MAKERERE INSTITUTE
OF SOCIAL RESEARCH
Makerere University
Kampala, Uganda

LAND TENURE CENTER
College of Agricultural
and Life Sciences
University of Wisconsin-Madison

BWINDI IMPENETRABLE NATIONAL PARK: SETTLEMENT, SOCIOECONOMY, NATURAL RESOURCE USE, AND THE ATTITUDES OF COMMUNITIES SURROUNDING THE PARK

by

Mark Marquardt and Magdalene Nyiramahoro
Makerere Institute of Social Research

and

Rob Wild
CARE International Development Through Conservation Project

ACCESS TO LAND AND OTHER NATURAL RESOURCES IN UGANDA: RESEARCH AND POLICY DEVELOPMENT PROJECT

Research Paper 6

Prepared for Makerere Institute of Social Research and the Land Tenure Center

April 1993

Bwindi Impenetrable National Park: Settlement, Socioeconomy, Natural Resource Use, and Attitudes of Communities Surrounding the Park

Report of a Rapid Rural Appraisal

by

Mark Marquardt and Magdalene Nyiramahoro
Makerere Institute of Social Research

and

Rob Wild
CARE International Development Through Conservation Project

ACCESS TO LAND AND OTHER NATURAL RESOURCES IN UGANDA: RESEARCH AND POLICY DEVELOPMENT PROJECT

Research Paper 6

Prepared for
Makerere Institute of Social Research, Makerere University, Kampala, Uganda
and
The Land Tenure Center, University of Wisconsin-Madison, USA

April 1993

This report is one of a series of research reports presenting finding of the Access to Land and Other Natural Resources: Research and Policy Development Project. Funding for this research has been provided by the United States Agency for International Development (USAID)/Kampala, through the Land Tenure Center's Cooperative Agreement with USAID/Washington, and through the World Bank's ASAC programme in Uganda.

All views, interpretations, recommendations, and conclusions expressed in this paper are those of the authors and not necessarily those of the supporting or cooperating organizations.

Copyright © 1996 by Mark Marquardt, Magdalene Nyiramahoro, and Rob Wild. All rights reserved

Readers may make verbatim copies of this document for noncommercial purposes by any means, provided that this copyright notice appears on all such copies.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS

The authors would like to thank the communities around Bwindi Impenetrable National Park without whose cooperation this study would not have been a success. We are grateful for their full participation in the interviews, patience, heartwarming hospitality, and willingness to provide information.

We also thank community leaders, particularly the RCs and women representatives, for their assistance and cooperation in mobilising community members, usually at short notice since the research team arrived at interview locations without prior notice.

We acknowledge the support of Mr. Karl Karugaba of Uganda Game Department who was our wildlife consultant. We are grateful for his important suggestions on issues that would probably be raised during the course of the interviews.

Finally, we thank Ms. Aggripinah Namara and Mr. Mark Infield of the Lake Mburo Community Conservation Project for providing important advice during our questionnaire design.

INTRODUCTION

The Access to Land and Other Natural Resources Research and Policy Development Project has undertaken a series of research activities to address issues related to land tenure and natural resources that are critical to the development of sound land use policies in Uganda. The buffer zone component of this project deals with tenure and resource issues in the buffer zones around Uganda's National Parks, Forest Reserves, and Game Reserves. To enable the project to draw rational conclusions concerning the above issues, a series of studies have been carried out that identify the characteristics of communities in and around these protected areas, factors leading to settlement in these areas, tenure rights to land and other resources, community attitudes toward the protected area, and general development issues.

The Project has used a two phased approach to the buffer zone research activity: a Rapid Rural Appraisal (RRA) exercise followed by a detailed socioeconomic survey. The purpose of the RRA is to gain a general understanding of the lives of the people living around the protected area and to identify key issues concerning the reserve. It is carried out as a preliminary activity prior to the administration of a detailed socioeconomic survey that targets the key issues and important questions raised by the RRA.

Where possible, existing development projects have been co-participants in the exercise. The information gathered will then permit the Access to Land Project to present general conclusions to policymakers. It has also permitted the specific project to have a clearer understanding of their community's resource tenure issues.

In the case of Bwindi Impenetrable National Park (BINP) the partner project was the CARE Development Through Conservation Project (DTC). DTC is an Integrated Conservation and Development Project (ICDP) which aims to conserve the forest by supporting appropriate community development projects in the area. The project started in late 1988. The second phase of the project, which began in early 1991, has two core interventions: 1) trees and agriculture, addressing issues of agroforesty, woodlots, banana plantation management, climbing bean variety trials, fish farming, and small livestock production; and, 2) support to Uganda National Parks, which includes biological inventory, management planning, and ethnobotany studies.

This report describes the results of the exercise that focused on BINP. The park was gazetted in August 1991, 10 months prior to this RRA exercise. The forest was first protected as a forest reserve in 1932, known as the Impenetrable Forest Reserve, the local name "Bwindi" being used later. The reserve was gazetted as a Game Sanctuary in 1961 and provisionally had been proposed for upgrading to National Park status in 1987. There was considerable debate both locally and nationally prior to the change of status with interdepartmental discord and local campaigning. The arguments hinged on resource use vs. biodiversity conservation. There was extensive gold mining and the forest was considered the most heavily pitsawn forest in Uganda. Resource use had been controlled just prior to the change in status but was clearly associated by the surrounding communities with the creation of the park.

This report provides a general overview of the area, a description of the representative communities visited, and a summary of the findings of the study.

OBJECTIVES OF THE RRA

As a preliminary to the larger survey, an RRA of representative communities around the park was undertaken. The objectives of this exercise were to gain a general understanding of a number of factors influencing the socioeconomic milieu of the area. These included:

a) the history of settlement in the area;
b) agricultural issues such as land tenure, landholdings, crops, livestock, etc.;
c) general economic activities;
d) utilisation of and problems with area resources such as swamps, water, forests, soil erosion, etc.;
e) perceptions and attitudes toward the conservation area; and
f) development problems and issues of concern to the community.

METHODOLOGY

The RRA process was carried out in a series of interrelated steps in two different time periods: between 2 and 5 December 1991 and 7 and 8 February 1992.

A questionnaire reflecting general issues was designed based in part on the previous experience of MISR and the RRA carried out jointly with the Lake Mburo Community Conservation Project. That earlier questionnaire was modified for this exercise as a result of that experience and to cater to the needs of a different resource regimes (range and fishing vs. forest resources).

A preliminary visit was made by the team leader to the DTC project area to discuss considerations for site selection. Seven communities were selected by DTC project staff as representative of settlement and resource use in the areas surrounding the forest. Three additional women's groups were selected to be interviewed to ensure that women's resource use issues were adequately covered. While appointments were made specifically to meet the women's groups, meetings with the other groups were spontaneous gatherings of residents upon arrival of the team in each area.

This approach may have limited the representativeness of the respondents. Those questioned were most likely to be unoccupied men found in trading centres rather than subsistence agriculturalists who are more representative of the community as a whole.

Interviews were conducted by a single member of the RRA team. A questionnaire, prepared in advance, guided the discussion. The remaining team members took notes and asked supplementary questions. Following the interviews the RRA team met to compare their notes and the impressions they had formed of the information collected. A single set of notes for each group was then compiled and served as the basis of this report.

LOCATION DESCRIPTIONS

The communities were selected in general on the basis of low altitude (north of the forest) and high altitude (south of the forest). As indicated earlier, three of the groups were specifically scheduled women's groups. The summary findings of these groups is presented as a separate discussion following the general discussion.

As would be expected, the people in the ten communities visited identified themselves as predominantly cultivators with some small scale livestock-keeping. People in two of the communities indicated that they used to be hunters, either in the swamps prior to their being drained (Kagunga) or in the forest (Nyakishojwa). A third (Ahamayanja) indicated that they used to be timber cutters.

