GEF Evaluation Office

Conservation Development Centre

GEF IMPACT EVALUATION

Case Study: Bwindi Impenetrable National Park and Mgahinga Gorilla National Park Conservation Project

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A first annual report on this program will be presented to the GEF Council at its November 2007 meeting. The findings, interpretations, and conclusions expressed herein are those of the authors and do not necessarily represent the views of GEF Evaluation Office, the GEF Council, or the Governments they represent. The authors of this document would welcome any comments or suggestions on its contents.

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Project overview

The Bwindi Impenetrable National Park (BINP) and the Mgahinga Gorilla National Park (MGNP) are located in south-western Uganda, covering 321 km² and 33.7 km² respectively. They represent afro-montane and afro-alpine ecosystems that are among the most biologically diverse tropical forests in East Africa. Bwindi Impenetrable National Park is the largest remaining tract of natural forest in Uganda and is the only site in East Africa encompassing an unbroken ecological continuum of lowland, transitional and montane forest. Mgahinga Gorilla National Park is part of a larger Virunga volcanoes network of national parks that extend into Rwanda and the Democratic Republic of Congo. The entire world population of approximately 600 Mountain Gorillas (*Gorilla gorilla beringei*) is found within the Virungas range and Bwindi, about half of which are found within Bwindi Impenetrable National Park, which was designated a UNESCO World Heritage Site in 1994. However, these parks are located in one of the most densely populated parts of Africa, and the forests serve as critical water catchments and important sources of forest products for surrounding communities.

The *Bwindi Impenetrable National Park and Mgahinga Gorilla National Park Conservation Project* was a five-year full-sized GEF/ World Bank project that was initiated in 1995. The overall objective of the project was to establish the Bwindi Mgahinga Conservation Trust ("the Bwindi Trust", or BMCT)[1] as a long-term conservation finance mechanism to support biodiversity conservation in BINP and MGNP. The rationale behind the project was that the establishment of the Bwindi Trust and its permanent endowment fund would provide the most appropriate mechanism for achieving long-term conservation of natural resources and sustainable development in the two parks and neighbouring communities.

The Bwindi Trust was legally established in September 1995 by a Trust Deed under the Uganda Trust Act, and the GEF provided the initial funding of US$4.3 million to capitalise the endowment fund. The capital was invested overseas and the intention was that the annual income, net of administration costs, was to be used to fund conservation and development activities in the target area.

The activities to be funded from the BMCT endowment income fell under three main programmatic pillars. The first pillar, which was allocated 60% of net annual BMCT endowment income, was the provision of support to **community development activities**, such as alternative income-generating activities and social infrastructure projects for local communities surrounding the parks, consistent with biodiversity conservation. The second pillar, allocated 20% of endowment income, was the provision of support for ecological and socio-economic **research and monitoring** activities focused on improving park management and park/community interactions. The final pillar accounted for the remaining 20% of income and was the provision of support for **park management** activities, in particular meeting the incremental costs of implementing management plans for Bwindi and Mgahinga National Parks.

To enable the endowment fund to grow, other donors provided initial co-financing for the Trust's operational and programme expenses. The US Government (USAID) provided US$ 890,000 between 1995 and 1997, and thereafter the Government of the Netherlands (DGIS)

[1] Bwindi Mgahinga Conservation Trust (BMCT) was originally called the Mgahinga Bwindi Impenetrable Forest Conservation Trust (MBIFCT). In this case study it will be referred to as the Bwindi Trust.

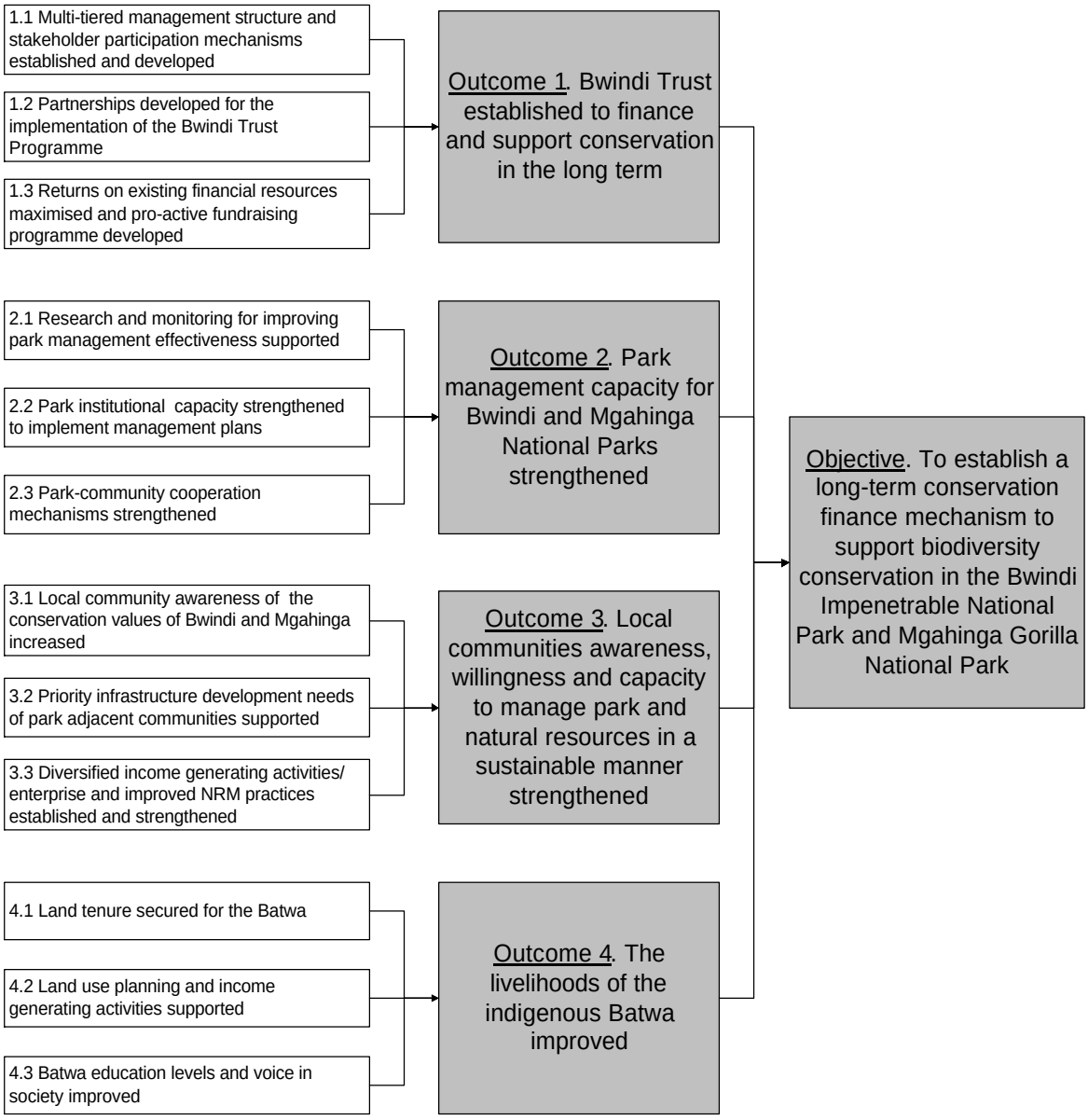
provided financing of US$ 2.86 million between 1997 and February 2003. It was envisaged that the endowment fund would produce enough interest after this initial period to support the conservation and development activities of the Bwindi Trust's implementation programme without further external support.

Project Logframe Analysis

The first analytical component of the Impact Evaluation Framework used in this case study assesses the delivery of the project outputs and outcomes identified in the project logical framework, or logframe.

As the original GEF project brief did not define a logical framework, it was necessary to develop a "retrospective logframe" based on the broad project objectives identified in the project brief, coupled with an understanding of what the project actually achieved in practice. In building this retrospective logframe, the study team drew on existing documentation, in particular the BMCT Strategic Review and Five-year Plan (1999), the Sustainability Plan (2003), and Annual Operational Plans. The resultant logframe (see Figure 1 below) not only organises the various intervention strategies employed by the project, but also identifies any missed opportunities in achieving the project goals that were identified by the study team.

Project Retrospective Logframe



The retrospective project logframe reflects the integrated conservation and development approach adopted by the Bwindi Trust and, in the view of the study team, is sufficiently comprehensive and adequately focussed towards the achievement of the overall project goals. However, the logframe does identify certain outputs that were missing from the original project brief. These omissions have consequences for the overall achievement of project outcomes as discussed below. The two key omissions were:

1. Output 2.3, *park-community cooperation mechanisms strengthened*. This output was not identified in the project brief or in the subsequent activities of the Trust, but is viewed as an essential component for strengthening park management (Outcome 2).
2. The outputs for improving the livelihoods of the Batwa (Outcome 3). The recommendations of a specially commissioned Batwa Study (Kabananukye & Wily,

1996) led to the identification of these outputs midway through project implementation.

The following sections examine the four project outcomes and the level of achievement at the end of the GEF project support (except where stated otherwise); and present the rationale underlying the outcomes, an assessment of the implementation logic, and an assessment of the actual achievement of the project outputs/ outcomes. The assessment of the achievement of the four project outcomes is summarised in Table 1 below.

Summary of the achievement of Project Outcomes

Project Outcome	Assessment
Outcome 1: Bwindi Trust established to finance and support conservation in the long term	**Well achieved (4)**
Outcome 2: Protected area authority's capacity to manage Bwindi and Mgahinga National Parks strengthened	**Partially achieved (3)**
Outcome 3: Local communities awareness, willingness and capacity to manage park and natural resources in sustainable manner strengthened	**Well achieved (4)**
Outcome 4: The livelihoods of the indigenous Batwa improved	**Partially achieved (3)**

Where possible, the assessment of project outcomes has drawn on the project's internal monitoring systems[2]; however, as the synthesis of this monitoring was not readily available and was not structured according to a logframe, it has been necessary to develop new indicators for several outputs. The assessment predominantly draws on the Implementation Completion Report, ICR (World Bank, 2001), the GEF Terminal Evaluation Review, TER (GEF, 2002), the OED Review of Implementation Completion Report (World Bank, 2001), the Post Implementation Impact Assessment, PIIA (World Bank, 2005), and the Bwindi Trust Annual Operations Plans/ Reports.

Outcome 1: Bwindi Trust established to finance and support conservation in the long term

The main rationale for the establishment of the Bwindi Trust was to create the institutional mechanisms for administering the income from the endowment fund and to ensure that it is spent effectively on mutually agreed conservation and development priorities. The most appropriate mechanism to achieve this was deemed to be a nationally registered trust. The main outputs towards achieving this outcome were as follows:

- Output 1.1: Multi-tiered management structure and stakeholder participation mechanisms established and developed
- Output 1.2: Partnerships developed for the implementation of the BMCT Programme

[2] The monitoring and evaluation of the project was targeted at three levels: **(1) Financial management of the Bwindi Trust**, measured by the rate of return on the capital endowment reported by the asset manager and income and expenditures reports prepared by the Trust Accountant; **(2) Administrative management**, measured by the fulfilment of the duties of the various management structures. This monitoring was developed alongside the Annual Operational Plans, and the indicators were primarily focused on implementation, e.g. *number of meetings held*; **(3) Long-term ecological and socio-economic conditions**, measured by the Institute of Tropical Forest Conservation and in particular the BMCT-supported Ecological Monitoring Programme.

- Output 1.3: Returns on existing financial resources maximised and pro-active fundraising programme developed

A detailed reporting of the qualitative and quantitative assessment of the delivery of these outputs and the ultimate outcome is provided in Table 2 overpage. The assessment has been carried out based on a series of indicators that have either been extracted from the project documentation or determined by the study team.

Output 1.1 (*establishment of a multi-tiered management structure*), was designed to balance the influences of the various stakeholders (e.g. Government of Uganda, local and international conservation/ wildlife NGOs, and the local communities) and provide an innovative mechanism for broad stakeholder participation and involvement in design, decision-making and supervision of conservation and related development activities in the target area. The major component of this output was the establishment of the Bwindi Trust itself, with its extensive administrative and governance as well as stakeholder participation structures. By the end of the project, the Bwindi Trust was well established with good human resources, infrastructure, and tried and tested mechanisms for involving stakeholders, especially the local communities. The overall assessment of the study team of the delivery of this output was therefore: **WELL ACHIEVED (4)**. See Table 2 for the detailed assessment.

Output 1.2 (p*artnerships developed for the implementation of the Bwindi Trust Programme*) was viewed in the project brief as critical to successfully delivering the broad programme of support for research, park management and community development. Regarding applied research and ecological monitoring, a very successful partnership was initiated with the Institute of Tropical Forest (ITFC), which still continues today. In addition, for the community development activities, collaboration was initiated with CARE International, who were implementing the Development Through Conservation (DTC) project in the area, as well as the International Gorilla Conservation Programme. However, these collaborative partnerships did not lead to the expected level of assistance with the identification, preparation and implementation of micro-projects. The overall assessment of the delivery of this output was therefore: **PARTIALLY ACHIEVED (3)**.

