problems in the DTC's planned strategies.

2) Strong Points:

List the strong points of the project, and recommend how these points can be replicated in other similar projects.

3) Resources:

Identify what resources are lacking in the Project and recommend possible avenues to obtain these resources.

MS

Although the Project has not started working intensely in Kisoro (Mgabinga Forest) or Muko (Ecuyha Forest), these areas should be visited by the evaluation team for comparison purposes and to recommend possible intervention strategies if different from those in the Impenetrable Forest area. These two areas are planned to be included in the Project for full scale implementation in Year 2 and 3 of the project respectively. All 3 forest areas should be visited since they are different in size and management classification.

3) Scheduling:

MS  
As advised by  
CASE in 1990

A period of two weeks is needed to carry out the field evaluation since accessibility to sites is poor and the complexity of the project requires time to review all aspects/components of the project. The evaluation will take place from May 28th to June 9th since the Project is expected to expand on it's activities soon and should be reviewed before expansion occurs. The draft evaluation report will be submitted for review to host country counterparts, USAID, WWF and CASE by the team leader. Following receipt of comments from these organisations, the team leader will take such comments into consideration in the finalization of the report prior to his/her departure from the country on June 20th, 1990.

Just add 1991  
27 days

The recommended schedule for the evaluation team is as follows:

- May 27 Travel to Kabale/Ikuzha.
- May 28 Team reviews Terms of Reference and Project documents. Agree on any modifications to TOR.
- May 28 Travel to Kisoro, view expansion area.
- May 30 Evaluation of Bubuguri Parish.
- May 31 Evaluation of Nyarubanga Parish.
- June 1 Evaluation of Nyarubale Parish.
- June 2 Evaluation of Maaya Parish.
- June 3 Ruhije - Discussions with Ecology Advisor.
- June 4 Ruhije and Evaluation of Ritoje Parish.
- June 5 Evaluation of Mukono East Parish.
- June 6-7 Administration & Management Review.
- June 8-9 Summary session.
- June 10 Travel to Kasapa.
- June 11-14 Preparation of Evaluation Report by team leader, circulate report for comments, conduct review meeting.
- June 15-19 Team leader finalises report.

The Evaluation Team will be given an opportunity to review the evaluation Terms of Reference and modify the schedule as needed to accomplish the outputs required. Issues to be addressed (Appendix A) may be revised by the team. The date set for this May 28.

#### 4) Evaluation Team:

The core evaluation team will be comprised of four external evaluators from outside the project. Members of the external evaluation will be as follows; USAID (2), WWF or CARE (1). An Ugandan national, neutral evaluator from Hbarera University will assist the team leader in the compilation of background information required for the preparation of the evaluation. An evaluation representative from USAID and WWF will be selected by the organizations. The USAID evaluator will serve as the team leader.

Project Management staff (Project Coordinator, Advisors, and Managers), Forest Department and Game Department Kampala representatives (one from each department), and Conservation Extension Agents (CEAs), GOU extension agents, and Advisory Committee chairmen from the Parishes to be assessed will assist as resource personnel. Also, the IFCP Director will be involved as a collaborating resource participant. The DTC Project Coordinator's replacement should be in country before the evaluation starts and this will provide the necessary continuity required of managing the Project.

Each Project staff would participate in the evaluation as a resource within their respective technical component, i.e. Ecology and On-farm activities. The Project Coordinator and Manager will cover the administrative and management issues. All Project Management staff and GOU/Kampala representatives will participate in the summary session.

The core evaluation team will travel together to the various parishes although each member will be responsible for assessing different issues/activities and may be holding discussions with different resource participants and farmers. One USAID representative and the Hbarera University evaluation team member will be responsible for the Ecology component evaluation while the USAID and CARE team members will concentrate on On-farm/Extension activities. As DTC is a multi-disciplinary project, the team members must view the project as an integrated effort involving on-farm and forest conservation activities. Thus, all members will be involved in assessing the integration of the project's activities. The team leader (USAID representative) will have overall responsibility for assessing the Project's administrative and management issues, although all team members will have input to these topics. All team members will compile reports on their areas of expertise and submit these reports to the team leader for incorporation into the final report.

5) Farmer Contact:

The Evaluation Team will communicate with farmers during the evaluation of each selected Parish. The CEAs and Advisory Committee Chairman will be responsible for organizing farmer contacts within their parish and also serve as translators if necessary. Farmer interviews concerning forest conservation attitudes/perceptions will be arranged through the CEAs as well. The evaluation team members will have ample opportunities for spontaneous random interviews with farmers within the selected parishes if required.

6) Constraints:

The Project site is located in the extreme southwest of Uganda and in a remote area (approximately 8 hour drive from Kampala) and therefore additional logistical limitations arise. As accommodation is scarce and/or non-existent, the evaluation team and Kampala resource personnel must be kept to a minimum. Some team members may be required to sleep in tents. Additional time will be required for travelling to and from Ikumba/Kampala as per the schedule in # 3 above. Travel within the Project site is rough and time consuming and may limit the available time for interviews in the field.

APPENDIX A

Issues to be Addressed

A. Planning/Implementation

1) Project Goals/Objectives/Activity Targets:

Are the Project's Goals, Objectives, and activity targets realistic/appropriate? Are the present indicators of the objectives effective for future impact/process evaluations? Are implementation plans necessary for each component?

2) Baseline Collection:

Suggest methods to improve upon the baseline data collection for project monitoring and evaluations. How much biological data is necessary for baseline data and how will this data be used to show impacts.

B. Project Site and Site selection

1) Expansion Of On-Farm Activities:

At what stage should the project expand the on-farm activities into other areas of the Project, i.e. to Mshinga and Echuya Forest areas.

2) Scope Of Activities:

Should all project activities be implemented on all sites; are the sites appropriate for all activities? Should or can the Project concentrate activities in specific sites to be used as model or demonstration sites or should there be equal implementation in each site?

3) Criteria For Forest Priorities:

Document the criteria used to determine forest priorities and discuss the appropriateness of the strategy.

C. Technical Components

1) Conservation Extension:

- a. Review the staff structure and hiring methods for the Project Extensionists (CEAs).

Has the strategy of using women CEAs increased the effectiveness of the Extension component?

Are the CEAs qualified or the best people to use as Project promoters?

Is the supervision of the CEAs adequate and if not recommend solutions to improve the supervision?

- b. Review the roles, responsibilities, and collaboration of the CEAs and GOU extensionists.

Do the Project extensionists understand their appropriate roles/responsibilities?

- c. Identify the present methods used for obtaining cooperation and coordination between the GOU extensionists and Project CEAs and suggest ways for improvement.
- d. Review the extension information sharing systems established.

How are farmers being contacted and perceiving the CEAs and GOU extensionists?

Is the decentralized zonal extension strategy operating more effectively than operating as one large group?

Have the training workshops adequately met the needs of the extension agents?

Does the monthly report format provide the necessary information to Project Management for donor reports?

## 2. Agroforestry/On-Farm Activities:

- a. Review the applicability and acceptance of the promoted on-farm activities.

Are the promoted technologies feasible and easily implemented by the farmers, and if not, what resources are needed?

Is information being provided to farmers at/for the appropriate times and seasons?

How effective have demonstration plots been in promoting on-farm activities?

Should the Project be involved in on-farm applied research or promote already proven technologies?

- b. Given the land tenure system and land fragmentation, recommend methods to carry out soil conservation practices in an ecological manner.
- c. Identify constraints and solutions for the sustainability of on-farm activities, especially in tree production and soil conservation methods.

## 3. Ecology Component:

- a. Review the methods and strategies for carrying out the ecological inventories and management plans preparation.

- b. Given that decisions are currently being made on forest designations without adequate data, should the project wait to prepare draft forest management plans until inventories are completed, or present plans with the data collected within one year's time and update plans on a regular basis with new information?
- c. Are the inventory methods of DTU being used by other Projects in the region, i.e. Are they being standardized?
- d. Is it appropriate to request for outside expertise to conduct inventories with Ugandan counterparts and students?
- e. Should the project be promoting multiple use of the forests at this time since some areas are destined to become national parks? Can the GOV monitor or enforce these activities at present?

**D. Integration of Components**

**1) Procedures/Methods:**

- a. Identify procedures/methods presently in place that ensure for the integration of each project component. Recommend methods and resources necessary which will strengthen the integration of these components.

**2) Management:**

- a. What technical, managerial, training, and monitoring systems are necessary to ensure project integration?

**3) Activities:**

- a. Are activities in each component being implemented in an integrated fashion, i.e. trees planted being used for soil conservation, fodder, etc...?

**E. Project Management and Organization**

The evaluation should provide recommendations to improve the overall project management and administrative structure at both the field and Headquarters levels.

**1) Staffing:**

- a) Review and comment on the staffing structure of the Project.

Does the project have sufficient and qualified human resources to operate a project of such complexity?

Identify any other positions needed.

b. Review the existing organization chart and recommend modifications if necessary.

c. What technical assistance is necessary? Identify technical weak spots and recommend appropriate human resources for assistance.

2) Communication Systems:

Review the Project's communication system and recommend steps for its improvement.

a. How effective is the present communication flow within the project? With CARE and GOU in Kampala? Between the Project and Donors? What steps are necessary to improve on the communication systems at each stage?

b. Prepare a flow chart for communication for:

1. Project staff

2. GOU and collaborating NGO's (IFCP) in relation to the Project staff

3. Project staff and Kampala office related to supervision and solving administrative and technical problems.

3) Coordination:

Identify and review the existing coordination links between the Project and participating GOU departments, NGOs, and donors.

a. What steps are needed to improve on the coordination between DTC and the Impenetrable Forest Conservation Project (IFCP)? Resource sharing, Personnel, and implementation of related activities should be addressed.

b. Have the established Advisory Committees been effective in coordinating project activities and planning? Recommend methods and systems for establishing and operating the District and National Advisory Committees.

c. Have the donor organizations adequately coordinated project information between each other and the Project? Identify weak links and recommend methods for improvement.

- d. What systems have been established to coordinate activities between the various GOU counterpart departments (Forest Dept., Game Dept., Agriculture Dept., Ministry of Environment Protection)? Recommend methods and responsibilities for improved coordination at this level.

#### 4) Institutional Support:

- a. Determine the level of institutional support provided by each participating group and recommend steps to increase support from and to the Project.
- b. In what ways is the Project assisting the GOU's participating departments in strengthening their institutional capabilities with respect to extension, training, planning, and logistics? Identify strategies for improved support.
- c. How has the Project benefited from, or received support from, the GOU departments, district technical services, and/or other NGOs/Projects? Document the support received from the Ministry of Environment Protection/Forest Department and recommend methods to obtain increased support.
- d. In what ways is the Project supporting the efforts of other Projects in the area and district level extension programs and has the support been valuable in meeting the needs of farmers and the Project's objectives.

#### 5) Project Agreements:

Review the various Project Agreements and recommend changes to improve the Project's operations and each party's roles/responsibilities.

- a. Are the agreements between USAID, WWF, and CARE comprehensive and flexible? Identify the pros and cons of the present agreement arrangement between the three parties and recommend the changes necessary for more efficient operations.
- b. Has the Project Agreement between GOU (MIF/Forest Dept.) and CARE been adhered to and useful in guiding project operations? Recommend steps to facilitate the signing of future Project Agreements and/or extensions.
- c. Is a Working Agreement between DTC and IFCP necessary for improved coordination of activities and management?

#### 6) Managerial Aspects Of The Project:

Are CARE and the World Wildlife Fund (WWF) working well together? Would the project have been better implemented if it had been carried out by one grantee only?

- F. Community Participation

1) Strategies:

Review the Project's strategies to obtain community participation.

- a. Do farmers feel they are included in all phases of project operations and how are local participants involved in decision making concerning activities?
- b. How do farmers/local participants perceive the project overall: effectiveness, support from the project, quality of technical advice and extension methods?
- c. Are the development needs of women being met through the Project's activities? Recommend ways that the Project can increase the impact on the improvement of the rural women's situation.

2) Inputs For The Community:

Provide recommendations on how the community can be provided with the necessary inputs for activity implementation and how this could continue through the communities themselves.

- a. Should the Project make available financial support to the communities through community grant/loan activity?
- b. How can agricultural implements be distributed to the communities which involve the communities input/organization?

## APPENDIX B

### TOR For:

#### TEAM LEADER (USAID Representative)

##### A. Specific Responsibilities

The evaluation team Leader will lead a qualitative evaluation of the DTC Project and coordinate all evaluation activities. Specific duties include, but are not limited to:

- 1) Review the project proposal and assess the appropriateness of the design and Project Goals.
- 2) Assess the overall managerial and organizational structure of the Project as per Appendix A sections A and E of the Terms of Reference.
- 3) Visit 6 participating parishes to determine the appropriateness of the activities and site implementation strategy.
- 4) Assist the technical team members in compiling activity information to assess the integration of the Project's components; Section D of Appendix A.
- 5) Preparation of a comprehensive evaluation report which compiles the information collected by other team members. Review the report with all parties involved in the evaluation. The report must be completed in country by June 14, 1990.

##### B. Qualifications

- 1) Minimum 5 years experience in evaluations of integrated natural resource projects in Africa.
- 2) Proven interpersonal communication and coordinating skills.
- 3) Team Leader must be approved and appointed by USAID.
- 4) Must be available in-country from May 27th to June 20th 1990.

APPENDIX C

FOR For:

EXTENSION SPECIALIST

A. Specific Responsibilities

The Extension Specialist will be overall responsible to assess the Project's on-farm strategies for activity implementation. The Extension Specialist is responsible to the Team Leader. Specific duties include, but are not limited to:

- 1) Assess the effectiveness of the Project's extension system and provide recommendations to strengthen this system; Section C. 1. of Appendix A.
- 2) Assess the appropriateness and acceptance of the Project's On-Farm activities as per Section 3 B. of the Terms of Reference.
- 3) Assess the community participation within the extension and on-farm activities and suggest ways to increase participation; Section F 1 & 2 of Appendix A.
- 4) Assist Team Leader in assessing Project's Management and organization structures.
- 5) Prepare a draft report on the Project's on-farm strategies, identifying strengths and weaknesses and recommending solutions to improve on-farm interventions.

B. Qualifications

- 1) Five years' experience in extension education and agroforestry in Africa.
- 2) Proves ability in the evaluation of integrated rural development projects.
- 3) Must be available in-country from May 27th - June 14th.

## APPENDIX B

TOB For:

### ECOLOGY SPECIALISTS

#### A. Specific Responsibilities

The Ecology specialists will assist in a qualitative evaluation of the DTC Project with emphasis on the Ecology or in-forest activities. They are responsible to the Team Leader. Specific duties include, but are not limited to:

- 1) Assess the methods and strategies used in the Ecology component concerning ecological inventories and management planning as per Section C. 3. of Appendix A.
- 2) Interview farmers to obtain their perceptions/attitudes towards the Ecology component's activities and forest use in general and recommend ways to integrate in-forest activities with farmer's needs; Section D. 1. of Appendix A.
- 3) Assist Extension Specialist in reviewing the community participation issues of Section F 1 & 2 in Appendix A.
- 4) Assist the Team Leader in addressing Project management issues of Section E - Appendix A, with emphasis on the institutional support and collaboration between Project and GOU participating departments. Recommend methods to increase the administrative effectiveness of the Project.
- 5) Prepare a draft report on the overall strategy of the Ecology component, which should include a summary activity update and recommendations for strengthening the component. Review the draft with all parties involved in the evaluation.

#### B. Qualifications

- 1) Graduate degree in ecology or forest conservation.
- 2) Five years experience in forest conservation evaluations in Africa.
- 3) Recommended by USAID and WWF.
- 4) Must be available in-country between May 27th - June 14th

DEVELOPMENT THROUGH CONSERVATION

IN

SOUTH-WEST UGANDA PROJECT

EVALUATION REPORT

ANNEX 2:

PROJECT SCHEMATIC - GOALS, ACTIVITIES,  
INDICATORS

APPENDIX B-1

Treatment Substrate - Goals, Activities, Indicators

Goals	Objectively Verifiable Indicators	Means of Verification	Assumptions
<p><b>Final Goal:</b></p> <p>To enhance the environmental quality of life for approximately 88,800 participating land users in Kibale and Bukungiri Districts of Southwest Uganda before 1993 by</p> <ol style="list-style-type: none"> <li>1) preserving the biological diversity, ecological processes, and environmental values of the three remaining Afro-tropical forests, and</li> <li>2) promoting sustainable productivity practices on adjacent agricultural lands.</li> </ol>	<ol style="list-style-type: none"> <li>A) 75% reduction of on-farm soil erosion by Year 10</li> <li>B) 85% of PLU families able to meet their fuelwood and pole needs through on-farm trees by Year 5</li> <li>C) Increase of available water through protection of forest catchments within 10 years</li> <li>D) Increase in the availability of forest products by Year 5</li> <li>E) 10% reduction in illegal forest encroachment within 10 years</li> <li>F) 85% of target families practicing integrated management (agroforestry soil conservation and livestock management) by Year 5</li> </ol>	<p>Comparison of baseline information, monitor reports of activities, periodic farmer questionnaires and interviews, observations</p>	<ul style="list-style-type: none"> <li>-no natural disasters occur such as apple drought, volcanic eruptions</li> <li>-no drastic changes of government and/or policies occur</li> </ul>
<p><b>Intermediate Goals:</b></p> <ol style="list-style-type: none"> <li>1) Strengthen the institutional and technical capabilities of the appropriate Govt. Makerere University, and participating land users to promote and manage the integration of long term forest conservation and sustainable land use practices.</li> </ol>	<ol style="list-style-type: none"> <li>A) Natural resources law enforcement personnel effectively curtailing illegal activities by a 50% reduction throughout the 3 Forest Reserves and adjacent areas by Year 4.</li> <li>B) Agroforestry and environmental education outreach begun in place and carrying out the timely provision of inputs and dissemination of appropriate technical advice by Year 3.</li> <li>C) Adoption of agroforestry, soil conservation, and animal husbandry techniques by 85% of the PLU families by Year 5.</li> <li>D) Research unit trained, equipped, and initiating inventories and applied research by Year 1.</li> </ol>	<ul style="list-style-type: none"> <li>-extended agent reports</li> <li>-sample disease treatments, and increased wildlife and habitat rehabilitation</li> <li>-forest reserve patrols</li> <li>-training evaluations</li> <li>-sampling area population via interviews and questionnaires</li> <li>-research publications/reports</li> </ul>	<ul style="list-style-type: none"> <li>-Govt personnel available and salaries/per diems paid on time at adequate rates</li> <li>-equipment received from Government/World Bank/University/Research Institute</li> </ul>
<ol style="list-style-type: none"> <li>2) Increase communication and involvement among PLUs, Govt agencies and NGOs to improve the understanding of, and planning for, natural forest conservation and sustainable land use practices.</li> </ol>	<ol style="list-style-type: none"> <li>A) Environmental education visits carried out by Govt Agents once/week/parish.</li> <li>B) Distribution of environmental education newsletter once/2 months</li> <li>C) Distribution of project articles and other educational materials to mass media.</li> <li>D) NGO/Govt Regional Planning Advisory Committee meetings once/3 months.</li> </ol>	<ul style="list-style-type: none"> <li>-environmental education weekly reports</li> <li>-environmental education newsletter</li> <li>-radio program, newspaper articles</li> <li>-meeting minutes</li> <li>-community activity lists</li> <li>-actual community proposals</li> <li>-correspondence</li> </ul>	<ul style="list-style-type: none"> <li>-cooperation among district and local officials</li> <li>-printing machines available</li> <li>-extension agents provided with transport</li> </ul>

Activity	IO	Rationale	Indicators (IPAT)	Verification	Assumptions
B) Planning Years 4, 5	1,3	No working plans or management plans exist for the 3 forests or agricultural lands. Activities are unplanned and exploitation oriented.	<p>A) 20,000 seedlings/parish/year and 10,000 seedlings/group/year planted and surviving after 2 years</p> <p>B) 23 agroforestry demonstration plots established by Year 4</p> <p>E) 26 extension visits/year/parish</p> <p>A) 23 Community Land Use Plans prepared by Year 4</p> <p>B) 3 Forest Management Plans written 1/forest by Year 5</p> <p>C) Species Recovery Plan written for all targeted endangered and rare species by Year 5</p> <p>D) Regional Agroforestry Plan completed by Year 5</p> <p>E) Phase 2 implementation Plan prepared by end of Year 5</p>	<p>C) Extension agent records, follow up visits</p> <p>D) Extension agents' records, farmers' yields, farmers visiting plots</p> <p>E) Extension reports, activities on going as per technical advice</p> <p>A) Actual community proposals, lists of activities</p> <p>B) Actual plans, implementation of projects</p> <p>C) Plan approved by Ministry of Wildlife and Tourism</p> <p>D) Plan approved by Regional Committee</p> <p>E) Phase 2 proposal</p>	<p>-inventories and baseline information completed</p> <p>-research information sufficient for planning needs</p>
B) Monitoring and Evaluation Years 2, 3, 4, 5	All IOs	Technologies being used are new to the area and have not been tested. Evaluations with community input, needed for proper planning and Phase 2 implementation.	<p>A) On-farm activities monitored each year</p> <p>B) Agroforestry trial plots monitored each growing stage and harvest</p> <p>C) Ecological in-forest research monitored</p> <p>D) 3 evaluations conducted during Years 1, 3, 4</p> <p>E) Training sessions evaluated at end of each session</p>	<p>A) Farmer and extension reports, PIRs</p> <p>B) Farmer and extension reports, PIRs</p> <p>C) Data notes, reports, PIR</p> <p>D) Evaluation reports, recommendations made, AIP</p> <p>E) Evaluation reports, training session reports, PIR</p>	<p>-that activities are being implemented</p> <p>-trainers trained and courses being held</p>

**Goals**

**Qualitative Verifiable Indicators**

**Means of Verification**

**Assumptions**

3) Promote and support improved planning for the better management and protection of species diversity, forests, catchments, and agricultural lands.

- E) Community Resistance Committee/ GCU/project staff Community Advisory Committee meetings each month.
- F) Community land use activity proposals developed by each parish by Year 3.
- G) Regional exchange of project strategies leading to the possible adoption by other natural resource projects.

- A) Collection of on-farm baseline inventories by end of Year 2 and ecological surveys completed by end of Year 4.
- B) Applied research conducted through Year 4 on rare and endangered species, occasionally valuable species, and agroforestry systems.
- C) Assistance for the development of a data base center by Year 3 capable of tabulation, analysis, and storing data base information.
- D) Community Land Use Plans written for each parish through the Resistance Committee, Advisory Committee and PLUs by Year 4.
- E) Acceptance, by GCU, of Management Plans for inoperable, Mubaya, and Mshinga Forest Reserves and a Regional Land Use Plan prior to end of Year 4. Agreement to implement these 4 plans during Phase 2 of the project.

- inventory reports, completed questionnaires
- research publications and reports
- raw data notes, progress reports
- analysis of profiles and data sheets
- Years 1 and 2 evaluation
- land use and management plans
- letters of acceptance/commitment from GCU
- Signed Phase 2 project agreement

- personnel in place to carry out activities
- GCU research permits granted
- capability exists to identify species
- collaboration from NRP and Stanford University for establishment and use of data center

4) Maintain the natural resource base of the 3 forests and adjacent lands for the sustainable utilization of species and ecosystems through appropriate on-farm activities (agroforestry, soil and water conservation, animal husbandry) and low occupancy practices in the forest (tourism, environmental education, improved bushcamping, and water catchment protection).

- A) 80% of all agricultural lands in participating parishes practicing soil conservation methods by Year 5.
- B) 85% increase in tree cover on on-forest lands by Year 5.
- C) 15% increase in agricultural productivity on existing farm lands.
- D) 80% of PLU families are self-sufficient in fuelwood and pole needs by Year 5.
- E) 15% increase in production of domestic animal biomass.
- F) 75% reduction in forest tree damage as result of bushcamping, sitamping and other unacceptable practices by Year 5.
- G) Established gorilla viewing, tourist industry ongoing in Mshinga Forest Reserve by Year 5.
- H) 5 increased number of days of water flow.