NTUNGAMO TRADING CENTRE, NTEKO PARISH, KISORO DISTRICT (8)

Nteko is located on the western edge of the forest. It is in an area of high and relatively steep hills with narrow valleys. While people moved into this area as early as 1900, coming mainly from Rwanda, most of Nteko was forested up to 1954. More people are still coming from Kisoro due to the land shortage there. There were out-migrations from Nteko in the late 1960s as people were displaced by the creation of a government agricultural farm. Those who were displaced went to Toro, Bunyoro, and Mubende. The area has about 100 households per parish with an average of 10-15 people in a household. The community is polygamous with most men having three wives.

The community lacks a well established infrastructure. There are only two government primary schools, a feeder road which is poorly maintained, no protected springs or boreholes to provide for clean water, and the nearest hospital is more than 10 miles away in Kisoro.

The major economic activity is cultivation with little livestock-keeping but, like other communities surrounding the forest, Nteko community members were also timber cutters. Crops mainly grown are bananas, bush and climbing beans, sweet potatoes, sorghum, maize, and some irish potatoes. Sorghum is important for cash as well as for local brew. Much of the produce is consumed locally, due to transport difficulties and the lack of an effective market. Any surplus is sold by the roadside on market days or taken to the nearest weekly market at Rubuguri trading centre. Individual tea fields have been abandoned due to the lack of a tea factory in the area and a road to transport the tea leaf to the nearest tea factory in Kayonza.

The Nteko community members used to derive some livelihood from the sale of non-timber forest products such as ropes, crafts (baskets and trays), wooden cups, plates, hoes, handles, etc. to Kisoro and other communities that are further from the forest. Gold mining from the forest was also an important activity for Nteko people and still continues within the community's area.

RUSHAGA TRADING CENTRE, REMEERA PARISH, KISORO DISTRICT (9)

Rushaga is also located south of the forest in the high altitude area on the forest's edge. The area is characterised by high and relatively steep hills. The Ruhezamyenda River flows out of Kigeyo Swamp past Rushaga to Lake Mutanda. The Shongi and Kabaya Streams flow out of the forest and join the Ruhezamyenda River near Rushaga. The trading centre is along the feeder road to Rubuguri from the Kabale-Kisoro road junction at Muko. The nearest dispensary is in Rubuguri, about seven miles distant. There are two primary schools in the area and protected springs.

There was no information collected on the settlement of the area as elderly members of the community were absent from the meeting. However, it was mentioned that no people have moved into the area recently nor have any people moved out. People have not moved because the availability of land is not yet a problem in their area. There are about 750 households in the Parish with an average of 10-15 people in a household. There were, however, complaints about homeless Batwa who steal food. The Batwa, new arrivals to the area, are now more dependant on farm land since their continued access to the forest has been denied.

The major economic activity is cultivation with little livestock. Members of the community had also been timber cutters before the closure of the forest and used to obtain other non-timber forest products. People coming for timber also used to buy produce from Rushaga, but this income has declined due to reduced market opportunities. Crops mainly grown are climbing and bush beans, sweet potatoes, sorghum, some irish potatoes, maize, and bananas. Much of the produce is consumed locally, due to transport difficulties. Any surplus is sold by the roadside on market days or taken to the nearest weekly market in Rubuguri trading centre. Sorghum is important for cash income and for making *omuramba*.

A limited number of livestock are kept. While only 200 head of cattle were reported to be in the area, some community members have fenced grazing land and there are those who have planted pastures. Two members of the community were reported to own paddocked cattle farms. Some sheep and goats are also owned.

Gold mining from the alluvial deposits along the Ruhezamyenda River valley is also important source of revenue for Rushaga community. Gold mining is mostly done by the youths and sold to buyers coming from Kabale and Kisoro.

KITAHURIRA TRADING CENTRE, NYAMABARE/KASHASHA PARISHES, KABALE DISTRICT (10)

Nyamabare/Kashasha community also is located south of BINP in the high altitude area at the edge of the forest. People here are primarily cultivators but formerly were also pitsawers. The average family size is 10-15 with about 5,000 families in Kashasha and 4,000 in Nyamabare.

The crops grown in this community—beans, sorghum, sweet and irish potatoes, maize, and peas—are typical of surrounding villages; the exception is wheat, which is grown for subsistence. Little or no surplus wheat is sold. The major cash income earners are peas, irish potatoes, and sorghum. Residents of Nyamabare/Kashasha also sell produce to traders who

load trucks for Kampala. The community is a major pea producer but production has declined due to increased crop damage by elephants. They reported that on average a farmer used to get 15 sacks (100 kg/sack) per harvest but now may get only 2 sacks. Nyamabare/Kashasha community cited crop damage by elephants as a serious problem affecting their income earning capacity, which they felt needed the attention of park officials. The local people are unable to guard against elephants and these animals cause considerable amount of crop losses to the farmers. They reported that crop damage had increased, especially after the forest was upgraded to National Park status.

The Nyamabare/Kashasha community used to engage in pitsawing. With the closure of the forest, however, most people in the area have become unemployed, while others went to pitsaw elsewhere in Toro, Ankole, and Bunyoro forests. Those unable to move returned to cultivation.

A few members in the community do blacksmithing and mining. Scrap metal (old hoes) is the major source of raw material for the blacksmithing industry, which makes knives and single forked hoes (*ekondo*). Small-scale local mining is done at the Muko Wolfram Mines. Formerly, these mines were run by an expatriate as a large scale commercial mining enterprise that created employment opportunities for Nyamabare/Kashasha residents. However, mining collapsed and now people practice small scale local mining. The wolfram is sold to businesspeople from Kabale who export it.

KAGUNGA TRADING CENTRE, NYARUHANGA PARISH, KABALE DISTRICT (1)

Kagunga trading centre is located south of BINP (high altitude) near the DTC project offices at Ikumba. The Kagunga community is situated within the Rubanda area south of the forest. The area has low lying hills and swampy valleys containing small streams. The trading centre is comprised of mud and wattle buildings that are well plastered with sand or sand and dung. Community members are primarily cultivators, local businesspeople, and traders. The majority of the members are residents of the trading centre and have their fields located nearby. Others go there for business purposes. There are three secondary schools, primary schools, a clinic which was reportedly ill equipped, three boreholes, and some protected springs. Community members mentioned the lack of boarding schools as affecting performance of schools in their area.

The major economic activities are cultivation, business, and trade. The most important crops grown are sorghum, irish potatoes, beans, maize, and peas. Irish potatoes are important for cash income, while sorghum is grown for subsistence and for making the local brew *omuramba.* People trade in produce commodities, including beans, irish potatoes, maize, and peas, selling primarily to traders from Kampala and Kabale. Consumer commodities are sold by local businesspeople. Tobacco was an important income earner in 1990 before the outbreak of the war in Rwanda, which was a major market for the crop. Another lucrative commodity in Kagunga is selling *omuramba.* Neighbouring villages also sell their surplus in the Kagunga market, which operates weekly. The few households with livestock have an average of 5-6 cows and 10 goats. The Ikumba DTC Project has created employment opportunities for people in Kagunga and surrounding villages where they are employed mostly as casual labourers.

KANYASHOGI, MPUNGU PARISH, RUKUNGIRI DISTRICT (7)

Kanyashogi is located in a high altitude area bordering the forest in the north. Kanyashogi community is situated where the forest forms a neck and includes the area where heavy encroachment of the forest had occurred. People moved into the Kanyashogi area mainly from the south of the forest, particularly from Rubanda. The area was reported to have been settled as early as the 1880s, but respondents did not know the origin of these first settlers. Areas such as Bukongwe near Lake Bunyonyi were cited as possible areas of origin of these first settlers. Later movements from Rubanda occurred in the 1960s and again as recently as 5 to 6 years ago. Some people have moved out of the area to Bunyoro, Zaire, and Toro in search of land or jobs. The parish has about 6,000 households with an average of 15 persons per household and many of the families are polygamous like their counterparts in the south.

