GEF Evaluation Office

GEF IMPACT EVALUATION

GEF Protected Area Projects in East Africa

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The papers in the Impact Evaluation information document series are:

1. Approach Paper to GEF Impact Evaluation – *Brann and Todd*
2. Final Report on Proposed Approach to GEF Impact Evaluation - *Foundations of Success*
3. GEF Biodiversity Policy Review - *Foundations of Success*
4. Methodological Challenges in Impact Evaluation: The Case of the Global Environment Facility – Todd and Vaessen
5. Priorities and indicators for Global Environment Benefits from Biodiversity: The current international architecture – *Nair*
6. Case Study Methodology – *Conservation Development Centre*
7. Case Study: Bwindi Impenetrable National Park and Mgahinga Gorilla National Park Conservation Project - *Conservation Development Centre*
8. Case Study: Lewa Wildlife Conservancy – *Conservation Development Centre*
9. Case Study: Reducing Biodiversity Loss at Cross-Border Sites in East Africa *Conservation Development Centre*
10. Impacts of Creation and Implementation of National Parks and of Support to Batwa on their Livelihoods, Well-Being and Use of Forest Products – *Namara*
11. Protected Areas and Avoided Deforestation: A Statistical Evaluation – *Andam, Ferraro, Pfaff and Sanchez-Azofeifa*
12. GEF Protected Area Projects in East Africa – Conservation Development Centre

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Executive Summary

Background

The GEF has invested substantial finances since 1991 into the protection of the global environment, but there is uncertainty as to the nature and extent of the lasting impact achieved by this investment. Due to the complexity of environmental processes and long timeframes necessary to generate impact, standard project monitoring and evaluations tend not to address the challenging task of measuring impact. The purpose of this study was to develop and test a theory based analytical approach to understanding and measuring the impacts of GEF funded projects. The approach was piloted within the GEF's largest portfolio, the Biodiversity Programme, with the view to it being scaled up more broadly if proven to be a suitable approach.

The case studies selected were three protected area projects in East Africa that had all received positive terminal evaluation and that should therefore have delivered impacts, without which it would be difficult to test the new methodologies. The case study projects were:

- Bwindi Impenetrable National Park and Mgahinga Gorilla National Park Conservation Project; a full-sized GEF/ World Bank project in Uganda that was implemented between 1995 and 2000
- Reducing Biodiversity Loss at Cross-Border Sites in East Africa Project; a full-sized GEF/ UNDP project that was operational between 1998 and 2003
- Lewa Wildlife Conservancy Project, a medium-sized GEF/ World Bank project in Kenya that was implemented between 2000 and 2003

Analytical Framework

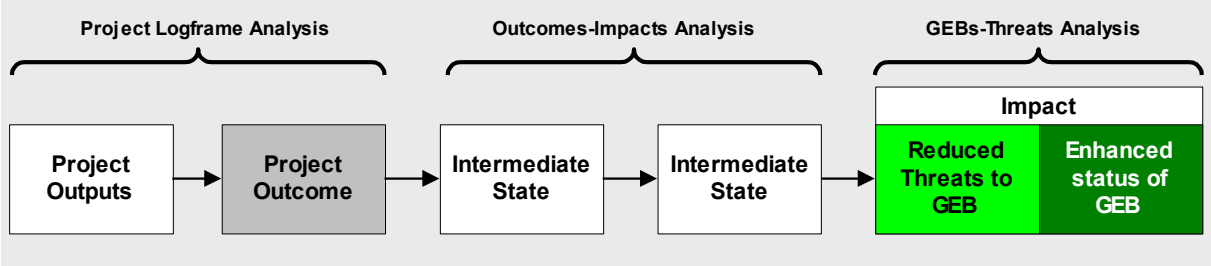
One of the main challenges facing impact evaluation is the question of **attribution**, i.e. whether the observed impacts can be attributed in part or in full to the project interventions, or whether they are due to some other external factors. To address this issue, the study adopted the **Theory of Change Approach** as the foundation for the analytical framework. This approach seeks to understand how impact is achieved by mapping out the logical sequence of means-ends linkages underlying a project and thereby making explicit both the expected impacts of the project and the outputs and outcomes that will lead to the achievement of these. The resulting theoretical model can then be tested by assessing whether the means-ends linkages can actually be confirmed in practice.

Another challenge faced in developing the evaluation framework was in defining what is an impact for the GEF. The overall goal of the GEF is broadly stated as achieving lasting improvements in the status of the global environment that are beneficial to human society, referred to by this study as **Global Environmental Benefits** (or GEBs). But the GEF has no guidelines or criteria for defining what constitutes a GEB. For biodiversity projects, GEBs could be chosen on the basis of their intrinsic values, such as species rarity and uniqueness, or for their economic values, such as ecosystem level processes of importance to human society.

This study sought to addresses these challenges in a realistic and cost effective way that is chiefly based on the utilisation of existing data concerning the projects. The Impact Evaluation Analytical Framework uses three distinct analyses for measuring impact, which together can provide a comprehensive understanding of impact as well as providing a useful means for triangulating the findings. As illustrated in the diagram overpage, the three analyses are:

1. **GEBs-Threats Analysis**, which identifies the expected project Global Environmental Benefits through identifying the target area's key biodiversity components at the different levels of biological organisation, followed by short-listing those environmental benefits of potentially global significance by reference to international biodiversity prioritisation and ranking lists. The analysis then assesses project impacts by examining both the change in status of the GEBs as well as trends in threats to these GEBs. This is the **direct measure** of project impacts.
2. **Project Logframe Analysis**, which confirms the delivery of project outputs and outcomes as defined by the project logical framework.
3. **Outcomes-Impacts Analysis**, which uses the Theory of Change approach outlined above to examine the process by which project outcomes are converted to ultimate impacts, often through a series of what is termed in this study "intermediate states". This analysis therefore provides a means of **indirectly measuring** project impacts and deals with the problem of attribution by explaining and testing how project outcomes led to impact.

The Impact Evaluation Analytical Framework



Main conclusions on the analytical framework

Overall, the study team considers the Impact Evaluation Analytical Framework to be an effective and practical approach to understanding and measuring impact. The framework draws on the existing project evaluation (Project Logframe Analysis) and monitoring data (GEBs-Threats Analysis), and through the Outcomes-Impacts Analysis provides an important third arm of analysis that links project evaluation and direct GEB monitoring together. This enables triangulation of impact findings and helps to understand how and why the project achieved the impact that it did. Although other focal areas will have different types of GEBs, and substantially different theories of change, the underlying principles are universal and with some modifications, should be broadly applicable to all areas of the GEF portfolio.

It is recommended that the GEF Evaluation Office elaborates the evaluation framework process into a practitioner's manual that can be further developed, tested and illustrated with examples from projects from other GEF focal areas, with the ultimate aim that in future it can be used in routine evaluations. Some of the key considerations to bear in mind for the further development of each of the analytical components are given below.

1. The Project Logframe Analysis is considered suitable for scaling up in its current form. However, it will be necessary for the methodology to be written up and the process clearly explained and illustrated in the proposed practitioner's manual.

2. The process to identify "global environmental benefits" needs to be further developed. In particular, general guidelines and criteria are needed to clarify what the GEF considers to be essential for classification as a GEB. In addition, considering the implications that the identified GEBs have on project monitoring, it is recommended that the identification of GEBs should be incorporated as a mandatory component of the GEF project development and approval process.

3. GEBs-Threats Analysis only provides an effective direct measure of impact for projects with long-term monitoring. Where such monitoring is lacking, this analysis will provide limited information on impact. The applicability of this approach would be enhanced if the GEF put in place requirements that projects establish relevant baseline and monitoring systems targeted to measure the GEBs, their key attributes and the associated threats. Where possible GEF projects should establish systems for ongoing monitoring.

4. The Outcomes-Impacts Analysis provides a potentially powerful method for the proxy measurement of impact and is the most innovative aspect of the framework, which requires the greatest amount of further development before it can be scaled-up. The main requirement will be the development of capacity within the GEF EO to undertake Theory of Change modelling in conjunction with the further piloting of the approach across other focal areas. The proposed manual for this analytical component should contain general templates for typical theories of change and provide a practical and cost effective process to carry out the approach, involving people on the ground that can provide insights into better understanding the theory of change behind projects and the local conditions that will need to be factored into the models.