- comparison of baseline surveys through monitoring activities
- closure of damaged forest areas
- extension agent reports
- observations of stream flow and new springs
- visitors book and gate receipts for gorilla viewing

- no natural disasters occur
- intermediate Goals 1, 2 have been met and intermediate Goal 3 is being carried out
- adequate accommodation and transport can be organized for gorilla viewing
- GCU endorses tourism for Mshinga and considers the forest for national park status

Matrix	ID	Rationale	Indicators (PATA)	Verification	Assumptions
			<ul style="list-style-type: none"> <li>5) 23 parish lead use activity proposals completed by parish members and community committee.</li> </ul>	<ul style="list-style-type: none"> <li>G) Proposals reviewed by committee. Activities incorporated into Project Plan.</li> </ul>	<ul style="list-style-type: none"> <li>G) SE campaign ongoing. Committees established.</li> </ul>
2) Inventory and Research	3,4	Lack of data on forest and on farm species and systems. Information needed for proper planning and identification of activities and strategies.	<ul style="list-style-type: none"> <li>A) 23 community baseline surveys completed by parish Resistance Committees, CE Agents, and project staff.</li> <li>B) 3 Ecological Surveys/ inventories initiated on species and systems (1/ forest).</li> <li>C) 8 applied research projects started based on information from ecological studies (2/forest)</li> <li>D) Data Bank Center being set up and operational for compiling data with computer through KIP</li> </ul>	<ul style="list-style-type: none"> <li>A) Questionnaire and survey forms completed. Information compiled.</li> <li>B) Data notes, survey reports</li> <li>C) Research notes and reports</li> <li>D) Printout of specific data entered</li> </ul>	<ul style="list-style-type: none"> <li>A) Questionnaire prepared and people trained to carry out studies.</li> <li>B) Mahorero students identified and research permits granted</li> <li>C) Mahorero students identified and research permits granted</li> <li>D) Computer available, consultant available to help establish data bank center</li> </ul>
4) Technical Assistance	4	Extension services required to disseminate information and advice to farmers and to create awareness toward conservation methods.	<ul style="list-style-type: none"> <li>A) 24 extension visits/parish made by CE, PE and Agriculture extensionists to promote lessons learned during training (1 visit/week/ parish) and assist in collecting baseline information</li> </ul>	<ul style="list-style-type: none"> <li>A) Extension monthly reports, baseline surveys prepared by community</li> </ul>	<ul style="list-style-type: none"> <li>A) Extension agents trained in technical information, communication skills, and surveying techniques</li> </ul>
5) Monitoring and Evaluation	All 10s	Monitoring and evaluation of training and SE campaign needed to adjust program for effectiveness and efficiency. Overall project evaluation needed for proper implementation and planning.	<ul style="list-style-type: none"> <li>A) Know training seminar evaluated at end of each seminar. 7 seminars total. Evaluated by participants.</li> <li>B) CE program monitored each month by Agents, CE advisers and project coordinators.</li> <li>C) End of year project evaluation/review conducted by internal group (project staff, advisory committee, AID Uganda program officer.</li> </ul>	<ul style="list-style-type: none"> <li>A) Training session reports and participants evaluation</li> <li>B) CE reports, community interviews through Resistance Committees and schools, PE report</li> <li>C) Evaluation reports and recommendations, AIP report</li> </ul>	<ul style="list-style-type: none"> <li>A) Evaluation forms are prepared</li> <li>B) All agents hired and carrying out duties</li> <li>C) -</li> </ul>

APPENDIX D-3

Extension Activities

Activity	Related IR	Rationale	Indicators (IPATS)	Verifications	Assumptions
1) Training Years 2, 3, 4	1	Extensive visits presently unorganized. Looking technical and extension knowledge needed to assist farmers in carrying out activities.	A) 2 training courses conducted per year for 20 PD and Game guards B) 2 courses conducted per year for training of trainers for 30 PD and Agriculture agents C) 4 follow-up courses conducted for 100 Agents D) 4 technical courses/year for 60 farmers E) 4 students trained for technical research	A) Guards equipped and patrolling. Decrease in encroachment B) Extension agents equipped and carrying out visits. Increase in agroforestry practices. C) Farmers participating as volunteer extension agents D) Articles from community for newsletter E) Training course evaluation. Students carry out job responsibilities.	- enough GOV agents in place to receive training - student availability
2) Community Organization Years 2, 3, 4, 5	2,3	Need to motivate and create awareness for community participation in planning and implementing activities. Community involvement will help ensure sustainability and proper planning.	A) 6 IR Newsletters produced per year B) 4 in-forest visits by district/year C) 40 IR meetings/parish/year by CE Agents D) 4 Regional Advisory meetings/year E) 22 Community Advisory meeting/month (1/month)	A) Articles being written by community for newsletter B) Visitor book signatures C) Research notes D) Meeting minutes and recommendations E) Community meeting minutes	- transport for meetings and visitor groups
3) Inventory and Research Years 2, 3, 4, 5	3,4	Little data presently exists on forest and on flora species and systems. Need information for proper planning and identification of activities and strategies.	A) 3 detailed ecological surveys completed. (1/forest by Year 4) B) 6 applied research programs for each forest carried out by Year 5 C) 22 agroforestry research plots established by end of Year 3 D) Data Bank Center set up by end of Year 2	A) Ecological survey reports, data notes B) Research notes C) Agroforestry research data, research plots plan D) Print outs of specific data, analysis of data	-biologist in place -research permits granted -land available for agroforestry plots -technical consultants available for data bank establishment
4) Technical Assistance Years 2, 3, 4, 5	2,3	Technical assistance in certain activities necessary due to new technologies. Extension is required to disseminate information and advice to farmers.	A) 200 km of live boundary planted for all 3 forests by Year 5 (20 km/year) B) 22 parish nurseries and 22 self-help nurseries established by end of year 4.	A) Range of various tree species growing B) Seedlings being produced and taken for planting, nursery records	-climatic conditions favorable for tree planting -extension agents trained -farmers willing to participate in agroforestry demonstration (see the need)

DEVELOPMENT THROUGH CONSERVATION

IN

SOUTH-WEST UGANDA PROJECT

EVALUATION REPORT

ASSET 3:

ANALYSIS OF THE PROJECT

Prepared by:

William J. Hart

29 June 1990

Development Through Conservation  
In  
SouthWest Uganda Project

EVALUATION REPORT

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plant and, most importantly, the endangered mountain gorilla.<sup>3</sup> The Bwindi and Mgahinga forests are important to the survival of the approximately 600 remaining mountain gorillas. The remnant population is distributed between Bwindi Forest Reserve and the parks, forests and game reserves where Rwanda, Uganda, and Zaire come together.

These forests, like most tropical moist forests (TMF) in the world, have come under extreme pressure. In Uganda it is reported that: "In 1964, Uganda had about 6,300 square km of TMF; by 1981 this had been reduced to 5,500, a 15 percent reduction in just seventeen years. \*\*\* Most of the loss in Uganda during the last two decades has been due to illegal encroachment by agriculturalists."<sup>4</sup>

#### 1.1.1.2 Original research roots

The New York Zoological Society financially assisted research activities by a biologist with long-standing interest in the conservation of the region's natural forests. The Bwindi Forest Reserve was chosen as the research area. As in some other reserves in Uganda, the Bwindi Forest Reserve is also Gazetted as a Game Sanctuary. Forest Department people enforce the Forest Act and Forest Department rules and regulations; Game Department people enforce the provisions of the Game Act and Game Department rules and regulations.

It has long been clear that study of animal species must consider the species' habitat requirements. Thus, an ecological survey was conducted in the Forest and some of the lands surrounding the reserves.<sup>5</sup> The survey approach recognized that strong relationships exist between the protection of the forest and its fauna, and the people living on the lands near the external boundary of the forest. In formulating a proposal for continuing the research and encouraging management initiatives for the forest, the research biologist reasoned that the greater the ability of those most affected by the reserve to meet their needs from their own land the less pressure they will place upon the resources within the reserve.

The Impenetrable Forest Conservation Project (IFCP) was established in August 1986 with a grant of US\$60,000 from the World Wildlife Fund of the U.S.A (WWF-US). Funding in the amount of US\$35,000 per year has been made available by WWF-US during the period 1988-89. The IFCP included an agro-forestry component and a conservation education component. These became the core components of the DTCP.

As part of the conservation education component, 17 residents of the villages bordering the reserve were selected and employed as Conservation Extension Agents (CEA). These persons were to be trained in the conservation practices farmers were expected to use and to assist in disseminating the imparted information to as many nearby farmers as possible.

<sup>3</sup> Project Final Report, op. cit., p.1.

<sup>4</sup> Ibid.

<sup>5</sup> It is understood that the title "Bwindi" is the formally gazetted name of the forest reserve. However, the name "Impenetrable" has been used cross interchangeably. In this report, the two names are used interchangeably.

#### 1.1.1.3 Perception of the exterior pressures

The New York Zoological Society biologist, who was now the IFCP Director, spent several years of work centered on primates, but fully cognizant of the tremendous diversity of the flora in the forest. During this time it became obvious that carrying on demanding research within the reserve, developing, training, and equipping a Game Guard force to protect the animals and habitats from poachers, encroachers, gold prospectors/miners and illegal timbering was a full time chore. He felt that some other mechanism was needed to work with the number of CEA's necessary to make on-farm contacts and persuade enough farmers to adopt improved husbandry on their lands to make even a modest impact upon such fundamental things as soil erosion. At the same time, it became evident that the IFCP budget was inadequate to collect in timely fashion all the biological data necessary for developing comprehensive management plans for the reserves and the contiguous zones. Therefore, a separately funded project that would support extension type activities outside the reserve and financially assist inventory activities within the reserve was considered essential.

From this the idea for a project to promote the use of conservation principles on private farm lands in the interest of conserving the three forests of south-west Uganda emerged. It was assumed that adoption of the conservation-based activities would benefit participating land users, but this was seen as only a tool to reduce pressure on the flora and fauna in the reserve and not to be given indiscriminate application across the countryside.

This perception was not limited to the Impenetrable Forest. The Ugandan and expatriate scientists working on the IFCP were fully cognizant that the Nshingira and Echuya reserves should be given similar management treatment.

#### 1.1.1.4 CARE was working with farmers

During this time, CARE International in Uganda (CARE-U) was active in the farm/community forestry field and providing technical assistance and leadership to an agriculture project. First there was a Village Forestry Project in the two administrative districts adjoining the Bwindi Forest Reserve. This was followed by a more widely based farm Forestry Project that absorbed the Village Forestry Project activities. In conducting the two forestry projects, the CARE-U staff members acquired considerable skill in working with farmers, propagating multi-purpose tree species, distributing seedlings to farmers, and succeeding in having farmers plant the trees on their land.

Most important, these projects gave CARE-U professionals close contact with officers of the Forest Department at all levels.

#### 1.1.2 Developing the Proposal

Since the IFCP was a joint venture of the WFF-US (with support from other donors) and the Government of Uganda (GOU), the IFC Project Director explored with both partners their interest in developing a complementary project. The response was positive. Thereafter, the IFC Project Director and a CARE-U representative developed a concept paper for such a project. The Permanent Secretary of the newly formed Ministry of Environment Protection,

acting for the GOU, endorsed the concept. Thereon, CARE-United States (CARE-US) headquarters began active solicitation of donor support. The IPC Project Director and CARE-U representative joined this effort.

#### 1.1.2.1 High probability of USAID support

Key personnel in the U.S. Agency for International Development Mission to Uganda (USAID-U) and the USAID Regional Economic Development Support Office for Eastern and Southern Africa (REDSO) were aware of the IPCP and there was a clear Congressional directive concerning the conservation of tropical forests and maintenance of biological diversity. These made USAID a logical first choice. The response was favorable and USAID-U personnel assisted the proposal drafting by suggesting appropriate ways to frame the proposal.

#### 1.1.2.2 CARE in Uganda a natural partner

It was clear that the WWF-US-assisted IPCP had technical skills and expertise to deal with issues associated with the biological and physical issues occurring primarily within the boundaries of the reserves. A companion non-governmental organization (NGO) with experience in dealing with farmers and resource users outside the reserves was needed. The apiculture and village/farm forestry projects managed by CARE-U made that organization a logical choice.

#### 1.1.2.3 A needs assessment was completed in June 1987

The needs assessment was led by the Director of the IPCP and CARE-U representative. It built upon the data contained in the IPCP Director's 1984 ecological survey. CARE-U personnel met with the district officers of the relevant GOU line agencies, Resistance Committee (RC) members, the IPCP appointed CEA's, and farmers during June 1987. It is reported that the responses to the IPCP-sponsored approaches were widely applauded by all parties.

#### 1.1.2.4 First draft of proposal ready in January 1988

The Project Director, IPC, and the CARE-U field representative set to begin drafting a proposal based on their personal experiences in the country. The draft proposal was circulated to the WWF-US and CARE-US headquarters.

The information available to the Evaluation Team members, to which considerable credence is given, indicates that the proposal document was quite general. Negotiations about the content were conducted between Washington, DC, New York City, Nairobi, and Kampala. In Uganda, communications were complicated by the fact that the IPC Project Director was headquartered in Ruhuha, Kabale District; in the United States, communications were complicated by the fact that the US dollar funds were to be allocated and supervised by the centrally-funded Plan for Natural Resource Management and Support.

What happened next is not known by the Evaluation Team members. What is clear, however, is that the proposal for a project which is to set the tone for similar interventions is 29 pages long plus three substantive appendices and a budget. It contains explicit physical targets and objectively

verifiable indicators. The Appendix titled "Project Schematic - Goals, Activities, Indicators" is shown in Annex 2.

In addition, it is inferred that the DTCP will yield general benefits from tourism.

The project proposal review process took four or five months.

### 1.1.3 From Proposal to Operation

#### 1.1.3.1 USAID accepts proposal in July 1988

Five months later, the local currency portion of the funding was approved and the funds released by USAID-U in July 1988. USAID-W US dollar funds were approved. The Project Cooperative Agreement was effective 30 August 1988. CARE-U assigned a permanent staff member, the person who had supervised farm forestry activities and participated in the drafting of the original project proposal and its subsequent elaborations, to perform the functions assigned to CARE-U under the sub-contract.

#### 1.1.3.2 WFP-US - CARE-US discussions extend from October to December 1988

The two collaborators met to negotiate a sub-contract to spell out the division of work in September 1988. In October, the IFCP Director and the CARE-U representative met in Washington with representatives of both organizations to move the negotiations along. The formal sub-contract was signed in late December 1988. During the two months, revisions of the budget were frequently requested from CARE-U.

When the sub-contract was signed, the responsibility for the Conservation Education and Agro-forestry components, formerly under the IFCP, were shifted to CARE-U. The CEA's were not paid between December and April because Ministry of Environment Protection officials instructed CARE-U project people to stop mobilization/implementation activities pending the signing of a GOU project agreement. It is interesting to note that the CEA's continued to function without pay until April 1989.

The members of the Team were informed that CARE-U immediately set about securing the approval of the Government of Uganda represented by the Ministry of Environment Protection (MEP).

#### 1.1.3.3 CARE-U and Government of Uganda agree to cooperate in September 1989

The nine month delay is critical to an evaluation of the project. By normal standards, the project start-up date is 30 August 1988, but by any reasonable standard the activities to be judged did not start until 1 October 1989 -- A DIFFERENCE OF 13 MONTHS!

There are also some strange omissions in the final agreement. CARE-U is obligated to only provide a Project Coordinator and an Ecology Advisor from the original list of four professionals. The exact posts to be filled by the GOU by seconding officers is completely silent. The only saving grace is that the agreement makes the "project documents" controlling. Thus,

in the case of the Conservation Education/Extension posts, the project documents provide for a project paid advisor; there is no restriction about being an expatriate or requiring a Ugandan national. The sequence is indicative of some very sloppy administrative work.

In November of 1988, CARE-U contracted with an ecologist and a conservation extensionist. The former began ecology work in the Impenetrable Forest and the latter prepared the forest and for and wrote a conservation newsletter and wrote and acquired conservation education materials.

In January 1989, building materials began to arrive at the headquarters site in Ikumba. However, CARE-U was under orders to stop all work pending the signing of the agreement with the GOU. The ban was lifted in May. Construction began shortly thereafter.

The dates cited above, together with the dates of other events, are presented as a sequence in Table 3.1.

#### 1.1.4 Analysis

##### 1.1.4.1 Preliminary surveys were lacking

It has been shown in agriculture and natural resources development projects as varied as potatoes in Peru to community forestry in Nepal that success involves working with people. Several international research centers, as well as bi-lateral and multi-lateral agencies have recorded their experiences with community participation. In general, the sequence found to be the most successful is:

- a. Conducting some form of Rapid Rural Appraisal to identify those problems the solutions to which the community can agree constitutes high priority and for which they are willing to work (willingness to pay test);
- b. Using the results of the appraisal to plan short-term tactics for planning interventions using participatory planning techniques;
- c. Conducting more in-depth surveys of biological, physical, social, economic, and institutional conditions in the community so that impact can be measured and to ensure that interventions suggested or requested by the community are feasible and sustainable;
- d. Formulating with the community long-term goals and short-term actions required to achieve the goals; and
- e. Reviewing the long-term goals and action plans annually.

It is conceded that those who conceived the project had substantial experience with Ugandan society. Even so, it is not certain that all of the combinations of interventions so confidently described in the proposal will work, be accepted, or that the full range of desirable actions have been enumerated. For example, trees are given the central focus; but there is no mention of grass or of stall feeding animals. Experience and common sense lead to the conclusion that problems and approaches are not the same in all communities even in the same general area. In discussing the utility of administrative "zones" in the DTCP, it is noted that each zone around the Bwindi

Table 3.1. Project formulation sequence

Date	Event(s)
August 1987	: Dr. Butynski, Mr. Torres, and Senior Forest Department official collect in the field information for project concept
August 1987	: Representatives of Forest Department, CARE, <sup>a</sup> USAID, <sup>b</sup> and WWF <sup>c</sup> travel to proposed project site to formulate strategies
January 1988	: First draft proposal for project to WWF and CARE
February 1988	: Report of trip to Kabale area basis for review of draft proposal by USAID, WWF, and CARE
	: Ministry of Environment Protection (MEP), Government of Uganda (GOU), informs USAID that the project is registered with the MEP and is consistent with MEP strategy
July 1988	: Project proposal reviewed in Kabale with District Forest Officer and members of RC-V <sup>d</sup>
	: Local currency contribution approved by USAID
	: Draft of agreement between CARE and GOU sent to Forest Department and Ministry of Environment Protection (MEP), Government of Uganda (GOU)
August 1988	: USAID authorizes project grant agreement with WWF
October 1988	: WWF/CARE meeting (with Butynski and Torres present) in Washington to negotiate sub-contract
November 1988	: Dr. Kalina and Ms Torres begin DTCP <sup>e</sup> in-reserve ecological and out-of-reserve conservation work
	: Period marked by intense budget writing and re-writing

- CARE International in Uganda
- U.S. Agency for International Development
- World Wildlife Fund of the United States
- Resistance Committee at the District level
- Development Through Conservation in SouthWest Uganda Project

December 1988 : Sub-contract between WWF and CARE signed

: CEA's<sup>1</sup> shifted from IFCP<sup>2</sup> to DTCP although no salaries can be paid through DTCP due to MEP instruction to keep implementation on hold until CARE/GOU agreement is signed

: Request MEP to act on draft agreement of July 1988

January 1989 : USAID writes to Ministry of Planning urging approval of GOU agreement with CARE for DTCP

: Forest Department gives verbal comments on draft and says matters rest with MEP

: Ikusba selected as headquarters site and construction materials begin arriving on site

February 1989 : MEP requests Ministry of Planning to clarify the position of the project in the national plan and whether the project is registered

March 1989 : MEP writes to CARE requesting a full review of the details of the project and draft agreement

: Ministry of Planning informs MEP that the project is registered in the RDP and that a ten-year planning horizon poses no problem

April 1989 : CARE requests MEP approval to proceed with "infrastructure" activities which is granted

: Started payment of CEA salary from local currency

May 1989 : Construction begins on Ikusba headquarters

: CARE representatives meet with MEP and Forest Department officials to review the proposed agreement

: CARE sends a revised draft agreement that follows entirely Annex "A" of the WWF/USAID project agreement to MEP

July 1989 : Botany and other inventory bases for in-reserve and out-of-reserve areas begun

September 1989 : Contract between GOU and CARE signed

<sup>1</sup> Conservation Extension Agent

<sup>2</sup> Impenetrable Forest Conservation Project

October 1989 : Implementation begins in spite of personnel shortages

November 1989 : Office, warehouse and residence in Ikusba completed

June 1990 : Evaluation of project

Forest Reserve exhibits quite different characteristics. Preliminary appraisals have a good chance to identify a community-specific intervention that has the best chance of adoption which will build credibility for extensionists.

Further, the work plans call for the preparation of community land use plans. Such plans will suffer serious defects if the social and economic conditions as well as biologic and physical conditions of the communities are not known. The project design provides only for the collection of baseline information by the CEA's; there is no provision for an advisor or manager to design and administer the kind of surveys that are needed. This is clearly beyond the capability of the average conservation education specialist.

The write-up understates the ability and knowledge of the farmers and the communities. During the evaluation, several farms were visited where quite sophisticated agroforestry systems were in place, including the culture of bamboo. Also, the landscape is liberally dotted with groves of *Eucalyptus grandis* and *Cupressus lusitanica*. The *Eucalyptus* trees show signs of regular harvesting and propagation by means of technically poor coppicing. But the stands are there and they are thrifty which indicates that there is a fairly long-standing interest in planting trees.

Finally, trying to use a specific percentage reduction of erosion as a measure of success is frivolous when no one knows what is the baseline rate of erosion.

#### 1.1.4.2 The results of Experimental work cannot be rigidly specified

What started as a straightforward hypothesis to be tested became complex and rigid. One consequence of such detailed specification of physical targets is a change in priorities for project management. Time that might be spent in innovating must be used to meet the targets even when field experience suggests that there are better or more acceptable solutions. Trying to both meet pre-ordained targets and innovate new technical and administrative approaches has taken a high physical and emotional toll. Members of the Team speculate that fixed targets were inserted by persons trying to anticipate the reaction of the donor.

#### 1.1.4.3 The 13-month interval between USAID and GOU contracts reflects a serious administrative lapse

Why the GOU agencies did not expeditiously move the project documents through the required procedures is beyond the ability of the Evaluators to judge. However, senior CARE-U management did not become personally involved and vigorously pursue the issue to conclusion. Both the WWF-US, and USAID-U management share the fault. After waiting a reasonable time for CARE-U to perform the contracted tasks, WWF-US should have intervened and made a strong representation to achieve results. If that failed, of course, both should have promptly turned to USAID-U for government to government inquiries. When the grantee did not make a request for assistance, it would seem that USAID-U would have first encouraged more forceful action by the grantee and if that failed to quickly move to determine the cause of the GOU reluctance.

### 2.1.2 Procurement

Off-shore procurement has been slow and non-responsive to field needs. The procurement process seems driven by least cost rather than optimizing results. The cases of sleeping bags and tents are indicative: those available in Ikumba are least cost, but they are too small and cheap in construction and material. They do not reflect knowledge about field conditions in the South-West Uganda mountains.

### 2.1.3 Reporting

The reporting process is cumbersome and time consuming. Part of the problem lies with the detail of the physical targets that are to be reported upon. Quarterly reports for projects far larger than the DTCP are often such shorter. It was not possible to tell whether this is a problem with the specified CARE reporting format -- Project Implementation and Evaluation (PIE) Report -- or is unique to the project.

### 2.1.4 Support

It appears that much of the work that should be done by the CARE-U headquarters office is instead done by the DTCP Coordinator. This has required the incumbent to spend an inordinate amount of time commuting to Kampala as well as to remote field locations and to personally handle such matters as disbursement of salaries to field personnel and negotiations with GOU officials about the payment of project allowances from project funds. The conduct of this evaluation is also indicative: there has been little support from the permanent establishments of either the grantee or the sub-contractor.

## 2.2 GOVERNMENT OF UGANDA

There seems to be a lack of commitment and understanding by the responsible personnel in the key agencies. This is indicated by the assignment of personnel to the project and degree to which the key agencies can focus their respective expertise on the problems of individual farmers.

### 2.2.1 Personnel

It is now nine months since the GOU entered into an agreement with CARE-U to pursue the project. Of three senior "Manager" posts, only one is filled and that by a relatively junior officer from the Game Department. The Project Manager is to come from the Forest Department and the Conservation Extension Manager is to come from the Environment Education Department, both in the Ministry of Environment Protection.

The very junior Game Biologist has insufficient stature to negotiate with faculty advisors in Makerere University concerning the learning/research program of the students working with the Ecology Activity or to influence faculty to assign their students to the project to meet thesis requirements. The officer has no experience in managing research work. Therefore, the ability of the Ecology Advisor to make progress in preparing for a hand-over of full responsibility for the inventories and surveys is very slow and detracts from the Advisor's professional responsibilities.