Although people in this community have the same ethnicity as those south of the forest, they cultivate different crops due to the different agroecological zone in which they are living. The crops grown in Kanyashogi are bananas, tea, beans, sweet potatoes, millet, and cassava. Some coffee, maize, and peas also are grown. Bananas are important for food and beer brewing. Peas and beans are sold to traders from Kabale and other neighbouring small towns and centres. Produce for sale is carried on the head or bicycles to the markets.

Tea is the main cash crop, grown on a small-scale outgrower basis. The tea leaf is sold to the Kayonza Uganda Tea Growers Cooperative (UTGC) factory. Feeder roads to enable transportation of the tea leaf to the factory are in place. Tea growing had collapsed during the general countrywide economic decline, and community members were engaged in pitsawing. However, since the rehabilitation of tea production in the country and with the closure of the forest, people have focused more on tea growing and cultivation.

A limited number of households keep livestock. About 100 households own cattle with an average of 10-15 cows per household. Other livestock held include sheep, goats, pigs, and rabbits.

There is blacksmithing in the area. Tools that are made include big and small knives, single forked hoes, and other implements that are sold locally.

AHAKARERE-KANUNGU, MASYA PARISH, RUKUNGIRI DISTRICT (3)

This community is located north of the forest near the Kanungu Sub-district headquarters in the low altitude area. The community is well placed with the basic infrastructure such as roads, dispensary, and schools (primary, secondary, and technical) in place. Most settlers came from Kabale District and are of Bakiga origin.

The majority of the residents are cultivators with a few keeping cattle as well. People have consolidated landholdings unlike in the south where landholdings are fragmented. Due to the relatively recent settlement, land pressure and the subdivision of pieces are limited. Ahakarere community members also complained about Batwa who have been displaced from the forest as result of its new National Park status. They reported that the Batwa do not have land outside the forest and now depend on stealing food, goats, and chickens from the community.

It was reported that the poor households have about 3 acres, while the rich have as many as 20 acres, with an average of 6. Fields are near the homesteads, the furthest being no more than 1-2 miles away.

Ahakarere community is typical of other communities north of the forest with regard to crops grown. Long maturation crops like tea, coffee, and bananas are grown as important cash crops. Other crops grown are beans, groundnuts, maize, sweet potatoes, cassava, and millet. Tea is sold to Kayonza UTGC, while coffee is sold through a cooperative society.

In addition to cultivation, cattle are kept. Those who own cattle have relatively higher numbers as compared to those keeping cattle in the south, with herds in the community ranging from 5-30 cows.

Like other communities surrounding the forest, members of this community cut timber prior to the closure of the forest. When pitsawing stopped, some of the timber cutters went elsewhere. Others searched for jobs in Kampala, on sugar plantations, or settled down to cultivation.

AHAMAYANJA, BUJENGWE PARISH, RUKUNGIRI DISTRICT (5)

Ahamayanja community members are predominantly cultivators with a few livestock-keepers. Formerly they were also timber cutters. This community also is at the edge of the forest on its northwest corner. It is located at a much lower altitude in an area characterised by spear grass vegetation, which thrives at lower altitude with warm and humid weather.

Infrastructure present in the area includes a feeder road, two primary schools, Sub-county headquarters, agriculture staff quarters, a guest house, a dispensary, a protected spring, and two boreholes that have bad water.

The community was settled as early as the 1870s by people coming from as far as Rwanda. Later movements of Bakiga from Kabale District also occurred: in the 1950s, due to land shortages; and in the 1960s, through government resettlement programmes. The government also settled Rwandese refugees in the area in the early 1960s. There are also Banyabutumbi, who claim origin from that area and have their counterparts in neighbouring Zaire.

Land is held in consolidated pieces averaging 5 acres, though some people have 15-20 acres. Fields are near the homes, though respondents did not give an estimate of the distance. Respondents reported that some individuals in the area have titled land.

Crops grown are the same as those already mentioned in other communities located north of the forest. However, groundnuts do better in this location than in other northern locations visited because of the warm weather coupled with relatively high rainfall and sandy soils.

WOMEN AND RESOURCE USE ISSUES

The earlier RRA experience in Lake Mburo National Park had shown that women were absent from most of the interviews or their presence and participation was peripheral. Three women's groups were selected to be interviewed to ensure that women's resource use issues were also addressed and this earlier experience was not repeated. The three groups, Ikumba Women's Group (2), Masya Bwoma (4), and Nyakishojwa Women's Group (6) were selected by DTC project staff as the most appropriate to interview. Prior notice was given before each interview.

The Ikumba women's group is south of the forest at the same location as Kagunga trading centre. Group members come from various villages and communities surrounding Ikumba. Masya Bwoma women's group is north of the forest near Ahakarere-Kanungu location and like Ikumba, the Masya Bwoma women's group members come from different villages and communities of the area. Nyakishojwa women's group is also north of the forest near the Zaire boarder.

The women gave similar responses to those of the general groups, especially to questions concerning community characteristics, infrastructure, and economic activities, but emphasised issues peculiar to them especially on things such as land tenure, trees, water, and agriculture.

LAND TENURE

Women were aware of the various types of land tenure operating in their area. The women at Ikumba said that people (boys) get land through inheritance from parents, and by purchasing, renting, or borrowing it. Group societies and some individuals at Ikumba were given swamp land by the government. Women at this location mentioned that people also borrow land freely from other people or rent it. They expressed concern about how men sell off land and leave nothing for their sons to inherit.

Responses to landownership and inheritance by women were the same in all three groups. Women do not own land nor, in general, can they inherit it. Women have access to land through their husbands and only in exceptional cases do women inherit land. Widows and divorced women can be given land by their brothers or their fathers. Women who stay unmarried can also be given land by their brothers or their fathers. If she ever marries, however, the land is returned to the family. Women staying with their husbands are not expected even to own the land that they have purchased. If a wife purchases land, the land then belongs to the husband and the signatory to the title or any other form of receipt indicates that the land is his. The group at Ikumba said that the fact that the man signs for the land bought by his wife gives him power to distribute it to another woman in case of a polygamous household. However, the women at Ikumba quickly added that now women may use their thumb prints or sign as the sole owner of the purchased land.

The women in Ikumba cited lack of the landownership as a major hindrance to planting trees as a women's group. The lack of exclusive control over land limits women to engage

primarily in annual crop cultivation. While a limited number of long maturation crops are possible in the Ikumba area, even as a women's group they cannot cultivate them.

TREES

Women mentioned the common uses of trees—fuelwood, building material, furniture, and food—although it would have been expected of them to mention specific uses, such as medicinal purposes and crafts. At Ikumba, trees are cut from individual woodlots or bought from other community members. The majority of the people have their own woodlots, although they are small and insufficient. In Masya, people used to get trees from the forest for firewood, building poles, furniture, and timber. Masya women's group members reported that community members did little to plant trees because trees from the forest were always accessible. When the forest was closed, whoever had trees became "rich" because they were then able to sell their trees expensively.

In all the women's groups, it was mentioned that trees are usually planted by men. While women also plant trees, they do not own the trees they plant nor can they harvest them without the consent of the husband. However, in Masya, while it was earlier identified as men's work, women now also plant trees because the men have been sensitised and educated about benefits of trees.