Main conclusions from the case study impact evaluations

The main conclusion that emerged from the application of the impact evaluation framework for the three protected area case studies was that strong and sustainable local institutions are essential to achieving impact. These institutions provide the necessary continuity and fund-raising capability to consolidate and scale up the project activities following project closure. This is especially important when dealing with integrated conservation and development initiatives, which require many years before achieving significant livelihood benefits let alone global environmental impacts. In addition, those institutions with a long history and commitment to the target area are most effective at winning the local trust and confidence needed to successfully initiate and scale up biodiversity conservation initiatives.

Another important conclusion is that the typical length of a GEF project (3-5 years) is insufficient time to develop sustainable community-based institutions and new conservation-compatible livelihood strategies and that continued support is needed to consolidate and develop these. But with such support substantial catalytic effects can be realised, as was observed by the subsequent scaling up of the Lewa project's community conservancy model within the greater ecosystem, and the replication of environmental trust funds in Africa following the Bwindi project's model. However, sometimes the identified catalytic effects are hard to quantify, as was the case for the Cross Borders project's policy and capacity building activities promoting participatory forest conservation in East Africa.

In addition, biodiversity projects can have negative impacts on the livelihoods and well-being of local peoples owing to the fact that the protection of biodiversity often requires the exclusion of other competing but incompatible land uses. This was observed for the Bwindi project where the loss of access to forest resources and subsequent resettlement and training activities have led to some negative social consequences with the indigenous Batwa community.

Acronyms

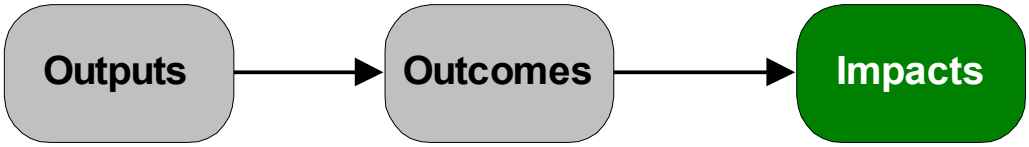
BMCT	Bwindi Mgahinga Conservation Trust
CAP	Conservation Action Planning
CBO	Community-based organisation
CDC	Conservation Development Centre
CFM	Collaborative Forest Management
CT	Conservation Target
DRC	Democratic Republic of Congo
GEB	Global Environmental Benefit
GEF	Global Environment Facility
GEF EO	GEF Evaluation Office
ICD	Integrated conservation and development
ID	Impact Driver
IGA	Income-generating activity
IUCN	World Conservation Union
KEA	Key Ecological Attribute
KWS	Kenya Wildlife Service
LWC	Lewa Wildlife Conservancy
NEMA	National Environment Management Authority (Uganda/ Kenya)
NEMC	National Environment Management Council (Tanzania)
NFA	National Forest Authority (Uganda)
NRM	Natural Resources Management
NRT	Northern Rangelands Trust
PA	Protected Areas
TNC	The Nature Conservancy
TOC	Theory of Change
UNDP	United Nations Development Programme
UWA	Uganda Wildlife Authority

1. Introduction

The Global Environment Facility (GEF) is the single largest source of funds and expertise for projects aimed at protecting the global environment. The funding is directed at six principal focal areas: biodiversity, climate change, international waters, ozone depletion, land degradation and persistent organic pollutants. Since its establishment in 1991, the GEF has provided over $7.6 billion in grants, which have leveraged a further $30.6 billion in co-financing, for over 2,000 projects in over 165 countries. Considering the scale of these investments, it is very important to the members of the GEF that the portfolio is achieving lasting impacts in improving the status of the global environment. Determining whether such impacts are being achieved is the challenging task of the GEF Evaluation Office. This study presents an approach to understanding and measuring the impact of projects within the GEF's largest portfolio, the Biodiversity Programme, which if successful, will be scaled-up for application in other GEF focal areas.

1.1 What is impact?

The diagram below illustrates the sequence of events on a typical GEF project intervention. The first two boxes, outputs and outcomes, are normally defined in the project brief, while the third box, impacts, is the main focus of this study.



Definitions of these three components are given below:

- **Outputs.** These are the lowest level objectives of the project and are **the immediate products of the project's activities**. These products are usually within the direct control of the project to deliver, and may be as diverse as capital investments, the establishment of service delivery mechanisms, or publications.
- **Outcomes.** These are the **short to medium term effects of a project's outputs** and are expected to outlive the project. The achievement of outcomes will be influenced both by the project outputs but also by additional factors that may be outside the direct control of the project.
- **Impacts.** The highest level of objective provides the overall justification for a project and explains why it is important in terms of the **long-term sustainable benefits to society**. A project will only expect to contribute to the achievement of impact, and often the impact will only be realised many years after project completion. Project impacts are rarely explicitly defined in the project brief, although they may be more generally captured in the overall goal of the project.

The higher the objective level, the harder it is to measure achievement. Because of capacity constraints and pressure on project implementers to deliver tangible and immediate results, project monitoring and evaluation often primarily focuses on measuring the achievement of outputs and, where data is available, to providing a provisional assessment of the achievement of the project outcomes. However, measuring the achievement of outcomes is challenging as they are often not realised until after project closure and the data to make such an assessment is rarely collected.

Considering the challenges faced in measuring outcomes, it is understandable that project monitoring systems and project evaluations rarely seek to measure the ultimate impacts of the project. The nature of the challenges of understanding and measuring impact within the context of biodiversity projects are elaborated below.

1.2 What is impact for GEF biodiversity projects?

The intended impact of the GEF can broadly be defined as the achievement of lasting improvements in the status of the global environment that are beneficial to human society. We refer to such improvements in this study as **Global Environmental Benefits**, or GEBs. In this context, a biodiversity impact or GEB can be considered to be a lasting improvement in the conservation status of biodiversity that results in globally significant benefits to mankind.

However, deciding what constitutes a biodiversity GEB is not straightforward. The term biodiversity relates to a complex and only partially understood system that operates at many different levels of biological organisation. Components of biodiversity (whether an individual species or an entire landscape) can be viewed as globally significant based on one or more criteria; for example, on account of their rarity and uniqueness, their pivotal role in ecological and evolutionary processes, or for their direct and tangible importance to human society (both in terms of economic values as well as cultural or aesthetic values).

Because of the difficulty involved in developing general rules for defining GEBs, the GEF has not so far established a framework for determining what does and does not comprise a GEB. Developing a simple mechanism for defining the potential GEBs of a project was therefore the first challenge for the present study. To address this need, the study has evolved a practical framework for identifying the potential GEBs of biodiversity projects based on the Nature Conservancy's Conservation Action Planning methodology (see section 2.2.1 below).

1.3 How to measure biodiversity impact?

Once a project's biodiversity GEBs have been identified, the next task is to measure impact, i.e. the extent to which there has been a lasting improvement in the conservation status of the GEBs. This is a significant challenge, because changes in conservation status of biodiversity take a very long time to emerge, which means that they are rarely realised during the lifetime of a project. The two main commonly-used approaches currently used to measure biodiversity impact are as follows:

1. **Biodiversity Monitoring**. Biodiversity monitoring should be an integral part of all biodiversity projects and involves the establishment of a baseline that characterises the status of key biological components of the target area. In an ideal world this monitoring should be continued in the long-term, in order to be able to make an accurate assessment of impact. However, in practice, few biodiversity projects have the necessary capacity or resources to undertake such monitoring. In the cases where monitoring is undertaken, it is often not targeted at the GEBs and will most often be stopped at project completion when it is still too early to record impact.

2. **Biodiversity Threat Assessments.** Given the difficulty in directly measuring biodiversity status, many biodiversity projects utilise an alternative approach that measures the level of threats to biodiversity, which provides a proxy measure for conservation status and biodiversity impact. Threat assessments are generally easier for project implementers to understand and implement. However, as with biodiversity monitoring, these threat assessments are rarely continued after project completion.

Another difficulty associated with measuring biodiversity impact is the question of **attribution**, i.e. whether the observed changes in conservation status can be attributed in part or in full to the project interventions, or whether they are due to some other external factors. For example,

in the Bwindi Forest in Uganda, one of this study's focal areas, there is information suggesting that the conservation status of the Mountain gorilla (one of the area's key GEBs) has improved following on from the GEF intervention in the area. But has this change been the direct or partial outcome of the GEF project, or is it due to other independent factors, such as other initiatives underway in the area, or changes in national environmental policies?