#### 1.1.4.4 CARE-U/ GOU agreement also and administrative lapse

The fact that the paper trail from the proposal to the Grant Agreement, to the WWF-US/CARE-U contract, to the CARE-U/GOU agreement does not contain a uniform set of positions for the project management and key specialties is ominous. The senior personnel in WWF and CARE-U simply did not seem to have any consistent notion of how the project was supposed to begin operating.

## 2.0 ADMINISTRATION

This section deals with the management performance of the major organizations engaged in the project: the grantee, WWF-US, the sub-contractor, CARE-U, the Government of Uganda, and USAID.

### 2.1 THE GRANTEE AND SUB-CONTRACTOR

The Team members used four objective indicators:

#### 2.1.1 Personnel

If the grantee considers the DTCP to be an important showcase for the pragmatic application of conservation principles, it is incomprehensible that a replacement for the outgoing Project Coordinator has not been recruited and put in place with sufficient time to be oriented by the incumbent. It may be that the sub-contractor has been lax, or that the GOU has been unreasonable. However, the grantee is responsible for ensuring that the terms of the sub-contract are carried out.

Further, the post of Extension Advisor remains vacant. The members of the team understand that some of the same nominating problems that have beset the selection of the replacement Project Coordinator have plagued the selection of a person for this post.<sup>6</sup> Again, there is no indication that the grantee has acted to support the sub-contractor or entered discussions with the donor to end the stalemate.

Difficulties are not limited to the DTCP. It was learned, for example, that even with budget releases spaced six-months apart, those releases, which include the salary of the IFC Project Director and operating expenses for the project, are often six months late in arriving. One DTCP professional has been without an employment contract since November 1989. The annually renewed IFCP contract with WWF-US expired at the end of May 1990 and has not been renewed although WWF-US has indicated that a new contract is pending.

<sup>6</sup> The Evaluation Team members were informed that the Government of Uganda had consistently requested that a slate of three candidates be submitted from which the recipient officials will indicate a preference. This is not an uncommon practice among host governments. It should be noted, however, that the resumes of three candidates qualified for the post of Conservation Education Advisor were submitted in timely fashion, but the Ministry of Environmental Protection review took nearly two months. During that time, the selected candidate took other employment. Ministry policy now requires that candidates be Ugandan nationals.

The lack of a full-time Conservation Extension team has shown up in the inability of staff to prepare the mass media releases and educational materials, such as slide shows, and lesson manuals for agro-forestry practices. A major part of what has been done was done by the Project Coordinator.

#### 2.2.2 Field Coordination

Discussions about the GOU field staff revolved around the attachment of personnel to the project with all of the perquisites of a major donor-assisted project rather than ways their technical skills could be channeled to farmers through project CEA's.<sup>7</sup> Team members were told that District Forest, Agriculture, Animal Industry, Community Development, and other extension officers, as members of the District Development Committees, were to formulate district extension strategies in which they all collaborate. Team members found no evidence of such coordinated plans during intensive interviewing in Kabale which included not only the district officers of the departments, but the District Administrator and the Chairman of the RC-V.

### 2.3 U.S.AGENCY FOR INTERNATIONAL DEVELOPMENT

There are four indicators that seem applicable to evaluating the USAID performance in the DTCP: funding sources, relations with the GOU, flexibility in project design, and supervision.

#### 2.3.1 Funding Sources Are Divided

The DTCP is funded with local currency, accumulated under the provisions of Public Law 480, through USAID-U and with US dollars through USAID-Washington. There are different persons responsible for each of the sources that have their own agenda.

#### 2.3.2 Relations With The GOU

The indicator here is the formation of the National Managerial Steering Committee. It has not been formed. If it had, there might have been less difficulty in filling the vacant slots in the project and a better understanding by USAID-U about coordination difficulties among the agencies of government.

#### 2.3.3 Flexibility In Project Design

By any standard, the DTCP is a small project. Yet the mandating of fixed targets and the reporting procedures, including those suggested by some that the objective impacts of the project should be measured, are nearly the same as for a multi-million dollar project.

#### 2.3.4 Supervision

In at least three points in the discussion of the performance of the grantee and the sub-contractor, USAID-U could and should have queried the

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<sup>7</sup> The evaluation team members did not perceive that differences might be involved between those persons assigned the occupy "establishment" posts, such as a Forest Ranger, and those who are casual laborers, such as a substantial percentage of the Forest Guards.

granted about the lack of progress and requested a meeting to determine a strategy for moving the project forward. To the knowledge of the members of the team, this was not done.<sup>8</sup>

## 2.4. ANALYSIS

### 2.4.1 Three Difficulties Were Observed

The first is one is commonly experienced by all officials everywhere: there is a shortage of skilled extension officers who will work at the Parish level. The second is that personnel jockey for attachments to those projects that will provide maximum amenities, and the DTCP does not do very well at that. The third observation is that coordinative mechanisms at the district and sub-district levels are very poor or non-existent.

### 2.4.2 Potential Difficulties Over Split Funding

There do not seem to have been any conflicts among those involved, although there appeared in the drafting of the terms of reference for the evaluation clear differences in value systems between USAID-U and USAID-W. In addition, different standards governing the use of local currency and the use of US dollars makes project administration difficult.

### 2.4.3 Too Much Rigidity For A Small, Test Project

Two things seem evident. First, if the approach is to use NGO's to implement small, innovative conservation-oriented activities, then project standards should encourage innovation in approach. Second, incremental development of field interventions should be encouraged so there is an opportunity to find out what works best before being committed to a course of action.<sup>9</sup>

## 3.0 ON-FARM OPERATIONS

The DTCP is divided into two major parts: one that is concerned with events on the farms that are in close proximity to the forest reserves and one that is concerned with inventorying biological resources in both the in-forest and on the periphery and with developing management plans for the in-forest zone. This section is devoted to the components of the on-farm part.

### 3.1 RELATIONS WITH OTHER PROJECTS

There are two projects which are specifically mentioned in the project documents: the IFCP, already discussed, and the Uganda Forestry Rehabilitation

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<sup>8</sup> If WFP-UN and USAID-W administrators are criticized for slack logistic support for this evaluation, USAID-U deserves the same criticism.

<sup>9</sup> It was time, Planning and Programming people in the Agency for International Development experimented with what was called a "rolling design." It was not such different than conventional urban planning/management practices. Some of the sites where it was piloted were unfortunate selections.

Project (UFRP).<sup>10</sup> Activities of the International Council on Research in Agro-Forestry (ICRAF) should be considered as a project.

### 3.1.1 Impenetrable Forest Conservation Project

As reported earlier, the IFCP staff conceived the idea of a DTCP and played major roles in writing the proposal and initiating the project. It is not surprising that the two projects are, complementary in scope. Relations between personnel in the two projects are very good.

There may be some who think that because the IPC Project Director is financed by the WWF that he represents coordination between the grantee and the sub-contractor. This is not a valid argument: the Project Director has his responsibilities to the management of research and promotion of conservation activities in South-west Uganda. He does not and should not represent WWF-US management.

### 3.1.2 Forestry Rehabilitation Project

Several components of the UFRP are directly related to the DTCP: Farm Forestry, obviously, and High Forest Management. (There are other components that could have utility for the DTCP, such as Training. They will be referred to elsewhere in this report.) At present, there is little interaction between the Farm Forestry Component and the DTCP. And there is not likely to be such simply because of the more traditional Forest Department nursery approach used in the Farm Forestry component as opposed to the community and individual farmer approach used by the DTCP. It will be very helpful to the DTCP if, through the Farm Forestry component, there is a supply of technically competent, reasonably equipped forest extension agents available to provide technical inputs to those farmers whose interest has been stimulated by the DTCP Conservation Extension Agents. This has not happened to date. Part of this is because the entire project has been very slow in starting and part of it is because of a tendency on the part of the department to compartmentalize projects as will be noted below.

There is provision in the Farm Forestry component for the deployment of a Sociologist to design community baseline survey instruments. The Evaluation Team members were informed that the sociologist has been engaged and that the survey instruments are either ready for field testing or for final administration.

Interactions with the High Forest component occur in the making of management plans for the Bwindi, Echuya, and Ntahinga Forest Reserves. The DTCP management, in cooperation with the IFCP staff, is supporting intensive surveys of the flora and fauna of the Bwindi and Ntahinga Forest Reserves. The stated objective of the work is a management plan for the three forest re-

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<sup>10</sup> This project is large and complex. The project was appraised by a World Bank Mission in 1967. It is made up of six major components: High Forest Management, assisted by the European Economic Community; Training, assisted by the United Nations Development Program; Farm Forestry, assisted by the United States International Development Agency and CIDA; Peri-urban Plantations, assisted by the Norwegian Agency for Development; and Softwood Plantations and Forest Department Rehabilitation, financed by an International Development Association loan.

erves of south-west Uganda.<sup>11</sup> The objective of the High Forest component is to update the Forest Working Plans. We understand that the process to be employed will follow long established Forest Department procedures. This inventory step is entrusted to a Stock Mapping Team trained under the UFEP. Both process and substance have relevance to how forest reserves will be planned and managed in the future -- a concern of the DTCP.

One of the products expected from the High Forest component is a set of up-dated aerial photography of the forests. Receipt of stereo pairs covering the three South West Uganda forest reserves will be a very valuable contribution to the Ecology Activity of the DTCP.

The most serious aspect of relations between the DTCP and the UFEP is that senior Forest Department officers consider the two projects duplicatory. The Evaluation Team learned that UFEP support for the Fara Forestry component would be withdrawn from those areas covered by the DTCP. Such a move would be unfortunate.

### 3.1.3 International Council on Research in Agro-Forestry

As part of the African network (AFRENA), the ICRAF management have established a field research facility in Kabale. The research observed in the field, although not discussed with ICRAF personnel, seems directed toward the use of exotic species rather than indigenous species which is the DTCP emphasis. The plots observed below the District Agricultural Institute, Nuhamba, seemed to have considerable importance in view of the prevalence of planting trees by farmers in the middle of existing fields throughout the DTCP area of operation. The plot research has little relation to DTCP efforts to encourage terracing.

### 3.1.4 Other Projects

The CEA network has been put to very good use by the C.I.A.F bean research team and other research people engaged in field verification trials on Irish potatoes. The fact that new and promising appearing bean varieties have been made available through the good offices of the DTCP help the credibility of the project staff.

The significance of the swamps in South Western Uganda is noted elsewhere in this report. Linkage with the International Union for Conservation of Nature and Natural Resources (IUCN) Wetlands Project would be useful. The Team members learned little about the project.

The South-West Region Agricultural Rehabilitation Project is also active. It is operated by the Department of Agriculture. Its relationship to the DTCP was not mentioned.

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<sup>11</sup> The Development Through Conservation in North-West Uganda Project proposal uses Uganda Forestry Rehabilitation Project terminology to describe the expected outcome: "...provides the necessary data, plans, and recommendations for the establishment of sustained yield, multiple use forest national parks." Project Grant Agreement, op. cit. p. 6.

### 3.2 FIELD STRUCTURE ISSUES

Field structure issues deal with choices made with respect to the site of the headquarters, the addition of "zones" to the existing hierarchy of geographic areas, and the nature of the supporting office staff.

#### 3.2.1 Locating the Headquarters in Ikuaba

There has been some question raised about the decision to locate and build a headquarters complex, including a residence in Ikuaba. The choice made approximates minimizing loss. Ikuaba is mid-way between the northern unit of Bwindi and the Rwanda border on the south side of Mgahinga; it is not in a district headquarters town so charges of favoritism between districts and/or departments cannot be made;<sup>12</sup> it is near the Rohanda Mission, a major link in the Roman Catholic radio network serving both North and South Kigezi; and it is accessible to rural people coming from Nyabale, Rubuguli, and points south and west. The major disadvantage is isolation -- everyone must travel to reach the office and it a long way to journey for contact with even one set of district officers.

The Ikuaba location has reasonable proximity to Ruhizha. The IFCP headquarters serves, in effect, as a sub-station for those DTCP activities to the north and for all in-forest DTCP activities.

#### 3.2.2 Use of "Zones" in the DTCP Hierarchy

Even before the Grant Agreement was made effective, CARE-U and Forest Department personnel consulted with the RC-V Kabale about the optimum operating level. They were advised to use the Parish as the basic planning unit and to involve the RC-II's in the process.

Project staff should be complemented on the creation of the zones which are, in effect, a collection of Parishes. The initial purpose of the zones was simplification of communications. That is, to pass information the DTCP management need only contact six lead CEA's called "zonal representatives; each zonal representative informs the other CEA's in that zone.

Choice of the zone boundaries, whether deliberate or accidental, represents an additional benefit: they seem to delineate, in terms of human ecology, homogeneous units that can be useful for planning purposes. Conditions in the south south-west of the Bwindi Reserve, as reflected in such indicators as area in fallow, are considerably different than along the north-eastern boundaries of the reserve.

#### 3.2.3 Field Office Support Staff

The size and distribution of work among the members of the field office staff seems adequate and well balanced with one exception. The administrative assistant for finance and control must be quickly brought to a higher level of performance to relieve the load of picayune tasks now performed by the Project Coordinator.

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<sup>12</sup> The Tanzanians learned while in forest that there is a strong possibility that the sub-district will be elevated to district status in the near future. This strengthens the "mid-way" argument.

### 3.3 CONSERVATION EXTENSION COMPONENT

This component is the central focus of the DTCP. Encompassed within the component are the perceived role of the CEA's which strongly influences the criteria for their selection, the characteristics of the Parish Advisory Committees and their perceptions of their role, and the style and content of training.

#### 3.3.1 Selection of Conservation Extension Agents

The CEA's are casual labor; that is, there is no such post recognized in the establishment roster. For their work, they receive Ushs5,000/= per month and are equipped with gum boots, raincoat, and distinctive cap and T-shirt.<sup>13</sup> The zonal representatives receive an additional Ushs2,500/= per month for the administrative chores they perform.

As noted earlier, the first 17 CEA's had been recruited under the IFCP and transferred to DTCP jurisdiction in December 1988. Two of the zonal representatives who played a role in this evaluation were originally IFCP CEA's. They are school teachers. There is now a full complement of 53 CEA's, at least 14 of whom are female, in place in 26 Parishes. This is a substantial achievement in and of itself. The Team members have the distinct impression that a majority of the CEA's are or were primary school teachers, but even they farm a plot or come from local farm families. The Project Coordinator confirms that there is a bias in favor of selecting such persons for these part time jobs. The rationale given is that the CEA can play a dual role: be a conduit for information going to farmers and heighten awareness about conservation in school children. The number of the male CEA's requesting that the Evaluators consider making the CEA jobs full-time was dismaying from the standpoint of contributing to dissemination of conservation information and from the viewpoint of taking good people out of the classrooms.

There is no question, however, that the increasing proportion of female CEA's is commendable. Everyone acknowledges that the majority of the farm labor is performed by women. What is not clear in Uganda is whether the decision-making is done by women.<sup>14</sup> Once again, knowledge of cultural factors will influence extension strategies. One of the women CEA's is the wife of a Forest Officer; another is a school teacher. The Evaluators have little feel for the backgrounds of the other female CEA's set during the field meetings, although most seemed to also be school teachers.

#### 3.3.2 Parish Advisory Committees

Representative members of five advisory committee were met during the field visits. In all cases, the chairman was present. The most consistent feature of the committees is their inconsistency. They vary in number from more than 30 to 18, in composition -- where some specify social connections,

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<sup>13</sup> The logs for the T-shirts was designed and rendered by the Conservation Extension Agents themselves.

<sup>14</sup> Studies in other cultures have found that up to 77 percent of farm decisions, such as choice of seeds and time of planting, are made by men. Similar studies have also shown that the primary farm family contact made by male extension agents is with the male head of family who often directs the extension message he relays to the women.

such as religion, and in methods of selection -- some are selected in rallies that resemble town meetings and others by personal solicitation.

Similarly, they vary in their perceptions of their roles in the communities and to the three segments of the civil government: (the Resistance Committees extending to the District Administrator, the administrative service extending to the District Executive Secretary, and the employees of the national line agencies). For example, in one Parish the committee saw its role as being a planner contributing to the deliberations of the RC-II; another committee saw the RC-II as being the planning body so they felt their role is implementation; and a third committee saw no connection between them and the work of the RC-II.

Field discussion of these relationships included, as indicated in the Introduction, members of RC-I, RC-II, and RC-III who were also members of the DTCP Advisory Committees, a Chairman of an RC-V, a County Chief, and two Sub-County Chiefs. What the Evaluators learned was there is a plethora of committees the roles of each varying according to who is describing them. This makes impossible the task of evaluating whether the project sponsored Advisory Committees are valuable or superfluous. The question is important if the very substantial job of preparing community land use plans is to be taken seriously.

At another level of inquiry, it was never determined whom the advisory committees advised, particularly when the pre-condition that one day there would be no "project" was imposed.

### 3.3.3 Training

It was found that the initial training of the CEA's emphasized communications skills. The emphasis was justified for those expected to persuade farmers to adopt new practices. Second round training took account the animosity between the population outside the reserves and those charged with protecting the reserves. The Conservation Extension Manager organized a workshop for CEA's to which Game Guards and Forest Guards were invited. This was an excellent step toward finding common understanding and continuing a practice begun with CEA's in the IFCP period. There is still a long way to go.

The Evaluators were told that the next phase of training will emphasize technical inputs. This seems logical. This phase is to mark the beginning of intensive attention for trees. The problem will be finding instructors who are knowledgeable about forestry and who also have empathy for the holistic approach necessary to sustainably upgrade agriculture on steep hillsides.

### 3.4 CONDITIONS IN THE FIELD

The conditions that were observed relate to soil stability and productivity, adoption by farmers of project recommended practices, and sources of seedlings.

3.4.1 There Is Agreement Among Farmers and Technicians That Yields Are Declining, The Soil Is Going

3.4.1.1 Gully erosion is evident.

The cultivation of steep slopes with no breaks is causing continual movement of the land down the slopes. The process resembles a series of slumps. The amount of the watershed of the Ishasha River that is under forested cover is a small proportion of the total. Maintenance of the forest cover plus slow adoption of bund building practices by individual farmers will not affect the hydrology of the basin. To reverse the trend will require a massive, orchestrated implementation of technically sound practices.

3.4.1.2 Very small areas per family

The average size of holding -- in some Parishes is estimated to be as small as .4 hectares (ha) per family -- coupled with irregular boundaries for plots, seriously impede installation of continuous terracing on the contour at the frequency necessary to hold the soil in place.

3.4.1.3 Former Agriculture By-laws broke down

At one time bunding on the slopes was mandatory and the Agriculture By-laws were enforced by the chiefs. In a short period after independence, the bund systems were broken. With few exceptions, farmers and officials agree that the terrace systems must be re-established. The members of the Team were assured that specifications for bunding that take account of the angle and length of slopes exist and that re-institution of the bund requirements in the Agriculture By-laws is under serious consideration. The By-laws will mandate technically effective bunding. The DTCP technical staff will have to intensify work within terrace systems, such as multi-row plant barriers and plants that will offer yields of usable products on the faces of the terraces, such as pulses and berries..

3.4.2 Acceptance of Recommended Practices

2.4.2.1 Planting trees

The leadership of the project are concentrating on the use of indigenous species of plants for use on farms. The species being used are generally fast growing, fix free nitrogen in the soil, and produce leaf and pod material that can either be fed to animals or used as green manure.

The touring members of the Team were shown many farms where farmers had planted two to four of the recommended tree species. Adoption by a high percentage of those contacted is good; it is bad if the adoption is taken solely on the word of the CEA's and quick results are expected. Building soil productivity and stability take time. Very few of the trees were part of what could be termed terracing operations.

2.4.2.2 Nutrient recycling

Nutrient cycling is a DTCP staff concept that is sound. An example is tree fodder grown on the farms that is fed to rabbits; rabbit manure

is composted and applied to the fields already benefiting from the nitrogen fixing action that produce food for the family and rabbits.

### 3.4.3 Seedling Production

Farmers are making their own nurseries and producing their own planting stock. Some of the nurseries are cooperative ventures wherein a group of farmers who raise a nursery on the land of one of the members, produce seedlings for use by the participating members, and disband or regroup to raise another nursery. The practice is a marvelous example of local adaptation. The nurseries are not something most professional foresters would find appealing, but they get the job done. The practice should be written up for publication.

All of this is extremely impressive given the very short time the project has been in full operation.

### 3.4.4 Conceptual Problems Are Emerging

#### 3.4.4.1 Inter-departmental friction

One of the most serious of the conceptual problems is the conflict between Game Department staff on one side and the Forest Department staff --both attached and otherwise -- and residents on the other side. The Evaluators suspect that some of the claims and counter claims are contrived and/or inflated. Nonetheless, the IFCP Director's successful program of recruiting, equipping, and training a Game Guard force to uphold the laws of Uganda inside the Bwindi and Ngabinga reserves is the cause of much of the unhappiness on the part of local people. The evidence seems conclusive that a large number of people were conducting activities that violated the Forest Act, the Game Act and the Mining Act. Why Forest Department personnel are taking positions against the Game Guards is open to conjecture. The situation, however, does directly affect the assumptions made in the Grant Agreement about inter-departmental cooperation in protecting the forest resource.

The important assumption made in the Grant Agreement documents is that there would be a sufficient level of stringent enforcement of the laws of Uganda to maintain the forest resource base. This is absolutely necessary in the short-run while the long-run on-farm activities develop sufficiently to be effective. The bulk of this work has been done by the IFCP Director. The Game Department has been very receptive to his requests for new personnel and has supported a rigorous training program for Game Guards. In return, the Game Guards have been equipped with uniforms, gum boots, T-shirts, and caps. The Forest Department has not responded to offers to provide the same level of training and equipment to Forest Guards.

The friction between departments is exacerbated by the fact that Forest Department personnel can assess and collect fines and penalties from a violator when and where the apprehension occurs whereas Game Department personnel must take the miscreant into custody and transport him/her to a Resistance Committee or court for prosecution.

#### 3.4.4.2 Tendency to become an integrated rural development project.

Another conceptual problem is the danger that the more Advisory Committees enter into community planning, the more development through conservation will resemble one of the comprehensive, integrated rural development projects that were in vogue a decade ago. For example, members of the Teas inquired in each Parish visited what those in attendance considered to be the major problem confronting them. In three of them, the top problem listed was transportation. Expenditure of time and resources to improve farms to market transport in the interest of meeting the DTCP goal of improving the lot of 86,500 participating land users would obscure the applied conservation focus of the project.

### 3.5 ANALYSIS

#### 3.5.1 Area-Wide Planning By A Single Decision-Maker

There are two aspects of planning for managing a reserve. First is the management of the resources within the reserve boundary. In the case of the DTCP Ecology Activity, with full support from the IFCP, the management plans assume that the responsible agency(ies) will implement them.

Second is the plan for the resources outside the reserve. All that is explicit is the expectation that a land use plan will be prepared by the farmers in each Parish. Integration of the land use plans with the reserve plan is not addressed in the project documents.

If the Teas members' perception of the simple, straightforward objectives of the DTCP are correct, then a single plan with a single planning decision-maker seems to be a desirable way to proceed.

If this is so, the implications are very significant for the way resource management agencies plan. In making a Working Plan for a Forest Reserve, Forest Department personnel will have to become involved in the land use planning in the Parishes and, conversely, involve the farmers from the Parishes in planning for the reserve.

#### 3.5.2 Collaboration Needed on Social and Economic Surveys

It is unfortunate that the sociologist for the UFRP Farm Forestry component is so overburdened that there cannot be collaboration between the two projects. It would be very useful if both projects were able to use the same parameters and units of measure for their baseline data. DTCP management should have been aware of this development, particularly since technical control for both activities is exercised by CARE-U, and brought this expertise to bear on the need for baseline information in the DTCP operating area.

#### 3.5.3 Participatory Planning For Reserves

The philosophic basis for the DTCP is developing a collaboration between reserve administration and those directly affected by the management decisions. Reversion to the old style of working plan means the exclusion of local people from decisions that directly affect them. As will be seen, the Teas members feel strongly that a new participatory approach to reserve plan-

ning should be tested in Echuya. It may be well for the Forest Department to rethink how the department's planning process can be made more open.

#### 3.5.4 Forestry Rehabilitation and Development Through Conservation are differently focused projects

The members of the Team view the UFRP as a broad-based move to strengthen the Forest Department's ability to contribute to the national welfare. Different components provide finances for new officers, staff housing, reinstatement of Forest Guards into the Establishment budget, transport, and equipment. For example, four-wheel drive vehicles are to be available to the district level; motorcycles and bicycles available to staff at the County and Sub-County level. The DTCP has no provision for such facilities. Its direction is toward the community and the farmer and not toward any of the several technical departments expected in the project design to serve as technical resources.