According to the male respondents, women can use the trees planted on the household's land for firewood but cannot sell them. "If a woman sells a tree without the husband's consent, then she may even sell the land." Men's control of trees, even those that are planted by women, ensures that women are not able to have eventual claim of ownership of land through tree tenure rights. Therefore, if land and trees remain resources exclusively controlled by men, the application and effectiveness of whatever resource conservation knowledge and skills women may possess will be largely limited by their lack of control over these land and trees resources.

ECONOMIC ACTIVITIES AND AGRICULTURE

The main economic activities in which women are involved are cultivation, marketing agricultural produce, and craft work.

In the north, growing annual crops such as sweet potatoes, beans, groundnuts, millet, and some sorghum is the responsibility of women, while the perennial crops such as coffee, tea, and bananas are responsibility of men. Other crops grown by women are onions, cassava, maize, and yams. In the south, the major crops grown are peas, sorghum, irish potatoes, beans, and sweet potatoes (mainly for subsistence).

Responses from the Ikumba women's group indicated that women sell sorghum, beans, irish potatoes, and peas. Sorghum is sold because women can afford to maintain their families without it. They also use sorghum to brew beer, which they sell to bar owners in Kagunga trading centre and other centres in their area. However, they pointed out that sweet potatoes are an important subsistence crop and therefore are not sold. Women in Masya sell groundnuts, beans, fruits, tomatoes, and sorghum. Groundnuts bring in the most cash. Masya

women also sell secondhand clothes. However, women cannot sell livestock without the consent of the husband.

Women's responses, as well as those of the general locations, indicated the growing of different crops on different pieces of land due to land fragmentation or different ecological niches. However, in the south, both reasons were given for growing different crops on different pieces. At Masya, women said they grow crops on different pieces mainly because of a difference in soils. For example, groundnuts grow well on lower slopes, while millet does well on higher slopes.

In all three women's group locations, the declining land fertility as a result of over use was cited as a major hindrance to increased production. Soil erosion and insufficient bunds on the hillsides were also cited as major causes of loss of soil fertility. High rainfall destroying bunds and ploughing without bunds were mentioned as major causes of soil erosion. Women in Ikumba are pained by the loss of soil. Sometimes there are quarrels about the bunds being destroyed by neighbours. This is solved by cutting small channels so that the soil is washed into one's field. During cultivation, small strips of grass are left to hold the soil. Other measures against soil erosion in the north require leaving grass patches on the contours. In the south, where bunds sometimes act as boundaries, when the bund becomes high it is destroyed and the soil shared among the two plots and a new bund is put in its place. Traditionally, when land was plentiful people could afford to fallow for longer periods and soil erosion was controlled by fallowing.

WOMEN'S PROBLEMS

In all locations, the lack of hoes was cited by women as a major problem hindering their agricultural production. Hoes were reported to be expensive and unavailable. Women suggested that hoes should be brought nearer to them instead of stocking them in towns like Kabale or Rukungiri.

The lack of a grinding mills for maize milling was another concern for women both in Ikumba and Masya Bwoma. The maize is attacked by pests, bringing about considerable loss to the women in terms of cash income and feeding their families. Food shortages were another concern for women. However, women in Ikumba added that food shortages were seasonal, especially March to May, when much of the grain has been used for seed.

Women also mentioned how men leave maintenance of the families to the women alone and spend most of their time drinking, though a few of the men help women.

CONSERVATION AREA AND WOMEN

As with the responses from the general locations, the women said they did not know why the National Park was created. They were told that animals and plants should remain so that they can be used by future generations. However, they were concerned that government creates conservation areas but the people do not know what goes on there. The Ikumba women think the forest was put aside to protect animals (gorillas) and improve the climate, because if the forest was removed the rain would fail and there would be too much sunshine. One woman at

Ikumba pointed out that originally there were many forests but now she realises there is only one remaining, which she said improves the climate.

Although women had negative responses to the conservation area as a National Park, they expressed a reasonable degree of appreciation for the presence of the forest. They appreciated its value in terms of its effect on the climate, particularly that it brings rain and reduces the sunshine. Some linkages from the National Park to the economies surrounding the park were cited by women, for example that people who will come to see the forest may buy their produce.

The loss of forest products like timber and craft materials was also a major complaint of women respondents. Firewood products and medicinal herbs were cited by all of the women's groups as a major loss resulting from the closure of the forest. Women who have household woodlots were now collecting firewood from them. Those who do not have woodlots collect from fallow area or woodlots belonging to others. Crafts, especially baskets, trays, and woven granaries, which are important for domestic use and for storage, are scarce and hard to procure. Nyakibazi, a local herb administered against worms in children, was reported to only thrive in the forest and the forest's closure has meant that they are left with only the modern drugs, which are expensive, as an option to treat their children.

Other complaints against the conservation area were crop raids by elephants (on peas), baboons, and monkeys. The Ikumba women were worried that people near the forest will be made to leave and that new and dangerous species were to be introduced into the forest.

GENERAL DISCUSSION

INTRODUCTION

The following presents a summary of the information gathered during the group discussions held at each of the sites reported above. These reflect objectives of the RRA laid out earlier: settlement, land tenure, agriculture, economic activities, resource utilisation, soil erosion, perceptions and attitudes toward the conservation area, and general developmental problems.

SETTLEMENT

The area around Bwindi Forest was settled primarily during the latter part of the last century and the beginning of this century. People moved into the area from the south, coming from the Kabale and Kisoro areas or further south from Rwanda and west from Zaire. This movement was reportedly caused by land shortage, famine, and tribal wars in the originating areas. Settlement occurred in this area because of available and fertile land.

Further movement into the area occurred in the early 1950s either voluntarily or, on the northern side of the forest, through government sponsored programmes to relieve land pressure in Kabale and Kisoro Districts. The Nteko community also reported movement at that time, resulting from tribal conflicts in Rwanda.

All locations reported movement out of the area to Bushenyi, Toro, Bunyoro, and Ankole. This continuing northerly movement occurred from the southern interview sites in the 1950s and from the northern sites in the 1960s and 1970s. This movement was a result of forced relocation (government resettlement schemes), a search for additional land, and for jobs.

Interestingly, almost all locations indicated that there is little population movement at this time. While the land pressure is still there, if not more acute than before, people who said there was outward movement in their area indicated an inability to move because of a lack of money: "The rich go, the poor cannot." People also indicated a reluctance to move, citing the experience of neighbours who moved and lost family members in the new location and later returned.

LAND TENURE

Land is generally held under customary tenure arrangements throughout the project area. Landholdings have been acquired mainly through inheritance, though each location reported some acquisition of land through purchase from neighbours, renting or borrowing from neighbours, and, in Ikumba and Nyakishojwa, reportedly given to people by the government. Titled land was reported at Kanungu and Ahamayanja. In the 1960s, the people of the village of Ahamayanja organised themselves and, working with the government, hired a team of surveyors to survey their land and issue titles to that land. Some members of that village spoke of wanting to have more land surveyed, but that the cost of surveyors was too high. Others in the village indicated that traditional boundary markers were adequate, given that titles were a mechanism for the government to cheat landholders.

All villages reported their land tenure system to be similar to that of the neighbouring villages.

The reported landholdings vary considerably between locations, both in terms of the size of holdings as well as in the number of pieces constituting a given holding. Two locations reported some people as having no land (Kagunga and Ikumba). At the same time, some people at Ikumba have 15-20 plots and at Nyamabare some people were reported to have 50 or more. Other locations said that people had one consolidated piece of land. Thus it becomes important to also look at the size of the plots being reported; one large plot may be greater than many small plots. Plot sizes varied from 2-5 per football pitch for the multiple plot holdings to 4-5 acres for the consolidated holdings.