Neither of the above two approaches will shed any light on the issue of attribution. Understanding attribution has been addressed through a broad range of evaluation approaches. For many years, evaluators relied on the concept of a "counterfactual" or a "control" to serve as the baseline against which project impacts could be measured. However, developing such counterfactual evidence is a time consuming and costly process, and normally the data is simply not available to make this form of evaluation feasible and reliable. This has led the GEF EO to consider alternative approaches that can potentially be used to understand project impacts and GEBs that **avoids the need for understanding the issue of attribution**. This line of investigation led the GEF EO to consider the potential of "Theory of Change" approaches, the third major potential methodology for determining biodiversity (and potentially other) impacts, and which formed a major element of this present study, as outlined below.

3. **Theory of Change Approach.** This involves mapping out the logical sequence of means-ends linkages underlying a project and thereby makes explicit both the expected impacts of the project and the outputs and outcomes that will lead to the achievement of these. The resulting theoretical model can then be tested by assessing whether the means-ends linkages can actually be confirmed in practice.

None of the above three mechanisms for understanding biodiversity impact is definitive, and ideally, it is best to use a combination of all three mechanisms, such that triangulation of the results of the different methods leads to strong evidence of project impacts. The development and testing of an evaluation approach that can effectively do this was the subject of this study, as outlined below.

1.4 The GEF Impact Evaluation Study

This *GEF East Africa Impact Evaluation Study* aimed to develop and pilot a comprehensive evaluation methodology for measuring the impacts, or as defined above, the Global Environment Benefits, of GEF biodiversity portfolio projects. The study was undertaken by the GEF EO, with technical support provided by the Conservation Development Centre, Nairobi, Kenya.

The geographic focus of the study was East Africa, due to the region's high concentration and range of GEF-supported biodiversity projects (in terms of geographic scope, total and proportional GEF monetary contribution, and implementing agencies) and the relatively high quality of project and country information. Three GEF projects from the region were then selected as case studies on the basis of their positive terminal evaluations, which in turn gave the likelihood of positive project impacts. These case study projects were:

- Bwindi Impenetrable National Park and Mgahinga Gorilla National Park Conservation Project (Uganda)
- Reducing Biodiversity Loss at Cross-Border Sites in East Africa Project (Kenya, Tanzania and Uganda)
- Lewa Wildlife Conservancy Project (Kenya)

The study comprised of the following main components:

1. Design of the evaluation analytical framework. This work was carried out through an iterative process involving both GEF EO and CDC staff members.
2. Desk research on the three case study projects to provide background information as a basis for piloting the analytical framework. This work was mainly carried out by CDC.

3. Field verification and stakeholder consultations with regard each of the three case study projects. This work was also carried out by CDC.
4. Stakeholder workshops to further develop and test the evaluation framework for all three case study projects. In this regard, Field Workshop #1 was held at Ruhija in Bwindi National Park, Uganda, from 23-26 April 2007, and Field Workshop #2 was held at Malu near Naivasha in Kenya from 25-26 July 2007. Both events were carried out jointly by the GEF EO and CDC, in collaboration with partners from the local project areas.

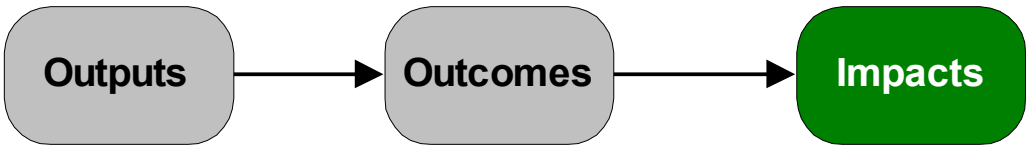
The **Impact Evaluation Analytical Framework** is described in detail in the next section (Section 2), followed in Section 3 by a summary of the overall findings of the application of the framework to the three case studies. The final Section 4 provides an assessment of the efficacy and relevance of the Impact Evaluation Analytical Framework for the future evaluation of the impacts of GEF biodiversity portfolio projects worldwide, as well as those of other GEF project portfolios.

2. Impact Evaluation Analytical Framework

This section describes the background, rationale and key features of the Impact Evaluation Analytical Framework that was developed by this study as a means of understanding and assessing the impacts of the three case study projects. A key consideration in developing the framework was to design an approach that is practical and achievable within the constraints of GEF project evaluation procedures and resources.

2.1 Overview

As discussed in the previous section, the process of delivering impacts in a typical GEF project is made up of three stages – the delivery of project outputs, how these outputs are subsequently converted into outcomes, and how outcomes contribute towards the delivery of lasting project impacts, i.e. for the GEF, lasting global environmental benefits that are important to human society. This process is illustrated in the diagram below.



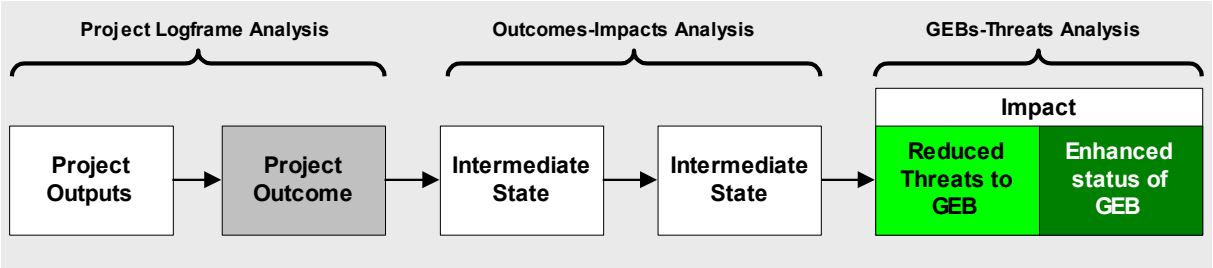
The major challenge to be addressed in designing the evaluation framework was to find a means of teasing apart and understanding the processes involved in delivering impact on a particular project, but in a realistic and cost effective way that is chiefly based on the utilisation of **existing data** concerning the project, and can be replicated in future GEF impact evaluations.

The Impact Evaluation Analytical Framework that this study has developed attempts to achieve this by using three distinct analyses for measuring impact, which together can provide a comprehensive understanding of impacts largely based on available project data, as well as providing a useful means for triangulating the findings. As illustrated in the diagram of the framework in Figure 1 overpage, the three analyses are:

1. **GEBs-Threats Analysis**, which first identifies the expected project Global Environmental Benefits, then assesses project impacts by examining both the change in status of the GEBs as well as trends in threats to these GEBs. This is the **direct measure** of project impacts described in the previous section.

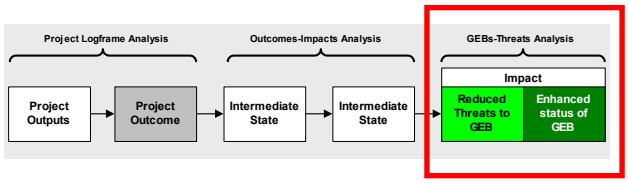
2. **Project Logframe Analysis**, which examines the delivery of project outputs and outcomes as defined by the project logical framework.
3. **Outcomes-Impacts Analysis**, which examines the process by which project outcomes are converted to ultimate impacts, often through a series of what is termed in this study "intermediate states". This analysis therefore provides a means of **indirectly measuring** project impacts.

Figure 1 Schematic of the Impact Evaluation Analytical Framework



These three main components of the study's Impact Evaluation Analytical Framework are described in the following sections.

2.2 Defining and measuring GEBs



As described previously, the optimal way of understanding a biodiversity project's impacts is to directly examine the biodiversity conservation benefits that the project has contributed towards. However, as mentioned, this is a challenging task for a variety of reasons – firstly because baseline data on the status of biodiversity before the project is often missing; secondly because it is difficult and costly to monitor biodiversity trends; thirdly, because changes in biodiversity occur over long periods of time and are difficult to assess in normal project lifespans; and lastly because of the issue of attributing particular changes in biodiversity to the project itself.

Nevertheless, the direct assessment of a project's biodiversity conservation impacts is still potentially a valuable part of understanding the process of impact delivery, and this assessment can be used to triangulate with the other assessment techniques detailed above. The development of a simple and cost effective way of first identifying the project's expected biodiversity impacts, and then measuring the status of these biodiversity impacts, formed an important component of the overall study. This comprised the study's "**GEBs-Threats Analysis**".