#### 3.5.5 Future Problems For Headquarters Complex

The location at that spot in Ikuaba was influenced by the generous offer of the Sub-County Chief, with the concurrence of the Ministry of Local Government, to use land within the Chief's compound. This interest by in the project by the civil government is worthy of note.

A major problem remains. When a Project Manager is appointed, the Coordinator will live in the headquarters compound but the GOU officer will have to find accommodation elsewhere. Such inequality will not make for smooth working relationships between two persons who should function as equals.

#### 3.5.6 Conservation Extension Agents Should Have a Strong Farm Background

Whether it is better to disseminate conservation oriented practices through persuasion or example is a matter for serious debate. The initial rationale for using teachers is breaking down as evidenced by the interest of the teachers to have full time project-financed jobs. The best conduit for information to small farmers is usually through farmers themselves. Another channel for school-oriented conservation education ought to be explored.

#### 3.5.7 Relation of Advisory Committee Planning to Government

Now that grass roots planning has begun, it needs to be oriented, with DTCP support, towards the GOU decision-making channels. Unfortunately, the planning process is in disarray with 3 parallel systems in place and most people in confusion. This born out by the variety of answers given by respondents at all levels.

#### 3.5.8 Trainers For the Advanced Concepts of DTCP Will Be Hard To Find

Even though the Grant Agreement documentation calls for the use of agro-forestry to deal with the conservation problems found on hill side farms, more is involved. Agro-forestry, at its best, takes the complete biological and physical aspects of a farmer's routine. But to make an impact, as suggested in the need for socio-economic baseline information, such items as the opportunity cost of labor at various times of year are important. The rapidly

developing discipline that deals with the total farm operation is farming systems.

Normally, when the farming system approach is used, finding skilled trainers is a serious problem. There seems good justification for including funding for external trainers in this field.

#### 3.5.9 On-Farm Research Into Use of Indigenous Tree Species

This practice is commendable and should be intensified. It is the opinion of the Evaluators that part of the botanical work supported by the DTCP and IFCP is directed at determining additional species desired by farm families that can be successfully propagated on local farms. There is a need for on-farm research, resembling field verification trials, to generate better data on what species are best for increasing fertility and controlling erosion, particularly when used in conjunction with terraces.

#### 3.5.10 Forest and Game Departments Need Unified Codes To Enforce

Matters would be much improved if technical field forces from both departments enforced the same laws with the same vigor and followed the same processes.

### 4.0 IN-RESERVE OPERATIONS

The Ecology Advisor and Manager are responsible for the biological survey and inventory work conducted under the DTCP. They are headquartered in Eshisha. The work is being done both by national professional biologists and by candidates for master of science degrees in Makerere University. Details of their work are found in Annex 4. The second aspect of this component is the preparation of the sustained yield, multiple use management plans for the reserves and applied research projects.

#### 4.1 DEVELOPMENT AND IMPLEMENTATION OF INVENTORY APPROACH

The work by the Curator of the Makerere University Herbarium, the Deputy Director of National Parks, the Ecology Advisor, and the graduate students is making significant contributions to knowledge about the flora and fauna of the Bwindi Forest Reserve. The use of graduate students in a program of research and training is consistent with the DTCP proposal and will contribute well-trained manpower to a depleted pool of skilled field people.

Two of the graduate students are conducting research outside the reserves. One is investigating the impact of agroforestry systems and the other is working with the swamp ecosystems which are so rapidly being altered. The results of the agroforestry work will be directly applicable to conservation-oriented work outside the reserve. Work in the swamps may open new geographic and substantive dimensions for the DTCP.

## 4.2 COMPREHENSIVE MANAGEMENT PLANS

Writing of management plans was discussed with the Ecology Advisor. It was obvious that considerable thought has gone into plan preparation, some of it colored by the controversies stemming from proposals by GOU to Gazette both Ngahinga and Bwindi Forest Reserves as national parks.

## 5.0 GENERAL OBSERVATIONS

### 5.1 IMPORTANCE OF THE SWAMP AND LAKE ECOSYSTEMS

The surface of South-West Uganda contains a complex system of lakes inter-connected by swamps. The lakes are deep and have steep banks but few marginal wetlands. It was reported that the lake fisheries produce very few fish -- it is claimed that they have been fished out. Perhaps there is a nutrient relationship between the swamps and the lakes. If so, low fish production could be related to swamp draining and felling the swamp forests. In a relatively protein poor area, the potential of the considerable lake resource seems to be inadequately recognized.

### 5.2 MANAGEMENT OF THE FOREST RESOURCE

The members of the Evaluation Team consistently received three pieces of information about the management of the Forest Reserves. While it was beyond the scope of the evaluation and available resources to confirm or discredit the claims, the frequency of the reports and breadth of the sources is cause for concern.

#### 5.2.1 High Grading High Value Species

The most valuable species, such as mahogany, are being deliberately selected for felling and, with contrivance, the dimension standards for these species are being violated. Such practices have a deleterious effect upon the species composition of the forest stand and on the reputation of the Forest Department.

#### 5.2.2 Distribution of the Value of Reserve Products Is Poor

The majority of the value realized from felling and producing lumber goes to business people far removed from the forest boundary. This is common in most countries. The team members learned, for example, that a large percentage of the male inhabitants of the communities surrounding the forest derive cash income from the timber sawing industry as day laborers. They feel this is important and strongly express their desire to be able to continue such earnings. They also note that very little of the large earnings made by their employers returns to their communities. The matter of equity will appear regardless of which agency has the responsibility for management.

#### 5.2.3 The Local Market Has Softwood But Not Hardwood

The majority of timber available locally comes from plantation-grown softwoods because the high value hardwoods are transported from the region, often smuggled across international borders.

### 5.3 THERE ARE NO CURRENT FOREST MANAGEMENT PLANS

Taken as typical is the Working Plan for the Ichuya Forest Reserve. The plan was prepared by the Working Plans Section and approved by the Chief Conservator of Forests for a ten year period starting in 1967. No updates based on actual conditions in the forest were noticeable. Extraction permits and licenses for the forest are based on guesses of current conditions and about cause and effect relationships.

### 5.4 STAGNANT SOFTWOOD STANDS COULD PROVIDE LOCAL JOBS

#### 5.4.1 Large Volumes Standing

The members of the Evaluation Team were impressed by the volume of stagnated material in the softwood plantations. The situation was described in the Staff Appraisal of the UFRP as follows:

The plantations now represent a substantially under-utilized source of timber; some areas are over-sature and others in need of thinning and pruning. Over the longer term, the softwood plantations could yield 90,000 m<sup>3</sup> of sawn timber in 2000. They could thus relieve, to a substantial extent, pressure on the ecologically fragile natural hardwood forests...<sup>15</sup>

#### 5.4.2 Hand Felling, Bucking, and Saving Are Labor Intensive

Consideration of the contribution of these forests to the cellulose flow of the country, it is equally important to examine the way the forests will be harvested. One senior forest officer said he was disappointed that no major companies had come forward to assist in the harvesting. Given the importance attached to day wages by the farmers the Team members spoke with, it would seem that what may be thought of as primitive methods of harvesting and processing could be good public policy.

## 6.0 AREAS PROPOSED FOR FUTURE DEVELOPMENT THROUGH CONSERVATION ACTIVITIES

### 6.1 MGAHINGA FOREST RESERVE

There is strong impetus in Government to Gazette the MgaHINGA Reserve complex a national park.<sup>16</sup> The Forest Department does not have technical objections to this action. At least three reserve boundaries are involved: the 1922 line, the 1941 line, and the 1959 line. The area between the lines are referred to as zones "A", "B", and "C". Zone "A" is the only one without

<sup>15</sup> WFP, 1987. "Staff Appraisal Report: Spanish Forestry Rehabilitation Project." (Washington: World Bank), p. 5.

<sup>16</sup> As noted in the introduction, many of the reserves have more than one title. In the case of MgaHINGA, the boundaries of the various reserves are not necessarily the same. Some of the areas are: MgaHINGA Forest Reserve, MgaHINGA Game Reserve, and MgaHINGA Wildlife Game Reserve.

residents or cultivation. This situation poses unique difficulties for management planning and, thus, for future DTCP Project-oriented activities in the area.

There is another complication. There seems to be general agreement among authorities that the gorilla population should be the focus of management. However, the management unit is tri-national and the Uganda gorilla population migrates across international boundaries. Thus, resource conservation in the Ngahinga Reserve may be as or more dependent on land use practices in Zaire and Rwanda as in the out-of-reserve zone in Uganda.

During the times of unrest which have affected the three countries whose boundaries meet here, the forests have been corridors for smuggling. Transnational movement in and through the forest may still be happening and is being handled by the Game Guards at considerable risk to themselves. This will have to be taken into account.

The DTCP Evaluators were told that no final government decision has been taken with respect to final location of the park boundary nor the types of use that may or may not be permitted within the various zones. It was encouraging to learn that a tourist lodge proposed for a site within zone "A" of the proposed park has been beaten back for the time being.

## 6.2 ECHUYA FOREST RESERVE

There is a block of moist tropical forest visible in the northern swell of Echuya Forest Reserve. Except for this block and the upland swamp, the forest is composed of high quality mountain bamboo. The reserve is only nine miles long; the narrowest dimension is two-miles at Kanaba Gap.

The situation in the Echuya Forest Reserve is precarious. The already enumerated pressure of population along the borders of all reserves is exacerbated by the long international border with Rwanda, a road that passes through the most narrow east-west dimension of the forest, and past abuses permitted in the high elevation swamp. The Muchuya Swamp is a very important feature that deserves special attention. (See Annex 4, p. 20.)

The 1967 Working Plan for the forest, referred to above, cites the importance of the forest as a watershed. Given the relatively small proportion of the catchments under forest, maintenance of this function will be inordinately difficult. In addition, Forest Department staffing for the reserve is very thin: a Forester, acting as Forest Officer, is the ranking employee on the ground. As an indication of demand for bamboo, the Working Plan allowed the harvesting of 500,000 live poles, plus "dead" material, per year.

There is no indication of a change in administration. That is, the management of the Echuya Forest Reserve will continue to rest exclusively with the Forest Department.

## 7.0 ORAL HISTORY

It is commonly understood that the Batwa people of the Bwindi Forest are rapidly changing. The Ecology Activity and the IFCP personnel rely upon the folk knowledge of these former forest dwellers to understand the forest. (See Annex 4 for more details.)

It seems that a very useful purpose would be served if the DTCP included a provision for training a natural historian in the skills and techniques of oral history. Several university history departments, for example Michigan State University), have excellent programs in oral history. And they have applied the techniques to recording natural history.

DEVELOPMENT THROUGH CONSERVATION

IN

SOUTH-WEST UGANDA PROJECT

EVALUATION REPORT

ANNEX 4:

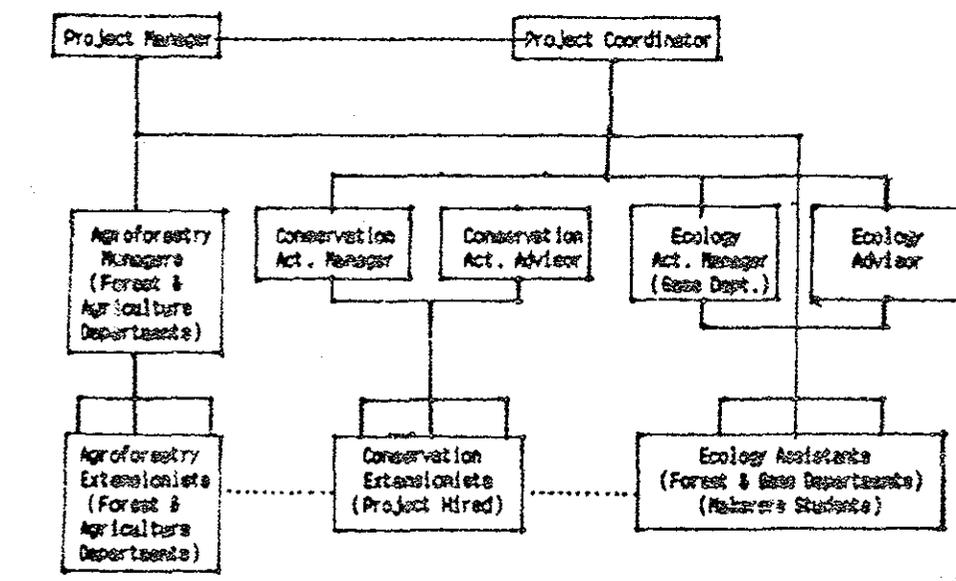
**NATURAL RESOURCES MANAGEMENT**

Prepared by:

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USAID/RETGO/ESA  
Regional Environmental Advisor

29 June 1990

Plate 3. Organization proposed in Project Cooperative Grant Agreement



**N.B.**

The Conservation Extension Agents work will be centered on promoting on-of-forest activities (agroforestry/tree planting, soil conservation) and coordinating with community groups/community Advisory Committees. Government of Uganda extension agents will administratively fall under the Forest Department Manager counterpart while receiving technical supervision by the Project Coordinator and Project Manager. Law enforcement guards will receive technical supervision by the Implementable Forest Conservation Project leader and Ecology Advisor and be directly responsible to the Forest Department and Grass Department Managers.

DEVELOPMENT THROUGH CONSERVATION  
SOUTH-WESTERN UGANDA PROJECT

EVALUATION REPORT

ANNEX 4: NATURAL RESOURCES MANAGEMENT

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DEVELOPMENT THROUGH CONSERVATION IN SOUTH-WEST UGANDA PROJECT

EVALUATION REPORT

ANNEX 4. NATURAL RESOURCES MANAGEMENT

EXECUTIVE SUMMARY

Based upon what was observed in the field, it is the general opinion of the author that USAID may have gotten one of the best returns for its investment that it has ever seen, from both the Development Through Conservation in South-West Uganda (DTC) and Impenetrable Forest Conservation (IFCP) projects. About 52 Conservation Extension Agents (CEA) are active in 25 Parishes that surround Bwindi Forest. Each Parish has an active Advisory Committee (AC) made up of a good cross section of the community and grass roots planning is beginning to take place. Farmers are beginning to adopt agroforestry practices to control soil erosion and improve soil fertility. The in-forest ecological surveys are well underway in Bwindi and Mgahinga Forest Reserves. It is the author's opinion that both the Development Through Conservation in South-Western Uganda (DTC) and Impenetrable Forest Conservation (IFCP) projects should be of great interest to USAID in promoting and possibly expanding. However, if these projects are to continue and/or to be expanded and if long term results are desirable there are a number of modifications that will be needed in the areas of:

- Government Policy Reform in the organization of natural resources management agencies, and the distribution of profits derived from natural resources exploitation to permit these agencies to be functional in the field in order to assure that exploitation is sustainable.
- \* The projects should be operated through institutes backed up by endowments to assure that long term recurring costs can be met, as what they are trying to achieve will require a minimum of 10-15 years.
- \* There is a major need to conduct a socio-ecological analysis to better understand the ties of the peripheral zone community to the natural resource base. In turn this needs to be integrated into an overall interactive management plan for each reserve that extends beyond the boundary of the reserve into the peripheral zone and which addresses the biological, social and economical needs of the area.
- \* There is a major need to educate the Conservation Extension Agents, the Game Guards and the people in the concepts of natural resources management.

- \* The Game Guards and Forest Guards need training in community relations, and can not begin too soon to develop stronger ties to the local communities, possibly through the CEA/Advisory Committees. The same might also be said for National Parks where most peripheral zone members in the area have great apprehensions about what a park will mean to their accessing natural resources from these forests.
- \* If indigenous trees are to be used in agroforestry, there needs to be immediate on-farm research begun to determine scientifically what species is best and in what manner to plant in order to promote soil conservation and/or soil fertility. If this is not undertaken, there is a risk that poor results will be obtained and that farmers will become disenchanted with the program. Farmers need to be immediately sensitized to this issue.
- \* There is a need to resolve the current confusion in local government over who has the responsibility to plan, and in turn link the grass roots planning, evolving out of the DTC project, to this mechanism.
- \* The success or failure of the DTC project should not be determined by how many trees it plants, or how many workshops it holds but on whether it establishes the ongoing processes which will organize the local communities to undertake their own development activities beyond the life of the DTC project.

Detailed findings and recommendations are presented in the body of the report. They are followed by a fairly lengthy evaluation that led to the development of these conclusions.

DEVELOPMENT THROUGH CONSERVATION IN SOUTH-WEST UGANDA PROJECT

EVALUATION REPORT

ANNEX 4. NATURAL RESOURCES MANAGEMENT

0.0 INTRODUCTION

The Development Through Conservation Project (DTC) is based in southwestern Uganda and working in on-farm and in-forest developmental activities. On-farm activities include agroforestry to control soil erosion and improve soil fertility, small animal husbandry, conservation education, protection of grass roots planning, and obtaining a better understanding of the relationship of peripheral zone communities to forest reserves within the study area.

In-forest activities include the collection of baseline ecological data and the use of this information, along with socio-ecological data, to develop interactive management plans that conserve the unique biological diversity of Southwestern Uganda's forest ecosystems while meeting the needs of the surrounding communities in the sustainable use of the natural resource base.

To understand the origin of the Development Through Conservation Project, it is necessary to go back to 1984, when an ecological survey was undertaken of forest reserves and their surroundings in southwestern Uganda, including Bwindi Forest (Impenetrable Forest), Mgahinga Forest, and Echuya Forest. The surveys found these forests to be not only rich in unique flora and fauna, including harboring over half of the World's Mountain Gorilla population, the golden monkey, the golden cat and other endemic species, but also found that they were suffering from human encroachment, this being one of the most densely populated areas in East Africa. In 1948 there were 3.7 hectares per person while today there are 140-500 persons per square kilometer and an average of only 0.7 hectares of land available per person.

Very steep slopes, once forested, are now under intense cultivation.

These findings led to the establishment of the Impenetrable Forest Conservation Project (IFCP) in 1986, to begin studying the gorillas of Bwindi and eventually Mgahinga Forests. It was quickly recognized that not only were the remaining portions of these forests being mined by the local people, but that the only chance for their survival would require a coordinated, three pronged plan of attack to deal with these issues; collection of baseline ecological data to upgrade the old forest management plans which were written in the late 1960's, develop an understanding of how the local community relates to the natural resources in these forests, and introduction of on-farm activities that might provide alternatives (e.g. agroforestry as a source of trees, small animal husbandry in the place of bush meat) so as to decrease the pressures on the natural resource base of these forest reserves. The ecological and socio-ecological surveys would be used to generate interactive forest reserve management plans to conserve the biological integrity of these forests while

promoting sustainable exploitation, where feasible, in collaboration with the peripheral zone community. This gave birth to the Development Through Conservation Project in mid-1986. Unfortunately, it has only been operational on the ground since about October 1989.

The purpose of this evaluation is to determine the progress that the DTC project has made since it became operational and to provide constructive criticisms on how it might be improved upon if it is to continue. Throughout this Annex, the DTC and IFCP projects will often be referred to together. They are so closely linked in their overall goals and objectives, and project staff and materials are so intertwined that they really must be looked upon technically (not administratively) as two components, with separate pockets of funding, of a larger umbrella project. Their purpose is to address sustainable natural resources management that integrates conservation activities in the forest reserves to developmental activities in the peripheral zones, realizing the linkage between these two areas that traditional forestry and park management have failed to acknowledge.

In Africa, the failure to integrate these two components has resulted in local communities being cut off from much of their traditional resource base (trees, wildlife, and, in some cases, grazing lands). In most cases it has put local communities at continual odds with the government natural resource managers, and has resulted in poaching and mining of the resources by the local community. It is recognized today, that the only way for a natural resource manager to have a chance of assuring the long term sustainability of the natural resource base is through collaboration with and not from opposition by the traditional resource users living in the vicinity of the forest or ecological zone to be managed. In most instances, as is the case in Uganda, natural resource agencies are understaffed and are required to cover large geographical areas. For instance the 321 km.sq. of Bwindi Forest is patrolled by only 36 Game Guards. More and more African nations are realizing that the old ways of policing and guns do not provide a long-term solution, only a stop gap. The best long-term solution is involvement of the rural community in natural resources management of these areas and providing them with direct individual benefits and economic incentives through sustainable exploitation of these resources. That is to say, giving back to them and then helping them to manage those resources that were absconded during the colonial period and over the last 25 years of many of these newly emerging nations.

The DTC evaluation began on May 29, 1990. The evaluation team consisted of:

- \* Bill Hart, Natural Resources Planner and Team Leader, with responsibility for evaluating design, project goals, managerial and organizational structure of the project, and on-farm evaluation
- \* Fred Kayanja, Trustee of the East African Wildlife Society, Vice Chancellor of Mbarara University of Science and Technology, responsible for in-forest activities and, evaluating project sustainability
- \* Paul André DeGeorges, Regional Environmental Advisor for USAID/East and South Africa, responsible for natural resources management issues.

From May 31-June 9, 1990 the team was in the field. The team was accompanied by the DTC Project Coordinator and the DTC Conservation Extension Manager. Headquarters of the DTC project were visited in Ikuuba, as well as IFCP headquarters in Ruhizha where the DTC Ecology Advisor is based. Conservation Extension Agents and Advisory Committees in five strategically located Parishes around the perimeter of Bwindi Forest were visited (Figure 1):

- Kashija Village of Rubuguri Parish in the southwest, (#1, Figure 1)
- \* Nyambale and Nyakabungo Parish representatives in the southeast, (#2, Figure 1)
- \* Ruhizha, in Kitojo Parish in the east. (#3, Figure 1)
- \* Bushura Village near Kanungu town, Bushura Parish in the northeast, (#4, Figure 1)
- Buhoma Village with representatives from Kueshero, Mukono and Icyonca Parishes, (#5, Figure 1)

Additionally, a meeting was held in Kanungu with the District Forest Officer from Rukungiri District, the Forest Officer from the Kanungu Subdistrict and some of their field staff. Government representatives from Kabale District were also interviewed including the District Administrator, the District Forest Officer, the District Agriculture Officer and the Game Warden for the Kigezi Range. Discussions were also held with the Rubanda County Chief and the Ikuuba Sub-county Chief, as well as some of the DTC/IFCP supported graduate students. A brief visit was paid to Mgahinga Forest to meet with Game Guards and the Resistance Committee Chairman for Chana, the village abutting the Mgahinga Reserve. A brief time was spent with the Forester responsible for Echuya Forest Reserve. Upon returning to Kaspala, meetings took place with the Commissioner of Agriculture, the Chief Game Warden and the Chief Forest Officer.

This Annex is based upon these interviews and personal observations in the field. It attempts to accurately reflect the opinions of the persons interviewed. Many of the recommendations in this document stem from interactions with the above-mentioned parties and represent only the opinion of the author, but he judges that they have been concurred upon.

It is hoped that in some small way this Annex can help to provide fresh thinking on how to foster improved ties between resource managers and traditional resource users, benefiting all parties concerned and conserving the unique natural beauties of the region.

In some ways this analysis looks beyond the DTC project and provides recommendations that the Government of Uganda, USAID and other donors might consider if they desire to get more actively involved in development through conservation.

## 1.0 FINDINGS AND RECOMMENDATIONS TO ENHANCE THE DTC PROJECT

The following is a summary of key findings in which steps might be taken at the project or government level to improve the outcome of the Development Through Conservation Project as well as to help it integrate into related projects. A number of these recommendations go beyond the scope of the Development Through Conservation Project with the understanding that USAID and other donors may wish to get involved more in-depth in the management of natural resources in Uganda to preserve biological diversity, increase income generation to local communities and generate foreign exchange through tourism.

### 1.1 THE NEED TO STUDY REPTILES AND AMPHIBIANS, AMONG THE LEAST KNOWN GROUPS IN EAST AFRICA

If DTC funds are forthcoming, support airfare and lodging for four California Academy of Science experts to survey Bwindi Forest and to train two Ugandan students in herpetology at the M.Sc. level.

### 1.2 THE NEED TO CONTINUE SUPPORT OF UNIVERSITY LEVEL STUDENTS FUNDED UNDER DTC

Continued support should be given to university students selected by the DTC project to undertake research on selected natural resources issues, applied where possible, in order to develop future managers and researchers for Uganda's parks and reserves. This should include but not be limited to:

#### 1.2.1 Socio-Ecological Research

Socio-ecological research into the relationship of peripheral communities to the natural resources of Bwindi, Mgahinga and Echuya Forests, (Knowledge, Attitudes and Practices). One or more students could be supported for each forest and this information linked to the in-forest surveys in order to devise an integrated management plan for each area.