Table 1: Landholdings by Location

	Location									
Landholdings	1	2	3	4	5	6	7	8	9	10
Ave. no. of pieces	3-4 (10)	(15-20)	6	2 (10)	1	1	5	20	-	20+ (50-100)
Ave. piece size (acres)	< .25	.3	-	.5	5	4	.5	.5	5	.2
Ave. total holding (acres)	.6 -1	< 7	3 < (20)	1	5	4	2.5	10	-	4

(Note: Numbers in parentheses denote the maximum number of pieces or total holdings cited by respondents.)

It would appear that the fragmentation of landholdings could be of concern here. However, people at all locations indicated that different crops were grown on different pieces of land; maize, ground nuts, and sorghum on the low slopes and beans, peas, and potatoes on the high slopes or near the forest. In part, this decision was based on the different soils at these locations. Others indicated that the fragmentation itself caused people to plant different crops at different locations. Further research should be undertaken to determine if people make conscientious efforts to obtain pieces of land in different ecological niches. If that is the case, arguments favouring land consolidation exercises will need to be reviewed.

Given that there appears to be a shortage of land, people were questioned on their willingness to go elsewhere for land and the distances they were willing to go. In general, people were willing to move for land within reason. People would be more willing to move to a new area if other family members already had moved there. Concern also was raised about people who had moved in the past and had people die at the new location due to diseases not prevalent in Kigezi (e.g., malaria). In most cases, people were willing to move .5-3 miles away, but longer distances were not commonly expressed.

Land belonging to the community was reported to no longer exist with the exception of land for government buildings and institutions or small amounts of grazing land at Kagunga and Ikumba. Such community land existed in the past but had been lost, primarily having been taken by new settlers coming into the area. Both Rushaga and Nyamabare saw the forest as having been communal land which has now been lost to them.

A mixture of responses were given to the question of women's ownership of land. While in some locations it was indicated that women could own land, it appeared that this was in exceptional circumstances; e.g., unmarried women (who stay unmarried, Masya) or widows. Women do not inherit land; they are expected to gain access to land through their husbands. If they purchase land the land then belongs to the men.

INFRASTRUCTURE

The basic infrastructure is in place in most of the communities: road, clinic/dispensary, schools, and boreholes or protected springs. Universally, however, the communities raised problems of the adequacy of these resources. Roads are in a state of disrepair leading to problems of access to markets for agricultural produce, access to clinics and dispensaries, and transportation in general. Clinics are understaffed (lack of midwives was often cited) and have a poor supply of drugs. Malaria is a problem in the area. Only four of the villages indicated having boreholes, the rest rely on protected springs or a river for water. These water supplies are not adequate. Lack of hoes or the unavailability of hoes locally appeared to be a constraint to agricultural activities. In those communities near the forest, lack of access to forest products, timber and, more importantly, medicinal plants, was of great concern. The infrastructure is generally better in the north because of the tea industry.

ECONOMIC ACTIVITIES

Agriculture is the main economic activity of the area: the sale of crops is the main source of income. The types of crops grown and sold vary with the location. Food crops such as sorghum and bananas were most commonly cited, with some locations also indicating sales of ground nuts, beans, and some maize. Bananas were sold both as a food crop as well as brewed into beer for local sale. In some areas, coffee, tea, and tobacco had been grown as cash crops, though with the recent low prices little of these products has been grown. The lack of markets and market infrastructure reportedly are major handicaps to the growing of cash crops.

As expected, cultivation is seen to be the most common occupation in the area. The rehabilitation of the tea industry north of the forest however, has meant that tea is increasingly seen as a possible cash crop. People are involved in a number of additional activities that supplement agricultural production. These include handicrafts, work for the DTC project, bee keeping, livestock rearing, and local employment as labourers on others' farms as well as road maintenance.

The changing status of the forest has had a major impact on the economic activities of the villages visited. It has meant the discontinuation of pitsawing activities and therefore had a significant impact on those directly involved in the timber industry, who have stopped working if they had not been able to find work in other forests. Bunyoro, Buganda, and

Bushenyi were reported areas where pitsawers had been able to find employment opportunities. Others had gone to the tea or sugar estates. Kampala was also reported as a location where people had gone to find work. The changed status of the forest also meant restrictions on access to handicraft materials. Others cited the loss of markets for locally grown produce to people involved in the timber industry.

One would expect that those who have gone outside of the area for employment would remit at least some of their earnings to support the family; however, it was generally reported that remittances were little if any at all. The lack of remittances was primarily attributed to low salary levels.

Small business enterprises existed in all of the areas; however, these were principally small shops with very limited stock, beer brewing operations, some trading in clothing, and some trading in agricultural produce. In all cases, these activities were run by local businesspeople rather than outsiders. The lack of roads was cited at Ahamayanja and Rushaga as a constraint to the development of more local businesses.

RESOURCE UTILISATION

When asked, respondents at each site were able to identify a number of natural resources they utilised, including timber and other wood products, medicinal herbs, water, clay for brick making, and stones for building materials. While many of these resources were in the national park and hence no longer available, others existed outside of the park. Outsiders had come in the past for the minerals found in the forest: gold, wolfram, iron, and bismuth, in addition to the above natural resources. However, presently people feel that the poor roads prevent outsiders from coming for these resources, which consequently has had an impact on the local economies.

People had mixed responses when asked of the benefits derived from these resources. Some indicated positive benefits in the utilisation of clay for pots, stoves, and brickmaking for buildings. Others were concerned by the loss of access to resources, principally gold, which had brought in a significant amount of income. While the bulk of the potential benefits from these resources would go to the local people, there seemed to be an inability to utilise the resources: "We would make bricks, but we have no implements"; or, "No one comes for building materials."

AGRICULTURE

It was stated at all locations that the availability and quality of land had changed in recent years. Increasing population pressure has meant that less land is available and of the land held the smaller landholdings have resulted in the decline or elimination of fallow periods. This has subsequently had an impact on the fertility of the soil. Natural manure does not appear to be utilised.

A wide variety of crops are grown reflecting the different ecological niches of rainfall and elevation in the areas surrounding the forest. Peas, beans, irish potatoes, sweet potatoes, bananas, and sorghum were most commonly cited with others indicating maize, millet,

vegetables, wheat, coffee, and tea. The former were generally offered for sale in addition to the cash crops of coffee and tea. Bananas were reported to bring in the most income, perhaps because of the forms in which they could be sold: fresh or for beer brewing.

Crops were sold predominantly in local markets. The weekly markets in the district offer some sales opportunities. Depending on the location produce is also transported to the nearest major trading centre: Kabale was often cited in the south, Rukungiri in the north.

LIVESTOCK

Although the Kabale area is generally thought to have little livestock, all locations visited reported the existence of some livestock. The mix of animals at all locations included cattle, sheep, goats, and chickens. Pigs were reported in the north. While cattle were generally reported to be the most important livestock, often because of the need for bride price payments, very few houses at each location were reported to have cattle, for example, only 40 out of 900 households at Ikumba. Of those people holding cattle, the average herd was reported to be relatively small, 3-5 head of cattle per household.

In general, community grazing land appears to be very limited or nonexistent. At most locations, people graze their animals on their own land. At Masya, Ahamayanja, and Kanyashogi some people have begun to fence their holdings to ensure grazing, and at Nteko it was reported that some individuals have planted pasture in Rubugiri. At other locations, people graze their animals wherever they can find space, including on plots following the harvest of crops. If individuals have fenced their land they manage it accordingly. Grazing fees have to be paid for grazing on communal land at Kagunga\Ikumba. Here it was reported that elders traditionally had been responsible for the grazing land; at other locations grazing land had always been thought of as a free good with no one responsible for it.