Ideally, the study team were keen to identify an existing tried and tested methodology for undertaking this component of the analysis, and we found what we needed in the Nature Conservancy's **Conservation Action Planning** (CAP) methodology. TNC has developed the CAP approach over many years and it has now been widely tested around the world, especially in North and South America. The methodology was developed as a way of assessing and monitoring the status of an ecosystem or conservation area by focusing on the most important biodiversity and ecological characteristics of the area.

The cornerstone of the CAP methodology is the identification of **Conservation Targets**, which are the key biodiversity components of the ecosystem or conservation area that are believed to be critical for the long-term survival of the ecosystem. The Conservation Targets (CTs) are chosen to encapsulate the key ecological components of the system, and may be at the system

level itself (e.g. river systems), or at the habitat/community level (e.g. a forest or woodland), or at the species level (e.g. a keystone species such as elephants that play a critical role in the ecosystem, or are a key characteristic of the ecosystem). The premise underpinning the CAP methodology is that focusing conservation action on the CTs will result in the maintenance of the ecological health of the entire ecosystem. Equally, an understanding of the status of the CTs is a strong proxy measure for assessing overall ecosystem health.

The study team recognised that the CAP method's conservation targets are equivalent to the environmental benefits that a particular ecosystem provides. Consequently, the methodology provides a potential mechanism of both identifying the environmental benefits of an ecosystem, and then measuring trends in these benefits. The next question was how to determine whether these environmental benefits are of potential global environmental significance, i.e. are they GEBs? The study team chose to do this by referring to existing international biodiversity prioritisation and ranking mechanisms. For example, at the species level, internationally recognised databases of globally endemic, range restricted or "endangered" species, were checked such as the IUCN Red List or the World Bird Database (by Birdlife). At higher levels of biological organisation, lists produced by international conservation organisations that identify critical biodiversity rich ecosystems, such as Conservation International's Hotspots or WWF's Global Ecoregions, were employed. In this way, using the CAP method as detailed below, it was possible to first identify the expected Global Environmental Benefits of the three case study projects, and then to assess the impact the project has achieved in delivering these benefits.

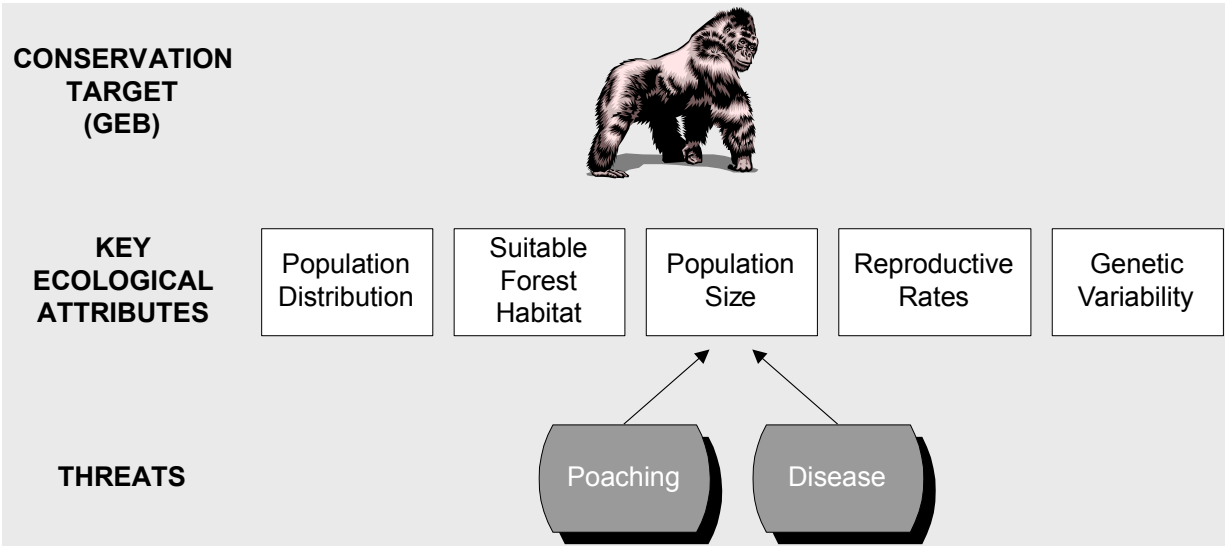
The CAP method also uses the concept of the **Key Ecological Attributes** (KEAs) of the Conservation Targets (GEBs), which can be defined as "*those factors of a Conservation Target's ecology that if degraded would seriously jeopardize the target's ability to survive over the long-term*". KEAs are generally attributes of: biological composition (e.g. population size/structure, sex ratios, genetic diversity); environmental requirements (e.g. key habitats, prey species, connectivity); or ecological interactions (e.g. keystone species, fire). The KEAs provide a mechanism for determining the status of the GEB in question – if the KEAs are found to be deteriorating, it is an indication that the conservation status of the GEB is declining, and *vice versa*. The assessment of the KEAs and the detection of trends in the KEAs was an important aspect of this component of the study.

The final component of the CAP methodology used in this assessment is the determination of **threats** to the GEBs, or more appropriately to their Key Ecological Attributes. The CAP defines threats as "*human pressures that result in the destruction or degradation of a Conservation Target or its Key Ecological Attributes*". These threats may either be current or likely to occur in the next ten years. The assessment of threats impacting on the GEBs in the case study areas was another important aspect of this component of the study.

Figure 2 below illustrates the relationship between a GEB, its KEAs and threats in the case of the Mountain gorilla (one of the GEBs of the Bwindi project). Five KEAs were identified for the Mountain gorilla, i.e. the aspects of the gorilla's ecology that are considered vital for the survival of the species. One of the KEAs, population size, was considered to be impacted by two main threats, poaching and disease.

In sum, the key principle of this component of the Impact Evaluation Analytical Framework is that any improvement in the status and viability of the identified GEBs or their Key Ecological Attributes, or a reduction in the threats to the GEBs, serves as a direct measure of the achievement of project impact.

Figure 2 Example KEA's and associated threats for the Mountain gorilla GEB



2.2.1 Identifying GEBs, KEAs and threats

GEBs & KEAs

The CAP methodology recommends that approximately eight conservation targets be identified for the selected conservation area, drawn from the system level, community/habitat level, and species level as mentioned above. The detailed methodology for identifying conservation targets and their KEAs is explained in the CAP information materials that have been prepared by TNC and will not be elaborated on here[1]. This study adopted a similar methodology, except that a further step was added to determine whether the targets selected were potentially of global significance, i.e. a GEB. As mentioned previously, this was done mainly by reference to international ranking and prioritisation mechanisms (e.g. IUCN Red Lists of Biodiversity) and their underlying significance criteria.

Table 1 below gives an example of the KEAs identified for the Mountain Gorilla for the Bwindi Case Study.

Table 1 Key Ecological Attributes for the Mountain Gorilla Conservation Target

Conservation Target	Key Ecological Attribute
Mountain gorillas	Suitable undisturbed forest habitat
	Population distribution
	Population size
	Reproductive rates
	Genetic variability

Threats

Once again, the study adopted the CAP methodology for the identification and assessment of threats, although the main focus was on the direct threats (termed stresses in the CAP) rather than the sources of threats (termed sources of the stresses in the CAP). The sources of threats in this assessment essentially align with the various elements of the comprehensive Outcomes-Impacts analysis discussed later in this report, and were addressed through that analysis.

[1] TNC (2007). Conservation Action Planning. Developing Strategies, Taking Action, and Measuring Success at Any Scale: Overview of Basic Practices. February 2007 (http://conserveonline.org/workspaces/cbdgateway/cap)

Once the threats to the conservation targets (GEBs) and their KEAs were identified, the threat assessment criteria proposed in the CAP were used to rank the different threats according to their severity and scope, as shown in Table 2 below. This ranking exercise enabled the analysis to be focussed on the most significant threats impacting on any particular target.

Table 2 Scoring system for threats analysis

Threat Level	Very high (4)	High (3)	Medium (2)	Low (1)
Severity (level of damage)	Destroy or eliminate GEBs	Seriously degrade the GEBs	Moderately degrade the GEBs	Slightly impair the GEBs
Scope (geographic extent)	Very widespread or pervasive	Widespread	Localised	Very localised

Threats were prioritised at **pre-project intervention** levels. An example of the outcome of this assessment and ranking exercise is given in Table 3 below.