#### 1.2.2 In-Forest Research

In-forest research should be continued to support students in studying ferns, butterflies, raptors, herpefauna and ethnobotany. As other research areas are identified, they should be supported.

#### 1.2.3 On-Farm Research

On-farm research should be supported for two students, one to study the use of indigenous trees to control soil erosion, and one to study indigenous trees to increase soil fertility. Consideration should be given to linking these individuals with ICRAF in designing on-farm trials in collaboration with Advisory Committees and local farmers.

#### 1.2.4 Swamp and Lake Fisheries Research

Support should be continued for the graduate student studying the relationship between swamp/lake fisheries and the conversion of these swamps to agricultural lands. This student should be given expanded support and should begin working through the Advisory Committees to interact with local farmers

and fishermen to see if compromises can be reached to diminish encroachment on portions of these biologically diverse swamps. There should be an attempt to collaborate with the IUCN Wetlands Project in Uganda.

#### 1.2.5 Small Animal Husbandry and Fish Culture Research

Consideration should be given to supporting one student to conduct applied research in small animal husbandry and another in fish culture, two areas in which villagers have shown keen interest and which could take the pressure off of wildlife in the forest reserves as a source of protein.

#### 1.3 THE ACCEPTANCE BY FARMERS ON BLIND FAITH THAT CURRENT AGROFORESTRY PRACTICES WILL BRING IMMEDIATE IMPROVEMENTS IN SOIL FERTILITY AND EROSION CONTROL

Until further applied scientific evidence is obtained (see 1.2.3), all participating farmers in the DTC study should be advised that current DTC activities are aimed at finding solutions to their problems and could take a few years before results, if any, are seen. This should be undertaken in order to avoid disenchantment with the project if expected results (e.g. increased soil fertility, increased crop production and decreased erosion) are not immediate.

#### 1.4 THE NEED TO STANDARDIZE ECOLOGICAL SURVEY METHODS AND DATA BASES

If DTC funding is forthcoming, USAID should support the proposed workshop on standardization of databases and ecological survey methods to be held in collaboration with the Department of Environment and Natural Resources at Makerere University and The Nature Conservancy.

The Ecology Advisor and Ecology Manager should be provided with funds to visit repositories (e.g. Harvard, Oxford, Nairobi) at least once a year to research the literature in order to relate their findings in the field to those of other researchers.

#### 1.5 THE NEED TO ENSURE THAT RESERVE MANAGEMENT PLANS EXTEND BEYOND FOREST RESERVE BOUNDARIES

There should be a concerted effort to begin collecting socio-ecological information in order to better understand the interaction between people living in peripheral zones of the forest reserves and the natural resources of these forests. This information should be overlaid with information collected from the ecological surveys in order to assure that there is an integration of biological, sociological and economic priorities built into these interactive plans. Much of this information can be collected in collaboration with the DTC Conservation Extension Agents and the Advisory Committees. The Forest Department, which maintains licensing records for extraction of forest products, should also be involved.

#### 1.6 THE NEED TO BEGIN ORGANIZED COMMUNITY INVOLVEMENT IN THE DEVELOPMENT OF RESERVE MANAGEMENT PLANS

There are many rumors and misconceptions about how improved management and reclassification of the Bwindi, Mgahinga and Echuya Forests will impact the ability of the rural communities to access these forests for natural resources

extraction. There should be a concerted effort through the DTC's Conservation Extension Agents and the Advisory Committees in collaboration with the Government of Uganda's Forest and Game Departments, and National Parks to begin sensitizing and interacting with the rural community, in order to allay any fears and misconceptions about their future relationships to these areas, and in order to begin involvement of the rural community in the decision making process that will eventually develop interactive forest reserve management plans. These plans will link conservation and development and will determine how these reserves will be managed and exploited in the future in a sustainable manner in order to economically benefit the communities living in the peripheral areas while, at the same time, protecting the biological integrity of these forest reserves.

#### 1.7 INSUFFICIENT FOREST DEPARTMENT AND AGRICULTURE DEPARTMENT EXTENSION AGENTS TO ADEQUATELY REACH GRASS ROOTS COMMUNITIES

Forest Guards and Agriculture Extension Assistants often are required to cover from one to two Sub-counties on foot. Each subcounty contains an average of seven Parishes. Each Parish contains an average of 10 villages. There should be a concerted effort to team up Conservation Extension Agents (2/Parish) with these extension agents in order to reach out to the people at a village level.

#### 1.8 CONSERVATION EXTENSION AGENTS AND GAME GUARDS ARE INADEQUATELY INFORMED ABOUT THE CONCEPT OF NATURAL RESOURCES MANAGEMENT

It was found that Conservation Extension Agents have little or no understanding of natural resources management. Game Guards see their role more as policemen than managers of resources. To date, the CEA's have looked entirely at on-farm activities to solve the problems of peripheral communities. A series of workshops should be held with CEA's, forest guards and game guards to discuss the concept of natural resources management as it pertains to the forest reserves. Consideration should be given to also inviting community leaders, especially elders who are respected by the community for their wisdom. Graduates from the Forestry College and from Mweka Wildlife Management School should be invited to explain these concepts.

#### 1.9 THERE ARE MAJOR CONFLICTS BETWEEN GAME GUARDS AND PERIPHERAL COMMUNITIES AROUND THE FOREST RESERVES

As part of the recommended workshop on natural resources management, game and forest guards should be sensitized to the fact that in the long term their ability to carry out their job depends upon developing a close allegiance with and support from the rural communities, not on continual confrontation. Every effort should be made through the conservation extension agents to facilitate game guards meeting with communities at a village level in order that each may understand the role and the needs of the other.

Since the Forest and Game Department personnel patrol the same areas and make arrests for both forestry and game violations as well as other illegal activities within the forest reserve (mining, grazing and smuggling), they should adopt a unified method of prosecution since it is believed that the current differences are one of the key reasons that the community perceives a difference in these two groups, looking more favorably on the forest guards who have a somewhat more lax means of dealing with poachers.

If ecological surveys indicate viable populations and if socio-ecological surveys indicate a strong cultural or economic need, consideration should be given by the Game Department to allow traditional hunting of targeted game species such as duiker and bushpigs under controlled conditions such as licenses, quotas, limitations on hunting techniques (e.g. the banning of snares), and closures during the breeding season. This should be undertaken with the principle that it is always easier to manage access to a resource through collaboration with a community than to prevent access to a resource through policing when the community sees access to this resource as part of their socio-cultural heritage and complimentary to their on-farm activities. This has been the experience of Zimbabwe, Botswana and Zambia, and is being experimented with by Tanzania and Kenya.

#### 1.10 THERE ARE MAJOR CONFLICTS IN THE FIELD BETWEEN GAME GUARDS AND FOREST GUARDS

Senior Government of Uganda (GOU) officials believe that placing all natural resources management branches under one ministry would result in a more unified effort at the field level. If such a unification is to occur it should also consider the Fisheries Department which is the other major natural resources manager. USAID should enter into policy dialogue with the Government of Uganda on this matter. If these conflicts at the field level can not be resolved, it will be very difficult to bring about long term success, both on-farm and in-forest, since they are so closely linked in the area of these Forest Reserves.

If these departments are unified, consideration should also be given to developing a system of reserve classification that falls under one heading. Both the forest guards, game guards, as well as the rural community, seem completely confused by the current means of classification where one forest may be classified as both a forest reserve and a game sanctuary, these classifications having conflicting management objectives; on one hand to exploit the resources of a forest and on the other to protect the ecological integrity of an area in order to preserve an endangered, rare or endemic species. One category of classification with an integrated management plan, as is currently being undertaken in Bwindi forest could meet both of these objectives with a lot less confusion and conflict. The DTC/IFCP ecological teams or the proposed Institute of Tropical Forest Conservation could help the Government of Uganda in such a reclassification scheme.

#### 1.11 FOREST GUARDS ARE SO POORLY PAID THAT IT IS DIFFICULT TO RECRUIT QUALIFIED PERSONNEL AND TO MAINTAIN INTEGRITY IN THE FIELD

USAID, as part of a policy reform dialogue, should consider negotiating with the Government of Uganda to allow a larger percentage of the revenue generated from forestry management activities to return to the Forest Department so that staff can be adequately paid and equipped to manage forest resources in the field. Unless the basic needs of field level personnel are met the best designed management plans are doomed to failure.

1.12 PROJECT TARGETS ARE UNREALISTIC AND DO NOT REFLECT WHETHER THE DEVELOPMENT THROUGH CONSERVATION PROJECT IS HELPING TO BRING ABOUT DEVELOPMENT

Development cannot be measured by how many trees are planted or how many workshops are organized, or whether forest reserve management plans are written. Establishing many of these targets assumes that we already know what the people want. It also results in project team members devoting all of their energies trying to meet these targets while failing to address the real issues of development, the establishment of ongoing processes which will continue even after the project will end. These targets should be eliminated and efforts placed into assuring that certain processes are established during the life of the project. If these processes can be established, agroforestry, soil conservation and forest reserve management will take care of themselves as part of these ongoing processes. The processes which should be the main objectives of the Development Through Conservation Project include but should not be limited to:

- 1.12.1 Establishing Functional Parish Advisory Committees To Promote Grass Roots Planning
- 1.12.2 Institutionalizing Grass Roots Planning Into The GOU Decision-Making Process
- 1.12.3 Linking Conservation Extension Agents and Advisory Committees To Main Line Government Management and Extension Services in the Areas of Forestry, Agriculture, Wildlife and Fisheries
- 1.12.4 Involving Local Communities in the Development of Interactive Management Plans For Forest/Same Reserves and Parks
- 1.12.5 Institutionalizing Environmental Education in Local Schools Through the Wildlife Clubs of Uganda, Facilitating the Children to Extend Conservation Concepts to Their Parents, and to Eventually Adopt These Concepts as They Enter Into The Local Work Force
- 1.12.6 Promoting Ties Between Research Groups (e.g. the proposed Institute of Tropical Forest Conservation, the proposed Institute of Development Studies and the International Council For Research in Agroforestry) and Extension of Information Emanating From These Groups to the Peripheral Zone Communities Through Advisory Committees, and/or the Government Extension/CEA Linkage

1.13 THE NEED TO ASSURE SUSTAINABILITY

The types of processes that both the Development Through Conservation and The Impenetrable Forest Conservation Projects are trying to achieve will be slow and gradual in coming and could require many years to achieve. For these projects to have a chance for success, they will require dedicated staff with a long term commitment and the assurances that finances are regular and sufficient enough to permit long-term planning. Currently, both of these projects survive from year to year, in some instances from month to month. It is the recommendation of the author, based on extensive interaction with both project

and some government staff, that these projects could best be served through the establishment of two endowment funds by USAID. These funds would be substantial enough to allow both projects to operate off of their interest. They could be a combination of local and foreign currency. These endowment funds could serve as a focal point for other donors, international conservation agencies or philanthropical institutions to place funds for natural resources management and development activities around Uganda's National Forests, Game Reserves and Parks.

Furthermore, it seems logical that the endowments (estimated at US\$ three million for each institute) be channeled through the proposed Institute of Tropical Forest Conservation and the proposed Institute of Development Studies based at Mbarara University of Science and Technology. This is a newly emerging university established by the Government of Uganda to promote grass roots development. The DTC staff could be absorbed by the Institute of Development Studies which would emphasize on-farm activities and the collection of socio-ecological data. The Institute of Tropical Forest Conservation would absorb the in-forest component of the DTC/IFCP projects. Together, these institutes would devise interactive management plans for the Bwindi, Mgahinga and Echuya Forest Reserves, and begin working in grass roots development with the communities living in the forest peripheral zones. These plans would be developed in collaboration with and implemented by the respective natural resources management agencies of the Ugandan Government (e.g. Forest and Game Departments, and National Parks).

Once the above-mentioned forests have operational management plans, these institutes will begin expanding similar activities to other natural areas which may benefit from development through conservation. These ideas are discussed in more detail in the main body of the Annex.

#### 1.14 DTC/IFCP PROJECT MANAGERS ARE OVERBURDENED WITH ADMINISTRATION

It should be understood that, unlike many larger projects, where managers take care of overall project coordination, the managers of these small projects are usually primarily in a technical role (e.g. the DTC project coordinator has been a natural resource conservationist, while the IFCP director is a wildlife ecologist). One of the biggest complaints of project management by both the Development Through Conservation and The Impenetrable Forest Conservation Project is the inordinate amount of time spent in routine administrative duties, all of which take away from their technical roles on these projects. It is recommended that local hire administrative assistants be hired as soon as possible to free these technicians of their administrative burdens so that they can more freely carry out the jobs for which they were hired.

#### 1.15 CONFUSION WITHIN LOCAL GOVERNMENT OF OFFICIAL PLANNING CHANNELS

Currently, there appears to be two channels of planning, the old colonial administrative system of chiefs and the newly introduced system of elected Resistance Committees. At local levels, these officials, as well as the community, are confused as to who has the overall responsibility for planning and as a result it is occurring haphazardly in an uncoordinated fashion and tends to be top down. If grass roots planning is to be effective it must have a

clear, well understood, open channel of communications upwards through the GOU. USAID, in collaboration with the Ministry of Planning might consider an analysis to streamline this currently muddled and confusing system. Unless grass roots, bottoms-up, planning can be made effective, many of the processes which the DTC project needs to established will be jeopardized.

## 2.0 ECOLOGICAL INVENTORYING

### 2.1 STRATEGIES FOR BASELINE SURVEYS.

#### 2.1.1 Ecological Inventorying

The purpose of collecting basic ecological information by DTC personnel about Bwindi, Mgahinga and Echuya forest Reserves is to provide baseline information which can serve a long-term monitoring program which will be established in order to determine the environmental health of these forests and the evolutionary changes that may occur from global climate change, local anthropomorphic activities or other unforeseen factors. This information, will also be overlaid with more traditional forestry inventories for commercial logging purposes to develop integrated management plans for these forests which take into account both ecological issues and the needs of the local community to benefit from these forests on a managed and sustainable basis. It will also be used to determine research priorities.

#### 2.1.2 Natural Forest Management Inventories

As part of the DTC project, basic information will be collected about all tree species that will permit management plans to be developed that address the sustainable exploitation of the above forests for commercial logging.

### 2.2 ECOLOGICAL INVENTORYING METHODS

Two types of surveys are being carried out. A rapid reconnaissance survey is undertaken in about 10 days to give the ecologists a quick overview about wildlife and vegetational types within a forest. This information is used to develop work plans to study the flora and fauna of the forest in a detailed scientific design.

To date, a rapid reconnaissance survey has been undertaken for Bwindi and in Mgahinga forest. The Mgahinga survey is being undertaken prior to completing the detailed survey being concurrently undertaken in Bwindi forest. This is because of a need to have a very preliminary management plan drawn up for Mgahinga forest as the result of political pressures to develop gorilla tourism in the near future.

Bwindi Forest Reserve is in the process of being inventoried in detail. Detailed methodological work plans by discipline will soon be available. In simple terms, Bwindi forest has been divided into 25 km<sup>2</sup> blocks, which are further subdivided into 1 km<sup>2</sup> blocks. A random block design is used to locate 4 km<sup>2</sup> blocks, of which the center of the block forms a cross, 2 km by 2 km. An attempt has been made to be sure that all habitat is covered based on a 1950 vegetational map prepared for Bwindi forest. There are 48 transects of which about 16 have been completed. Based upon this basic design, multi-disciplinary surveys are being carried out.

Recent aerial photographs of the area, funded by the Forestry Rehabilitation Project, have been promised to the IFCP/DTC teams. These images will be compared with aerial photographs taken in 1954 to determine the rate of

encroachment on the Bwindi Forest Reserve and any evident changes in habitat within the current Forest Reserve boundaries. This information will be tied into the on-the-ground surveys described below.

Once these detailed surveys are completed, key ecological indicator parameters should be identified that can be rapidly monitored, with minimal time/expense on an annual basis as part of a long term ecological monitoring program.

#### 2.2.1 Vegetation And Forestry

At 100 meter intervals along a given 2x2 km transect, all plants are identified for a distance of 5 meters perpendicular on each side of the transect (a path of 10 meters). A relative order of abundance of from 1-5 is given to all plants. All trees are identified by species and quantified, including number, and diameter at breast height (DBH). All trees are categorized by species into DBH classes: 5-50 cm, 51-100 cm and greater than 100 cm. This information will be used for developing a sustainable forest exploitation plan once critical habitat is identified for gorilla and other endangered, threatened or unique species that should be set aside and not disturbed. Likewise, trees and plants which may have potential for cultivation on-farm for agroforestry, medicine, construction and other uses are noted. Some of this information is gained from local people who act as guides.

Once the formal survey is completed, the botanist cruises randomly about the study plot looking for new, rare or endemic species of plants that were missed.

Representative species of all plants are collected, cataloged and put in plant presses for further verification at the herbarium of Makerere University. Plants that can not be identified are sent to the Royal Botanical Gardens, Kew (London) for identification.

A student is working on his masters in ethnobotany, collecting information from elders on the use of plants for medicinal purposes. A preliminary survey has been conducted using local knowledge and oral history. Plants have been field identified and collected for further verification at the herbarium of Makerere University or at the Royal Botanical Gardens. Scientists in Kew will also conduct tests to determine what important medicinal chemicals/drugs may be contained in these plants. Consideration will be given to how royalties and/or on-farm cultivation may be encouraged if it is determined that some of these plants are of commercial value to the pharmaceutical industry. This student is also a protege of Tony Katende, the project's botanist who is one of the foremost botanists in East Africa and who is nearing retirement age.

Another student is conducting her thesis research on the ferns of Bwindi forest.

#### 2.2.2 Ornithology

Mist nets are strung along the 2 km x 2 km transects to collect representative birds from the forest understory. These birds are identified, representative species photographed, and banded with standardized and numbered bands used by the East African Ornithological Society. A tag and recapture technique is being used to obtain relative abundance. Additionally, a stan-

ward walking censusing method is being used based upon site and hearing to further qualitatively identify birds. Tape recordings are also made. One M.Sc. student is currently studying the ecology of raptors.

#### 2.2.3 Small Mammals

Live traps are placed along the 2 km x 2 km transects and relative abundances are measured, based upon hours of trap time.

#### 2.2.4 Large Mammals

Local people who know the forest are used to help in identifying large mammalian species by their spoor and pug marks within 1 km<sup>2</sup> blocks. Records are also made of visual observations, although many of these animals are timid and rarely seen. Where animals are associated with a particular habitat, this is noted.

#### 2.2.5 Gorilla Censusing

This is being undertaken by the IFCP but integrated into the overall DTC ecological inventories. Local guides are used who are intimately knowledgeable of Bwindi Forest and its wildlife. Gorilla nests and spoor are observed. A gorilla band is followed for three nights (3 sets of nests), new nests being prepared daily. After three nights, if the same number of nests and spoor are observed, then the number of gorillas in the band are estimated. Further verification is made by the number of older males "Silver Backs" in the band as indicated by the number of nests with white hairs.

This methodology is very labor intensive and is not being used in the Virungas, where rapid surveys are made via transect counts to estimate gorilla populations. It is believed that the above methodology, developed by Dr. Putynski, will provide better information on community structure and territory, in determining the gorilla bands' range, and in determining what areas need complete protection versus merit consideration for multiple use with regard to protecting gorilla populations. It should be noted that there are an estimated 300 mountain gorillas (*Gorilla gorilla beringei*) in the Virungas and 300 in Bwindi, with a population of about 500-1000 breeding gorillas in interacting bands needed to assure a viable population. Because of these low numbers, the mountain gorilla is considered an endangered species by the International Union for Conservation of Nature and Natural Resources (IUCN).

In Rwanda and Zaire, behavioral studies are conducted with observers as close as 5 meters from the gorillas. The IFCP project feels to obtain a realistic idea of behavior, much greater distances are required. Currently, behavioral studies are not a main objective of the IFCP/DTC projects, but could be foreseen in future activities, once management plans have been developed and implemented.

Two students have been funded under the IFCP/DTC project to conduct their theses on gorillas, one in Mgahinga forest who has recently graduated, and the other in Bwindi who is looking at gorilla movements.

### 2.2.6 Herpefauna

Reptiles and amphibians are among the least known groups in East Africa. If the DTC project is continued, plans exist to cover airfare and food for herpetologists from the California Academy Of Science to conduct a survey of herpefauna in Bwindi, while at the same time training a Ugandan student(s). Four of the world's experts on East African herpefauna are based at the Academy. It is recommended by the author that this activity be supported if funding by USAID is forthcoming.

### 2.2.7 Butterflies

Plans exist to support one Ugandan student for a masters degree in butterfly ecology in Bwindi Forest Reserve under the DTC project. Bwindi forest is believed to contain the highest number of tropical butterflies in Africa.

Because of difficulty in the terrain of Bwindi Forest Reserve, most surveys last for 10 days at a time and require camping under very primitive conditions. The detailed surveys carried out in Bwindi Forest will eventually be carried over to Mgahinga and Echuya Forests.

## 2.3 STANDARDIZATION OF METHODOLOGIES

The DTC and IFCP projects are pioneering the idea of using multi-disciplinary ecological data to devise management plans. Project staff are working closely in the development of practical field survey methods. This is one of the first projects in the region to undertake such surveys. It is believed that in the near future, other USAID missions and donors will begin supporting similar efforts in the region. Because this is so new, there is a unique opportunity to develop standard sampling methodologies, both in-forest and on-farm, as well as standardized data bases both for future projects in Uganda and elsewhere (e.g., USAID in Madagascar is planning the same type of interventions both in-forest and on-farm around lemur reserves). The DTC Ecology Advisor has already investigated the standardization of ecological survey methodologies in Central and South America and found this does not exist, each research group using what they consider appropriate in isolation of others. One advantage that exists in Uganda, is that many of the scientists being used on this project are (e.g. the botanist/forester, small mammal specialist, gorilla biologists) or will soon become (e.g. fern specialist, herpetologist) the only experts in their fields available in Uganda. They or their former students will likely be employed on similar projects in Uganda. As a result, it is likely that the current methodologies being developed on these two projects will be expanded throughout Uganda as forest reserve, game reserve and national park management plans are updated and modernized, integrating the peripheral communities into these plans.

A meeting will be held in September 1990 at the Institute of Environment and Natural Resources at Makerere University on the development of standardized methods and data bases. This will be sponsored by the DTC/IFCP projects, funds forthcoming. Plans exist to invite The Nature Conservancy who has been developing simple user friendly data bases in Latin America for at least a decade. Consideration should be given to inviting other USAID mission representatives (e.g., Madagascar) or donor project representatives who are undertaking or planning to undertake similar activities in Uganda or the region. It is strongly recommended that USAID support this activity.

## 2.4 DEVELOPMENT OF FOREST MANAGEMENT PLANS

All three forests are somewhat unique and therefore each will require management plans tailored to this uniqueness.

### 2.4.1 Bwindi Forest Reserve

Bwindi Forest Reserve is an Afro-Montane forest considered the most biologically diverse forest in the region. It is also very limited geographically, this being the largest area of its kind in Africa. Not only does it harbor over half of the world's mountain gorilla population (300 of 600 known mountain gorillas), but it contains unique endemic fauna and flora such as the golden cat. The Ishasha Gorge alone, a small area within Bwindi Forest Reserve, has at least seven endemic tree species found nowhere else in the world. At the same time the area of this reserve, 321 km<sup>2</sup>, is large enough that it has the potential to be both managed as a gorilla sanctuary and for commercial logging of hardwoods and other forest product extraction under a carefully thought out management plan that could benefit the peripheral communities in the area and protect the unique flora and fauna within its confines. There is an ongoing debate as to whether Bwindi should remain under the control of the Forest Department or become a national park.

This is further complicated by the desire of the Forest Department to turn Bwindi into a Forest Park in which a percentage of the forest would remain as a strict nature reserve (this is a core area within productive forests which are not to be touched), a percentage of the forest will be a buffer zone in which low level consumption of forest products will be allowed, and a percentage of the forest will be actively logged. It is unclear how the exact percentages of each area will be determined; however, it is recommended that they be based upon scientific findings from the in-forestry ecological/ natural resource surveys of the DTC/IFCP projects.

A number of ongoing or proposed activities may jeopardize the ecological integrity of this Bwindi Forest including encroachment of settlers from Zaire, a proposed hydroelectric dam in the Ishasha Gorge, proposed roads from Shosa to Rubuguli, and from Buriabe to Kiyebe, plus enrichment planting (taungya system) in the Kicariro/Rutabagwe area that is resulting in forest destruction. None of these activities should be undertaken without proper environmental assessments to better understand the potential impacts on Bwindi forest, and whether there are viable alternatives to avoid disturbing this area.