As would be expected the quality and availability of grazing land was reported to have declined over time at most of the locations visited. This was attributed to the increasing amounts of land converted for cultivation and in the decline or elimination of fallow periods. However, at Kanungu and Masya it was reported that the quality of grazing had improved on the land that had been fenced (while unfenced land continued to decline).

Livestock are sold at all locations. The payment of school fees was most often cited as the reason for selling cattle. Payment of taxes, bride price, medicine, and clothing were also cited. Sales are made locally: slaughter stock to butchers or young stock to others who will rear them. In the south, cattle had been sold to Rwanda, and the closure of that market has had a significant affect on the prices received for sale, with prices reportedly falling by over 50%. Prices in the north are fairly regular throughout, ranging from 30,000 to 80,000 per cow. Very little milk is produced and consequently very little is sold. The bulk of milk produced is consumed or made into ghee.

Crop damage disputes were reported in all of the areas visited. In general, these are resolved by the people themselves or handled by the RCs. In a number of cases, fines were reportedly levied; however, people indicated that such fines were often not paid.

TREES

Bwindi Impenetrable Forest had in the past been the major source of trees for people in the area. Since the closure of the forest people have had to rely on alternative sources of wood. Community woodlots as such have not existed, so people have had to rely on wood from remnant forests or trees that exist on the land of individuals. People have begun planting their own woodlots, but it will be some time before these trees are mature.

A wide variety of trees were reported to be used. Eucalyptus, black wattle, and cypress were most often cited and used principally for building materials and for fuelwood for cooking. Sales of wood products were reported in each location. These products included charcoal for local sales and timber as far away as Kampala. Others indicated sales of furniture, wooden utensils, and hoe handles.

The respondents had very strong feelings about the ownership of trees. Those trees found in the forest belonged to the government, but outside of the forest one "cannot find a tree belonging to no one." Woodlots belong to individuals. Trees found on the land belong to the person owning the land. This is particularly the case when the individual planted the tree. Though at Kanyashogi and Nteko people admitted that one had to get a felling permit to cut certain species of trees that were found on an individual's land. This, however, was less of a problem than getting a license to cut timber on government land.

As mentioned earlier people are beginning to plant trees, "even those with small plots." The people have accepted that they will no longer be able to get trees from the forest and therefore have to grow their own. One has the impression that tree planting has begun in earnest to ensure that there are wood products available in the future. People reported that they are planting trees where they are not cultivating, on the steeper slopes, and on less fertile ground. Ahamayanja even reported some tree planting taking place at the parish headquarters.

However, there appears to be confusion over who has the right to harvest the trees. Some indicated that whoever planted the trees has the right to harvest them. Others indicated that there still was a need to get a felling permit. Still others indicated that the government had told them that they couldn't cut the trees, even those they had planted long ago.

Each location indicated that women could plant trees. Planting trees used to be considered to be men's work, but now women are permitted to plant. However, it was generally required that the husband give permission to plant the trees. When the tree is harvested it is generally only with the husband's consent, particularly if the wood is going to be sold. If it is cut for home use, the husband's permission may not be needed. The only exception to these rules appears to be when the woman owns the land herself. As indicated above, this appears to be rare.

FISH

At the time of the design of the research activity, DTC had already incorporated fish ponds into their extension package, but with limited success. A series of questions related to fish

were included in the RRA interviews to solicit information on people's use of fish to aid in the review of this activity.

It was apparent during the interviews that fishing and fish consumption were limited. Only three locations indicated any fishing at all and that was only by small boys catching mud fish in the swamps. Others indicated that they did not eat fish, or if they did, they bought the fish in the market. The women at Masya indicated that they had fish ponds in the past, but they were seen as breeding grounds for mosquitoes, so they were closed.

SWAMPS

While swamps appear to be a common feature of the landscape around Bwindi Forest, six of the locations interviewed indicated that swamps did not presently exist in their areas (One location said that some of the swamps that had existed had been drained by cooperative societies and the land distributed among the members.) The four locations that had swamps in their areas indicated that they were generally small patches, often on the land of individuals or belonging to societies. Where this was the case, ownership and control of the swamps was in the hands of the individual or society. Where swamps were on nonindividualized land they were seen to belong to the government.

While in the past the government had encouraged people to drain the swamps, at present the government has stopped this practice. The swamps that had not been drained had not been managed in the past either. Those swamps on individual land at Rushaga were reportedly well managed. Swamp sizes were reported to have declined in recent past. This is obviously related to the drainage programs. However, people also indicated that the fertility of the swamps has also declined and less water is carried by them than in the past.

A number of products come from the swamps. Thatching grass was most often cited. Grass for making mats, fibres for making mats and ropes, and clay for making pots were also obtained from the swamps. Where thatching materials were not available from swamps, people had to rely on spear grass, banana fibres, or sorghum stalks.

WATER

The principal source of water varies at each location. Two of the groups indicated that they had borehole water. (These, however, were at the same location.) Five of the other locations indicated that had they had protected springs and an additional site had begun a protected springs programme. The other locations relied on unprotected springs and streams and rivers in the valleys. At all locations, while people felt blessed with water resources, they often indicated that their water sources were limited or in some cases not clean. Where springs do exist mechanisms have been put in place to provide some level of protection for them. These include fencing, assigning people to look after them, and protection with stones.

Only two locations indicated that the availability of water had changed over time. These changes were attributed to the draining of swamps and clearing of land. However, the sources of water people use have changed. Where people had previously relied on surface water such as the swamps and streams, a greater reliance on springs (protected or not) and boreholes is

presently the case. Seasonal fluctuations in water supplies were noted at most locations; i.e., less water in the dry season, but they did not indicate an overall trend of less water over time.

Water conservation did not seem to be a high priority as the timing of the most critical needs for water during the cropping season corresponds to the wet season. Harvesting occurs at the end of the wet season. Some limited attempts were made to conserve water. These included mulching and digging in weeds to retain soil moisture, as well as digging pits to collect water, particularly in the dry season.

The watering of livestock is of concern for the management of protected springs. At most locations we were told that livestock are generally watered at streams in the valleys bottoms, in some locations at specific spots on these streams. At Nyakishojwa and Kanyashogi, troughs for the salting of livestock were provided by the wealthy cattle holders for their cattle or at the community watering points in the stream valley. At other locations, no specific place is designated for the watering of livestock.

SOIL EROSION

All locations except Nyamabare indicated the existence of soil erosion in their areas. As expected the erosion is caused by steep hills and heavy rains. However, these natural conditions are exacerbated by cultivation on steeper slopes, shorter, or nonexistent, fallow periods, and fewer bunds. Attempts apparently are being made to repair bunds and plant elephant grass or trees to hold the soil. However, there is concern about the planting of elephant grass as it is seen as a harbour for rodents. At the same time, planting the wrong species of trees is seen to be detrimental to the cropping pattern given the amount of water the trees may be drawing from the soil. Soil erosion was reportedly of less concern in the past as people had more land and hence more flexibility for fallow periods and crop rotation. Also at that time bylaws concerning bunds were enforced by chiefs and agricultural officers. This is not the case at present.

CONSERVATION AREA

A series of questions were asked in order to gain insight into perceptions people had concerning conservation areas in general. Most people understood that these area are created by the government for the protection of plants and animals. They had a number of ideas why BINP was created: to protect gorillas, for tourism, for climate, for revenue, etc. However, how the government arrived at these decisions was not clear to the people in the area.

There is, however, little understanding of what is happening in the park. People have been told that the animals and trees are being protected. While people used to go into the forest to get timber, handicraft materials, and medicines, this access to the forest had been regulated through licensing for timber products and mining. Other activities had been unregulated. Since they are no longer permitted to enter the forest they feel they do not know what may be taking place inside: "The *mzungus* prefer a gorilla to a human being. Long ago we looked after these gorilla. Now why are they being more protected? Now there is a problem between us and the gorillas." "We were in harmony with animals when it was a forest reserve and we got

products. Now we are not allowed to go there." "You people think we are animals and one elephant or a gorilla is more valuable than 200 people."