The GEBs, KEAs and threats in the three case study areas were all identified by specialists participating in the study who had an extensive knowledge of the ecosystems concerned.

Table 3 Example ranking of threats to Black rhino GEB (Lewa project extract)

Threats to the CT/ KEAs	Severity Score (1-4)	Scope Score (1-4)	Overall ranking
Poaching and snaring	3	3	**3**
Insufficient secure areas	2	3	**2**
Habitat loss (due to elephant density)	1	1	**1**

2.2.2 Assessing conservation status and threats to the GEBs

The next stage in the process was to develop a data collection framework for assessing the status of the GEBs, their KEAs and the associated threats. The framework identifies indicators for each KEA and threat, along with the potential sources of information for measuring the indicator. For the Bwindi and Lewa projects, the task of collecting and assessing this information was undertaken by scientists from the Institute of Tropical Forest Conservation, headquartered in Bwindi National Park, and the Lewa Research Department respectively. For the Cross Borders project, this exercise was done by CDC based on the existing project documentation, a field visit to the project site and consultations with key informants. The objective of this exercise was to provide quantitative measures for each indicator from before the project (**baseline**), at the **project close**, and **present day**. Where quantitative data was not available, strong qualitative data was used.

The findings from these assessments were discussed at Field Workshop #1 at Ruhija and the emerging trends were finally presented in summary tables. Table 4 below provides a sample extract from the Lewa project assessment of the conservation status and threat level to the Black rhino GEB.

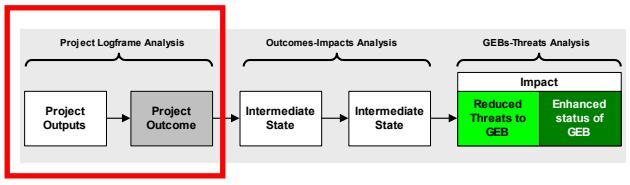
Table 4 Black rhino conservation and threat level status (Lewa project extract)

Variable	Indicator	Unit	Baseline	Project end	Now	Trend
Key Ecological Attribute						
Population size	Total population size of Black rhino	No.	29	40	54	⇧
Productivity	Annual growth rates	%	12	13	15	⇧
Threats to the GEBs						
Poaching and snaring	Number of black rhinos poached and snared in Lewa	No.	0	0	0	⇔
	Number of black rhinos poached and snared nationally	No.	2	15	15	⇧

Key to trends

⇧	Conservation status is improving	⇩	Threat level is decreasing
⇩	Conservation status is deteriorating	⇧	Threat level is increasing
⇔	Conservation status is stable	⇔	Threat level is unchanged

2.3 Evaluating project outputs and outcomes



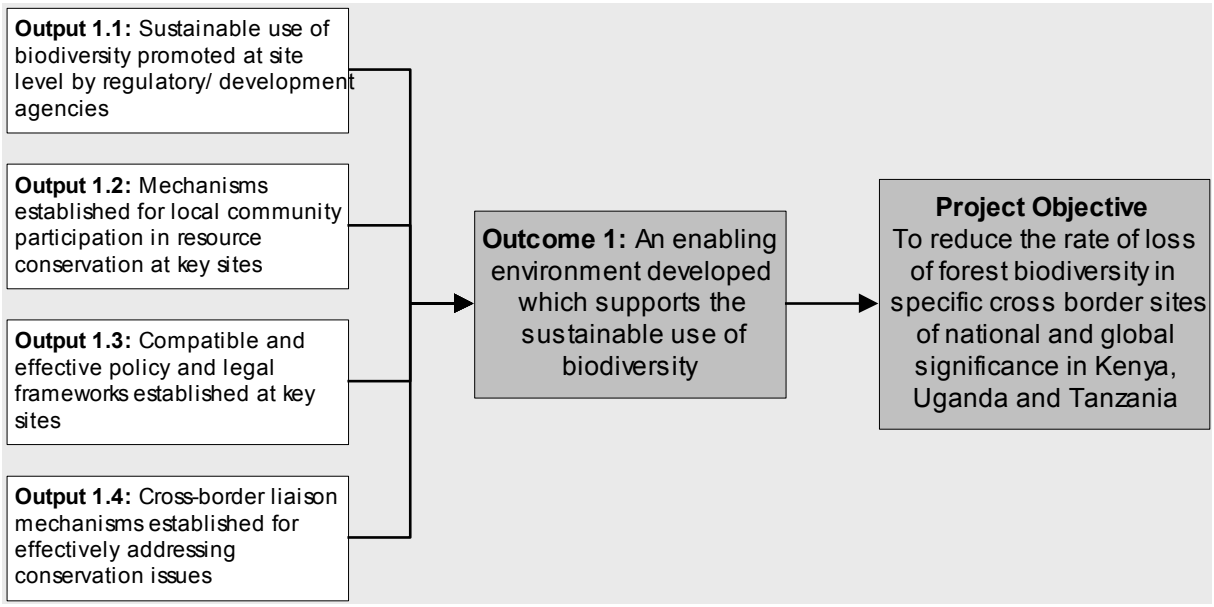
This component of the evaluation framework examines the first stage in the process of delivering impacts – the outputs and outcomes delivered by the project. Most GEF projects incorporate internal project monitoring systems that are designed to measure the delivery of the project against its defined activities, outputs and outcomes. The "**Project Logframe Analysis**" developed in this study uses this monitoring information, alongside the mandatory mid-term and end-of-project evaluations, to rapidly assess the delivery of project outputs and outcomes.

The working definition of project outputs and outcomes for this study are defined in the introduction (section 1 above). The overall project objective is not assessed by this analytical approach as it relates to the intended impacts that are contributing to global environmental benefits and is measured directly by GEBs-Threats Analysis and indirectly by the Outcomes-Impacts Analysis.

For the three case studies examined here, project outputs and outcomes are taken from the original or modified GEF project briefs. However, where these project briefs do not have clearly defined logframes, it was necessary to retrospectively formulate project outputs and outcomes based on the terminal evaluations and what the project actually did on the ground. This was the case for both the Bwindi and Lewa projects, which, although they had an overall Project Objective, lacked clearly defined outputs and outcomes.

The Cross Borders project logical framework was well defined in the original project brief and later modified following the Mid-term Review. The modified logical framework for Outcome 1 is shown in Figure 3 below.

Figure 3 Extract from the Cross Borders Logical Framework for Outcome 1



2.3.1 Assessing logical frameworks

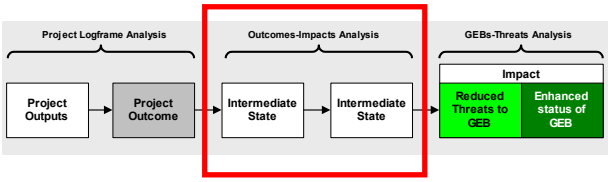
The steps used in assessing the project outputs and outcomes are defined below:

1. **Assess implementation logic.** Are the identified outputs and outcomes sufficient and appropriate to deliver the intended outcomes and contribute to the Project Objective respectively? If this is not the case, it is important to identify missing or inappropriate outputs or outcomes.

2. **Select or develop indicators.** This step seeks to clearly define indicators for measuring the extent of achievement of each output or outcome. These indicators have ideally already been identified in the internal project monitoring systems. However, often project monitoring focuses on measuring implementation, i.e. "*number of meetings held*", rather than the achievement of objectives. It is therefore necessary to select appropriate indicators from the project monitoring systems, or failing that to develop new indicators, which either measure lasting changes in the conditions in the project area of focus, or changes in behaviour (knowledge, attitudes, and practices) of affected individuals, groups and institutions.

3. **Score achievement of outputs and outcomes.** The final step involves the scoring of the outputs/ outcomes against the defined indicators. This assessment is based on the project monitoring dataset and the evaluations previously carried out. The scoring system used is as per the Outcomes-Impacts Analysis (see next section).