Output 1.3 (*asset management and pro-active fundraising developed*) focuses on building up the BMCT endowment fund through effective and efficient financial management systems. In this regard, the project Mid-Term Review stated that there was lack of a long-term strategic framework guiding the design and implementation of the Trust's activities and long-term sustainability, which in part was addressed by the production of the 1999 Strategic Review and Five Year Plan at the end of this project. However, at the project close the terminal evaluation concluded that the Bwindi Trust had not yet raised adequate additional funds to enable the Trust to move from a sinking fund to a fund in perpetuity, and that there were no indications of a pro-active fundraising strategy to access new donor finances. The overall assessment of the delivery of this output was therefore: **PARTIALLY ACHIEVED (3)**.

At the end of the project therefore, the Bwindi Trust had been successfully established as the overall mechanism for promoting conservation in the Bwindi and Mgahinga National Parks, and was already operating effectively in working towards its defined conservation goals. However, some aspects of this outcome had not been fully accomplished, and in particular the ability of the Trust to have a long-term impact on conservation in the ecosystem was undermined by the limited progress on developing the Trust's asset and fund-raising base. As a result of this, the study team were unable to assess the achievement of this outcome as fully achieved, but rather considered the achievement of this outcome as: **WELL ACHIEVED (4).**

The following sections look at how the establishment of the Trust led to the project's conservation and livelihood outcomes.

Logframe assessment for the establishment of the Bwindi Trust to finance and support conservation in the long term (Outcome 1)

Indicators	Quantitative/ qualitative assessment		Source
Output 1.1: *Multi-tiered management structure and stakeholder participation mechanisms established and developed*		**4**	
Establishment of innovative governance mechanisms	The Trust Management Board (TMB) was formed with high level of government, NGO, community, private sector and donor representation, although delays in establishing and using sub-committees within the TMB to divide the Board's responsibility	4	ICR and TER
Establishment of effective programme delivery mechanisms	The Trust Administration Unit (TAU) was effective in providing support to the TMB and LCSC, but adversely affected by staffing difficulties. Also initial administrative costs of the TAU were high	3	ICR and TER
Establishment of effective community participation mechanisms	The Local Community Steering Committee (LCSC) had a diverse membership with members from the three administrative districts adjoining the park, with good representation of women and Batwa, although the participation of the Batwa was still a challenge	5	ICR and TER
Establishment of effective technical advisory mechanisms	The Technical Advisory Committee (TAC) met six times to review proposals. However, the diverse technical expertise of the TAC was underused, as the majority of sub-projects funded by the project were too small in size (i.e. less that US$1,000)	3	ICR and TER
Output 1.2: *Partnerships developed for the implementation of the Bwindi Trust Programme*		**3**	
Implementation of relevant partnerships	Partnership with: (1) ITFC regarding socio-ecological research and monitoring, which resulted in successful Ecological Monitoring Programme; (2) with CARE Development Through Conservation project and IGCP; however, the lack of formal Memorandums of Understanding hampered collaborative efforts.	3	ICR
Output 1.3: *Returns on existing financial resources maximised and pro-active fundraising programme developed*		**3**	
Growth of endowment fund	Capital investment outperformed initial benchmark figures, with an average nominal return for three years of 13.6%. At end of project fund had grown from US$4.3 million (FY1994/5) to just over US$ 7 million (FY1999/2000)	4	TAU
Donor projects secured	Co-financing from USAID (1995-1997) of US$ 890,000 and from the Government of the Netherlands (DGIS) of US$ 2.86 million (1997-2002). However, there were insufficient funds to meet the needs of the Trust's activities after co-financing	3	TER

	expired.		
Outcome 1: The Bwindi Trust established to finance and support conservation in the long term		**4**	
Establishment of institutional, administrative and financial arrangements	The participatory institutional arrangements for Trust management were very effective. The major identified shortcoming related to lack of plans to increase the sustainability of the fund, which limits the chances of the Trust moving from a sinking fund to a fund in perpetuity	4	TER

Outcome 2: Park management capacity for Bwindi and Mgahinga National Parks strengthened

The rationale behind the project's support for strengthening park management capacity is that improved protection and management of both Bwindi and Mgahinga National Parks was central to delivering the overall conservation objective of the GEF investment, as well as of the Bwindi Trust itself. The main outputs towards achieving this outcome were as follows:

- Output 2.1: Research and monitoring for improving park management effectiveness supported
- Output 2.2: Park institutional capacity strengthened to implement management plans
- Output 2.3: Park-community cooperation mechanisms strengthened

A detailed reporting of the qualitative and quantitative assessment of the delivery of these outputs and the ultimate outcome is provided in Table 3 overpage. The assessment has been carried out based on a series of indicators that have either been extracted from the project documentation or determined by the study team.

Output 2.1 (*research and monitoring*) focuses on applying the results of long-term monitoring to inform protected area decision-making and the interventions of conservation and development organisations such as BMCT. The establishment and running of a long-term Ecological Monitoring Programme (EMP) was not in the original project brief, but was developed during project implementation with additional financing provided by the Government of the Netherlands. It has subsequently become an essential component of the Bwindi Trust implementation programme, and an important success. The Bwindi Trust has been fortunate to be able to delegate the implementation of the EMP, along with the other research activities, to the Institute of Tropical Forest Conservation, with its permanent, field-based offices within Bwindi Impenetrable National Park with trained field scientists, support staff and facilities that allow long-term studies to be sustained in both Bwindi and Mgahinga forests. The overall assessment of the delivery of this output was therefore: **FULLY ACHIEVED (5)**.

Output 2.2 (*park institutional strengthening*) was originally intended to provide for the incremental costs of implementing new management plans for the two parks. However, in the event, the main focus was on financing much-needed basic park operating costs. This was necessary following the 1996 financial and managerial crisis at UWA, combined with the serious security problems in western Uganda and the region, which had a severe impact on UWA's revenues as well as on their core recurrent costs. It was only after the GEF project concluded that the situation at UWA and in the two national parks stabilised, to an extent whereby the Bwindi Trust could start providing the intended incremental support for management plan development and implementation. The overall assessment of the delivery of this output was therefore: **PARTIALLY ACHIEVED (3)**.

Output 2.3 (*Park-community cooperation mechanisms strengthened*) focuses on strengthening cooperation and conflict resolution between park management and neighbouring communities, as an important means of achieving shared conservation objectives. This output was not explicit in the project brief and has not been reported on by the project evaluations. Although a great deal has been achieved in improving park-community relations since the formation of Bwindi and Mgahinga National Parks, conflicts still arise as communities seek to access park resources and as wildlife causes damage on community land.

The study team considered that the Bwindi Trust, as an independent, impartial and mutually respected third party, has a potentially significant role to play in advising and helping to build bridges between the parks and their neighbours. However, there was little evidence that the Trust had helped establish these bridges. In addition, there are potential synergies and opportunities for rationalising the two co-existing community participation mechanisms around Bwindi and Mgahinga; the Trust's Local Community Steering Committee (LCSC) and UWA's

Logframe assessment for the strengthening of Park management capacity for Bwindi and Mgahinga National Parks (Outcome 2)

Indicators	Quantitative/ qualitative assessment		Source
Output 2.1: *Research and monitoring for improving park management effectiveness supported*		**5**	
Support to applied research activities	Thirteen management-oriented research projects have been funded by the Trust and findings disseminated through published research reports. However, research has been led by ITFC and there has been limited involvement of UWA ecology department	4	PIIA, Annual Reports
Establishment of Ecological Monitoring Programme	In collaboration with support from the Government of the Netherlands, a systematic and long-term Ecological Monitoring Programme was established and implemented by ITFC	5	ICR
Output 2.2: *Park institutional capacity strengthened to implement management plans*		**3**	
Support for recurrent costs	Although not in the original project brief, the Bwindi Trust averted potentially high risks to the biodiversity of the parks by financing the operating costs of UWA for continued park management when it suffered a managerial and financial crisis in 1996	5	TER
Support to management planning processes	The crisis at Uganda Wildlife Authority severely delayed the implementation of management plans for the park. As a result, the eventual development of the General Management Plans was undertaken after the completion of the GEF project	2	ICR/ Annual Reports
Output 2.3: *Park-community cooperation mechanisms strengthened*		**1**	
Support to UWA's community conservation and education programme	No evidence available from the evaluation reports that this was undertaken, although subsequent to the project, Bwindi Trust staff have stated they have provided advice to UWA in this area	1	10-Year Review
Coordination with UWA's Community-Protected Area Institution mechanism	No evident available from the evaluation reports, but current Bwindi Trust staff have stated they have participated at park revenue sharing meetings, but still limited interaction	1	10-Year Review
Outcome 2: Park management capacity for Bwindi and Mgahinga National Parks strengthened		**3**	
Implementation of rational management plans	As funding was redirected to basic operational needs and activities of UWA, the park management plans were not developed during the project. However, support for applied research and monitoring and basic recurrent costs did lay the foundation for post-project development of the plan	3	10-Year Review

Community Protected Area Institution. Once again, these opportunities had not been explored or developed. The overall assessment of the delivery of this output was therefore: **NOT ACHIEVED (1).**

At the end of the project therefore, the Bwindi Trust had been highly successful in building up the long-term ecological monitoring systems that were crucial for the achievement of long-term conservation goals, and had provided vital support for park management at a time when UWA itself was hard pressed to deal with financial constraints as well as pressing security issues in the ecosystem. The Trust had, however, been less successful in promoting the development and implementation of new park management plans which were intended to spearhead conservation action in the ecosystem, or in promoting effective mechanisms for park-community dialogue, cooperation and conflict resolution, even though the Trust had itself been very effective in building effective relations with the local communities (as described in the next section). **As a result, the study team assessed the overall achievement of this outcome as: PARTIALLY ACHIEVED (3)**

Outcome 3: Local communities awareness, willingness and capacity to sustainably manage park and natural resources strengthened

The rationale for this Outcome was the understanding that neighbouring communities provide potentially the greatest threat to the conservation of Bwindi and Mgahinga and that winning their support was crucial to the overall success of the project. It is the area of activity that has perhaps presented the greatest challenge for the Trust - in designing and supporting an appropriate set of activities that meet the Trust's conservation objectives while at the same time also responding to the needs and expectations of the local communities. The Outcome adopted integrated conservation and development approaches, aimed at positively influencing the attitudes and practices of community members towards supporting the conservation of the protected areas concerned and the sustainable use of natural resources.

The main outputs towards achieving this outcome were as follows:

- Output 3.1: Local community awareness of the conservation values of Bwindi and Mgahinga increased
- Output 3.2: Priority infrastructure development needs of park adjacent communities supported
- Output 3.3: Diversified income generating activities/ enterprise and improved NRM practices established and strengthened

A detailed reporting of the qualitative and quantitative assessment of the delivery of these outputs and the ultimate outcome is provided in Table 4 overpage. The analysis for this Outcome covers the first seven years of the Trust (1995-2002), due to the fact that a major component of the community support was undertaken through the co-financing provided by the Government of the Netherlands from 1997-2002. The assessment has been carried out based on a series of indicators that have either been extracted from the project documentation or determined by the study team.

Output 3.1 (*conservation awareness raising*) was not identified in the project brief as a specific stand-alone activity to complement the support for community projects. In response, the Implementation Completion Report highlighted the need for the Bwindi Trust to focus more on raising public awareness and integrating conservation values into the community support programme. However, despite the lack of a specific conservation awareness-raising

programme that could disseminate information through educational materials, radio messages, etc., the Bwindi Trust was still able to generate good levels of support for conservation through the Local Community Steering Committee mechanism introduced to identify community projects. The overall assessment of the delivery of this output was therefore: **PARTIALLY ACHIEVED (3)**.

Output 3.2 (*support for social infrastructure projects*) was the main focus of the support given by the Bwindi Trust to the local communities. The first community development grant cycle (from identification to completion) lasted four years and resulted in the completion of 43 out of 50 grants awarded, totalling about US$ 400,000. These projects directly responded to the communities prioritised development needs, were implemented in a timely manner, and generated good will and support among the community for the Trust and its conservation objectives. However, these projects did not adequately address the need to promote sustainable park and natural resource practices. The overall assessment of the delivery of this output was therefore: **WELL ACHIEVED (4)**.

Output 3.3 (*support for diversified income generating activities and improved NRM practices*) was not a significant feature of the Trust's community support programme between 1995 and 2002, due to community preference for social infrastructure projects. However, the amendment of the community project selection criteria for the second grant cycle (1999-2002) ensured some IGAs were supported, which provided a direct link towards encouraging conservation-compatible practices, rather that just generating conservation support that was achieved by the social infrastructure project in outputs 3.1 and 3.2. The overall assessment of the delivery of this output was therefore: **PARTIALLY ACHIEVED (3)**.