A number of problems exist with the conservation area, some historic and others as a result of its change in status. Crop damage by wild animals appears to have a serious impact on people in the area. Reports of elephants, baboons, monkeys, pigs, and gorillas raiding crops were given at seven of the locations visited. While people had been told that they should apply for compensation, this was not forthcoming. The limitations on access to the forest means that people can no longer chase the animals far into the forest in an effort to control crop raiding.

The changed status of the forest also has meant that people no longer have access to forest resources, such as firewood, medicinal plants, honey, timber, etc. At two locations respondents raised their concern of the Batwa who had lived in the forest and were still dependent on it but were now forced out of the forest onto their land.

People saw little benefits coming from the forest. The benefits of the forest to people had predominantly been that of access to its resources. ("We hate the park because we get nothing.") Now that the forest's status had changed, these benefits no longer flow directly to the community. When people were asked of the benefits they would like to see coming from the forest their responses initially reflected those of the lost benefits. However, at some locations people looked at additional benefits which may be derived from the park, such as getting people involved in the tourist industry associated with the park, employment opportunities with the research institute, and road repairs.

It would appear that at the time of the RRA exercise people felt that there had been very little consultation with them concerning the changed status of the forest. ("When you mention the National Park it makes us want to vomit.") Most locations had reported that no one had come to visit them and discussed the planned changes. Others indicated that the visits which had occurred had been one of telling people the new rules, rather than any attempts at consultation with the villagers. ("We are bored with empty promises.")

DEVELOPMENT PROBLEMS

General questions were also asked at each location of what villagers thought that they could do to improve their situation and what they thought that the government could do to assist their community. The majority of locations saw a benefit from joint activities: "We need to form societies"; "Groups are better able to combine resources for development"; "We need joint effort to build schools, roads, etc." Individual responses also included building fish ponds, beekeeping, private woodlots, etc.

However, a large list of things which the government could do to help was readily forthcoming at each location. Constraints with agriculture was most commonly cited. The need for markets for agricultural produce, better prices for commodities, subsidies for inputs and implements, better roads for moving produce to market, improved seed varieties, control of crop raiding animals, and grinding mills were common responses. The need for assistance in providing social services, such as schools, clinics, hospitals, and banks was also expressed.

While people also indicated a desire for returned access to forest resources, there was a request for assistance in planting trees in their own woodlots in the form of seedlings and new tree species. Assistance with general economic development in the region such as factories and more shops was also mentioned.

CONCLUSIONS

The RRA results indicate that there are great variations between the southern and northern regions of the forest area. This is particularly true for issues concerning the organisation and size of landholdings, cropping systems, and population densities. These variations can be attributed to ecological and climatic differences, the trend of settlements, and a considerable degree of cultural and traditional change.

Landholdings are fragmented and held in multiple pieces in the south while the north has more consolidated landholdings. The reported landholdings and plots also vary considerably within the locations. Some locations in the south reported a minimum of 2-3 plots and a maximum of 15-20 plots or even 100 plots, with total landholdings ranging from less than 1 acre to 10 acres. In the north, the number of plots ranged from 1 to 2 with a maximum of 10 plots and landholdings ranging from 1-20 acres. Although, it was expected that people from the south would report smaller landholdings, the results of the RRA indicated that they have more land in the south than always portrayed, if one takes into account the number of plots that were given as owned by individuals. However, care should be taken while looking at the size of these individual plots, because many plots put together may still be smaller than one big consolidated piece. This still leaves the individual in the south with less land than a counterpart in the north. The reverse also is true, one consolidated landholding could be smaller than many pieces put together; therefore, arguments about land availability and shortage in this area should be critically analysed. The causes of land fragmentation in this area should not be exclusively attributed to inheritance practices. Other reasons, such as economic problems should be investigated as it is common practice for people in the area to subdivide their land for sale, particularly to deal with such expenses as hospital bills and school fees. that are beyond the individual's earning capacity.

The economy around Bwindi Forest is predominantly agricultural. Cash incomes are based on crop sales as a result of surplus production or as cash crops such as tea and coffee. Some of the traditional food crops such as irish potatoes, beans, and peas have become important both for food and for cash. The area south of the forest (Rubanda) produces a major supply of these crops for the urban areas of Kampala and Kabale. Crops grown around the forests are distinctly varied. Seasonal crops are commonly grown in the south while the north grows both perennial and seasonal crops. The variations in crops is mainly because of variations in altitude with the south generally above 1,800m and the north below 1,800m. The variation in altitude means different ecologies for different crops. Land fragmentation and different ecological niches greatly influence farmers' decisions on what crops to grow on different plots.

Therefore, projects such as DTC that are already in the area or those that intend to work with the local communities need to understand these variations and their causes in order to adopt feasible and appropriate agriculture development projects for each community. This will greatly improve people's appreciation of NGOs' developmental work in the area. Some arguments for crop variations could be because of trends of settlements between south and north. The respondents often cited the south-north movements of people and later settlement of people in which case the north may not have been settled long enough to have land

subdivisions resulting from bequests of land from generation to generation. Less subdivided land gives people in the north room to afford to tie up land in perennial crops. However, this needs further investigation, because crops such as tea were reported at one location in the south where it earlier had been abandoned due to the lack of a market. Therefore, some crops such as tea in the north could be partly due to government policy introducing the crop and establishing a tea factory and the needed feeder roads network.

Although the economy around Bwindi Forest is predominantly dependent on cultivation at present, other economic activities formerly also depended on either directly collected or indirectly obtained forest products. These products were used in day to day life for incomes, farming, and domestic use. There was concern over the lack of alternative sources of these forest products, and this was an important factor influencing the attitudes in the communities around the forest toward the park.

Because of the rich flora and fauna, the forest offered a variety of products to the people. The abrupt cessation of access to these resources greatly affected the livelihood of the communities. They have now been divorced from the forest benefits and yet exposed to problems from the forest, particularly crop damage by wildlife. Therefore, in order for the park to gain the support of the local people, as many renewable resources as possible should be allowed to be collected from the forest. There should be a balance between conservation and protection, and control of access to the resources. This could be ensured through careful monitoring if utilisation is allowed in multiple use zones, with licenses issued and enforcement of park laws implemented.

A common concern of the farmers, especially those living at the forest boundary or those residing at some distance from the forest boundary but having fields next to the boundary, was crop damage by wildlife, especially baboons, monkeys, bush pigs, and elephants. The local community perceive wildlife as unproductive and destructive. This is true if analysed in terms of past benefits from the forest, as well as present and expected future benefits. The past benefits that were accrued freely were stopped while present and future benefits from the park (tourism revenue) are unrealised. Therefore, people cannot appreciate the forest in its present status as a park. Their interest in conserving the forest lies in getting direct benefits (forest products) but not the idea of resource conservation. Anything that the park could do to solve the wildlife damage problem would greatly improve relations between the people and the park. This is very important because the very people whose support is needed are the very people who are negatively affected by the park.

Conservation education, other extension work, and communication between the park and the people is much needed in order to minimise negative attitudes and misconceptions about the park. Conservation education programmes by DTC that aim at the "elite" members of the local community should also be extended to the illiterate, elderly, and less educated community members. This would ensure that a larger percentage of the population will be aware of conservation issues. Many times park authorities have emphasised law enforcement activities while neglecting public relations with the local people. This has only helped to create an image of park officials as authoritarian figures. It is, therefore, critical that park

management authorities should apportion their time toward educational programmes about the benefits and values of Uganda's National Parks. They should also be able to interact with local people and talk with them about their problems, concerns, and perceptions of the park. Such dialogue between the park and the people of the surrounding communities would benefit both parties. This also would help to eliminate the erroneous beliefs the communities have about BINP; i.e., that the white man owns the forest, that dangerous wild animals will be introduced into the park, that people living near the park will be made to leave, and that government will take over land where people plant trees. If such misconceptions are not cleared up, some developmental projects may fail to effectively take off, as has been experienced by DTC over tree planting issues associated with agroforestry and woodlots.