2.4 Understanding the process from project outcomes to impacts

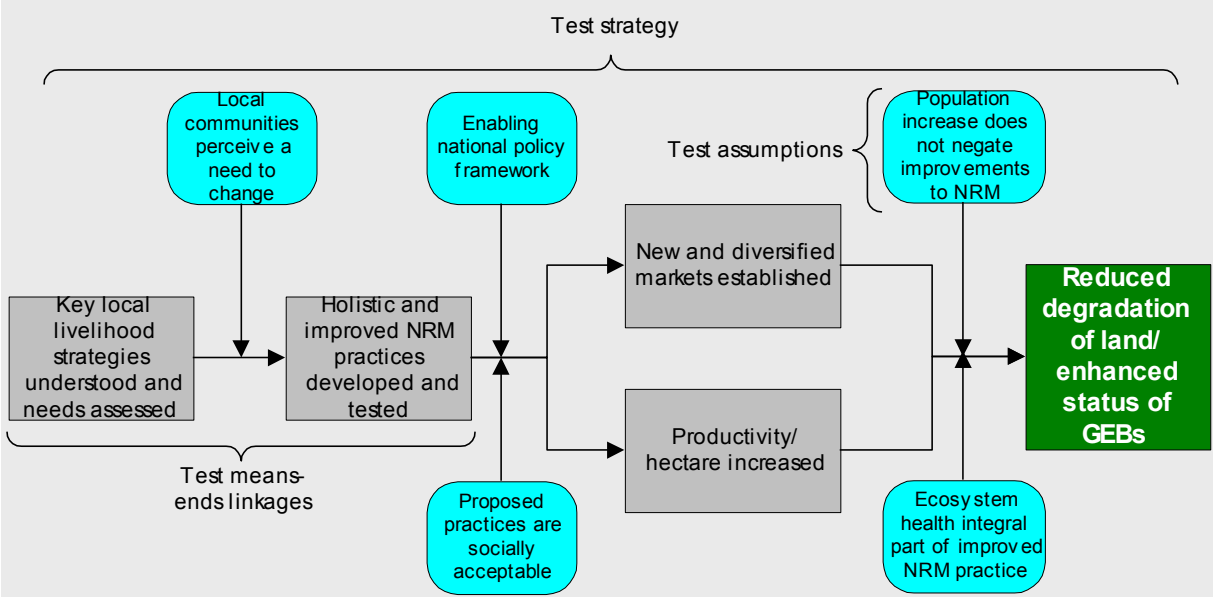


The final piece in the jigsaw of the impacts evaluation analytical framework is the "Outcomes-Impacts Analysis". As discussed previously, this analysis is based on the Theory of Change (TOC) approach to understanding project impacts.

Perhaps the ideal approach to understanding the impacts of biodiversity projects is to develop comprehensive TOC models for the diverse intervention strategies that underpin these projects, which we term here "Integrated Conservation and Development" or **ICD strategies**. A typical GEF biodiversity project may incorporate an array of such strategies, although they are rarely explicitly identified. For the case studies targeted in this study, a variety of ICD strategies were identified and modelled using a TOC approach during Field Workshop #1. These included so-called "Protection Strategies", "PA Co-management Strategies", "Benefit Sharing Strategies" and "Community Natural Resource Management Strategies".

A highly simplified example of this type of ICD strategy-based comprehensive TOC modelling is given in Figure 4 below, for a Community NRM Strategy. The model illustrates the underlying means-ends linkages (between the grey boxes) and assumptions (in blue boxes) that comprise a theory of change that delivers the intended impacts (in the green box).

Figure 4 Community NRM Strategy Theory of Change Model



ICD strategy-based TOC models can potentially be assessed in three ways (see Figure 4 above):

1. **Testing the ICD strategy itself**, by comparing project outcomes with and without the strategy. This requires assessing not only the project site, but also a control site (counter-factual) where the specific project strategy has not been implemented, but which represents a comparable ICD situation.
2. **Testing key linkages**, by measuring whether means-ends relationships hold true. For example, in the diagram above, if "*key local livelihood strategies are understood and their needs assessed*" does that lead to "*holistic and improved NRM practices being developed and tested*"?
3. **Testing key assumptions**, by measuring whether assumptions have been realised or not. For example, is the assumption that "*population increases will not negate improvements to natural resource management practices*" supported by evidence on the ground?

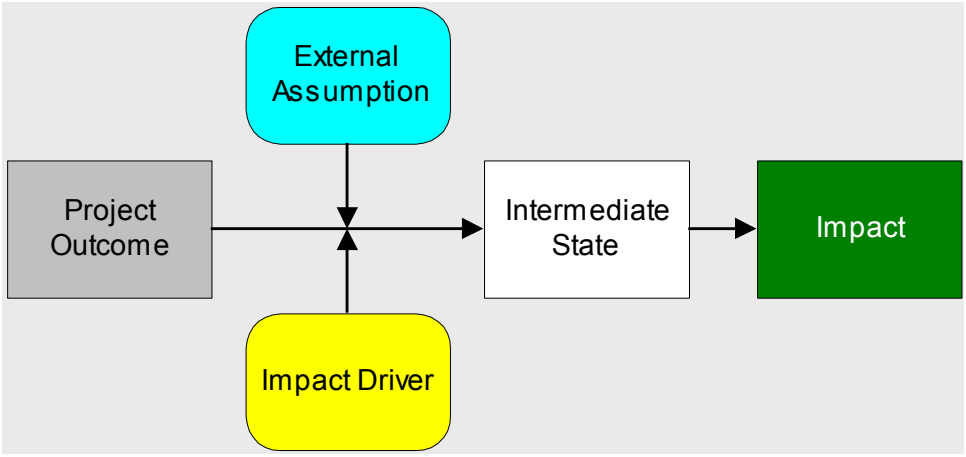
The comprehensive ICD strategies-based TOC approach is perhaps the optimal theoretical method for better understanding the relationships leading to the delivery of biodiversity impacts. However, it is unrealistic in most practical situations. This is because the models that are developed cannot be easily reconciled with the logical frameworks of most conservation projects. Project logframes are not normally aligned to the ICD strategies that underpin the projects, but rather focus on the packaging of project outputs and outcomes in an appropriate fashion for project delivery. For example, Outcome 1 of the Lewa Project is: "*Long-term institutional and financial capacity of LWC to provide global and local benefits from wildlife*

conservation strengthened". While such an outcome may be appropriate in a logical framework, it is very unlikely to feature in an ICD strategy TOC model.

Since project monitoring and information collection is usually geared to the delivery of project outputs and outcomes, it is relatively easy for an evaluator to assess whether the project has delivered the anticipated outputs and outcomes (as per the Project Logframe Analysis used in this study), but much more difficult to probe to the level of the underlying strategies that the project is attempting to deliver – first because these strategies have usually never been explicitly formulated, and second because the data to test the means-ends linkages and assumptions of these strategies has not been collected. This means that in order to use the ICD strategies-based TOC approach, it is first necessary to generate the strategy-based TOC models as illustrated above, and then to collect new data on the various elements of the model. This is a very time consuming process that was not even feasible in this detailed study, let alone in a routine evaluation of a GEF project.

For the purposes of this study, a simpler way was needed of understanding the process of delivering project impacts, based as far as possible on existing project structures and data. This was achieved through the Outcomes-Impacts Analysis, as illustrated generically in Figure 5 below.

Figure 5 Outcomes-Impacts TOC Model components



The model incorporates three different elements that it is suggested are involved in the transformation of project outcomes into impacts, as follows:

- **Intermediate States.** These are conditions that are expected to be produced on the way to delivering the intended impacts.
- **Impact Drivers.** These are significant factors or conditions that are expected to contribute to the ultimate realisation of project impacts. Existence of the Impact Driver (ID) in relation to the project being assessed suggests that there is a good likelihood that the intended project impact will have been achieved. Absence of the ID suggests that the intended impact may not have occurred, or may be diminished.
- **External Assumptions.** These are potential events or changes in the project environment that would negatively affect the ability of a project outcome to lead to the intended impact, but that are largely beyond the power of the project to influence or address.

2.4.1 Categories of Impact Drivers

The outcomes-impacts analysis adopted in this study is based on the premise that Impact Drivers are critical factors in the delivery of project impacts, and essential for understanding what makes a project successful. The rationale is that, if these IDs are not present in a project and are not maintained after the specific project intervention is over, it is unlikely that the intended project impacts will be achieved. Therefore, it is important that the IDs that are often

implicit in a project are made explicit, and that their role in achieving impacts is understood. For this purpose, the study identified potential generic IDs, under three categories (appropriateness, sustainability and catalytic effects) to serve as a checklist during this analysis, as outlined below.