At the end of the project therefore, the Bwindi Trust had been successful in the delivery of social infrastructure projects, which provided a high level of support for the conservation objectives of the park. A great deal had been learnt during the first grant cycle (1996-2000), including the need for: clearer project selection criteria, in-kind matching contributions, and greater supervision regarding project identification and implementation. The Trust had responded to these lessons by adopting a two-tiered approach of both social infrastructure projects and income-generating projects for future grant cycles, which resulted in a good start being made during the second grant cycle (1999-2002) towards initiating conservation compatible income-generating and improved NRM practices. **As a result, the study team considered the overall achievement of this outcome as: WELL ACHIEVED (4).**

Outcome 4: Livelihoods of the indigenous Batwa improved

This outcome was not articulated as a distinct component of the original project brief, but the issue of the indigenous Batwa was flagged as a potential negative socio-economic impact of the project. According to the World Bank's Indigenous Peoples policy, measures were needed to firstly evaluate the project's impact on this indigenous group, and secondly to enable them to share in project benefits. In response, the project brief stated that the TAU would be tasked with assisting the Batwa to identify and articulate their needs (in the form of funding proposals) and to gain effective representation in the Trust's decision-making process and, together with CARE/DTC and UWA staff, in park management planning.

However, following an anthropological and socio-economic study of the local Batwa carried out during the first year of the project (Kabananukye & Wiley 1996), it was decided that a standalone Batwa Project was needed, to provide technical assistance and facilitation to enable them to gain greater control over their own affairs, through social organisation,

representation mechanisms, improvement of their relations with other ethnic groups and effective communication of their perceptions and needs to a local, national and international audience.

The main outputs towards achieving this outcome were as follows:

- Output 4.1: Land tenure secured for the Batwa
- Output 4.2: Land use planning and income generating activities supported
- Output 4.3: Batwa education levels and voice in society improved

Logframe assessment for the strengthening of local communities to sustainably manage park and natural resources (Outcome 3)

Indicators	Quantitative/ qualitative assessment		Source
Output 3.1: *Local community awareness of the conservation values of Bwindi and Mgahinga increased*		**3**	
Conservation awareness campaigns	Attempts at raising public awareness of biodiversity and conservation issues fell far short of project objectives. It was only after the GEF project that the Bwindi Trust started disseminating conservation messages through the media and arts	2	OED/ 10-year Review
LCSC mechanism	The LCSC mechanism (both the election process for committee members and the project selection process) has been an effective mechanism for increasing local community understanding and awareness about conservation	4	10-Year Review
Output 3.2: *Priority infrastructure development needs of park adjacent communities supported*		**4**	
Addressing community needs	Social infrastructure was the prioritised need identified through the LCSC project selection process and, between 1995 and 2002, 91% of the community development grant allocation went to improving infrastructure (e.g. primary and secondary schools and health units).	5	Annual Reports
Linkage to conservation	The community infrastructure projects were assessed to be consistent with biodiversity conservation (e.g. tree planting around all schools and clinics, wildlife clubs at schools, etc.) and had a positive impact on the community members' attitude towards the conservation of the parks.	3	ICR & TER
Output 3.3: *Diversified income generating activities/ enterprise and improved NRM practices established and strengthened*		**3**	
Addressing community needs	Between 1995 and 2002, a total of 45 agro-forestry and IGAs were supported (7% of the total community development grant allocation). As most of these projects were in the second grant cycle (1999-2002), it was too early to measure the impacts of these projects on communities.	3	Annual Reports
Linkage to conservation	The tree planting and alternative IGA projects were appropriately targeted towards reducing the dependence on park resources and promoting conservation-compatible land uses in park-adjacent communities, although there was limited coverage (700 households).	4	Annual Reports
Outcome 3: Local communities awareness, willingness and capacity to manage park and natural resources in a sustainable manner strengthened		**4**	
Cooperation levels with the community	Overall the Trust's community support established a good working relationship with the targeted PA-adjacent communities and provided a platform for conservation awareness raising and the conservation compatible NRM/ IGA activities subsequently supported. Although concerns were raised regarding community capacity to manage projects and the lack of indications of the development impact or sustainability of the grant-sponsored projects.	4	OED/ PIIA

A detailed reporting of the qualitative and quantitative assessment of the delivery of these outputs and the ultimate outcome is provided in Table 5 overpage. The analysis for this Outcome covers the first seven years of the Trust (1995-2002), as the Batwa project was initiated through the co-financing provided by the Government of the Netherlands from 1997-2002. As the GEF project evaluations do not cover the Batwa component in any detail, the analysis has focused on reviewing the Bwindi Trust annual reports.

Output 4.1 (*land tenure secured*) was a major focus of the support to the Batwa. This support was in direct response the anthropological and socio-economic study of the Batwa commissioned by the project (Kabananukye & Wiley 1996), which identified two main aspirations of the Batwa, the first of which was the desire to own land, as they were economically dependant on the often exploitative majority ethnic groups. Although good progress was made in purchasing land for over half of the target Batwa community, there remained the need to obtain land titles for the Batwa, which would give the Batwa a true sense of ownership. The overall assessment of the delivery of this output was therefore: **WELL ACHIEVED (4)**.

Output 4.2: (*land use planning and income generating activities supported*) was the logical next step of support to the Batwa after purchasing the land. Although some basic implements and support was provided to the Batwa on being settled on the new land, by the end of 2002, the support to the Batwa had not made significant progress towards carrying out land use planning and promoting income generating activities. The overall assessment of the delivery of this output was therefore: **POORLY ACHIEVED (2).**

Output 4.3: (*Batwa education and voice improved*) was considered essential for giving the Batwa the tools to realise their own development aspirations. Good progress was made in supporting education and initial steps were taken to strengthen their social organisation, representational mechanisms, relations with other ethnic groups and advocacy voice at the local, national and international levels. The overall assessment of the delivery of this output was therefore: **PARTIALLY ACHIEVED (3)**.

At the end of the project therefore, the Bwindi Trust had been successful in purchasing land for the Batwa, thereby directly responding to their primary aspiration to own land, and had contributed to their educational levels in ways that supported them to realise their own development. However, whilst this was a pragmatic approach to improving their livelihoods, the study team felt there had been a lost opportunity for the long-term conservation of Bwindi and Mgahinga forests by not addressing the second Batwa aspiration of access and controlled user rights to the forest, to which they believe they have customary tenure rights (Kabananukye & Wiley 1996). **As a result, the study team considered the achievement of this outcome as: PARTIALLY ACHIEVED (3).**

Logframe assessment for support to the indigenous Batwa (Outcome 4)

Indicators	Quantitative/ qualitative assessment		Source
Output 4.1: *Land tenure secured for the Batwa*		**4**	
Purchase of land and land titles	326 acres of land were purchased by the Trust, which was subsequently use to settle over 50% of the Batwa community around Bwindi and Mgahinga. However, by 2002 land surveys were still waiting to be undertaken and land titles were not obtained.	4	Annual Reports
Output 4.2: *Land use planning and income generating activities supported*		**2**	
Productivity of acquired land	This component of the Batwa Project was not adequately addressed during the 1995-2002 period, with only very basic implements and support given to the resettled Batwa	2	Annual Reports
Output 4.3: *Batwa education levels and voice in society improved*		**3**	
Primary school enrolment	For 2001/2002 500 Batwa children (approximately 25% of the Batwa children of school-going age) received uniforms, exercise books, pens, pencils and school bags to improve Batwa school enrolment	4	Annual Reports
Secondary school enrolment	The number of Batwa enrolment at secondary school is extremely low. The Batwa Project has provided support for two Batwa girls to attend secondary school, although there still remain many barriers preventing Batwa primary school leavers continuing to secondary school.	2	Annual Reports
Conservation awareness-raising	A start was made on conservation awareness-raising through two Batwa drama groups who were trained and equipped to pass on conservation messages to other communities.	3	Annual Reports
Representation in decision-making bodies	Despite representation of Batwa on the LCSC, the attendance and participation of the Batwa remained a challenge even though a Batwa Project Officer had been hired to work with the those communities	3	TER
Outcome 4: The livelihoods of the indigenous Batwa improved		**3**	
Empowered Batwa communities	A good start has been made by the Batwa Project to empower the communities through the purchase of land, support for education and their representation on the LCSC. However, the Batwa still remain far less developed/ empowered than the other communities in the area.	3	Annual Report

Outcomes-Impacts Analysis

The extent to which project outcomes have been converted to impacts is assessed by an Outcomes-Impacts Analysis, which forms the second part of the Impact Evaluation Framework. As identified in the Project Logframe Analysis above, the project had four major out-comes:

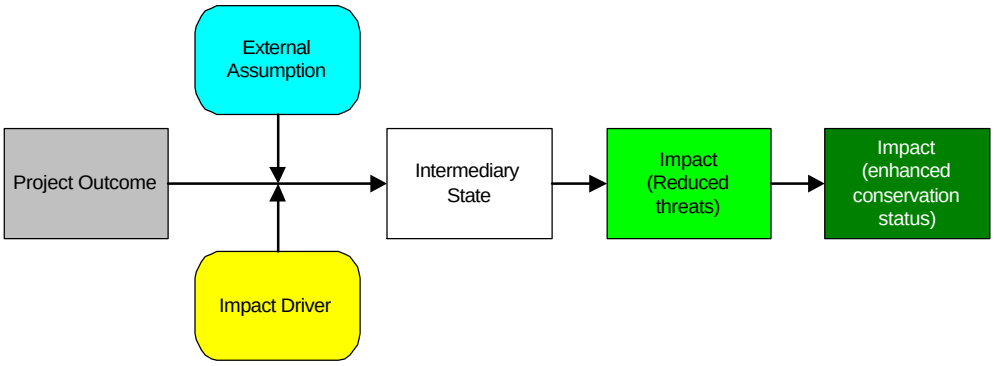
- Outcome 1: Bwindi Trust established to finance and support conservation in the long term
- Outcome 2: Protected area authority's capacity to manage Bwindi and Mgahinga National Parks strengthened
- Outcome 3: Local communities awareness, willingness and capacity to manage park and natural resources in sustainable manner strengthened
- Outcome 4: The livelihoods of the indigenous Batwa improved

Each of these outcomes was assessed to have been partially to well achieved at the end of the project. The following sections examine how the first three outcomes have led to impacts.

The assessment was largely based on the review of the terminal evaluation reports and studies that have been carried out since the end of the project; in particular, the Bwindi and Mgahinga ICD Strategies Assessment Project (McNeilage *et al.*, 2005 draft), the Post Implementation Impact Assessment (World Bank, 2005 draft) and the recent Bwindi Trust 10-Year Review (Malpas *et al.*, 2007). In addition to the literature review, a field study was commissioned to examine the impacts of the creation and implementation of Bwindi and Mgahinga National Parks and of support to the Batwa indigenous community on their livelihoods, well-being and use of forest products.

As mentioned above in section 2.4, the issue of the Batwa was specifically highlighted in the project brief as a potential negative unintended impact that needed to be specifically addressed and evaluated. Due to the importance of this issue to the GEF, this component of the Outcomes-Impacts has been addressed by a separate study (see Namara, 2007).

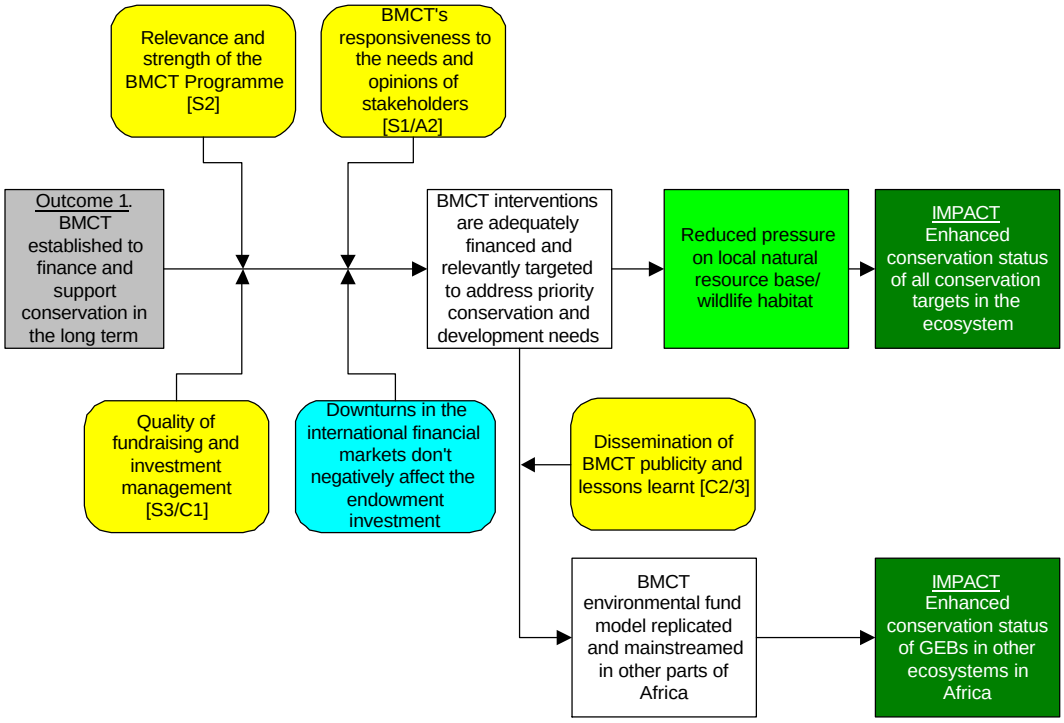
The Theory of Change models developed for Outcomes 1-3 used the following key for the different coloured/ shaped boxes:



Outcome 1: Bwindi Trust established to finance and support conservation in the long term

As discussed in section 2.1, the overall logframe assessment of the establishment of Bwindi Trust indicates that this outcome was *well achieved*. The theory of change model for linking Outcome 1 to the intended impact of enhanced conservation status of the ecosystem is illustrated in Figure 2 below.