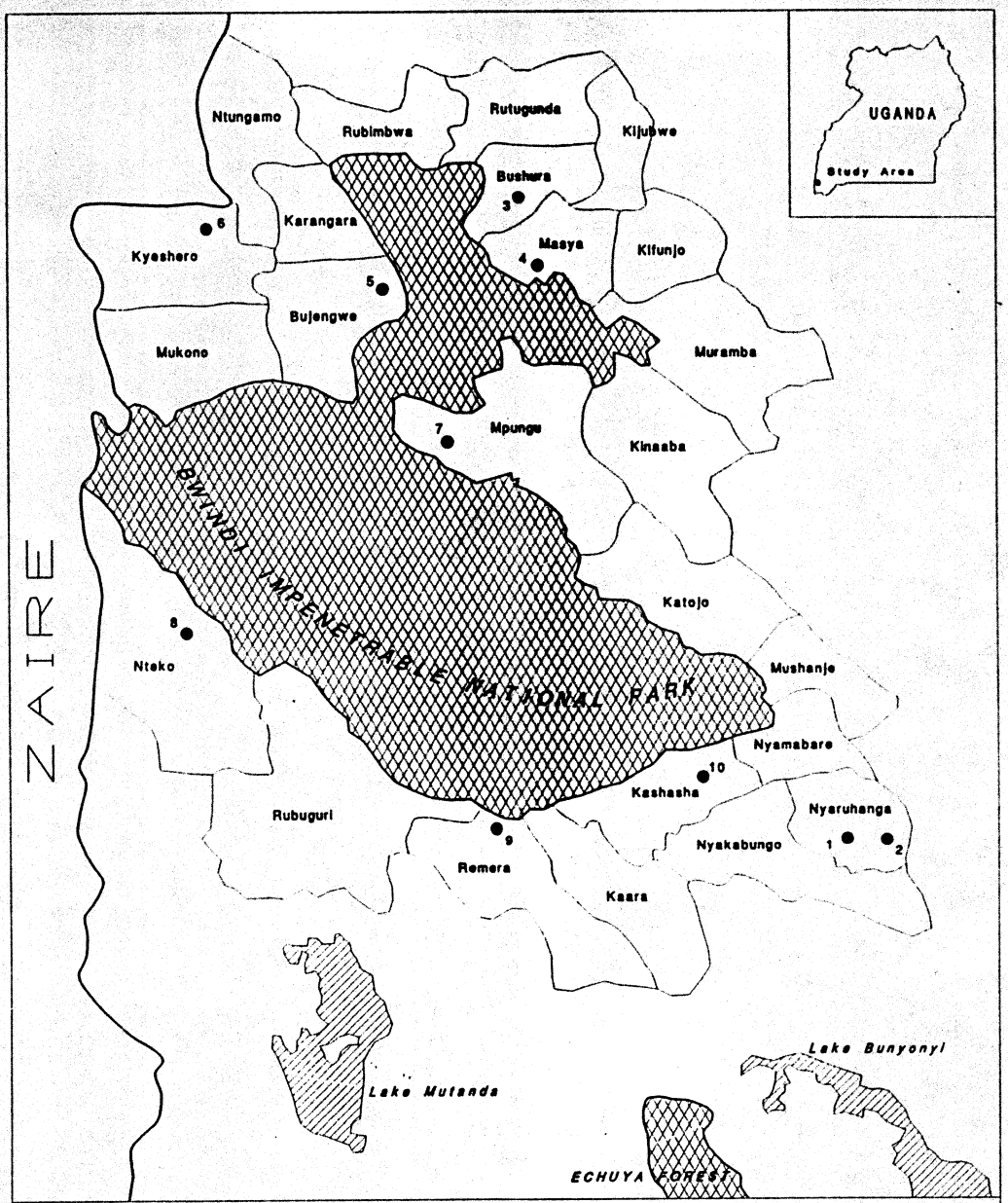
Soil conservation is another issue that should be taken seriously by developmental organisations seeking to conserve the forest by supporting communities' developmental projects. Although soil conservation, especially the control of soil erosion through bunding, is a longtime phenomenon in the area, it seems the practice has not taken firm root. The RRA results showed that concepts about use of bunds on hillsides were variable. Through interviews and by observation it was found that bunds were being used to control soil erosion; however, responses at various locations indicated that bunds were not viewed favourably. The northern locations complained about bunds being a major harbour for rodents which cause substantial crop loss, while the southern communities could not afford to have narrow plots by putting more than one bund on the same plot and thus reducing the area available for cultivation. Given the elevation of the forest area and hills being cultivated almost to their tops, this has a serious implication for land degradation in the area. The lack of bunds and fallowing on the hills plus limited tree cover would mean serious soil erosion on the hills and siltation of rivers and lakes in the lower areas, decreased soil production, increased land degradation, and subsequently increased pressure on the forest for cultivable land. Therefore, other soil conservation measures have to be developed to supplement the bunds otherwise the lack of proper conservation tools may have long-term repercussions on what may have been achieved towards conserving the forest.

Although there are considerable efforts to control bush burning both by DTC and the local authorities, there is some degree of bush burning, especially when opening up land for crops such as millet. Such fires have sometimes spread to the forest, leading to extensive damage.

Presently, development and conservation projects around Bwindi Forest, whether government or NGO sponsored, have been limited to protecting springs, bore-holes, agroforestry, increased crop production, crop management, woodlots, and supplements for proteins. Although people felt that these projects were beneficial, the local communities seemed to have identified their priority problems which developmental projects must address. One example of such priority was hoes. The women groups emphasised this as a major problem, hindering their agricultural activities, and they requested that hoes should be subsidised or brought nearer to the people. If developmental projects incorporated the distribution of hoes into their programmes or sold them at subsidised prices, it would help serve individual household needs and would be welcomed by all communities.

Problems of the local communities are geared toward immediate need, such as marketing opportunities, roads (communications) and accessibility, education facilities, health facilities, and the provision of clean water. These were some of the locally identified priorities that the communities perceive as solving their problems, if addressed. The longterm natural resource conservation activities did not seem to be favourably viewed, though these can reduce pressure on the forest and at the same time improve people's lives. Therefore, any organisation's activities geared to providing clinics and dispensaries, rehabilitating the existing road network to improve marketing opportunities, subsidising education and improving water supplies would favourably influence people's attitudes towards the park, and perhaps would change their behaviour towards the park. However, long-term natural resource conservation projects will succeed only after increased awareness and sensitisation, allowing the people of the area to realise the need for conservation. Projects can then identify the needs of the people and the methods that would help solve the natural resource problems.

RRA SITES AROUND BWINDI IMPENETRABLE NATIONAL PARK



International Boundary — Protected Area

Parish Boundary — RRA Site

1 Kagunga, 2 Ikumba Women's Group, 3 Ahakarere-Kanungu
4 Masya-Bwoma Women's Group, 5 Ahamayanja, 6 Nyakishojwa Women's Group
7 Kanyashogi, 8 Ntungamo, 9 Rushaga, 10 Kitahurira

SOURCE: Bwindi Draft Map, Wild & Blade, 1993
Drawn for MISR/LTC Land Access Project by J. Breyer
Kampala, 1995