Appropriateness

IDs under the appropriateness category relate to environmental and socio-economic factors or conditions that are expected to create sufficient incentives amongst stakeholders to ensure their engagement and support in the delivery of the intended impacts. Potential generic IDs include:

- **Environmental ID** – a factor/ condition relating to the practices and policies of land owners and users in the targeted ecosystem that will complement and reinforce the achievements of the project outcomes in conserving the identified global environmental benefits
- **Socio-economic ID** – a factor/ condition that is likely to enhance socio-economic benefits and thereby encourage communities to be more engaged in and supportive towards the delivery of intended impacts

Sustainability

IDs under the sustainability category relate to the socio-political, institutional and financial factors or conditions contributing to the continuation, post-GEF funding, of the mechanisms and other accomplishments generated by the project, which will ultimately lead to impact. Potential generic IDs include:

- **Socio-political ID** – a factor/ condition that is likely to establish strong links and cooperation with the political and cultural/ traditional leadership and thereby encourage their constituencies to support the delivery of intended impacts
- **Institutional and human resources ID** – a factor/ condition within the institutions supported and/or established by the project that will enhance their long term viability and capacity to deliver the intended impacts
- **Financial ID** – a factor/ condition related to initiatives supported and/or established by the project that will enhance their ability to be financially self-sustaining, either through income generation or a secure source of long-term external support

Catalytic Effects

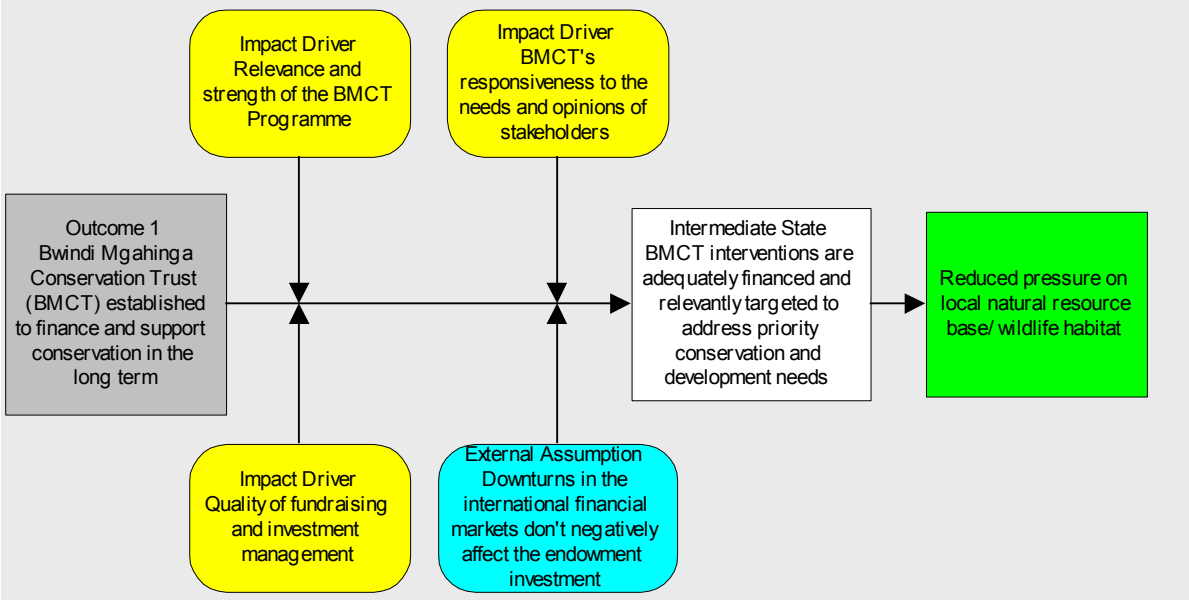
IDs under the catalytic effects category relate to those factors or conditions contributing to the scaling-up, replication and mainstreaming of intended project impacts within the broader ecosystem and further afield.

- **Leveraging co-financing and resources ID** – a factor/ condition that is likely to secure further commitments of finance and resources for the continuation and wider application of successful project-supported initiatives, and thereby leading to the realisation of greater impact
- **Replication of interventions ID** – a factor/ condition that provides an opportunity to link organisations or individuals not targeted by the project to technical and financial support necessary to repeat successful project initiatives within the wider area, and thereby leading to the realisation of greater impact
- **Mainstreaming environment into policies and legislation ID** – a factor/ condition that establishes mechanisms for using the lessons learnt during project implementation to influence and strengthen national priorities and policies, and thereby leading to the realisation of greater impact

2.4.2 Developing Outcomes-Impacts TOC models

The process of developing an Outcomes-Impacts TOC model is best described by looking at an example, which is taken from the Bwindi Case Study, shown in Figure 6 below.

Figure 6 Example Outcomes-Impacts TOC model from Bwindi Case Study



The steps involved in developing this TOC model are as follows:

1. **Identify Intermediate States.** The first step involves examining whether the successful achievement of a specific project outcome would directly lead to the intended impacts and, if not, identifying additional conditions that would need to be met to deliver the impact. In the example above, the project outcome "*establishment and development of the BMCT long-term conservation financing mechanism*" is not considered sufficient to lead to the intended impact. It is felt that an additional intermediate state must be attained in order to deliver the impact, which is that "*BMCT interventions are adequately financed and relevantly targeted to address the priority conservation and development needs*".

2. **Identify Impact Drivers.** The next step is to identify those factors that are likely to contribute to the realisation of the intermediate state(s) and impact, which are under the control of the project to influence and address. The starting point is to look through the categorisation of Impact Drivers (see section 2.4.1 above) and identify opportunities for maximising impact. In the example above, three IDs (the yellow boxes) are identified. The first, "*relevance and strength of the BMCT programme*", is an institutional ID addressing issues of sustainability. The second, "*BMCT's responsiveness to the needs and opinions of stakeholders*", is both a socio-political ID addressing sustainability of impact as well as a socio-economic ID addressing the appropriateness of the project in achieving impact. The final one, "*quality of fundraising and investment manager*", serves as both a financial and leveraging of co-financing/ resources ID, addressing issues of sustainability and catalytic effects respectively.

3. **Identify External Assumptions.** The final step seeks to identify those factors that are necessary for the realisation and sustainability of the intermediate state(s) and ultimate impacts, but which are beyond the control of the project to influence. The starting point for this step is to look back at the assumptions originally identified in the project document. In the example above, one External Assumption is identified, which relates to the performance and stability of international financial markets and their effect on BMCT's endowment fund.

2.4.3 Assessing TOC models

Once the Outcomes-Impacts TOC models have been developed, as illustrated in Figure 6 above, the next stage is to develop an **assessment framework** for each model, aimed at identifying key information needs to assess the different components of the model. The assessment framework defines key indicators for measuring the extent of achievement for each ID, Intermediate State and External Assumption and the sources of information to make this assessment. Table 5 below provides an extract from the Bwindi Case Study assessment framework for the three Impact Drivers identified for Outcome 1 (see Figure 6 above).

A large proportion of the data necessary for this analysis can be sourced from the project terminal evaluation reports and studies that have been carried out since the closure of the projects. However, in addition to reviewing the existing documentation, it is often necessary to collect new information through targeted consultations and studies.

Table 5 Extract of assessment framework for Bwindi Outcome 1 Impact Drivers

Impact Driver	Indicator/ issue	Source of Information
Relevance and strength of the BMCT Programme	▸ Activities supported by the Trust are guided by an overall strategic framework for achieving the long-term conservation of the ecosystem	▸ BMCT 10-year Review
BMCT's responsiveness to the needs and opinions of stakeholders	▸ Local Community Steering Committee (LCSC) mechanism is representative of community needs ▸ BMCT mechanisms complement UWA and local government activities	▸ ICD Strategies Assessment ▸ BMCT 10-year Review
Quality of fundraising and investment management	▸ Fundraising generating discrete projects with donor funding ▸ Asset managers showing good performance	▸ ICD Strategies Assessment ▸ BMCT 10-year Review ▸ Trust management

Once the information for the assessment framework has been collected and synthesised, the final stage is to score the achievement of the project in converting outcomes into impacts. Each Intermediate State, ID, and External Assumption is scored according to the level to which it has been achieved. The scoring system adopted for assessing the achievement of these variables is outlined in Table 6 below.