Bwindi TOC Model for Outcome 1



The rationale for the TOC model is that the project outcome, "*BMCT established to finance and support conservation in the long-term*" will realise impact provided that the Intermediate State "*BMCT interventions are adequately financed and relevantly targeted to address priority conservation and development needs*" is achieved. That is, the achievement of this intermediate state will ensure that there will be sufficient funds to support relevant interventions that will lead to the achievement of the intended impact, i.e. *a reduced pressure on the local natural resource base*. The achievement of this intermediate state depends on a variety of factors, including three impact drivers and one external assumption.

In addition, as the Bwindi Trust was the first environmental trust fund to be developed in Africa, it has become a successful example that has subsequently been replicated and mainstreamed in other parts of Africa and worldwide. Consequently, the TOC model has included a secondary Intermediate State, with an associated Impact Driver, which leads to a catalytic impact that goes far beyond the stated scope of the project.

The rationale and assessment of the impact drivers are described in the following section, followed by an assessment of the evidence that the intermediate state has actually been achieved. The detailed qualitative and quantitative analysis for the achievement of Outcome 1 to Impact is provided in Table 6 at the end of this section.

Achievement of impact drivers

Relevance and strength of the Bwindi Trust Programme (Institutional Impact Driver).

A clearly articulated and relevant implementation programme is essential not only for ensuring that the Bwindi Trust's financial resources are targeted towards addressing key and strategic long-term conservation and development concerns, but also in enabling the Trust to leverage additional and sufficient financial resources for underwriting its conservation and socio-economic development activities. In this regard, the Trust has made significant progress by putting into place a set of overall strategic objectives that guide the Trust's project interventions, as well as establishing a set of criteria that guide the project selection process. However, these strategic objectives have not been converted into a comprehensive and proactive implementation programme, which specifies the outputs to be achieved and activities needed to accomplish these outputs. Annual operation plans developed by the Trust partially fill this gap, but these are of a short-term nature and do not provide the long-term programmatic framework that would be ideal. Instead, the Trust mainly relies on a largely reactive rather than proactive project identification process embedded in its Local Community Steering Committee (LCSC) mechanism. The end result is that the programme is heavily influenced by the LCSC and frequently responds simply to community needs rather than long-term conservation and development priorities. In addition, the absence of an explicit and comprehensive long-term programme framework significantly handicaps the Trust's ability to raise additional funds for its field initiatives. The study team's assessment for the achievement of this driver was therefore: **PARTIALLY ACHIEVED (3)**

Bwindi Trust's responsiveness to the needs and opinions of stakeholders (Socio-economic/ Socio-political Impact Driver).

The rationale behind this driver is that the Trust's ability to ensure that its interventions are targeted on priority conservation and development issues, and thereby achieving impact on reducing pressures on the natural resource base and habitats, depends on its ability to respond to the needs and opinions of stakeholders, especially its local community stakeholders. To a large degree, this impact driver was a key principle underlying the multi-tiered management structure of the Trust, which aimed to balance the influences of the various stakeholders, including; Government, local and international NGOs, private sector, and local communities and thereby maximise stakeholder involvement in, and ownership of, the Trust. As a result of these mechanisms, the Trust has been extremely successful in incorporating the views of and responding to the needs of the local communities, in particular through its participatory and transparent community-based project selection process. However, the Trust has been less successful in including other stakeholders, such as the protected area authorities and local government. The study team's assessment for the achievement of this driver was therefore: **WELL ACHIEVED (4)**

Quality of fundraising and investment management (Financial and Leveraging of Co-financing Impact Driver).

This driver is fundamental to the achievement of the identified intermediate state, and to the overarching objective of the Trust mechanism to support conservation in the Bwindi-Mgahinga ecosystem in perpetuity. In the absence of this Impact Driver, it is likely that the Trust endowment fund will gradually revert to being a sinking fund, which would result in the Trust being unable to adequately address priority conservation and development needs in the medium term and eventually to the Trust ceasing to operate. There are two key aspects to this driver – firstly, the quality of the management of the endowment fund and secondly, the

quality of the fundraising undertaken to supplement the endowment income. Both of these aspects, if successful, will enhance the Trust's financial capacity to address the conservation and development priorities identified in the Trust's programme. In this regard, the study team assessed that, following an initial period of fund mismanagement, the Trust has learnt lessons and subsequently the endowment fund has performed relatively well and in line with international markets. However, regarding the second aspect of the impact driver, the Trust has not been very pro-active or successful with fundraising to supplement the income from the Trust. The study team's overall assessment for the achievement of this driver was therefore: **PARTIALLY ACHIEVED (3)**

Dissemination of Bwindi Trust publicity and lessons learnt (Replication and Mainstreaming Impact Driver).

This driver is necessary if the catalytic effect of this project is to be realised within the broader context of Africa. The main requirement behind this impact driver is that there is a high level of dissemination of information about the Bwindi Trust through various media (printed, electronic, presentations, etc.) regarding general publicity/ promotion, and also relating to more substantive lessons learnt and recommendations targeted at practitioners and policy-makers interested in initiating similarly targeted environmental funds. Although the Bwindi Trust has produced a few glossy reports regarding its activities, these have been targeted to reporting back to existing donors, rather than a wider audience. In addition, the Bwindi website has only recently been established and provides only minimal information about the Trust and its activities.

However, despite the fact that the Trust has not itself made extensive proactive efforts to raise awareness about its achievements or to disseminate lessons learnt, there has been a substantial amount of interest in the Trust, with several invitations for the Trust Administrator to make presentations at international conservation forums. The study team's overall assessment for the achievement of this driver was therefore: **PARTIALLY ACHIEVED (3).**

Achievement of intermediate states and impact

The assessment of impact drivers and external assumptions presented in the previous section suggests that there is good evidence that the conditions were in place for the delivery of both the intermediate states identified in the TOC model for Outcome 1. The next stage is to assess what evidence exists that the intermediate states were actually achieved, which then enables conclusions to be drawn from the TOC model about the ultimate achievement of impact from Outcome 1. This is discussed below.

Intermediate state: BMCT interventions are adequately financed and relevantly targeted to address priority conservation and development needs

The study team's assessment of the achievement of this intermediate state was that the Trust is currently over-reliant on its endowment fund, which only provides sufficient income for the Trust's core activities, and that sufficient progress has not yet been made to secure supplementary donor funding to fund a comprehensive programme of activities. This lack of adequate financing in part relates to the fact that the Trust's implementation programme does not proactively target the long-term and strategic conservation needs in the ecosystem, but has rather concentrated on responding to the immediate development needs as prioritised by the local communities. The study team felt that a more proactive strategic and fundraising programme would have enabled this Intermediate State to be fully achieved. Consequently,

the study team's overall assessment for the achievement of this intermediate state is: **PARTIALLY ACHIEVED (3)**.

Intermediate state: BMCT environmental fund model replicated and mainstreamed in other parts of Africa

The Bwindi Trust was the first environmental trust fund established in Africa, and several other environmental trusts have been established in Africa subsequently building on the Bwindi Trust model and lessons learnt. This has occurred despite the fact that the Trust has not itself made extensive proactive efforts to raise awareness about its achievements or to disseminate lessons learnt (see impact driver above). The Bwindi model appears to be so compelling (and the demand sufficiently significant) that it has not been necessary to proactively publicise the model. Consequently, the study team's overall assessment for the achievement of this intermediate state is: **WELL ACHIEVED (4)**.

In conclusion, the Outcomes-Impacts TOC model approach for assessing impact from Outcome 1 suggests that the Bwindi Trust has made substantial progress in putting in place the conditions needed to achieve impact both in the Bwindi-Mgahinga ecosystem itself, as well as more broadly in achieving conservation impact across the African continent. With regard impact in the immediate ecosystem, greater impact can potentially be achieved if the Trust were to have a stronger and more proactive implementation programme for addressing the most strategic conservation and development needs of the ecosystem, and as a foundation on which fund-raising efforts can be scaled up. With regard the wider scaling up of the Trust's impact across the continent, which has been very successful, still more could be achieved if the efforts to publicise and raise awareness of the Trust's successes and lessons learnt were strengthened.

Section 4 below examines the direct evidence of whether impacts have actually been achieved in the Bwindi-Mgahinga ecosystem as an alternative means of triangulating the impact conclusions of this TOC model.

Outcome 1 - Impact TOC assessment

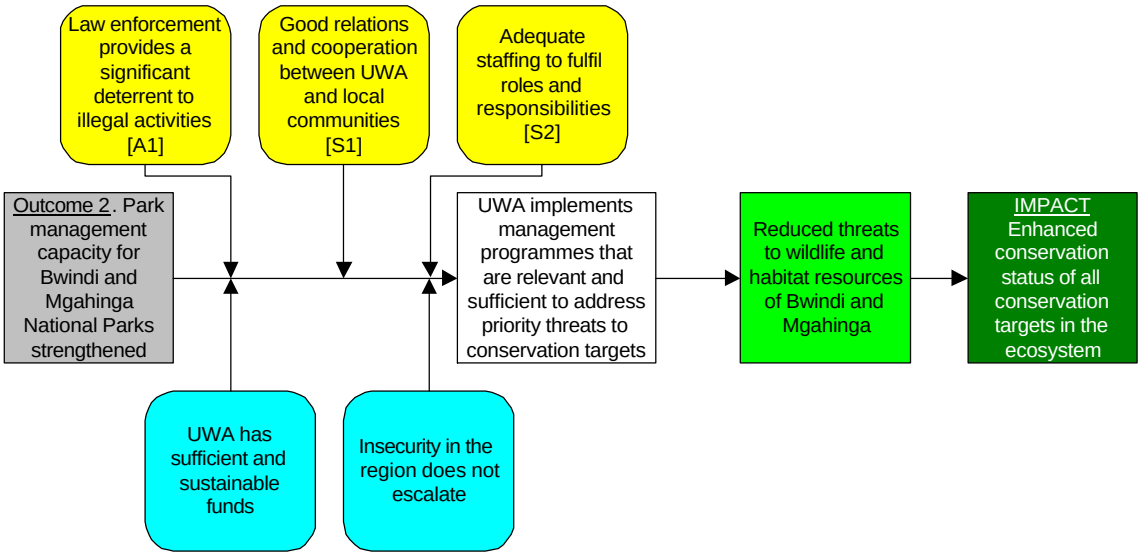
Indicators	Quantitative/ qualitative assessment		Source
Impact Driver 1: *Relevance and strength of the Bwindi Trust Programme [S2]*		**3**	
Bwindi Trust strategic framework for achieving the long-term conservation of the ecosystem	Programme-level strategic objectives in Bwindi Trust's Strategic Plan & 5-Year Plan (1999) and Sustainability Plan (2003). However, a comprehensive strategic and programmatic framework has not been institutionalised within the Trust's organisational arrangements and procedures	3	10-Year Review
Impact Driver 2: *Bwindi Trust's responsiveness to the needs and opinions of stakeholders [S1/A2]*		**4**	
LCSC mechanism is representative of community needs	LCSC has been a very successful bottom-up, transparent and comprehensive mechanism for: (1) the election process - ensuring minorities are represented and (2) the identification, selection and implementation of community developments activities	5	ICD Assessment
Bwindi Trust's Programme complements UWA and local government activities	No mechanisms established for effective collaboration and coordination with government institutions around BINP/ MGNP, as evidenced by UWA's Community Protected Area Institution (CPI), running in parallel with the Trust's LCSC mechanism, which serve similar ends	3	10-Year Review
Impact Driver 3: *Quality of fundraising and investment management [S3/C1]*		**3**	
Asset management performance	The endowment is valued at $7.66 million (July 2007), which represents an average rate of return of 5% over the initial GEF investment of $4.3 million (1995), excluding $1 million income paid out for Trust's core costs (see Figure 3). Although growth is less than the 6-12% return forecasted in the Bwindi Trust Fundraising Strategy (1999)	4	TAU
Fundraising programme	Since project closed, limited funds have been raised: grants awarded are $95,050 from DGIS (2003-5) and $250,000 from FAO/UNF (2001-2005) and $50,000 from CARE Rights Equity and Protected Areas (REPA) Programme. Only new funding prospect is with CARE.	2	10-year Review
Impact Driver 4: *Dissemination of Bwindi Trust publicity and lessons learnt [C2/3]*		**3**	
Establishment of dissemination mechanisms	The Trust has recently developed a website and has produced two glossy reports (for period 1997-2002 and 2002-2005). Although the Bwindi Trust does not have a strategy for disseminating publicity and experiences, it has received *ad hoc* study tours and the Administrator has shared experience at international conferences, such as the World Parks Congress (2003)	3	TAU
External Assumption 1: *Downturns in the international financial markets don't negatively affect the endowment investment*		**3**	
International equity and bond markets	Fall in global markets (2000-2002) led to depreciation of endowment from US$7.3 million (1999) to $5.3 million at the end of 2002. Current market instabilities may again impact on the endowment capital.	3	TAU

Indicators	Quantitative/ qualitative assessment		Source
Intermediate State 1: *Bwindi Trust interventions are adequately financed and relevantly targeted to address priority conservation and development needs*		**3**	
Strategic Programme	Although the Trust has an effective and participatory mechanisms for selecting community projects, it lacks the strategic programme framework to identify and proactively address key conservation priorities	3	10-Year Review
Funding	Although the endowment fund is performing well, the income from the endowment only funds the basic operational costs of the Trust. There is lack of capacity to generate projects and to access new donor funding needed for achieving the broader Programme objectives of the Bwindi Trust	3	10-Year Review
Intermediate State 2: *Bwindi Trust environmental fund model replicated and mainstreamed in other parts of Africa*			
Trust Funds in Africa	Since the establishment of the Bwindi Trust in 1995 as the first conservation trust fund in Africa, environmental and conservation trust funds had been tested in 27 countries in Africa by mid 2002; including 12 that were existing and operational, seven that were in the process of being set up, and 15 that were potential new funds. The contribution that the Bwindi Trust made to this proliferation of funds is not possible to measure, but it certainly set an important precedent	4	Saini (2002)
Achievement of impact: reduced pressure on local natural resource base/ wildlife habitat		3	

Outcome 2: Park management capacity for Bwindi and Mgahinga National Parks strengthened

As discussed in section 2.2, the overall logframe assessment of the project's strengthening of the capacity of UWA to manage Bwindi and Mgahinga National Parks was *partially achieved*. The theory of change model for linking Outcome 2 to the intended impacts is illustrated in Figure 3 below.