### 2.2.2 Mgahinga Reserve

This is a small 25 km<sup>2</sup> forest that is dominated by bamboo and some alpine vegetation. It is closely linked to Zaire's *Parc des Virungas* and Rwanda's *Parc des Volcans*. This tri-country area holds the remaining 300 mountain gorillas that roam freely between the borders of these countries. It is also the home of the rare golden monkey, a subspecies of the blue monkey. Most people feel that this area is so small and so encroached upon, that it has little commercial value other than for some possible low level extraction of vines and bamboo for use by the peripheral community. The Forest Department is in agreement that the Mgahinga forest should become a National Park because of its potential importance to rejuvenating the tourist industry in Uganda.

#### 2.4.3 Echuya Forest:

This is a very small forest that is only nine miles long by an average of 2 miles wide, covering an area of 34 km<sup>2</sup>. It is dominated by bamboo forest. In its center is the Kigeyo Swamp, one of the highest, largest and most biologically important swamps in East Africa. It is reported that there has already been an attempt to convert portions of this swamp into grazing land. A large area of this forest borders Rwanda. Rwanda has cut down most of its bamboo and as a result poaching of bamboo in Echuya is a major problem which is difficult if not impossible to control given there is only one Forester with a bicycle to patrol this rugged inaccessible mountainous forest. It is unclear how many support staff (e.g. Forest Guards) are attached to this Forester, but they would appear to be inadequate to properly manage this area. The DTC/IFCP ecology teams feel that if a plan can be properly designed, Echuya could be managed for commercial exploitation of bamboo on a sustainable basis and still maintain its ecological integrity. In the now out-of-date 1968 management plan, it was prescribed that 500,000 live bamboo poles/year could be commercially exploited from this forest.

#### 2.4.4 Bwindi Forest Reserve Management Plan

This will be the first detailed management plan developed for the three forest reserves. Once these multidisciplinary surveys are completed for Bwindi, a detailed management plan will be prepared overlaying this information in order to best determine total protection versus multiple-use areas. The uniqueness of this plan compared to other gorilla parks is that it will be designed around a multiple species approach, including not only gorillas, but elephants and other rare, endangered or endemic species that are in need of preservation. Gorilla parks in Rwanda and Zaire are managed to benefit/exploit only the gorilla.

More importantly, sections of the forest that are not critical to the preservation of the above-mentioned flora and fauna will be designed to generate economic revenue from sustainable exploitation of forest products under a carefully drawn out set of management guidelines. In fact, the traditional method of selective logging using pit saws is considered to have a minimal impact on the forest ecology. In pit sawing the tree is felled, made into boards on-site and the boards are hand carried out of the forest. The surrounding areas recover rapidly from this low level of disturbance. This is compared to modern practices which often require clear cutting and/or using tractor like skidders to drag the logs from the forest, leaving wide swaths of disturbed forests in their paths. The IFCP Director/primate biologist believes that if properly managed, pit sawing could be beneficial to the gorilla populations, encouraging the growth of luxuriant vegetation for food that might otherwise not be as readily available under the dense canopy of a mature forest. Maybe there is an ecological reason why man and gorilla have coexisted side-by-side? In discussions with the DTC/IFCP ecologists, it has been suggested that the forest management plan be designed, permitting local community involvement to determine sustainable exploitation, within broad guidelines established by the scientific data from this study.

Once the detailed management plan for Bwindi is completed, similar work can begin in the other forests. If the DTC/IFCP projects are expanded, the possibility exists to accelerate this process in the other forests, assuming that additional staffing can be brought on board.

#### 2.4.5 Socio-Ecological Baseline Data

It is the impression of the author that to date the DTC/IFCP projects have put too much emphasis on collecting in-forest ecological data and to little time in collecting information on understanding the interactions between the forest and peripheral zone inhabitants. Failure to have this type of information which integrates the biological, social and economic characteristics of the area and which develops an interactive management plan that links the forest to the peripheral zone could result in increasing conflicts between the resource users and the resource managers.

Collection of such information will permit the priorities of in-forest resource extraction by peripheral communities to be integrated into the Forest Reserve management plans. This study should combine both socio-ecological surveys with licensing information on forest product use, obtainable from the Forest Department. Some thought should be given to using oral history to learn about the forests from the Satwa pygmies, of which there are 30-50 families remaining who live in proximity to Swindi forest. They may hold many secrets about the forest and its value to man that could be lost in another generation if not recorded. This would be an excellent thesis topic for a university student(s), (possibly one student for each forest) through the soon to be organized Institute for Development Studies at Mbarara University of Science and Technology.

It is believed that the staff from both projects realize the importance of this relationship, thus the reason for creating DTC. This component of these projects cannot begin too soon. It may be especially urgent in Mgahinga where there is a rush to set park boundaries and devise management plans with virtually no socio-ecological data on the local community's interaction with Mgahinga forest. According to the PC-I chairman of Chana, the village closest to Mgahinga, he has never been contacted by the authorities and yet consideration is being given to moving people off land which they are cultivating, if this forest is given park status.

### 3.0 GOVERNMENT OF UGANDA'S ABILITY TO MANAGE AND ENFORCE

Under current Ugandan law, there appears to be major confusion as to who is responsible for the management of the three forests under the OTC project. The forest areas have a variety of classifications: If Gazetted as a Forest Reserve, the forest may be Production or Protection; they may also be Gazetted as Game Reserves -- and the Gazetted boundaries may not be the same, as is the case in the Mgahinga forest area. The classifications are shown in Table 4.1.

Table 4.1. Various classifications of three forest areas

Classification	Name of Area		
	Bwindi	Mgahinga	Echuya
Forest Reserves:			
Productive	x	x	x
Protective	x	x	x
Game Reserves		x	
Game Sanctuary	x		
(Being considered for National Park)	x	x	

The three forests in the study area have been classified as both protective and productive multiple use forests. Normally, forests classified as protected only tend to be important watersheds where no logging is allowed.

Game reserves come under the auspices of the Game Department, Ministry of Tourism and Wildlife. Forest Reserves come under the management of the Forest Department in the Ministry of Environment Protection. The National Parks is a parastatal under the Ministry of Tourism and Wildlife.

#### 3.1 FOREST DEPARTMENT

The Forest Department traditionally promotes exploitation of forest reserves. Currently, the Forest Department is having difficulty managing the above forests because of a manpower shortage, out-of-date management plans, and rumored corruption at all levels.

##### 3.1.1 Planning

Unfortunately, the last forest management plans for these forests were drawn up in the 1960's (e.g. 1961 for Bwindi Forest and 1967 for Echuya Forest). These management plans were designed to control the extraction of

commercially valuable forest products including hardwood and bamboo. It does not appear that plans ever existed for non-commercial, or "minor", forest products, including vines, marsh grasses and medicinal plants.

There is a central Forest Planning Division, at headquarters in the Forest Department, which draws up management plans for each forest. In theory, preliminary plans are drawn up by the District Forest Officer and his staff and then passed on to the Forest Planning Division for finalization prior to being signed off on by the Chief Forest Officer. It is evident that this system has not been very effective for about 15 years.

The in-forestry component of the DTC project should be of great help to the Forest Department for the three forests in the study area. Additionally, there should be a concerted effort made by the DTC in-forest component to coordinate these activities with the natural forest management component of the Forestry Rehabilitation Project.

### 3.1.2 Staffing

The Forest Department is currently understaffed and as a result is having a difficult time controlling sustainable extraction of resources in these forests. One DFO explained that his staff is sorely in need of refresher courses. Traditionally, the Forest Department's manpower has been divided as follows:

#### Headquarters

- Chief Forest Officer
- 3 Deputy Chief Forest Officers
  - Administration and Planning,
  - Forest Research and Management
  - Technical

#### Field

- 10 Regional Forest Officers
- 34 District Forest Officers
  - 34 Assistant District Forest Officers<sup>1</sup>
  - Assistant District Forest Officer - Extension

County Level:	Forest Officer
Sub-County Level:	Forester
Parish Level:	Forest Ranger
Village Level:	Forest Guard
Within Reserve:	Forest Patrolman

The Forest Rangers, Forest Guards and Forest Patrolmen are the grass roots level: people who have direct contact with the local community. It is their relationship to the local community that ultimately will determine the success or failure of any management plan. The same may be said for their counterparts in the Game Department and in National Parks.

The Forest Patrolmen and the Forest Guards receive on the job training. There is a new push to require that all new Forest Guards have an East African Certificate of Education, equivalent to an "O" Level in the English system of

<sup>1</sup> In some Districts, the Assistant District Forest Officer handles the extension forestry chores as well as assisting the District Forest Officer with the administrative/management load.

education. The Foresters and Forest Rangers receive 2 year technical degrees from the national forestry college. Additionally, for a Forest Ranger to become a Forester, he must work in the field for at least three years, return to the technical school for another two years and pass an exam. The Forest Officer and above are university graduates. A major problem that also exists is that the lower level field staff are so poorly paid that it is difficult to recruit someone with the proper qualifications.

Due to staffing problems, natural forest management and extension roles may be combined from the Assistant District Forest Officer on down. For the same reason, a lower level person will cover a higher level position. Both of these situations exist in the DFC study area.

Because, of the manpower shortage, Forest Guards are responsible for areas too large for one person to adequately manage. As an example in the Kabale District, a Forest Guard covers two Sub-Counties with an average of seven Parishes per Sub-County and 10 villages per Parish. This area is covered on foot and the individual is charged with both natural forest management of beats falling within his area, and extension.

All of this is further complicated by the fact that forest reserves cut across district administrative lines so that a given forest unit with one management plan may be managed by two different DFO's and their staffs. For instance, within the Rukungiri District, natural forests are divided into beats, or areas of natural forest falling within the district. One Forest Ranger is assigned to patrol the three beats of Ishasha, Buhoma and Kayanza around the Bwindi Forest Reserve. Other areas of the Bwindi forest are managed by the DFO and his staff from the Kabale District. Not only is the execution of a unified management plan difficult given the logistics and difficulty of the terrain, but it is further complicated by the overall role of management for a given forest being split at a local level.

### 3.1.3 Natural Forest Exploitation

Licenses are issued for the extraction of all forest products including saw timber, bamboo, firewood, vines, marsh grasses, etc. Fees are charged for extraction of each product. Each pit sawyer is charged a felling fee for each tree of Uganda shillings (Ushs) 500/=. The fee schedule demonstrates a wide range of values, from Ushs5,500/= per m<sup>3</sup> for Class I (choice) hardwoods to Ushs25/= for poles. Some illustrative fees are shown in Table 4.2.

Table 4.2. Illustrative felling and harvesting fees for forest products

Description	Class (if any)	Unit	Fee
Hardwood	I	cubic meter	5,500/= <sup>a</sup>
Hardwood and Cypress	II	cubic meter	4,900/= <sup>a</sup>
Hardwood and Pine	III	cubic meter	4,900/= <sup>a</sup>
Bamboo		pole	30/=
Natural forest firewood		cubic meter	300/= <sup>b</sup>
Vines and marsh grasses			Discretion of DFO
Poles		each	25/= to 40/= <sup>c</sup>
Fence poles		each	100/= to 200/= <sup>c</sup>

- \* Felling fee
- ° One bundle/head load, more or less
- ° Fee varies by diameter of pole

It is alleged by much of the local population, that pit sawing permits are issued to rich saw millers, who can afford to pay off those issuing the permits. These millers use their own pit sawyers. The local communities perceive that they fail to derive major benefits from pit sawing, working primarily as day laborers hand carrying boards from the forest to the benefit of a few relatively far removed entrepreneurs. Most local inhabitants can not afford the Ushs45,000 to invest in a saw.

Only four trees can be felled per license issued. Additionally, the number of pit sawyers is limited (e.g., 100 in the Bwindi Forest Reserve). A forest is broken into compartments and in turn into coupes (e.g., areas of 80 to 160 hectares). Normally, within a coup there is no minimum girth for felling except for specified species (e.g., to be felled in Bwindi forest, *Podocarpus* spp. is supposed to exceed a girth of 10 feet at a height of 10 feet above the ground). Only one coup within a compartment may be exploited at a time. Normally, there is a limit on the total volume of timber harvestable per year from a forest. All logs must be stamped by a Forest Department staff member who has cruised the area to determine the quantity and location of harvestable timber. According to Forest Department staff, only marked trees may be felled. Furthermore, boards, all of which are cut on the spot and hand carried from the forest, must have a Forestry Department stamp to show that they came from legally harvested timber.

All of this assumes adequate staff in the forest, which does not appear to be the case. It is alleged that these rules and regulations are broken, and that without sound management plans and enforcement, the forests are being mined and many important tree species, both economically and ecologically (e.g., mahogany), are disappearing from this loosely controlled high grading. For example, the IFCP Director's 1984 report estimated that between 1983 and 1984 the volume of timber removed from Bwindi Forest Reserve exceeded the management plan limit by 1,700 m<sup>3</sup>. In 1983/84 it was estimated that 80% of the timber was cut illegally, much of it smuggled out of the country at a net loss

of revenue from fees to the GOU of US\$600,000/=. In 1983/84 there were 73 licensed pit sawyers and an estimated 140-200 illegal pit sawyers. Rectifying these problems is a major goal of the Forestry Rehabilitation Project being funded in a joint effort by the donors, the natural forest component being funded by EEC.

Given the limited manpower and lack of transportation in the Forest Department, consideration should be given to establishing roadside checks along key transport routes to assure that all passing trucks with lumber, have boards or logs that have been stamped by the Forest Department as a means of identifying legally harvested timber. This system is being effectively used in Senegal where similar manpower shortages exist. For this to work, it requires integrity at the field level.

Minor forest products (e.g., vines, marsh grasses and even medicinal plants) are being increasingly used to produce handicrafts for sale. The risk exists that minor forest products are being mined since there is no scientific data to suggest the sustainable yield from these products.

#### 3.1.4 Enforcement By The Forest Department

The Forest Act allows fines to be given in the field. This is believed by many to be one of the reasons for corruption in the system. It is alleged that Forest and Game Guards often are not paid for six months at a time. It is further alleged that poorly paid forestry personnel either are bribed to permit illegal extraction of undersized trees or larger timber volumes than are legal, or that when an individual is caught in the act an arrangement is made on the spot and the money is pocketed. Recognizing that to have sound management of natural resources, the managers must be adequately compensated for their efforts, and realizing that this problem permeates throughout the Government, a Public Servants' Review Commission has been established to review the adequacy of salaries. One action that might help remedy this problem is to allow more of the revenue generated from forest exploitation to return directly to the Forest Department so that its operational budget meets its managerial requirements. USAID might consider having a natural resources economist assess this need, in collaboration with the GOU. An understaffed, ill equipped Forest Department will never be able to carry out a management plan, regardless of how well the plan is designed. The same can be said for the Game Department and National Parks. The advantage that National Parks has over other natural resources management agencies is that as a parastatal, generated revenue goes directly into its coffers and can be used to pay higher salaries and properly equip its personnel in the field.

#### 3.2 GAME DEPARTMENT

Traditionally, the Game Department managed various land areas as follows:

- Game Reserve: These are protected areas where there should be no human interference.
- Game Sanctuary: These areas were often set aside to protect rare and endangered species such as white rhino.

There were also areas managed by the Game Department for hunting by local people, and for tourism generating big game hunting. Hunting has been outlawed

since 1980 due to the civil unrest and the inability of the Government to regulate this resource. Therefore, the major role of the Game Department has gone from one of manager/enforcer to policeman.

### 3.2.1 Game Department Planning

It appears that currently there is little or no need for planning to manage wildlife. The only planning which takes place is in the organization of game patrols in these game sanctuaries/reserves. Game Guards are put in the field purely for reasons of enforcement.

### 3.2.2 Game Department Staffing

The staffing pattern and educational levels are as follows:

- \* Chief Game Warden, University Degree
- \* Deputy Game Warden, University Degree
- \* Principal Game Warden, University Degree
- \* Senior Game Warden, University Degree
- \* Senior Game Assistant, 2 year course Mweka, Tanzania
- \* Game Assistant, Wildlife Management, 2 Year Course Mweka in Tanzania
- \* Senior Game Guard, on-the-job training
- \* Junior Game Assistant, on-the-job training
- \* Game Guard, on-the-job training
- \* Vermin Control of crop pests

Field level personnel who have regular contact with the rural inhabitants of the DTC study area are the Game Guards. The success or failure of these Game Guards in the long term will be determined by the relations they develop with the local communities.

### 3.2.3 Game Guard Enforcement

The role of today's Game Department and of the Game Guard is purely one of enforcement. Their role and the territory which they cover is much smaller than forestry or agricultural personnel making their task somewhat manageable in comparison. The Game Warden for the Kigezi Range covers three discrete territories, spread out though they may be:

- \* Bwindi Game Sanctuary
- \* Gorilla Game Reserve (Mgahinga)
- \* Kigezi Game Reserve (Ishasha Camp)

More importantly, the key field staff at the Game Guard level is confined to the discrete areas of these game sanctuaries and reserves, not entire Counties, Sub-Counties or Parishes as is the case with their counterparts in the Forest Department.

The Game Act has traditionally required the violator to be brought to district headquarters and to be prosecuted through the government court system. It appears that this system of prosecution is very burdensome and is often drawn out over an extended period of time, often 5-6 weeks and requires the Game Guard to make a number of court appearances. Since the Game Guards are on foot, this means covering long distances over rough terrain. Often the violator is given a light fine, or the violator is found guilty and then the sentence is suspended. The Game Warden of the Kigezi Range has gotten around this problem by going through the officially sanctioned system of Resistance Committees that can levy fines in the field.

It is not known whether it is because of the formal system which often requires the violator to be taken great distances from his home, or due to the informal system that has been set up, or due to the strict nature in which game laws are enforced, but Game Guards in the DTC study area have a reputation among the local people of being overly strict and in some cases corrupt. In at least two cases within the DTC study area (Kashija Village in Rubuguri Parish and Bushura Village, Bushura Parish), the people have gone to the County Chiefs requesting a stop to the actions taken by the Game Guards.

Although it is not the purpose of this Annex to draw conclusions along these lines, another reason has been given for the perception by the local communities that the Game Guards are overly abusive. It is believed that in the past when the Game Guard force was reduced, much of the control over forest product extraction was in the hands of the Forest Department which is believed by many to have been under equipped given the 321 km<sup>2</sup> area and somewhat lax in carrying out its enforcement duties for the reasons given above. With the upgrading of the Game Guard staff at Bwindi (36 guards) and Mgahinga (13 guards) by the IFCP, the increased presence of the Game Guards and their stricter enforcement of the law, has resulted in the perception that they are overly harsh with the rural community. They arrest not only game violators, but illegal miners, illegal grazers and violators of the Forestry Act. Violators of the Forest Act are turned over to the Forest Department for prosecution.

### 3.3 NATIONAL PARK DEPARTMENT

Uganda National Parks, a parastatal under the Ministry of Tourism and Wildlife, has a National Parks Advisory Board made up of the following personnel:

Appointed as citizens interested in conservation of wildlife:

- \* Presently Vice Chancellor, Mbarara University of Science and Technology
- \* Presently Permanent Secretary, Ministry of Constitutional Affairs; formerly Permanent Secretary, Ministry of Environment Protection
- \* Formerly Director, Uganda National Parks

- \* Presently Director, Uganda National Parks
- \* Presently Deputy Director, Uganda National Parks
- Presently Chief Fisheries Officer
- Presently Commissioner of Tsetse Fly Control

Appointed *ex officio*:

- Chief Forest Officer
- \* Chief Game Warden
- \* Head, Zoology Department, Makerere University
- Managing Director, Uganda Tourist Development Corporation

The administrative makeup of the Uganda National Parks is as follows:

- \* Director of Uganda National Parks
- \* Deputy Director

For Each Park there is the following staff:

- \* Chief Park Warden
- \* Senior Park Wardens
- Park Wardens
- \* Junior Park Wardens
- \* Park Rangers

Park Rangers are trained on-the-job, Junior Park Wardens at the Mweka (Tanzania) Wildlife Management School, and the rest are university graduates.

It is understood that the current philosophy of Uganda National Parks is to manage parks in the flavor of a biosphere reserve in which the following areas would be established:

- Core area set aside to protect rare, endangered or endemic species, and to promote tourism as a means of deriving economic benefit.
- \* Limited Use Zone around the core area in which low level extraction might be permitted for such products as vines, grasses and medicinal plants.
- \* Multiple Use areas within the park boundaries that would allow extraction of forest products under carefully managed conditions by the local populace in order to derive economic benefit from such activities.

- \* Buffer Zone on the edge of the park in which integrated development activities would be undertaken with local inhabitants to improve their economic well being and quality of life, some revenue from tourism going towards this end.

Traditionally, as part of the colonial legacy, most national parks in Uganda, as in most of Africa, were managed purely to protect the wildlife and their habitat, and not to benefit the local community through multiple use. The concept of a biosphere reserve is relatively new and would require Uganda National Parks to staff up with qualified foresters and possibly game biologists who have backgrounds in the extractive management of forest products on a sustainable basis.

#### 3.4 COLLABORATION BETWEEN GOVERNMENT INSTITUTIONS MANAGING UGANDA'S NATURAL RESOURCES

Due to the simultaneous classification of the same forest for different management priorities, the fact that the objectives of these management priorities are in abject opposition (extraction by the Forest Department, preservation by the Game Department), and due to these natural resources management agencies being in different ministries, there has been little or no apparent attempt to collaborate. Rather, in the field the DTC evaluation team was continually confronted with innuendos and accusations from both groups concerning the above-mentioned illegalities.

This is further complicated by the possibility of the Bwindi and Mgahinga forests becoming national parks adding additional kindling to the fire resulting in a tendency for Uganda National Parks and the Game Department under the Ministry of Tourism and Wildlife to be at odds with the Forest Department under the Ministry of Environment Protection.

In hope of bringing about better collaboration between these groups, it has been proposed to establish an Institute of Tropical Forestry Conservation through Mbarara University of Science and Technology in which research and management plans would be prepared in collaboration with all of the above agencies, who in turn would also implement these plans, being the government bodies charged with such duties.

One additional consideration is to place these agencies under one ministry, along with river and lake fisheries, so that all natural resource management agencies can develop common management objectives and collaborative rather than competitive ties. The Fisheries Department is brought into this since it is a natural resources management agency and because, like the Forest and Game Departments, Fisheries and National Parks are at odds in Lake George and Lake Edward over the control of fisheries exploitation within park borders. As natural resources become a focal point for the SOU and the donors, these conflicts could increase unless the above steps are taken. This is a policy reform issue that USAID should consider discussing with the SOU, which if feasible could help to eliminate much of the conflict at the field level by having these agencies under one head with one set of coordinated management goals in the field.

Interest was also shown in having the current Forestry College become a multi-disciplined training school in natural resources management for field level personnel in these natural resources management agencies.

#### 4.0 TRADITIONAL RESOURCE USERS.

##### 4.1 ON-FARM NATURAL FOREST PRODUCTS

Interviews conducted in five Parishes around the Bwindi Forest indicate that most of the farmers in South-West Uganda are already practicing some form of agroforestry in that they are already cultivating a wide variety of natural forest plant/tree species which they have either actively left on their lands during clearing, and/or which they have taken from the forest and are cultivating for various purposes (See Table 4.3). A list of the more common indigenous trees/plants left on the farm when clearing lands for agricultural purposes is contained in Table 4.4.

##### 4.2 IN-FOREST EXTRACTION OF NATURAL RESOURCES PRODUCTS

In-forest products are extracted for a wide variety of purposes. An illustrative list of the products is shown in Table 4.3.

###### 4.2.1 Commercial Forest Products

The most lucrative product taken from the forest area is saw timber of the following species:

- \* *Podocarpus melleinianus*
- \* *Entandrophragma excelsa* (Mahogany)
- \* *Newtonia* spp.
- \* *Lycia* spp.
- \* *Albizia andiantifolia*
- \* *A. guinefella*
- \* *Chrysophyllum gorongosense*<sup>1</sup>

Bamboo is the other species of important value extracted from the forests. It should be noted that there are a vast number of species, some doing well grown on-farm, while others survive in harvestable quantities only in a natural forest environment.

###### 4.2.2 Minor Forest Products

Additionally, marsh grasses extracted from within forest boundaries for production of handicrafts include:

- \* *Cyperus esculentus*
- \* *Cyperus papyrus*

<sup>1</sup> List furnished by Adeline Kabera, DFC-sponsored M.Sc. student in Makerere University.