Bwindi TOC Model for Outcome 2



The rationale for the TOC model is that the project outcome "*Park management capacity for Bwindi and Mgahinga National Parks strengthened*" will realise impact provided that the Intermediate State "*UWA implements management programmes that are relevant and sufficient to address priority threats to conservation targets*" is achieved. The achievement of this intermediate state will enable park management to apply sufficient resources and properly targeted actions that will lead to the achievement of the intended impact, i.e. *a reduced threats to wildlife and habitat resources of Bwindi and Mgahinga*. The achievement of this intermediate state depends on a variety of factors, including three impact drivers and two external assumptions.

The rationale and assessment of the impact drivers are described in the following section, followed by an assessment of the evidence that the intermediate state has actually been achieved. The detailed qualitative and quantitative analysis for the achievement of Impact from Outcome 2 is provided in Table 7 at the end of this section.

Achievement of impact drivers

Law enforcement provides a significant deterrent to illegal activities (Environmental Impact Driver).

Law enforcement underpins effective park management and should be seen as a necessary and complementary approach to the community conservation strategies adopted by park management and other collaborating partners. Unless there is respected and sufficient law enforcement in place, the substitutes to park resources and alternative sources of income promoted by the community conservation strategies will be seen as an additional benefits complementing illegal resource use. The Law Enforcement sections at Bwindi and Mgahinga National Parks are the largest departments in terms of personnel and equipment, with a over

35 rangers in 2001 (about one ranger per 10km^2), which have since been increased under the provisions provided by the General Management Plan (2001-2011). In addition, under the current management plan, the ranger force has been better trained and equipped, with a new emphasis on using ranger outposts as patrol bases, and collaborating more closing with other security organisations (including the Uganda Army) and the local communities. Although it is difficult to measure ranger effort and effectiveness, the community attitude surveys conducted around Bwindi indicated that there was a widely held view that illegal activities had decreased and that law enforcement was the main reason for this reduction. The study team's assessment for the achievement of this driver was therefore: **WELL ACHIEVED (4)**.

Good relations and cooperation between UWA and local communities (Socio-Political Impact Driver).
The rationale for this driver is that with limited resources, it is not possible to police the entire park, and that there is a need for the support of the local communities towards the conservation of the two parks, and their cooperation in their management. As stated above, law enforcement rangers are required to work closely with communities and to encourage them to report illegal activities. In addition, the community conservation unit at Mgahinga and Bwindi National Parks, which number about ten staff, have a clearly defined programme aimed at (1) implementing UWA's Revenue Sharing Policy – whereby 20% of gate fees are used to support community projects in the park neighbouring parishes, (2) undertaking conservation awareness raising, (3) implementing strategies to minimise the impacts of problem animals to communities and (4) supervising sustainable utilisation of identified park resources. Clearly, this is an ambitious undertaking and although there is a dedicated team at Bwindi and Mgahinga, there are insufficient resources and personnel to comprehensively deliver on this mandate. Furthermore, 20% of gate fees amounts to a small amount of money when spread between the numerous and densely populated communities around Bwindi and Mgahinga and consequently there has tended to be a gap of about three years before sufficient revenues accrue to make disbursements to the communities.

The responses to community attitude surveys around the park show that the park has indeed developed good relations with the local community, which is demonstrated by increased levels of cooperation from an initially hostile local community. However, the fact that over half the community member interviewed in the 2002 survey had not heard about the Revenue Sharing Programme, testifies to the fact that more resources are needed to extend the community conservation activities of the parks. The study team's assessment for the achievement of this driver was therefore: **PARTIALLY ACHIEVED (3)**

Adequate staffing to fulfil roles and responsibilities (Institutional Impact Driver).
This final driver for this theory of change model has already been touched on in the previous drivers, but it is important to emphasise that, if UWA is going to be able to implement the management plan developed for the parks, it needs adequate numbers of well trained staff to implement the ecology/research, law enforcement, tourism, community development programmes. After law enforcement, the second biggest department at Bwindi and Mgahinga is tourism, with about 30 personnel in 2001. However, as stated above, the community conservation department is very stretched, and the research and monitoring section only had one officer to cover both parks in 2001, which has not been significantly increased upon since. The study team's assessment for the achievement of this driver was therefore: **PARTIALLY ACHIEVED (3)**

Achievement of intermediate states and impact

The assessment of impact drivers and external assumptions presented in the previous section and in the table below suggests that there is good evidence that the conditions were in place for the delivery of both the intermediate states identified in the TOC model for Outcome 2. The next stage is to assess what evidence exists that the intermediate state were actually achieved, which then enables conclusions to be drawn from the TOC model about the ultimate achievement of impact from Outcome 2. This is discussed below.

Intermediate State: UWA implements management programmes that are relevant and sufficient to address priority threats to conservation targets

The study team's assessment of the achievement of this intermediate state was that park management is adequately staffed, has increasingly effective relations with the local communities, and has a strong and well-structured General Management Plan in place guiding its operations through the implementation of the plan's various component management programmes. However, the plan lacks a clear mechanism for performance and impact monitoring, which may ultimately hinder the ability of park management to adapt their programmes to the changing conservation needs of the parks. The study team's overall assessment for the achievement of this intermediate state is: **WELL ACHIEVED (4)**.

In conclusion, the Outcomes-Impacts TOC model approach for assessing impact from Outcome 2 suggests that the Bwindi Trust's support to park management has contributed and resulted in a strong park management which is better placed to achieve impact in the Bwindi-Mgahinga ecosystem. However, greater impact could potentially be achieved if the park management were to have greater resources to implement its programmes set out in the General Management Plan.

Section 4 below examines the direct evidence of whether impacts have actually been achieved in the Bwindi-Mgahinga ecosystem, as an alternative means of triangulating the impact conclusions of this TOC model.

Outcome 2 - Impact TOC assessment

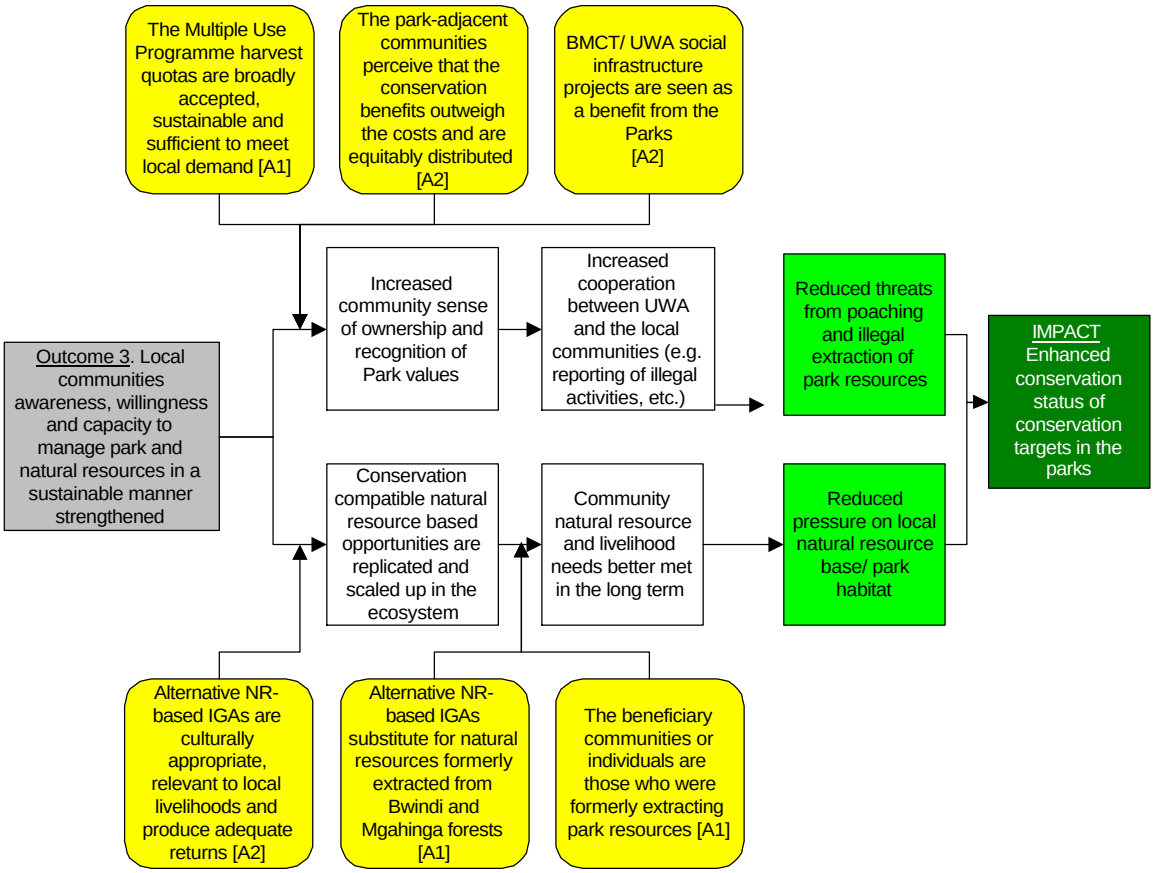
Indicators	Quantitative/ qualitative assessment		Source
Impact Driver 1: Law enforcement provides a significant deterrent to illegal activities [A1]		**4**	
Attitudes of local communities	The 2002 ICD community focus group discussions identified law enforcement as the main reason for the reduction in illegal activities in the park. 76% of community respondents felt that illegal activities had decreased between 1992 and 2002. Although illegal activities still persist, it is now mainly restricted to subsistence needs and not the commercial interests of the past	4	ICD Assessment
Impact Driver 2: Good relations and cooperation between UWA and local communities [S1]		**3**	
Park-community collaboration	Relationships have dramatically improved from the initial hostility to the creation of the national parks. The 2002 ICD community surveys showed an increased willingness of local communities to report illegal activities and to participate in park fire control, especially among those who had received benefits from BMCT. However, the CPI has not yet been established as an effective institution for collaboration.	4	ICD Assessment, 10- Year Review
Revenue sharing programme	Although less than half (40%) of the respondents in the park-adjacent parishes knew about the Revenue sharing projects that had been implemented in their parish, the programme was still the second most frequently cited intervention in the 2002 ICD surveys for improving community attitudes towards the parks. However, there has been community criticism of poor and delayed delivery of projects and that the projects are subject to time consuming and potentially costly local government procurement procedures.	3	ICD 2002 Assessment; 10- Year Review
Impact Driver 3: Adequate staffing to fulfil roles and responsibilities [S2]		**3**	
Anti-poaching/ tourism personnel	The requirements of gorilla tourism have led to a coverage of security and ranger personnel at Bwindi to ensure species protection and the safety of visitors.	4	UWA
Research and monitoring personnel	A research and monitoring officer is stationed full-time at Buhoma, overseeing research and the Ranger Based Data Collection programme. However, the RBDC does not account for changing levels of patrol effort, effectiveness of patrols, or coverage in different parts of the park, making it difficult to make any reliable conclusions about trends over time for ecosystem health and illegal activities	3	UWA/ ITFC
Community conservation personnel to establish good relations with local community	Community conservation unit has a number of rangers and a warden. However, the unit lacks the resources and manpower to properly implement their collaboration and benefit sharing mechanism (CPI)	3	10-Year Review
External Assumption 1: *UWA has sufficient and sustainable funds*		**4**	
Tourism revenues showing stable and upward trend	Tourism revenues for UWA are showing a stable and upward trend. For example, between 2000/1 and 2002/3 there was a 75% increase in UWA's revenue (US$ 1.8 million to US$ 3.2 million). Tourists' *Willingness To Pay* to see Mountain gorillas is very high - gorilla tracking is fully booked despite substantial price increases, which	4	UWA Annual Reports

Indicators	Quantitative/ qualitative assessment		Source
Sound financial management	are now set at US$500 per permit (1 July 2007). Plans have been approved to habituate two new gorilla groups for tourism tracking at BINP UWA is institutionally mature and well established and managed, with high levels of financial accountability, and has been attractive to donors (e.g. World Bank/ PAMSU)	4	UWA Annual Reports
External Assumption 2: *Insecurity in the region does not escalate*		**3**	
Stability in neighbouring countries	Continued conflict and political instability in neighbouring DRC pose a threat to BMCA, both from the influx of refugees and the potential utilisation of the forests by rebel groups. Apart from the death of several tourists and a Warden in March 1999, there have not been any similar attacks.	3	UWA
Security operations	UPDF (Ugandan Army) personnel patrol in BMCA, specifically to provide security against cross-border rebel raids	3	UWA
Intermediate State: *UWA implements management programmes that are relevant and sufficient to address priority threats to conservation targets*		**4**	
General Management Plans	Well-structured BMCA General Management Plan (2001-2011) developed and approved, and incorporating recommendations of the Ecological Monitoring Programme and research conducted by ITFC. However, no clear indicators to measure the performance of UWA in plan implementation	4	UWA/ Plans
Achievement of Impact: Reduced threats to wildlife and habitat resources of Bwindi and Mgahinga		**3**	

Outcome 3: Local communities awareness, willingness and capacity to sustainably manage park and natural resources strengthened

As discussed in section 2.3, the overall logframe assessment of the project's support for strengthening the capacity of local communities to contribute towards the conservation of Bwindi and Mgahinga indicates that this outcome was *well achieved*. The theory of change model for linking Outcome 3 to the intended impacts is illustrated in Figure 4 below.

Bwindi TOC Model for Outcome 3



The rationale for the TOC model is that the project outcome, "*Local communities awareness, willingness and capacity to manage park and natural resources in a sustainable manner strengthened*" will realise impact provided that the following Intermediate States "*Increased community sense of ownership and recognition of Park values/ cooperation with UWA*" and "*Conservation compatible natural resource based opportunities are replicated and scaled up in the ecosystem to better meet livelihood needs*" are achieved. That is, the achievement of these intermediate states will ensure local communities appreciate and respect the national parks and are receiving sufficient and tangible livelihood benefits that will lead to the achievement of the intended impact, i.e. a *reduced threats from illegal extraction of park resources and reduced pressure on the natural resource base*. The achievement of these intermediate state depend on six impact drivers.

The rationale and assessment of the impact drivers are described in the following section, followed by an assessment of the evidence that the intermediate states have actually been

achieved. The detailed qualitative and quantitative analysis for the achievement of Impact from Outcome 3 is provided in Table 8 at the end of this section.

Achievement of impact drivers

The impact drivers for this Outcome 3-Impact TOC model were either environmental or socio-economic impact drivers under the *appropriateness* category, which relates to the conditions/ factors that would lead to the generation of incentives amongst the stakeholders to ensure their engagement and support in the delivery of the intended impacts.

Three environmental impact drivers were identified as important factors for reinforcing the achievement of the project outcome in reducing the pressure on the park and the associated global environment benefits. These impact drivers address issues relating to the sustainability of the controlled access to park resources (Multiple Use Programme), the degree to which alternatives to forest products (e.g. tree nurseries/ woodlots) actually serve as substitutes for park resources and the degree to which the initiated interventions target the illegal resource users. Although these drivers are being addressed by the continued community support programmes of the park management and collaborative partners, such as the Bwindi Trust and CARE, there is a problem that an insufficient percentage of the neighbouring local communities are being reached, especially the most marginalised members of society most dependent on park resources. For example, the Multiple Use Programme around Bwindi National only operates in half the parishes and then only for a selected number of products. Consequently, illegal extraction and resource use by park adjacent communities still persists, although at reduced levels. The study team's assessment for the achievement of the three environmental impact drivers was therefore: **PARTIALLY ACHIEVED (3).**

The three socio-economic impact drivers identified were viewed as important contributing factors towards enhancing the socio-economic benefits of the target community and in turn encouraging these communities to be more engaged in, and supportive towards, reducing illegal extraction of park resources. These impact drivers address issues relating to whether the benefits of conservation outweigh the costs for all members of the park adjacent communities, and whether the development interventions are both relevant to local livelihoods and seen by the recipients as a conservation benefit. As with the other environmental impact drivers, these factors are being addressed by the continued programmes of the park management and collaborative partners, and are having their desired effect on the attitudes and behaviours of the direct community beneficiaries. However, the many indirect beneficiaries and non-beneficiaries who may have more favourable attitudes towards the park than before, are less likely to convert to more conservation-compatible practices. The study team's assessment for the achievement of the three socio-economic impact drivers was therefore: **PARTIALLY ACHIEVED (3).**

Achievement of intermediate states and impact

The assessment of impact drivers and external assumptions presented in the previous section and in the table below suggests that there is reasonable evidence that the conditions were in place for the delivery of the intermediate states identified in the TOC model for Outcome 3. The next stage is to assess what evidence exists that the intermediate state were actually achieved, which then enables conclusions to be drawn from the TOC model about the ultimate achievement of impact from Outcome 3. This is discussed below.

Intermediate State: Increased community sense of ownership and recognition of Park values/ Increased cooperation between UWA and the local communities

The study team's assessment of the achievement of these two intermediate states was that the support to communities around the parks has generated a high level of conservation awareness, understanding and support for the forests. This has been reflected in improved park-community relations and increasing instances of cooperation in areas such as fire control and resource access. From the community attitude surveys it would appear that well over half of the local community members are supportive of the park. Consequently, the study team's overall assessment for the achievement of this intermediate state is: **WELL ACHIEVED (4)**.

Intermediate State: Conservation compatible natural resource based opportunities are replicated and scaled up in the ecosystem/ Community natural resource and livelihood needs better met in the long-term

The study team's assessment of the achievement of the final two intermediate states was that although community attitudes have significantly improved, less progress has been made to convert these positive attitudes into the wider adoption of conservation-compatible natural resource use. Although some practices have been successfully adopted and contributed to better meeting livelihood needs, there is a lack of resources and capacity to scale up these practices more widely. Consequently, the study team's overall assessment for the achievement of this intermediate state is: **PARTIALLY ACHIEVED (3)**.

In conclusion, the Outcomes-Impacts TOC model approach for assessing impact from Outcome 2 suggests that good progress has been made in attaining the support of local communities to achieving impact in the Bwindi-Mgahinga ecosystem. However, this is the most complicated of the TOC models and even after 10 years of the Trust and the implementation of similar interventions over a longer period by organisations such as CARE, it is still often difficult to measure achievement. The analysis of this TOC model identifies that greatest progress has been made in changing attitudes and winning support for conservation, even among community members who are not direct beneficiaries of the community support programmes. However, changing behaviours and practices of communities to be more compatible with the conservation objectives of the park has not been so easy to achieve, and has mainly been limited to the direct beneficiaries of community support programmes.

Section 4 below examines the direct evidence of whether impacts have actually been achieved in the Bwindi-Mgahinga ecosystem as an alternative means of triangulating the impact conclusions of this TOC model.

Outcome 3 - Impact TOC assessment

Indicators	Quantitative/ qualitative assessment		Source
Impact Driver 1: *The Multiple Use (MU) Programme harvest quotas for identified park resources are broadly accepted, sustainable and sufficient to meet local demand [A1]*		**3**	
Support for conservation	Designated resource users have been licensed by UWA to collect identified forest products. Senior park staff questioned in the 2002 ICD Assessment, said that registered resource users are generally more responsive to park issues (especially fire control) because they have a stake in the park; however, about 18% of the rangers claimed registered resource users carry out illegal activities	3	ICD Assessment
Responsive to local demand	The Multiple Use Programme is being implemented in about half of the parishes around Bwindi National Park, and only one parish by MGNP. During the 2002 ICD community surveys, over half those in MU parishes considered themselves a primary or secondary beneficiary. However, there is some frustration (especially among the Batwa) that other forest products (e.g. wild yams) are not yet included in the MU Programme.	3	ICD Assessment
Impact Driver 2: *Park-adjacent communities perceive that the conservation benefits are equitably distributed and outweigh the costs of conservation [A2]*		**3**	
Sufficiency of benefits	The 2002 ICD community surveys found that 67% of people in park-adjacent parishes perceived benefits from the park, highest in parishes with eco-tourism. However, 58% of respondents perceived that they were worse off living near a park (mainly due to wildlife damage).	3	ICD Assessment
Equitability of benefits	The social infrastructure projects seek to benefit the broadest section of society. However, the 2002 ICD survey concluded wealthier members of society are more positive towards conservation than the poorer people. Reasons for this include; (1) livelihoods of poorer members suffer most from restricted access to forest resources (2) poorer members tend to live nearer park boundaries and consequently suffer most from wildlife damage and (3) Benefits from enterprise/ IGAs interventions often focus on the more literate and educated members of society (i.e. the wealthier ones).	3	ICD Assessment 10-Year Review
Impact Driver 3: *BMCT and UWA social infrastructure projects are viewed by local communities as a benefit from the park [A2]*		**4**	
Benefits realised from the parks	Social infrastructure projects were associated with the presence of the parks. BMCT and	4	ICD

Indicators	Quantitative/ qualitative assessment		Source
	UWA's community projects were the two most frequently cited benefits that communities identified as coming from the park. 91% of respondents who knew about BMCT considered they had benefited.		Assessment
Impact Driver 4: *Alternative NR-based IGAs are culturally appropriate, relevant to local livelihoods and produce adequate returns [A2]*		**3**	
Adoption level	The 2002 ICD community surveys found that over 50% of respondents stated they benefited from the agricultural-based IGAs (principally those implemented by CARE DTC project). However, adoption was by members from the wealthier categories of the community, who own land, are generally located away from the park boundary (i.e. no wildlife damage) and have access to markets	3	ICD Assessment
Impact Driver 5: *Alternative NR-based IGAs substitute for natural resources formerly extracted from Bwindi and Mgahinga forests [A1]*		**2**	
Extraction of forest products with substitutes	The 1992 Baseline survey around Bwindi indicated that 50% of the households collected building poles, bean stakes and firewood from the forest. In the 2002 ICD survey tree products and bamboo were still some of the most illegally accessed products in the two parks. For example, 39% of respondents indicated continued extraction of park fuelwood	2	ICD Assessment
Impact Driver 6: *The beneficiary communities or individuals are those who were formerly extracting park resources [A1]*		**3**	
Targeting the poorest members of society	Although farmers targeted by the ICD strategies are not the only threat to the park, they are the nearest, most numerous and most dependent on park resources. However, alternative IGAs did not manage to reach the poorest of the poor, who are often the most dependent on the park resources.	3	ICD Assessment
Intermediate State 1/2: *Increased community sense of ownership and recognition of Park values/ Increased cooperation between UWA and the local communities*		**4**	
Changes in community attitude	The 2002 ICD surveys found that two thirds of the community respondents felt that appreciation for the park and community-park staff relations had improved over the past 10 years, which is reinforced by the increase in the sharing of information, cooperation in putting out fires and the Multiple Use Programme. The 2002 focus group discussion identified *increased awareness of ecological importance of the forest in climate control* as the second	4	ICD Assessment 10 Year Review

Indicators	Quantitative/ qualitative assessment		Source
	most important factor (after social infrastructure projects) for this improvement in attitude. However, UWA's community collaboration mechanism is still in the early stages of development and requires greater resources		
Intermediate State 3/4: *Conservation compatible natural resource based opportunities are replicated and scaled up in the ecosystem/ Community natural resource and livelihood needs better met in the long-term*		**3**	
Level of replication	Successful adoption of profitable beekeeping, mushroom growing, handcraft enterprises by the Trust, and the formation of enterprise groups has helped to ensure the sustainability of these IGAs. In addition, new groups interested in replicating IGAs have already approached the model entrepreneurs trained by BMCT. However, the ability to replicate these IGAs without financial support from BMCT seems limited, although it is still too early to tell	3	10 Year Review
Achievement of Impact: Reduced threats from poaching and illegal extraction of park resources		**3**	
Achievement of Impact: Reduced pressure on local natural resource base/ park habitat		**3**	

Targets-Threats Analysis

A direct measure of the project impacts is provided by the third and final component of the Impact Assessment Framework – the Targets-Threats Analysis. This analysis firstly assesses the status of the biodiversity values that the project has addressed (section 4.2) and secondly, assesses the changes in the threat levels impacting on these biodiversity values (section 4.3 below).

Scientists from the Institute of Tropical Forest Conservation (ITFC), which is headquartered in Bwindi Impenetrable National Park, undertook the information collection and assessment for this analysis. ITFC was established in 1991 as a semi-autonomous unit of Mbarara University of Science and Technology and undertakes conservation-orientated research and training in south western Uganda, in particular, Bwindi and Mgahinga National Parks, and Echuya Forest Reserve. As discussed in section 2, the Bwindi Trust/ the Government of the Netherlands have financially supported ITFC to conduct applied research studies and to establish and implement the Ecological Monitoring Programme for the two parks, which makes ITFC uniquely positioned to undertake this analysis.