Table 4.3. In-forest and on-farm natural forest products, Development Through Conservation Project\*

Product/Purpose	Site				
	Rubuguri <sup>b</sup>	Bushura	Buhoma	Ruhizha	Nyambale
<b>IN-FOREST<sup>c</sup></b>					
Medicine	x	x		x	x
Rainfall	x	x			x
Saw Timber	x	x	x	x	x
Poles	x			x	x
Erosion Control	x				
Clean Drinking Water	x				
Vines & Marsh Grass <sup>d</sup>	x		x	x	x
Wild Fruit	x				
Game <sup>e</sup>					
honey			x		x
Farm Implements <sup>f</sup>			x		x
Firewood	x	x	x	x	
Musical Instruments					x
Household Implements <sup>g</sup>					x
<b>ON-FARM<sup>h</sup></b>					
Building Material		x	x	x	x
Firewood		x	x	x	x
Medicine		x	x	x	x
Saw Timber		x	x		x
Charcoal		x			x
Food <sup>i</sup>		x	x		
Green Manure		x			
Shade Trees				x	
Wind Breaks				x	
Cosmetics				x	
Boundary Marker				x	x
Beehives					x
Bark for Mats					x

Source: Interviews in the cited villages.

- \* It is possible that products not indicated as being used by a given community may very well be used. Broad, not specific questions were asked. Responses were allowed to come spontaneously from the people. More systematic in-depth socio-ecological surveys need to be carried out.
- <sup>b</sup> In the first village, no questions were asked regarding on-farm natural forest products.
- <sup>c</sup> In-Forest Natural Forest Products are those forest products extracted from Bwindi Forest.
- <sup>d</sup> Used for baskets, mats, granaries, and other woven products.

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Table 1.3. (Continued)

- Game Guards or Forest Guards were present at most meetings so the question of game meat is very likely not relevant.
- Handles for hoes and other tools.
- Cups, basins, and plates, for example.
- On-Farm Natural Forest Products are those products gathered from the farm from natural vegetation left behind at the time of land clearing, or extracted from the forest and actively cultivated.
- Largely fruit.

Table 4.4. Indigenous trees of South-West Uganda traditionally left on agricultural lands during clearing and/or while actively cultivated

Genus and Species	Uses
<i>Albizia adiantifolia</i> *	Poles, timber, medicine for livestock
<i>Erythrina abyssinica</i>	Boundary marking, handicraft, medicine, furniture, canoes for brewing, beehives
<i>Markhamia platycalyx</i>	Poles, timber, fuelwood
<i>Ficus natalensis</i>	Boundary marking, furniture, containers
<i>Euphorbia candelabra</i>	Live fence and medicine
<i>Croton megalocarpus</i>	Shade, firewood
<i>Pococarpus millenjianus</i>	Poles, timber, firewood
<i>Sesbania sesban</i> *	Firewood, stakes for beans, stalls for small animals, faggots
<i>Vernonia amygdalina</i>	Medicines for people and livestock
<i>Dorstenia abyssinica</i>	Fruits, live fences
<i>Crassocephalum afromontana</i>	Shade, medicine
<i>Ficus branchypoda</i>	Handicraft, containers, timber
<i>Cassia macrobotrys</i> *	Shade

Source: Adison Kakuru, DTC-supported Makerere University student

\* Nitrogen fixing with potential to increase crop production.

It also appears that there is a wide variety of medicinal plants collected from the forests. A complete list of these plants, including their scientific name and the malady for which they are used, is contained in a recently produced report by a student attached to the DTC project. A variety of vines are collected for making handicrafts. Further information on minor product species should come out of the botanical survey and from the recommended socio-ecological survey.

#### 4.2.3 Consumption Of Wild Game

Interviews with Advisory Committees in which Game Guards/Forest Guards were present would lead one to believe that wild game or "bush meat" is of little value to the local inhabitants. This is contradicted by the fact that a major objective of the Game Guards has been to stop poaching of game. Two methods have been traditionally used:

- \* Snares and traps which are very destructive in that they not only catch duiker and giant forest hog but incidental species including gorilla, chimpanzee, buffalo, leopard and even elephant that may lose a hand or a foot in their fight to escape, or starve to death and rot in the snare.
- \* Spears and dogs.

The other factor that needs to be taken into account here is that interviews indicate that most of the protein in the DTC study area is derived from legumes such as beans, peas and groundnuts. Cattle are usually killed only at weddings and chicken/sheep during holidays such as Christmas and Easter. Relatively speaking, bush meat may be a more important source of meat protein than one might guess.

It would also appear that since traditional hunting appears to be only for a few targeted species (duiker, giant forest hog, bushbuck, guinea fowl and francolin), it may not be that unreasonable to allow it to continue under a controlled setting if the community would agree to ban such destructive practices as snares and traps, and abide by seasons and quotas. Where animal populations are sufficiently high to withstand hunting pressure, controlled hunting of game with seasons, quotas and limitations on hunting techniques should be considered to allow some access to this protein source. It may very well be that limited access in a collaborative effort to manage the resource may prove more fruitful in the long term and result in a decreased rate of poaching and a decreased need for policing by the Game Department than would result if a complete ban on using the resource existed as is presently the case. Banning access to a resource has always failed in the long term in most of the world unless the community sees a perceived need, and it appears here this is certainly not the case. Furthermore, it is not evident to what degree hunting is a socio-cultural experience versus a necessity. In either case it may be difficult to completely stop. The recommended socio-ecological survey should help to better understand this activity within the study area. If nothing else this idea is something worth investigating.

#### 4.3 ATTITUDES TOWARD NATURAL RESOURCES BY THE LOCAL COMMUNITY

##### 4.3.1 Natural Resource Use

The natural resources of the forests of southwestern Uganda, as in much of Africa are an integral part of the everyday lives of the local residents. The groups interviewed by the DTC evaluation team have the perception that the resources belong to them, although most of the people agree that there is need for government management or the resources will be rapidly depleted due to increasing pressures on these resources from the ever expanding population. However, currently, the local communities around these forests are very confused as to their rights to use the in-forest resources due to the conflicting management goals and continual squabbles between the Forest Department and the Game Department.

##### 4.3.2 Perception By The Local Community Of Forest Reserves Versus National Parks

A summary of differences perceived by the local community between national forests and national parks is contained in Table 3.0. Basically, the local residents favor national forests over national parks due to their perception that a forest is established to be managed for sustainable exploitation by the rural community while national parks are perceived to be closed off from access by the people for multiple use of forest products. Most of the concerns raised by the local people to the DTC evaluation team were also raised by the people to the recent public inquiry made into the possibility of establishing Bwindi Forest as a national park.

Basically, a park is perceived by the rural community as a management unit established to protect wildlife, and to benefit the Government from foreign tourism. They perceive this a net loss since access is eliminated to the very resources on which their lives so dearly depend. This is further reinforced by the current cadre of Game Guards who see their role purely as policing and not collaborating with the rural community in the management of their resources.

Many people have argued that rumors are being spread about the proposed parks by the Forest Department in order to turn the people against the idea of a park. In the DTC evaluation, this was not observed. The people continually referred to the Lake Mburo National Park in which herders were thrown off of what had been their traditional grazing lands in 1980. Furthermore, incidences were given of lions coming out of Queen Elizabeth Park to attack both humans and livestock. Although rumors may be a small part of the problem, it would appear that Uganda, like many African countries, is still confronted with the cloak of its colonial past in which the role of park and Game Guards was to keep the people from accessing their traditional resources rather than working with them to manage and benefit from these resources. Any benefits accrued went to the colonial power not the people.

Both the National Parks and the Game Department have a major task of initiating a public relations campaign with the rural community to sensitize them to the fact that if these areas become parks they will be different than the typical colonial parks that have continued into the post independence years of this relatively young nation (about 25 years to over 200 years for the U.S. and older for Europe).

Table 4.5. Perceptions of local communities about National Parks and gorillas

Perception	Site					
	Chana	Rubuguri	Bushura	Buhoma	Ruhizha	Mwabale
Locals will have not say over forest becoming a park	x	x	x	x	x	x
Locals don't want a park based on current perceptions	x	x	x	x	x	x
Park will help Uganda but not the local people	x	x	x	x	x	x
If the forest becomes a park, the people will no longer be allowed to extract forest products		x	x	x	x	x
People will lose their land if the forest becomes a park	x	x	x	x	x	x
Wild animals, such as lions, will be introduced that will harm the people			x			
Crop pests will increase as a result of the park and the people will not be compensated			x			
If the Forest Reserves were given to the people, they would convert them to agricultural lands		No	x	x	x	Mixed
Forest Guards are friendly and Game Guards are unfriendly		x	x	x	x	x
Gorilla is only of interest to white people	x					
Most people in the area have never seen a gorilla	x	x	x	x	x	x
People like gorillas and/or have nothing against them and feel they can live in harmony with them as they have since time immemorial		x	x	x	x	x

Note: x = Positive Response To Perception

More importantly, the most critical change which must take place is in the bush where improved relations must begin taking place between Game Guards, Park Guards (if these areas become parks) and Forest Guards. An important role of the DTC project should be to bring these people together Advisory Committees to develop a friendly and collaborative relationship between themselves and with the rural community.

#### 4.3.3 Perceptions Of Gorillas By The Local Community

A summary of the local communities' perceptions of gorillas is contained in Table 4.5. The most interesting point is that most people have never seen a gorilla, but at the same time seem to be fond of the gorilla and see it as no threat to them, their families or their crops. Most everyone expressed the idea that they have coexisted with the gorilla since time immemorial and plan to continue along these lines. Unfortunately, it is evident that very few have given any thought to the importance of the forest to the gorilla, because most people would convert the forests to farm lands given the opportunity.

#### 4.3.4 Wildlife Pests

Most every area visited experiences problems with traditional wildlife pests originating from the forest, including baboons, other monkeys and giant forest hog. In two cases, Rhuirija and in Nyambale/Nyakabungo Parishes, the elephant is considered a pest. It is believed that there are only 15 elephants left in Bwindi forest.

Everyone met has the perception that there is nothing that they can do about crop pests. They understand that there is no Government compensation and believe that they can not take the life of the pest. The Kigezi Game Warden explained that this was a misperception and that "Vermin" could be killed and eaten by the local people. He felt very strongly that Government compensation should be provided in the case of crop damage by protected animals such as the elephant, where the people can do nothing to protect their livelihood. The Game Act is currently being revised and may address this very issue.

Sensitizing the rural community of their rights to protect themselves from crop pests is the type of extension efforts that should be considered by the Game Department to help develop a collaborative rapport between the Game Guards and the local communities. DTC could serve as the mechanism to undertake such extension efforts.

#### 4.3.5 Relationship Of The Local Community To Government Departments Responsible For Natural Resources Management

As discussed throughout this report, while the local community has a very good rapport with Forest Department staff, they are at continual odds with the Game Department staff. The Game Department must develop a major public relations program with the rural community. The Game Department should also consider upgrading its educational requirements for personnel, like the Forest Department, and/or provide annual short courses for the guards in the concepts of natural resources/wildlife management and community relations/extension.

## 5.0 COMMUNITY EXTENSION.

### 5.1 USE OF CONSERVATION EXTENSION AGENTS TO COLLECT KNOWLEDGE, ATTITUDE, PRACTICE (KAP) INFORMATION

While the DIC project has in essence been functioning on the ground for only about eight months, and can not be expected to do every thing at once, there is a major need to begin collecting information about on-farm and in-forest activities by the rural community (please refer to Sections 1.2.1 and 2.4.5). This would be an excellent opportunity to support a graduate student(s) to collect this socio-ecological information working through the CEA's and Advisory Committees in collaboration with local Forest Guards, Game Guards and agricultural extension agents.

### 5.2 USE OF THE CEA'S TO SENSITIZE THE PERIPHERY ZONE INHABITANTS TO THE PHILOSOPHY OF SUSTAINABLE IN-FOREST MANAGEMENT

It is the impression of the author that, to date, most of the emphasis in conservation extension has been placed on addressing on-farm problems, especially those related to using agroforestry to promote soil erosion control and to increase soil fertility. Where discussions have taken place with the CEA's, the impression has been given that they have taken the attitude that the solution to most of the people's problems will be found on farm and in turn will significantly decrease the need to exploit the forests, as though this is an inappropriate activity.

It is recommended that more training be given CEA's on the ideas behind sustainable natural resources management that take a balanced approach to on-farm and in-forest activities. A workshop should be held, inviting CEA's, Game Guards, Forest Guards, and Forest Rangers to discuss the concept of sustainable natural resources management. The Forest and Game Department staff, who have studied at the Forestry College or at the Wildlife Management School at Mweka, should be invited to give lectures on this topic. If it is deemed feasible, the Game Department should provide lectures to the CEA's on game management including the idea of seasons, quotas and appropriate gear. This information should then be extended to the local people.

### 5.3 INVOLVEMENT OF PERIPHERY ZONE INHABITANTS IN DECISION MAKING FOR NATURAL RESOURCES PLANNING IN AND AROUND THE FOREST RESERVES

It is becoming more and more the philosophy that the development of Forest Reserves, protected areas and parks requires the development of management plans that extend well beyond the official boundaries of these protected areas and which take into account the interactive biological, social and economic links that exist between the boundaries of these reserves: the people on one side of the boundary whose lives are traditionally very closely tied to the very plant and animal resources on the opposite side of the boundary which are to be conserved.

In classical parks and reserves, this has not occurred. In much of Africa the people have been denied access to two thirds of their resources, in many places being left to eke out an existence on marginal, low productivity soils (e.g. Especially, the case on savannah lands). While this is becoming a thing of the past, and while the distinct impression was given that the intention of

the Government of Uganda is to provide this interactive link -- and even share with the local community the income generated from these areas, to date there has been no attempt to involve the local communities in the conceptualization and planning of these areas.

It might be argued that to begin this activity now without adequate ecological baseline data would be premature, but considered judgement holds that it can not happen too soon. Already, there are rumors spreading throughout the community about these reserves and parks, some of these true, most of these false. It is strongly recommended that the DTC team begin working with the GOU to develop an interactive program with the local communities concerning the plans for these areas. Initially, this will help to quell many of their fears. The Advisory Committees that are already in existence to address natural resources and conservation issues and which represent a good cross section of the local society could provide this forum.

As preliminary management plans are drawn up by the DTC/IFCP teams in collaboration with the GOU, meetings could be held through the Advisory Committees to explain preliminary recommendations and to permit some modification of these plans to fit into the community's needs that were overlooked by the preliminary plan. A plan should not be considered finalized until it has gone through this interactive process and everyone is in agreement with its contents. In this way the local communities will feel, and rightfully so, that they are an active part of the decision making effort that designed these plans. Rather than being force fed these plans, as has been typical in the past and which has resulted in whole sale opposition (e.g., Lake Mbaro), there is a good chance that the local community will become one of the biggest proponents of these areas, given that the individuals as well as the community as a whole should perceive that they are still allowed some access to the area under closely managed conditions and at the same time everyone is benefitting. This has certainly been the experience in the southern African countries of Zimbabwe, Botswana and Zambia. It is also being practiced in Kenya and being experimented with in Tanzania.

#### 5.4 USE OF EXTENSION TO TAKE PRESSURE OFF NATURAL FORESTS

This is being actively pursued by the DTC project in a number of ways:

##### 5.4.1 Multi-purpose Tree Planting

This is being actively promoted on-farm by the DTC project for the purpose of soil stabilization, fodder, crop production, wind breaks/boundary markers, firewood, timber and other uses. On farm trials are being undertaken by farmers, although they need to be organized in a scientific manner.

##### 5.4.2 Planting Of Indigenous Trees On-farm

Most of the trees being promoted by the DTC project are indigenous to southwest Uganda (refer to Table 4.4). Many of these trees are important to the farmer and have traditionally been not only left on the land during clearing but also collected from the forest. By promoting the additional uses of these trees on the farm for enhancement of soil fertility and for the control of soil erosion, there may be some decline in the need to extract products from the natural forest, though it is doubtful it will ever

completely replace this need. A masters degree candidate will be funded to begin conducting research on soil conservation using indigenous tree species for soil erosion (Tables 4.4 and 4.6). This should not only help to scientifically define the spacing of trees for soil erosion, but help to promote additional on-farm use of natural forest species.

The DTC project is unique in that although it is not ignoring exotics (Table 4.7), it is emphasizing the use of indigenous tree species. Although ecologists have continually warned, and there are many examples to support this concern, that the introduction of exotics species of any kind could result in catastrophic impacts to the natural and man-made environments, international tropical foresters have traditionally promoted exotics. A living example is occurring right now in Uganda where introduced cypress trees are rapidly dying out from attack by an aphid. The economic losses from the die-off of this tree have not been measured, but certainly for the rural inhabitant who lives a marginal existence, the loss of such trees could be significant. There is no indication to date that indigenous species, apparently resistant, have been affected.

#### 5.4.3 Swamp Ecology And fisheries

Another masters degree candidate is being supported to conduct research in natural fisheries management in the Kigyeyo Swamp/Lake Bunyonyi ecosystems found within the study area. She may soon begin helping farmers, among who there is great interest, to begin fish culture as an alternative source of protein. Preliminary findings from this study suggest that many of the swamps in the study area may be not only important from the standpoint of biological diversity, but may be important in contributing nutrients to the nutrient poor (oligotrophic) lakes in the region, helping to support lake primary production and ultimately fishery production as a source of local protein.

Additionally, it appears that these swamps may be breeding and nursery grounds for lake fish and in themselves also provide a source of fish production. Five species of fish have been identified which are associated with the swamp/lake complex:

- \* *Clarias mossambica*
- \* *C. carsoni*
- \* *Barbus spp.*
- \* *Tilapia zilli*
- \* *Haplochromis spp.*

The two species of *Clarias* and *Tilapia* have potential for fish culture. The papyrus and swamp forest may provide important game habitat for animals such as the sitatunga (a truly aquatic antelope) and waterbuck, among others. Unfortunately, this habitat has been reduced by 75% in the Kigyeyo Swamp from conversion to grazing land and crop production. This is not unique to this swamp and is occurring throughout the DTC study area.

Table 4.6. Exotic trees used in South-Western Uganda  
for agroforestry

Genus and Species	Uses
<i>Calliandra calothyrsus</i>	Nitrogen fixing, fodder, hedge row
<i>Leuceana leucocephala</i>	Nitrogen fixing, fodder, hedge row
<i>Grevillea robusta</i>	Poles, timber, bunding/soil conservation
<i>Dovyalis cafraca</i> (Keiapple)	Fruit tree, living fence (thorny)
<i>Eucalyptus grandis</i>	Timber, construction poles, fuelwood
<i>Cyprinus lucsitania</i>	Timber, poles
<i>Pinus patula</i>	Timber, poles

Source: Adison Kakuru, DTC-supported Makerere University student

Table 4.7. Indigenous plants of South-West Uganda  
with potential for use on agricultural lands

Genus and Species	Nitrogen-Fixing	Soil Erosion
<i>Indigofera spicata</i>	x	x
<i>Indigofera arrecta</i>	x	x
<i>Indigofera</i> spp.	x	x
<i>Cassia floribunda</i>	x	x
<i>Cassia hirsuta</i>	x	x
<i>Cassia kirkii</i>	x	x
<i>Cassia mimosoidea</i>	x	x
<i>Trephrosia nana</i>	x	x
<i>Trephrosia</i> spp.	x	x
<i>Ficalhoa laurifolia</i>		x
<i>Cajanus cajan</i> (Pigeon Pea)	x	

Source: Adison Kakuru, DTC-sponsored Makerere University student

This researcher should be encouraged to share her findings through the CEA's with local farmers and fishermen to see if a compromise can be reached to set aside some of this important habitat in the area to assure that fish continue to contribute to the protein supply in the area. The IFCP director explained that the rural inhabitants around Ngoto Swamp, at the northern end of Bwindi Forest, have already organized to protect this area which provides them with important sources of raw materials for handicrafts. The DTC should encourage this grass roots movement, providing it with information and helping it to develop a swamp management plan. Her efforts should receive full support from the DTC project. Consideration should be given to support another student in swamp/lake ecology and in fish culture extension if funding for DTC continues. There should also be an attempt to join forces with the IUCN Wetlands Project where additional funding could be solicited.

#### 5.4.4 Small Animal Husbandry

Small animal production of chickens, rabbits and pigs is being rapidly picked up by the rural community as a supplemental source of protein and may help to reduce the demand for bush meat. Support should be given to a student to conduct applied research with the rural community in small animal husbandry.

## 6.0 COLLABORATION WITH OTHER NATURAL RESOURCES PROJECTS.

### 6.1 IMPENETRABLE FOREST CONSERVATION PROJECT

Since this project spawned the DTC there has always been close collaboration. This bond is enhanced by the fact that the two projects share facilities, such as offices, classrooms, and radios, and common goals and objectives. As a result there is excellent coordination between these two groups in, among other things, the collection of baseline ecological data that will be used to develop management plans for the forest reserves.

The DTC project holds workshops in one of the IFCP buildings and the female Parish CEA holds weekly meetings with farm women to discuss such diverse topics as soil erosion, agroforestry and birth control and to learn handicraft skills.

### 6.2 FORESTRY REHABILITATION PROJECT. THIS IS A US\$ 33.3 MILLION PROJECT WITH MULTI-DONOR FUNDING DIVIDED INTO SIX COMPONENTS:

- Natural High Forest Management, with EEC funding
- Training with UNDP funding
- Farm Forestry with DANIDA/CARE funding
- Rehabilitation of Peri-Urban Plantations with NORAD Funding
- Rehabilitation of Softwood Plantations with IDA funding
- Infrastructure including housing, vehicles, technical equipment and field supplies with IDA funding

This project is once removed from the farmers and is primarily trying to improve the institutional capabilities of the Forest Department. However, there does appear to be some contact between DTC and this project:

- There is talk of the Farm Forestry component of the project training Forest Guards collaborating with DTC in agroforestry techniques.
- It is reported that the Forestry Rehabilitation Project plans to supply the IFCP with recent aerial photographs of the Bwindi forest.

One disconcerting note is that there is talk of the farm forestry component being dropped in the areas where DTC is operating because it is felt that there is an overlap of activities. As pointed out, the target audiences of these two projects are entirely different and appear to complement each other rather than to be in conflict. It is recommended that these groups be brought together to devise a strategy that will link these two activities, thereby enhancing their performance.

### 6.3 INTERNATIONAL COUNCIL FOR RESEARCH IN AGROFORESTRY (ICRAF).

This group is being heavily supported by USAID and has been conducting research in the use of both exotic and indigenous trees for on-farm use in East Africa. For instance, they have already conducted on-farm research with *Sesbania sesban*, one of the featured trees in the DTC on-farm component. A field station has been recently established at Kabale.

One of the concerns this evaluator has, as the result of farmer interviews, is that the farmers are taking the advice of the CEA's on blind faith concerning expected benefits from the use of trees (mostly indigenous) to control soil erosion and to increase crop production. There really is not enough scientific data to suggest that the planting of trees will guarantee increased crop production in South-Western Uganda.

There is a danger that if immediate results are not obtained, the farmers may become disenchanted with the DTC project and abandon any future attempts to work with them. To date, there is no systematic attempt to use data from scientific research to determine spacing of trees, both inter- and intra-row spacing.

Likewise, there is little or no information available on what can be expected from the variety of indigenous trees being used on the project with regard to increase soil fertility. There is a crying need to conduct research with the proposed nitrogen fixing trees in Tables 4.4 and 4.7 to find which ones work best, and under what planting regime for best crop production. It is recommended that the students wishing to conduct agroforestry research in soil conservation and fertility, be linked to ICRAF if at all possible, to design an on-farm set of field trials with farmers. One cautionary note, ICRAF has a tendency to push the use of exotics. It is the DTC evaluation team's recommendation that the use of exotic trees and plants should be avoided where possible.

It is suggested that until better information is found as an outcome of the DTC project that CEA's inform and sensitize farmers that they are an integral component of the quest to solve the above problems in southwestern Uganda. The farmers should not expect overnight results from the DTC project.

## 7.0 DIVISION OF PROJECTS BY IN-FOREST VERSUS ON-FARM ACTIVITIES.

It is the impression of the author that one of the major weakness of the DTC project is that there has been a tendency to isolate on-farm and in-forest activities. The project headquarters based in Ikumba has spent most of its effort in establishing on-farm linkages through Conservation Extension Agents and the development of Advisory Committees. On-farm tree planting, some small animal husbandry, and handicraft/family planing for women is where the emphasis has been placed to date.

The ecological component which is geographically isolated in Ruhizha has been emphasizing the collection of in-forest ecological baseline data. This component has more closely allied itself with the IFCP project also based at Ruhizha.