Identification of GEBs, Key Ecological Attributes and threats

The process of identifying the specific global environmental benefits for the Bwindi project, and their associated Key Ecological Attributes and threats, was undertaken jointly by CDC and ITFC.

The original project brief provides a general overview of the global environmental benefits, emphasising the high level of species diversity and endemism, especially with respect to mammals, montane birds and butterflies. It notes that there were seven bird species listed on the International Council for Bird Preservation's Red Data Book and two species of butterfly on the IUCN Red Data Book.

Using the Conservation Action Planning methodology outlined in the methodology section of this report, the large number of potential GEBs were reduced to four key biodiversity components, which were chosen to encapsulate the key global environmental benefits of the project site. The four GEBs identified were:

1. Continuous altitudinal forest gradation	System
2. Montane forest habitat	Habitats
3. Mountain gorillas	Species
4. Grauer's rush warbler	

The assessment framework for the analysis is provided in Table 9 overpage, which defines both the Key Ecological Attributes to be assessed to gain a better understanding of the status of the GEBs, as well as the major threats to be assessed to understand changes in the threat levels impacting on the GEBs. The first two GEBs (continuous altitudinal forest gradation and montane forest habitat) were subsequently combined for this analysis, as the Key Ecological Attributes were similar and it was impossible to disaggregate information for montane forest.

Assessment of achievement of GEBs

The first aspect of the Targets-Threats Analysis is to determine the conservation status of the GEBs. The analysis below presents, as far as possible, the trends in the conservation status of the GEBs from before the project (baseline), at the project close, and currently. The focus of the assessment is on the Bwindi Impenetrable National Park, rather than the Mgahinga Gorilla National Park, because Bwindi contains the three identified GEBs for this analysis, whilst Mgahinga, being only 33.7 km² in size and part of a broader transboundary protected area, only has partial representation of the first two identified GEBs. A summary table of this analysis is presented in Table 12 at the end of the section.

Bwindi's GEB Assessment Framework

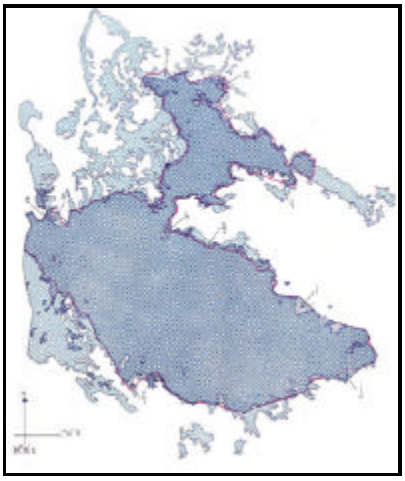
GEBs	Key Ecological Attributes	Threats
1. Continuous altitudinal forest gradation/ Montane habitat	▸ Forest size and extent ▸ Canopy cover ▸ Forest regeneration processes ▸ Habitat diversity ▸ Keystone species (including seed dispersers and pollinators) ▸ Forest connectivity	▸ Poaching ▸ Pit-sawing and tree cutting ▸ Encroachment ▸ Fire ▸ Lack of regeneration of forest gaps ▸ Hostile neighbouring communities ▸ Loss of forest connectivity at neck
2. Mountain gorillas	▸ Suitable undisturbed forest habitat ▸ Population size ▸ Population distribution ▸ Reproductive rates ▸ Genetic variability	▸ Poaching ▸ Pit-sawing and tree cutting ▸ Encroachment ▸ Fire ▸ Lack of regeneration of forest canopy ▸ Hostile neighbouring communities ▸ Disease
3. Grauer's rush warbler	▸ Swamp forest ▸ Population size	▸ No threats identified in next 10 years

Continuous altitudinal forest gradation/ Montane forest habitat GEBs

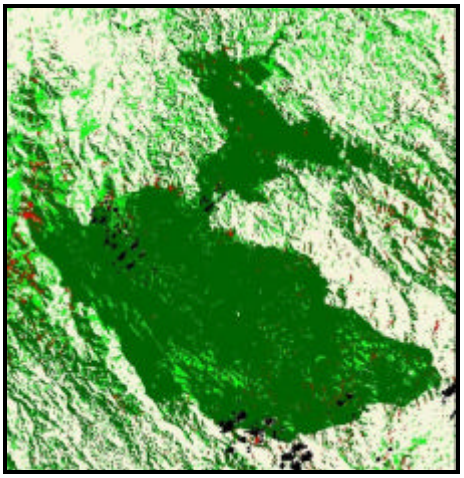
The KEA, ***Forest extent and size***, was shown to be declining prior to the gazettement of BINP, but has since stabilised. An assessment of the Uganda Lands and Survey topographical maps derived from 1954 and 1990 aerial photographs showed that total forest area declined from approximately 442.7km^2 to 324.9km^2, representing a reduction in forest area by 27% over a period of 36 years (Figure 5A). Since the establishment of the park in 1991, there has been very little forest loss other than in small patches on community land away from the park as demonstrated in the satellite image analysis of forest cover loss between 1987 and 2000 (see Figure 5B). Therefore, the assessment of the conservation status of this KEA is **STABLE** and Bwindi forest continues to the only site in East Africa encompassing an unbroken ecological continuum of lowland, transitional and montane forest.

The indicator of water quality indices was used to measure the KEA, ***canopy cover***. Water quality is considered one of the first indicators of changes that occur within a forest catchment. Since 2001, ITFC have been monitoring environmental characteristics and water invertebrates at 12 sites of varying human disturbance history. Following the establishment of the baseline in 2001, quarterly readings have been taken at the sites. The initial results from the first five years suggest there has been little change in water quality indices, indicating that at least there has been no major drop in water quality, which would be expected if there had been serious degradation of the forest protecting that watershed. In addition, initial findings show that the water quality at formerly encroached areas in the Mbwa River tract is recovering, whilst intensively logged sites are still degraded. The principle area for Mountain gorilla tourism still has very low impact on water quality. However, longer-term data will be needed to determine conclusively if any changes in water quality have occurred. Based on this data, the assessment of the conservation status of this KEA is **STABLE**.

Bwindi forest extent and size since 1954



A. Map of BINP showing extent of the forest in 1954 (light blue) and 1990 (darker blue)
(*Source: Scott 1992*).



B. Forest Loss around Bwindi between 1987 and 2000 derived from Landsat images (Red areas indicate loss of forest cover).
(*Source: Laporte 2006*)

The final KEA for which data was available was for ***forest regeneration processes***. Before Bwindi Impenetrable forest became a national park in 1991, there was a high level of human activity, especially cutting of large trees for timber. 61% of the forest was intensively logged, 29% selectively logged and only 10% was remained intact (as shown in Figure 6 below). This created very large gaps (open areas) in the forest, and there has been some concern that regeneration was not occurring in these areas.

Logging intensity in BINP between 1947 and 1990. *(Source: Howard 1991)*

An ITFC study in 2001 quantified and compared regeneration in three sites that had previously been logged at different intensities (Babaasa *et al., 2004*). The results of the study concluded that there is little or no regeneration in the gaps of selectively and intensively logged sites, as measured by both the density of saplings and the number of species of saplings, when compared with the adjacent under-storey in closed forest. This is attributed to the large size of gaps created by logging, which are covered by a dense tangle of herbs, shrubs and semi-woody climbers. Elephants prefer feeding in such large gaps with this dense herbaceous growth, which might further hinder regeneration.

A further study (Musinguzi, *2005).*) showed little tree regeneration in the previously burned areas compared to the adjacent closed forest in BINP (see Table 10 below).

Regeneration in formerly burnt areas compared to adjacent closed forest. *(Source: Musinguzi, 2005)*

Diameter size-class	Total No. of live individuals in burnt sites/ha	Total No. of individuals in the closed forests/ha
Seedlings (<2cm dbh)	3.27	20.4
Saplings (2 ≤ 5cm dbh)	3.40	26.2
Poles (=5<10cm dbh)	0.94	13.3

However, regeneration is occurring in previously encroached areas. A study *(*Mwima, 2003*)* was conducted for the Mbwa River Tract of BINP, which had been cultivated for at least 20 years prior to being reclaimed in 1993. More seedlings and trees occurred in the adjacent closed forest than in the formerly encroached area of Mbwa, but more saplings and poles occurred in Mbwa than adjacent closed forest. The resulting secondary forest that is still developing in Mbwa would have the potential to develop into primary forest in the long-term. Therefore, the assessment of the conservation status of this KEA is **STABLE**.

The overall assessment is that the conservation status of continuous altitudinal forest gradation/ montane forest habitat is **STABLE**.

Mountain gorillas GEB

The Mountain gorillas are of particular global significance due to their charismatic nature, their role as a keystone species and their small population size of around 600, which makes them critically endangered.

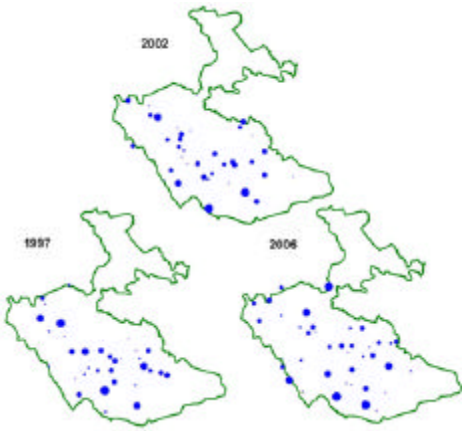
The first KEA, **population size**, has been measured by population censuses carried out in 1997, 2002 and 2006. The results of the Bwindi censuses show a continued increase in the population of Mountain gorillas. The increase to 340 gorillas in 2006 represents a 6% increase in total population size since 2002 and a 12% increase since 1997 (Table 11 below). Overall the gorilla population has been increasing at approximately a one percent annual growth rate, which is indicative of a reasonably healthy and well-protected population. As elaborated in Table 12 at the end of this section, the structure and composition of the population has remained constant. Therefore, the assessment of the conservation status of this KEA is **IMPROVING**.

Bwindi Mountain gorilla population parameters

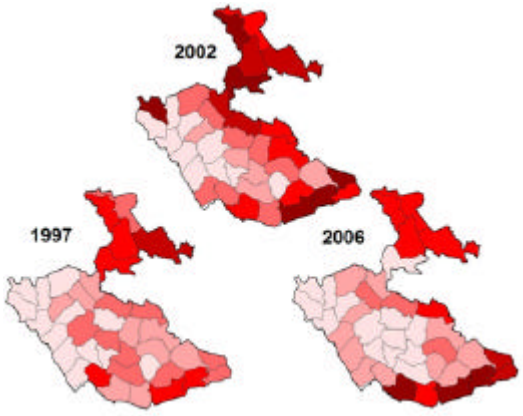
Population parameters	1997	2002	2006
Total population estimate	300	320	340
Number of groups	28	27	30
Number of solitary males	7	10	11
Mean group size	10.2	11.3	10.8
Group size range	2 to 23	3 to 25	3 to 28
Proportion of immatures	37%	36%	36%

The second KEA of the gorilla population in Bwindi, **population distribution**, is shown in Figure 7A below (each circle represents one gorilla group, with the size of the circle proportional to the size of the group). While each diagram provides only a snapshot of the distribution of groups at the time of the census, rather than a detailed picture of their use of space, there is an indication that in 2006 the groups were spread over a larger proportion of the park than in previous censuses. In particular, one group has also crossed a short distance into the northern sector for the first time in living memory, while more were also found in the exterior sectors of the park. Therefore, the assessment of the conservation status of this KEA is **IMPROVING**.

Gorilla and human disturbance distribution patterns during three censuses in Bwindi



A. Distribution of gorilla groups



B. Distribution of human disturbance

With regard the third Key Ecological Attribute, ***suitable undisturbed forest habitat***, the forest cover has remained constant immediately before, during and after the period of GEF support in Bwindi. Although there is not a good understanding of the quality of different habitat types in Bwindi for gorillas, this would indicate that the available habitat for gorillas has remained constant. Levels of illegal activity have fluctuated considerably over the period since the national park was gazetted in 1991. There is evidence of a small decrease from the early 1990s to the period after 1995 when the GEF support started. Since then, there is no evidence of a consistent decline, and different forms of illegal activities persist in the park. Figure 7B above illustrates the human disturbance patterns during the three gorillas censuses (the depth of shading for each sector represents the encounter rates of signs of disturbance). There is evidence that human disturbance is having an impact on the gorilla population. When the distribution of gorillas (Figure 7A) is compared with disturbance patterns (Figure 7B) for each of the censuses, it can be seen that gorillas tend to be found in areas of low disturbance. A negative correlation is found in each case between the number of gorillas and gorilla groups found in each sector with the encounter rate of signs of human disturbance. Therefore, the assessment of the conservation status of this KEA is **STABLE**.

The overall assessment is that the conservation status of Mountain gorilla is **IMPROVING**.