There needs to be a concerted effort, as has been emphasized throughout this report, to extend the collection of baseline data of the forests' natural resources beyond the boundaries of the forests' so that an interactive management plan can be developed that will protect the biodiversity of these forests' while at the same time enhancing the access to these resources by peripheral communities in a managed and sustainable manner.

If they are to remain as separate projects, project management of the DTC project should assure that the data base being collected for the development of forest Reserve management plans be extended beyond the peripheries of the reserves.

## 8.0. MANAGEMENT AND ADMINISTRATION.

### 8.1 PROJECT LEVEL

It is the impression of the author that there is major room for improvement in management of these projects by both CARE and the World Wildlife Fund (WWF). First of all, no real advantage is seen in having WWF involved in this project since they appear to be collecting overhead with little or no contribution to the success of the project, having taken a hands-off approach both managerially and technically. Furthermore they have added to the already unwieldy reporting procedures. Reports must be sent to CARE New York, CARE International in Paris, and WWF in Washington. Procurement has also been very slow.

It appears that WWF/CARE may have also set unreasonable and unattainable targets for this project (e.g. number of trees to be planted, 75% reduction in on-farm soil erosion when there is not even baseline data to measure this, 25% of the families meeting fuelwood needs, 20,000 seedlings being planted/Parish/year, etc.). If recent cable traffic between AFR/TR and Madagascar concerning their Environmental Planning and Management Project is an indication, the Agency realizes that many of the changes which we are talking about will come very slowly and should not be weighed down with too many quantitative targets. It should be remembered that development is establishing processes that will continue beyond the length of this project. Development can not be measured by the number of trees planted, reports produced or meetings held. It was the unanimous agreement among all parties interviewed that too much time is being spent by project staff in trying to meet these targets, which in many cases assumes that we already know what the people want, rather than establishing various processes such as:

- \* The establishment of working Advisory Committees
- \* Promotion of grass roots planning that eventually becomes institutionalized into the Government of Uganda's decision making process for development
- \* Linking the CEA's and Advisory Committees to Forestry, Agricultural extension agents, and Game Guards for technical advice
- \* Integrating the local communities into the development of and eventual implementation of Forest Reserve, Game Reserve and Park Reserve management plans
- \* Institutionalizing environmental education in the local school systems, possibly through Wildlife Clubs of Uganda, in such a manner that the children extend new concepts to their parents, and as they begin to farm readily take up the adoption of these techniques.
- \* Promoting ties between research groups and the extension of this information to the farmer.

These are some of the major goals or targets that the DTC project should be striving for. Success should then be measured not in the number of trees planted but in the gradual development of these processes. The DTC project is

evolving well beyond its original objectives, primarily as the result of its design which has given the local communities the flexibility of setting many of their own targets, rather than coming in with a cookbook of recipes which are forced on them. It is therefore the recommendation of the DTC evaluation team that if this project is to be continued, most of the original target indicators be scrapped and the success and/or failure of this project be based upon the promotion and establishment of many of the above processes that are beginning to take place. Rightfully so, successes in these areas will not occur overnight and the goal of making this a 10 year project should be considered a minimal period, 15 years being even more realistic in order to have a chance of seeing success. If these processes can be established many of the more quantifiable targets will take care of themselves including decreased soil erosion, increased on-farm use of trees, increased crop production, decreased poaching, more collaboration between natural resource managers and users to derive economic benefits from sustainable management of the forests, and overall improvements in the quality of life and living standards of the rural community.

#### 8.2 NATIONAL LEVEL MANAGEMENT OF THE DTC PROJECT.

The counterpart ministry for this project is the Ministry of Environment Protection. Within this Ministry, the Forest Department is the coordinating agency to the DTC project. They are to provide a counterpart to the DTC Project Coordinator. To date there has been very little cooperation with this group. It appears that there were major bureaucratic delays by this Ministry that held up the DTC project for over a year. To date, there has been no Forest Department counterpart seconded to the project.

One has to question whether the Forest Department is even the best agency with which to collaborate, since their mandate is so narrowly focused and the DTC project is evolving into more than just a tree planting and forestry management project, requiring linkages to many different branches of the government (e.g. Agriculture, Game and Forest Departments, and possibly National Parks). There has been talk of the Ministry of Plan placing planners in Uganda at a Parish level. The role of this Ministry is to look at the big picture and to plan for integrated development. A planner would have a much broader outlook on the needs of the DTC project and could enhance the process of both grass roots planning being linked into the existing decision making process and help in the promotion of an integrated interactive park management planning process.

#### 8.3 DTC/IFCP PROJECT SUSTAINABILITY.

It was the unanimous decision of all project staff interviewed that the current institutional and financial arrangements of both the IFCP and DTC projects are inadequate. Currently, both projects exist, in some cases, without any guarantee that six months from now there will be funding to continue. Long-term planning can not take place under such circumstances. In order for them to be successful they must be assured of being able to cover long term recurring costs.

This investigator sensed a consensus among those to whom he talked for the following institutional and financial arrangements.

### 8.3.1 Institutional

The newly emerging Mbarara University of Science and Technology should be contracted by USAID to take over a combined DTC/IFCP project.

There is a feeling by many people in Uganda that the current system of higher education results in a breaking of the linkages between students and their rural roots, a majority of them destined to live in Kampala or other regional towns, never to return home except to visit their families during vacation. Mbarara University of Science and Technology is being established by the Government of Uganda to promote a closer linkage with the rural community and to educate students who will be sensitized to their needs and who will be willing to live and work in the countryside where development must take place.

Such an arrangement would decrease the administrative burden on USAID, especially if this is to become a long term commitment. Under the umbrella of Mbarara University of Science and Technology, the in-forestry activities would be handled through the newly proposed Tropical Forestry Institute at the University. The on-farm component would be taken over by the proposed Institute of Developmental Studies at the University. This institute would absorb the current DTC staff and the CEA's. This would also provide the unique opportunity for students, at all levels and from different disciplines, to work in the field at a grass roots level. It would be the goal of the university to see that these two components are linked in order to assure integrated planning and development takes place.

These institutes would conduct research and help prepare plans for the administrative bodies of the Government whose responsibility it is to implement these plans in order to assure sustainability in the region, including the Forest and Game Departments, and National Parks. They would also work closely with the grass roots Advisory Committees in helping them to plan for development of the region emphasizing natural resources management on-farm and in-forest. It would be their responsibility to assure that integration of in-forest/on-farm activities takes place.

### 8.3.2 Financial Arrangements

It is recommended that an endowment be established by USAID for these institutes with combined local currency, and foreign exchange sufficient enough to assure that the interest rate could support many of the project activities. This is estimated at US\$ three million for each institute. This fund could then be further supported by other donors and charitable organizations. For instance, the Sheraton Hotel in Kampala is currently charging each occupant \$/S 1 and matching this by the addition of a second dollar for support of conservation of the Bwindi forest. This money could be channeled into this endowment. Initially, most of the work from this endowment would be in the Bwindi/Mgahinga/Echuya forest areas. As these areas are dealt with, the institutes will expand their activities to other important forested areas and parks that can benefit from development through conservation.

The advantage of this for USAID, is that it would be a lump sum grant, would have minimal management burden and would help assure the long term sustainability of DTC/IFCP-like activities.

## 9.0. DEVELOPMENT OF AN INTEGRATED PLANNING NETWORK

### 9.1 GRASS ROOTS PLANNING

One of the more successful components of the DTC project has been to establish Conservation Extension Agents (CEA's). Originally, their role was seen to be one of education and sensitization of the local communities about natural resources issues. The CEA's, through the local Resistance Committees (RC), have organized Advisory Committees (AC) which are elected by the community on a voluntary basis and which represent a good cross section of the society including farmers, church groups, women and government personnel living in the area.

Initially, the CEA's began by promoting on-farm activities such as agro-forestry, and to a lesser degree small animal production (chickens, rabbits and pigs) and bee keeping while sensitizing the people to the importance of the forest.

The author gained the impression that this project has gone well beyond its original intent and in fact has done something that larger and more complex projects have been unable to attain, the initiation of grass roots planning at a community level.

### 9.2 INVOLVEMENT OF GOVERNMENT EXTENSION AGENTS IN GRASS ROOTS PLANNING

What grass roots planning is currently lacking is a link to government personnel involved in natural resources management, including those from the Forest Department, Game Department and Agriculture Department. In some cases such relationships are beginning to occur, especially where these government agents happen to be living in the area and have become members of the Parish Advisory Committee. The development of the relationships between the AC's, the CEA's and these government personnel should be encouraged. In essence, the CEA's, with two per Parish, can help these natural resource agents extend out and reach well beyond the areas they are currently able to attain due to the large geographical areas which they must cover with virtually no logistical support.

### 9.3 THE NEED FOR BOTTOM UP PLANNING

Another observation is that currently most planning is top down, be it through the Resistance Committees (locally elected representatives at the village, Parish, Sub-County and District level) or through the government administrators or Chiefs at the same levels). This appears to be ingrained in the culture due to a long tradition of the people being ordered about extending back to the kingdoms and colonial period.

The Advisory Committees currently see the DTC project as the solution to all of their problems. While the project must continue to provide them support and encouragement, it should slowly push them in the direction of the Resistance Committees and the Development Committees so that their voices may be heard through the chain of command in the government decision making system. In this manner, the possibility exists to begin institutionalizing grass roots planning 'from the bottom up' in Uganda.

#### 9.4 CONFUSION WITHIN LOCAL GOVERNMENTS OF OFFICIAL PLANNING CHANNELS

One of the most obvious problems observed during the DTC evaluation team's field visit was the confusion both within local government and by the rural community about the planning process. Currently, there are, in essence, two planning groups, the old colonial system of Chiefs who are government functionaries and the recently established Resistance Committees who are elected by the people to represent them locally and regionally. It seemed that every individual, both within the administration and within resistance committees, had his/her own ideas of how they interacted in planning for development. This was further complicated by the fact that the rural community for the most part perceived both of their roles as one of dictating to them what they must do rather than interacting with them to provide the decision makers with an indication of their priorities so that solutions may be sought.

DTC is beginning to promote bottom up grass roots planning at the village level. Somehow this needs to link into what appears to be a somewhat cumbersome and ill defined parallel set of planning networks. Consideration should be given by USAID to funding, in collaboration with the Ministry of Planning and Economic Development, an evaluation of the current system of planning to see if this can be streamlined and simplified to the benefit of all parties, both government bureaucrats and the people who both seem to be thoroughly confused by the current setting, all of which is detrimental to institutionalizing the planning process from the grass roots upward.

#### 10.0 TECHNICAL ASSISTANCE.

One of the biggest complaints of both the DTC and IFPC staff is that the administrative burden of these projects took away significantly from the time that the project managers/technicians had in giving technical direction to the project. It is suggested that if these projects are consolidated, that an administrative assistant be brought on immediately who is familiar with USAID/CARE financial reporting requirements. If they are kept as separate projects then each should have an administrative assistant. This should free these technical managers to devote more time to what they are here to accomplish.

It is also recommended that a socio-ecologist or someone interested in developing those skills become actively involved in the DTC project to help in collecting information that will link on-farm and in-forest activities in the development and implementation of integrated natural resource management plans for the Bwindi, Mgahinga and Echuya forests.

## 11.0 POTENTIAL FOR TOURISM IN SOUTHWEST UGANDA

After having personally visited Mgahinga and Bwindi Forest Reserves, the DTC evaluation team cautions both USAID and the Government of Uganda in counting entirely on economic revenue generated from tourism to support these two parks.

### 11.1 TOURISM POTENTIAL IN MGAHINGA

Mgahinga is linked to the touristically important *Parc des Volcans* in Rwanda and *Parc des Virungas* in Zaire. As with all of these parks, it is situated in mountainous terrain at an elevation of 2,400-4,300 meters above sea level. It takes a well conditioned and acclimated person to do any serious hiking in this area, atypical of most tourists. Additionally, the gorilla population most readily seen by tourists, near the present headquarters of the Gorilla Game Reserve Conservation Project, migrates back and forth between Uganda and Zaire. Unless their behavior can be changed, which is probably not a good idea, it will be hit or miss as to whether a gorilla(s) is seen. Two days before the DTC team arrived the gorillas were to be seen. The day that the team arrived they were in Zaire. Are tourists willing to invest in such a risk, when in Rwanda they are guaranteed the classical "gorilla experience?" It can be argued that there are other interesting sites such as the rare golden monkey and the scenic background setting of the volcanoes, but it is doubtful that this alone will attract major numbers of tourists. Even if the gorillas can be acclimated to stay in the area, it is normally advisable to have no more than four people per day. Even if visitations can be increased with time after acclimatization of the gorillas, this will be a low volume form of tourism. Although this will generate revenue, it can not compare to that potentially generated from high volume tourism expected from parks situated in savannah areas (e.g., Queen Elizabeth and Murchison Falls) where the wildlife is large, abundant and readily visible, the terrain is flat, and tourism can take place in a comfortable vehicle or boat. Additionally, the gorilla is a rare and endangered species and is susceptible to human diseases. Many primate ecologists question the wisdom of excessive human exposure to this species.

### 11.2 TOURISM POTENTIAL IN BWINDI (IMPENETRABLE) FOREST

Although there are approximately 300 gorillas in the Bwindi forest, most of them are not easily accessible. This forest is at an altitude of 1,160-2,600 meters above sea level. The terrain is steep, rugged and treacherous, once again a geography that the average tourist would not be able to survive. The author of this report, who considers himself in excellent condition exercising daily, was hard put to climb only two ridges with a number of stops to catch his breath, hopefully due to the short acclimatization period. From Ruhizha, at least seven ridges must be traversed, one is obliged to camp under primitive conditions and still there is no guarantee of seeing a gorilla. The DTC evaluation team never saw a gorilla during their entire stay. The head of the IFCP has not seen a gorilla for one and one-half years, mostly tracking their nests as an indication of their presence. The head of the IFCP team explained that if tourism is possible in Bwindi, the most likely place to establish it would be around Buhoma. Once again this would be a low volume form of tourism.

The uniqueness of these areas and the importance of the mountain gorillas deems their being worthy of preservation for future generations of Ugandans, as well as mankind. However, since this form of tourism has limited value economically, it can be argued that the Bwindi forest should be managed as a multiple use area, generating income from both gorilla tourism and rational exploitation of other resources. In fact, its future and the future of the gorillas may depend upon this multiple use, given the increasing pressures from the growing human populations who will need to benefit economically from this forest in order to have a vested interest in its survival. Unfortunately, Mqahinga is already so encroached upon and so small that this form of management is probably not practical.

If USAID wishes to get involved in tourism as a generator of foreign exchange, it is likely that renovation of the two above-mentioned savannah parks would be in their best interest. In turn, side trips could be made by those hearty souls who wish to experience the refreshing climate and uniqueness of the high mountain areas with the outside chance of seeing a gorilla if lady luck presents herself.

Although not relevant to southwestern Uganda, the opportunity is taken here to raise the question of reopening sport hunting in the savannah areas, possibly for plains game. In many of the southern African countries, it has been found that keeping these marginal agricultural lands in natural range for livestock and wildlife is more economical and generates more foreign exchange than conversion of this land to poor yielding crop production. This factor is very critical since in many of the East and Southern African countries where the best agricultural lands are already over crowded, there has been a concerted policy to resettle people onto relatively sparsely populated savannah. With few exceptions (e.g. elephant and rhino), habitat destruction is the biggest cause for wildlife depletion in Africa!! USAID is making a major investment in this activity on communal lands in Zimbabwe, Botswana and Zambia, giving the rural communities a vested economic interest in wildlife conservation and the maintenance of wildlife habitat. Tanzania has recently initiated such programs and even Kenya will begin a pilot project within a year. If USAID is interested in conservation through tourism and is looking beyond the DTC/IFCP projects, it might consider helping the Game Department conduct a wildlife census to determine the current status of game populations in former hunting zones. Such a census will be a prerequisite, after 15 years of uncontrolled management that could have had a significant effect on plains game populations. If game populations are adequate, the Zimbabwe "Campfire Program" could then be used as a model for integrating the rural community into this activity. If properly established, a portion of the revenue could go back into the Game Department to provide it with the operational funds it so dearly needs to manage Uganda's wildlife populations.

If USAID is interested in the tourism sector, it is recommended that a natural resource park economist be consulted to determine the investment required and the expected economic returns from bringing back full scale tourism. It is suspected they would be high. The only thing holding back high volume tourism currently, may be the reluctance of tourists to visit some of these areas, especially the Murchison Falls National Park, while there is still civil unrest. Tourism is an industry waiting to happen if Uganda can maintain its stability and regain the reputation it had in the past for game viewing.

DEVELOPMENT THROUGH CONSERVATION  
IN  
SOUTH-WEST UGANDA PROJECT

ANNEX 3.

**PARTIAL LIST OF PERSONS CONTACTED**

29 June 1990

LIST OF CONTACTS

1. USAID/UGANDA

- \* Gary Bayer, USAID/Uganda, AG/NR
- \* Joe Torres, DTC Project Coordinator, CARE

2. May 31, 1990

- \* Justus Tindigarukayo, Principle Game Biologist
- \* Alan Hamilton, WWF International, Plant Conservationist

Brief rendezvous on road to Mbarara, returning from village interviews on the concept of parks in Southwest Uganda.

3. May 31, 1990

- \* Samson Werikhe, IPCP Masters, candidate, Gorilla research in Mgahinga Forest Reserve

4. June 1, 1990

- \* Aggrey Kazigaba, Forest Guard, Kisoro
- \* Paul Bitimana, RC-1 Chairman, Chana Village
- \* Mgahinga Game Guards
- \* Ursula Koslowski, Intern to Gorilla Game Reserve Conservation Project
- \* John Karugaba, Forester, Echuya Forest

5. Kashiya Village at Rubuguri Parish, Southeast Side Impenetrable Forest, June 2, 1990. Persons contacted include:

- \* Zine, CEA l/c Remeera Parish
- \* Blasio Byibesho, On-Farm Forest Extension Guard
- \* Anaclet K. Ntege, Forester Rushaga, S. Bwindi
- \* Chris Sagorogoza, Rubuguri CEA, Zonal Representative
- \* Aboziherie Vastina, CEA Rubuguri Parish
- \* Judith Twinomujuni, CEA l/c Remeera Parish
- \* John Tibeihelio, CEA l/c Kashiya/Rutaka
- \* Rose Mary Cyanaizoye, CEA l/c, Kashiya/Rutaka
- \* Ericano Balihina, Advisory Committee Chairman
- \* Wiclifu Nyauve, Member Advisory Committee
- \* Erastus Ntunda, Chairman, Advisory Committee, Mreko

LIST OF CONTACT (CONT.)

6. Forest Department, Kanungu Subdistrict, June 3, 1990. The following persons were interviewed:

- Francis Rwendeire, Forest Officer, Kanungu Subdistrict
- Thomas Baluka, District Forest Officer
- Stanley Bazaarabona, Forester
- Richard Murahutya, Forest Ranger, Kayonza
- Caleb Munvesoni, Forest Guard, Kayonza
- Nestor Tshumisine, CEA Kijubwe
- John Tindiwegi, CEA Zonal Representative DTC Kanungu
- Vincent Ndyanabo, CEA Bushura Parish
- Miss Vostinah Mbabazi, CEA Bushura Parish
- Henry Tukeijahe, CEA Rutugunda Parish
- Edith Twinoujuni, CEA Kijubwe Parish

7. Bushura Village, Bushura Parish Advisory Board, June 30, 1990. The following Advisory Committee members attended this meeting:

- Behangana, Enoth-Chairman†
- Nyanabangi, David Willie-Vice Chairman†
- Sebarole, Edgar-Secretary
- Bramire, Daniel-Treas†
- Bisheija, D.-Youth
- Bagyanyi-RDO Rep.
- Ticwowe Mrs.-RCC Rep
- Bacyominsi-Women/Head
- Ndyanabo-Vet
- Kibeira, Forester/Elder†
- Kazarwa-Game Ranger
- Banaturaki-P/C
- Muvagaba H.-(CM RD-2)-RC Rep
- Rutagururayo-Forest Guard
- Turyahikayo, Caleb-Education

† Attended Meeting

8. Bubosa, June 4, 1990. The following advisory committee members were visited (Mahe Kanongo, DTC Conservation Extension Manager joined DTC Evaluation Team):

- George Bitti Tindituza, CEA Mukono
- Michael Tusilwa, CEA Kueshero Parish
- Jossiah Kinanga, Zonal Representative, Icayaoca
- Gongo Elisha Gay, CEA Mukono West
- Senshago Kanyonyi Seth, Forest Ranger I/c Bizengo
- Rev. Stephen Besigye, PAC Chairman Mukono
- Gliphar Tuhlabisibwe, P/Chief Mukono
- George Lulenangue, Teacher Kayashande P/S
- James Matsiko, Teacher Kayashande P/S
- Stephen Twetsor, Teacher Kayashande P/S
- Beshisha Enock, Teacher Kanyeshande P/S
- Batinathe Watten, Teacher Kanyeshande P/S
- G. Bagande
- B. Tumcoebagok, Forest Worker Bijengwe
- Kyimpemwe Grace, CEA Mukono Parish
- P. Kahababo
- P. Ntaruhunga, Worker (Farmer)
- C. Katunguka
- L. Karugaba
- Kabyenyesi, Worker (Farmer)
- Bukooke, Worker (Farmer)

9. CEA Meeting Ruhija, June 5, 1990. This included:

- Norah Hafashimana, CEA Kitojo Parish, and CEA Building
- Seriano Tsume, CEA Kitojo Parish, in charge of the agroforestry and seed collection
- Josephat Turyahaabwa CEA Kitojo Parish and Ruhija Zone Rep
- Aulerian Katabaazi, CEA Kitojo Parish, CEA Building
- Ernest Kamugisha, Vice Chairman, Advisory Committee

10. Meeting with Impenetrable Forest Conservation Project (IFCP) and DTC staff, June 6, 1990. This included (Professor Fred Kayanja joined DTC Evaluation Team):

- Dr. Jan Kalina, Ecology Advisor, DTC
- Dr. Thomas Butynski, Director IFCP
- Dr. Jonathan Baranga, Deputy Director of National Parks, Deputy Dir. IFCP, Mammalogist
- Tony Katenda, Botanist

Other persons met include:

- Dennis Babaasa, Counterpart to DTC Ecology Advisor, Game Dept. Biologist
- Didas Rutembe Turinawe, Junior Game Assistant, I/C Bwindi Forest Animal Sanctuary
- Ignatius Achoka, Student Research Assistant, Makerere University
- Vincent Bashakkura, Game Guard, Bwindi

11. Nyabale and Nyakabungo Parish CEA's and Nyabale AC, June 7, 1990. The following persons attended the meeting:

- Klaus-Jurgen Sucker, TA, Gorilla Game Reserve Project- Briefly on the road
- Mrs. Evacy Royanutana, woman CEA, teacher
- George Tusingwire, Mushaje Parish, RC-II rep
- James Bayende, CEA Nyakabungo Parish, teacher
- Sam Osiina, CEA Nyarurambi Parish, Teacher
- Rutahunga, Chairman AC, Big Farmer, Medicine Man
- Godfrey Mugisha, CEA Nyabale

The following were farmers, not members of the AC that attended:

- Tweheyo Phillip
- Livingstone Byasukama
- Benett Mugisha
- Peter Ashemereinao
- W. Migiisha

12. June 8, 1990, Kabale District

- V. R. Baligayonve, District Administrator
- John Elisha, RC-V Chairman, Kibale District
- Isreal Kikangi, District Forest Officer
- James Bilegeya Komayombi, District Agricultural Officer
- Michael Edigu, Game Warden, Kigezi Range

13. June 9, 1990

- Francis Tibyeitu, Rubanda County Chief
- Seth Barinabo Njojo, Ikumba Sub-County Chief
- Clestine Nagezi, RC-V Councillor, Member District Development Committee, Vice Chairman Rubanda Development Committee
- Simon Bujana, CEA Nyaruhanga Parish
- Virginia Nyasaguru, graduate student, swamp culture/fisheries research, DTC Project
- Adison Kakuru, MSc. candidate agroforestry, soil conservation research, DTC Project

14. June 11, 1990, Entebbe

- Fustin Ojacor, Commissioner of Agriculture
- Jecco Isabirye, Senior Agriculture Officer, Training

15. June 12, 1990, Kampala/Entebbe

- Lawrence Kiwanuka, Chief Forest Officer
- Charles Kibi Otin, Acting Chief Game Warden
- John Miskell, CARE, Forestry Rehabilitation Project