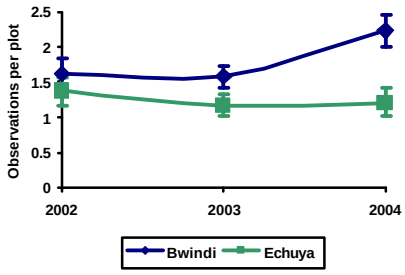
Grauer's rush warbler GEB

Grauer's rush warbler is one of the rarest species in Bwindi, restricted to swamp areas and is listed in the International Council for Bird Preservation's Red Data Book. The populations of this bird in the Mubwindi Swamp in Bwindi, as well as in Echuya forest, have only been monitored since 2002. Initial results indicate that the population is stable in Echuya, and shows some sign of increase in Bwindi (Figure 8 overpage). However, populations of small animals such as these birds will show considerable variation by year and season, and therefore it is too soon to make any conclusions about consistent trends in these populations. The overall assessment is that the conservation status of Grauer's rush warbler is **STABLE**.

Changes in conservation status levels before and after the GEF support

Key Ecological Attribute	Indicator	Conservation Status			Trend	Data Source
		Baseline	Project end	Now		
GEB: Continuous altitudinal forest gradation/ Montane Forest habitat						
Forest size and extent	Area of forest cover	No change in forest size since 1987			⟺	Nadine Laporte, Woods Hole Research Centre
Canopy cover	Water quality indices	Since 2001, water quality is good and seems stable			⟺	ITFC Ecological Monitoring Programme
Forest regeneration processes	Abundance of saplings and seedlings in forest gaps	There is little sign of regene ration in gaps caused by selective or intensive logging, or by fire. Regeneration is occurring in previously encroached areas.			⟺	ITFC Ecological Monitoring Programme Regeneration studies
Habitat diversity	No information					
Keystone species	No information, except for Mountain gorillas (see below)					
GEB: Mountain gorillas						
Population size	Total population size	300	320	340	⇑	1997, 2002, 2006 Gorilla censuses
Population distribution	Locations of gorillas groups	Groups appear to be more spread out across the park by 2006 (see attached report)			⇑	1997, 2002, 2006 Gorilla censuses
Suitable undisturbed forest habitat	Areas of habitat	No change in forest size since 1987			⟺	Nadine Laporte, Woods Hole Research Centre
	Encounter rates of disturbance signs	See threats analysis. No clear indication of a reduction in disturbance.			⟺	See above
Reproductive rates	Insufficient data to allow comparison of reproductive rates over different periods					
GEB: Grauer's rush warbler						
Swamp forest	Size and extent	No known degradation of swamps within Bwindi over this period			⟺	
Population size	Total population size			Stable or increasing ?		ITFC Ecological Monitoring Programme

Grauer's rush warbler population in Bwindi and Echuya



Assessment of reduction of threats to GEBs

The second aspect of the assessment was to understand the changing threat level to the identified GEBs. It was decided to assess the threats in general, rather than by GEB, as each threat affects each of the GEBs, with the exception of the Grauer's rush warbler, which had no threats identified for the next 10-year period.

The ranking of threats according to severity and scope at **pre-project intervention levels** is given in Table 13 below, which was undertaken by the scientists at ITFC. The key to the scoring system is given in Table 5 in the methodology section of this report.

Expert assessment and ranking of threats at pre-project

Threats to the GEBs	Severity Score (1-4)	Scope Score (1-4)	Overall ranking
Poaching	2	4	3
Pit-sawing and tree cutting	3	4	3
Encroachment	4	1	2
Fire	4	2	3
Lack of regeneration of forest gaps	2	3	2
Hostile neighbouring communities	3	3	3
Loss of forest connectivity at neck	2	1	1
Disease (gorillas)	No information		

Understanding the key threats affecting the GEBs helps to put the changes in the level of threats in context. The analysis below presents, as far as possible, the trends in the threat levels from before the project (baseline), at the project close, and currently. A summary of this analysis is presented in Table 15 at the end of this section.

Threat: Poaching and pit-sawing/ tree cutting

The most reliable source of data for instances of illegal activities within the parks is provided by a PhD thesis (Baker, 2005), which calculated signs of poaching incidences per patrol day from park records. Between 1991-1994, the average number of poaching incidences per patrol day in Bwindi was 0.31 (± 0.03). During the period of the GEF support from 1995-2000, this figure dropped by approximately 20% to 0.25 (± 0.02), which is a statistically significant change (Mann Whitney, $z = -2.66$, $p < 0.01$). This analysis has not been repeated after 2000.

The only other source of information on the level of threat from illegal in-park activities is from the gorilla censuses carried out in 1997, 2002 and 2006 in Bwindi, where the frequency of encounters of different signs of illegal human activity is recorded along the reconnaissance trails. This provides systematic and intensive coverage over the whole park. Unfortunately, it is not possible to use this dataset to identify emerging trends over time as each census was carried out at a different time of year, and there could be seasonal changes in some forms of illegal activities that are reflected in these inter-annual comparisons, or other factors that cause a high degree of variation in disturbance levels. However, there is clearly no consistent downward trend in illegal activities over this period, as might be hoped for if conservation initiatives were succeeding in addressing these threats.

The overall assessment is that there is an **UNCHANGED** threat level from poaching and pit-sawing.

Threat: Encroachment

The map of forest change from satellite analysis described above (Figure 5) shows almost no loss of forest within the park boundaries between 1987 and 2000. If there was extensive encroachment this would be evident from satellite analysis. In addition, patrol rangers have reported no serious incidents of encroachment since 1995. Reliable data on encroachment found during patrols prior to this period is not available, although it is thought to have occurred in certain areas.

The overall assessment is that there is a **DECREASING** threat level from encroachment.

Threat: Fire

Fire has long been considered a conservation problem at Bwindi particularly in dry years. Considerable areas have been burnt in the driest years of 1960/61, 1984, 1992 and 1999. Comparable surveys of fires in Bwindi have been carried out since 1999 (Table 14 below).

Fire incidences and causes in BINP

	1999	***2000***	***2001***	***2002***	***2003***	***2004***
# fires	37	7	0	0	2	3
Area damaged (ha)	264	17	0	0	9.4	4.1
Fire from outside the park	22	0	0	0	1	2
Fires due to wild honey harvesting	9	9	0	0	0	1
Fires in bee-keeping MUZ	4	4	0	0	1	0
Unknown causes	2	2	0	0	0	0
% of fires put out with local community assistance	68	100	-	-	0	99

The incidences of fire in BINP have been decreasing, and since 1999 no fire has been recorded to have been set deliberately, whereas in 1992, 31% of the recorded fires were attributed to arson. This reduction in threat level could be because the region has not experienced a particularly dry period since 1999. Also, park management and other conservation organizations have intensified fire education so that the local communities are more careful in their activities that involve the use of fire. Finally, intensification by park

management of patrols, boundary clearing and alertness could have prevented a number of fire outbreaks.

The overall assessment was that there is a **DECREASING** threat level from fire.

Threat: Lack of regeneration of forest gaps

As identified in the assessment of the *forest regeneration processes* KEA for the *Continuous altitudinal forest gradation* GEB, there is little sign of regeneration within forest gaps as evidenced by the lack of tree seedlings and saplings. The forest gaps were caused by selective and intensive pitsawing, which largely occurred before the forest was gazetted as a national park in 1991.

The overall assessment is that there is an **UNCHANGED** threat level from lack of regeneration of forest gaps.

Threat: Hostile neighbouring communities

When the park was gazetted in 1991, there were high levels of conflict with the surrounding communities. Fires were intentionally set, and park rangers at times were physically assaulted when they entered villages. However, there has been a significant improvement in attitudes since that time.

CARE undertook a baseline survey in 1992, and used agree/disagree responses to statements that were either positive or negative towards the park. An average of 53% of responses were negative to the park (i.e. agreeing with negative statements towards the park, or disagreeing with positive statements). A repeat survey was carried out by ITFC in 2002, using responses to the same statements about the park, at which time the proportion of negative responses had fallen to 24%. In addition in 2002, 66% of community respondents and all PA staff reported that attitudes towards the park had improved in the preceding ten years. The survey found that Integrated Conservation and Development strategies played a major role in this improvement, and that the Bwindi Trust's support for community projects was one of the strategies with the greatest positive impact on attitudes.

The overall assessment was that there is a **DECREASING** threat level from hostile neighbouring communities.

Threat: Loss of forest connectivity at neck

According to the satellite analysis of forest cover for Bwindi between 1987 and 2000 presented in Figure 5 above, there has been no loss of forest around the narrow neck separating the southern and northern sectors of Bwindi. However, this remains a narrow strip of forest, traversed by a road, which is still a vulnerable area where edge effects and disturbance could result in an effective loss of connectivity between two parts of the altitudinal range of forest represented in Bwindi.

The overall assessment is that there is an **UNCHANGED** threat level from loss of forest connectivity at neck.

Changes in threat levels before and after the GEF support

Threat	Indicator	Threat level			Trend	Data Source
		Baseline	Project end	Now		
Poaching	Encounter rate of poaching signs per patrol day.	0.31	0.25	-	⇔	Julia Baker PhD thesis
	Encounter rate of poaching signs per km walked on census recce trails	No consistent pattern from census data from 1997, 2002 and 2006.				Gorilla censuses in 1997, 2002, 2006
Pit-sawing and tree cutting	Encounter rate of tree cutting per km walked on census recce trails.	No consistent pattern from census data from 1997, 2002 and 2006. See attached report.			⇔	Gorilla censuses in 1997, 2002, 2006
Encroachment	Area of forest loss around boundaries of Bwindi	Satellite image analysis shows no almost loss of forest cover inside park between 1987 and 2000. Encroachment rarely reported since 1995.			⇩	Nadine Laporte, Woods Hole Research Centre
Fire	Frequency and extent of fires, community response to fires.	Fire incidences declining and community cooperation in fire control improving since 2000. No incident of arson reported since 1992.			⇩	ITFC Ecological Monitoring Programme
Lack of regeneration of forest gaps	Abundance of saplings and seedlings in forest gaps	Little sign of regeneration in gaps caused by selective or intensive logging			⇔	ITFC study in 2001
Hostile neighbouring communities	Park adjacent community members expressing lack of support for the park, as percentage of community members surveyed	53	24	-	⇩	ICD Strategies Assessment (2002)
Loss of forest connectivity at neck	Area of forest loss at the neck in Bwindi	Satellite image analysis shows no almost loss of forest cover inside park between 1987 and 2000.			⇔	Nadine Laporte, Woods Hole Research Centre
Disease (gorillas)	No information	No information			??	

Conclusions

The main conclusions from this case study have been summarised according the three components of the analysis.

Project Logframe Analysis

The Project Outcomes were assessed by the terminal evaluations to be moderately to highly satisfactory. However, the project lacked a clear logical framework, with a hierarchy of activities, outputs and outcomes. As a consequence a number of activities, outputs and components were omitted and only subsequently added during project implementation. In addition, too much focus was placed on monitoring and evaluation of the means (e.g. establishment of the trust fund) rather than the ends (e.g. biodiversity conservation through an established research programme and community activities, etc.). This meant that the project was not as responsive to adapting its approaches and strategies and many shortcomings were subsequently not identified until the Mid-Term Review. Overall, the logframe analysis provides clear evidence that the project was successful in establishing the BMCT and its programme of activities, but it provides little evidence about the biodiversity conservation impacts of the project.

Outcomes-Impact TOC Analysis

This analysis provided clear evidence that the mechanisms established and interventions initiated by the project have been continued and expanded since project closure. Overall the assessment was that impact from the outcomes has been partially achieved.

The Outcomes-Impacts TOC analysis emphasises the importance of establishing long-term institutional mechanism, as it enables the impact drivers to be addressed beyond the scope of the project. This is especially important when dealing with integrated community and development initiatives, which require many years before achieving significant livelihood benefits let alone global environmental impacts.

Another important conclusion from this analysis is that adequate stable funding is a critical impact driver and that both BMCT and UWA can achieve high impact when funds are available. Finally, this analysis highlights the replication of BMCT pilot model by other environmental funds, representing a catalytic effect of the Trust in broadening the scope of impact.

Targets-Threats Analysis

The final analytical component provides good information regarding the conservation status of global environmental benefits accruing from Bwindi. Perhaps the most striking findings are that, despite intense pressure from densely populated agricultural areas surrounding the park, there has been no loss of forest cover in Bwindi since the late 1980s, and the Mountain gorilla population is stable and increasing. Prior to gazettement

the park was being rapidly degraded by pit-sawing and uncontrolled exploitation of other resources. When Bwindi was made a national park, there was significant resistance from the local communities, and the resulting conflict and negative attitudes posed a major threat to the park and a challenge to the park managers. However, there has subsequently been a considerable reduction in conflict and improvement in the local communities' support for the conservation of Bwindi. That said, Bwindi does continue to face significant threats. Poaching and other forms of illegal exploitation of forest resources persist, and there is no evidence that conservation efforts in recent years have had a significant impact in reducing these. In addition, the legacy of intense pit-sawing in degrading the forest remains, with a large number of forest gaps created by the removal of trees, and very little forest regeneration within these.