Table 6 Scoring system for Outcomes-Impacts TOC Models

Score	Description
?	No evidence available
✗	Not achieved
✓	Poorly achieved
✓✓	Partially achieved
✓✓✓	Well achieved
✓✓✓✓	Fully achieved

3. Key findings and conclusions of the impact evaluation case studies

This section provides an overview of the key findings of the impact evaluation assessment for each of the three case studies. The final section provides the main conclusions that emerged from the three case studies concerning how and why impact was delivered. A detailed summary of the findings of the case studies is given in the Annexes.

3.1 Bwindi Project

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 project aimed to establish an environmental trust fund, the Bwindi Mgahinga Conservation Trust ("the Bwindi Trust"), to serve as a long-term financing mechanism to support the conservation of two of Africa's most ecologically unique national parks.

GEBs

The Bwindi and Mgahinga forests in south-west Uganda are isolated islands of a once much more extensive montane forest habitat that extended across the wider Albertine Rift area of central Africa, and which is now coming under heavy pressures from one of the most dense human populations in Africa. Like other surviving patches of Albertine Rift forest, these two national parks contain a large number of endemic species, many of which are of global biodiversity significance. This study identified four key biodiversity components that represent the Global Environmental Benefits provided by these forests - the globally endangered Mountain Gorilla, for which these forests are an important sanctuary, the rare Grauer's rush warbler, which is a characteristic species of the forest's swamp habitat, the unbroken ecological continuum of forest types - the only example in East Africa - and the unique montane forest habitat. These GEBs were all declining prior to the project as a result of a range of threats emanating from the surrounding dense human populations, which the new environmental trust fund mechanism was designed to address, in particular by working together with the local communities at reducing pressure on forest resources.

As detailed in the methodology section, the study used the impact evaluation framework's three analytical approaches to assess whether the intended impacts of the project in terms of delivering the anticipated global environmental benefits had in fact been achieved, as outlined below.

Project Logframe Analysis

Overall, the process to establish the Bwindi Trust and the work that the Trust has since accomplished is widely regarded as an outstanding success for the GEF, and since its establishment the model has been adopted and replicated elsewhere in Africa. The terminal evaluation of the project concluded that this had been a "Moderately to Highly Satisfactory" intervention by the GEF. This study's Project Logframe Analysis endorsed this finding, although it concluded that the project could have been even more effective if certain project elements had been better addressed. For example, it was felt that the lack of progress during the project to develop the Trust's endowment and fundraising capacity limited the scope of the Trust to expand its activities. Overall, the conclusion of the logframe analysis was that a very good foundation had been established through the project to ultimately deliver impact and the identified GEBs. Whether these impacts have in fact occurred is assessed through the remaining two elements of the evaluation framework, detailed below.

GEBs-Threats Analysis

As described in section 2.2 above, the GEBs-Threats Analysis is designed to provide a direct measure of project impact, by working up information on trends in the status of the selected GEBs since the project ended as well as on the threat levels to these GEBs. This assessment occurred about seven years after project closure, so there was a reasonable possibility that actual impacts could be detected, although these could not necessarily be attributed directly to the GEF intervention. In fact, the GEBs-Threats Analysis indicated that there had been a measurable positive impact in the conservation status and threat levels with regard all four of the identified GEBs. In the case of the Mountain gorilla, there has been a steady increase in gorilla numbers and distribution since the project began. Although there was less data available to assess the other GEBs, the data available indicated that the conservation status for the other GEBs was stable. Although the threats to the GEBs have not been eliminated, the threat levels have been reduced, in particular due the role of the Bwindi Trust in working with the initially hostile communities and winning their support and cooperation for conservation and the strengthened law enforcement operations of the park authorities.

Outcomes-Impact Analysis

The GEBs-Threats Analysis above showed that there had been a measurable change in the status of the four selected GEBs, which would suggest that, were it not for the issue of attribution, the project has achieved a significant impact. The final element of the evaluation framework, the Outcomes-Impacts Analysis, sought to determine whether the recorded impacts can be reasonably attributed to the GEF intervention, by evaluating the theory of change linkages between the outcomes delivered by the project and the impacts that were seen on the ground.

The analysis identified three key aspects of the linkages between project outcomes and ultimate impacts that were crucial. These were:

- The capacity of the Bwindi Trust to continue and scale up support for conservation and development interventions in the ecosystem.
- The further strengthening of park management to implement relevant management programmes that address threats to the identified GEBs.
- The continued support to park-adjacent communities to improve cooperation with park management and enable the wider adoption of conservation-compatible livelihood strategies.

With regard to the institutional capacity of the Bwindi Trust, there was good evidence to show that the Trust had matured and grown since project closure. For example, the Trust subsequently hired qualified senior staff, who have been effective in continuing the community support programme and firmly establishing the Trust as a respected conservation institution in the ecosystem. However, the Trust's programme of activities had to be scaled down in due course due to a drop in funding. In general, it was felt that the strengthened Bwindi Trust had contributed to the observed impact, but that greater impact could potentially have been achieved if the Trust had had a more strategic and proactive implementation programme, which would also have helped in securing more funds.

The strengthening of park management was seen as a key aspect for delivering ultimate impact and an important complementary strategy to the Trust's principal activity of providing community support. Since project closure, the main support of the Trust has been in the development of a management plan, which is seen as a key tool for the future management of the park. However, the limited resources to implement the management plan are seen as the main block to realising greater impact. With respect to community support, good progress has been made in increasing community support for conservation through a diverse range of awareness-raising and

livelihood support activities. However, changing behaviours and practices has turned out to be more difficult to achieve on the ground, and there was limited evidence of scaling up of successful activities beyond the direct beneficiaries of the community support programme. Overall, the link between the three key aspects and the observed impact was considered to be moderately strong.

Conclusion

The three analyses all triangulate towards the conclusion that the GEF intervention in Bwindi and Mgahinga National Parks through catalysing the establishment of the Bwindi Trust has indeed led to measurable impacts in terms of GEBs delivered, and that these impacts are continuing to be created. The initial Project Logframe Analysis showed that the project, although not perfect, had largely succeeded in delivering its intended outputs and outcomes. The GEBs-Threats Analysis then demonstrated that there had been measurable impacts achieved on the ground, with the key GEBs stabilised and starting to show improving conservation status and reducing threats. Finally, the Outcomes-Impacts Analysis provided evidence that these impacts could indeed be attributed to the GEF intervention, by demonstrating that the linkages between project outcomes and ultimate impacts had been largely achieved. However, this analysis also showed that potentially even greater impact could have been achieved from the GEF intervention if the Trust had managed to secure higher levels of financing and had taken a more strategic approach in delivering its programme and undertaking fundraising activities.

3.2 Cross Borders Project

The **Reducing Biodiversity Loss at Selected Cross Border Sites in East Africa Project**, was a regional five-year, full-sized GEF/ UNDP project that was operational between 1998 and 2003. The project aimed to promote innovative collaboration approaches to forest conservation at the policy and field levels, with an emphasis on encouraging the governments of Kenya, Tanzania and Uganda to cooperate in protecting transboundary forest areas. Due to the large scope of this project, the study based its findings on an assessment of what was considered by project implementers to be the most successful of the four cross border sites; **the Sango Bay and Minziro forests** that straddle the border between Uganda and Tanzania.

GEBs

The Sango Bay and Minziro forests form an extensive swamp forest containing West African and Afro-Montane species that together represent a globally unique ecological system with a number of endemic species. This study identified six Global Environmental Benefits that were felt to represent the key biodiversity components of global significance provided by these forests. The identified GEBs were: the evergreen swamp forest-grassland system, which is found nowhere else in the world; two avian species (the Blue swallow, characteristic of the forests' grassland habitat, and the Forest francolin); and three flora species (the endemic swamp podo, a highly prized timber species, the increasingly rare wild coffee, and the endemic shrub, *Pseudagrostachys ugandensis*). These GEBs were all declining prior to the project due to a number of commercial and subsistence threats, in particular from logging activities and the demand to convert the forest to other land uses. The transboundary nature of the forests provided further complications in effectively addressing the threats. The innovative collaboration and cooperation approaches being advocated and piloted by the project were designed to address these threats.

The findings of the three analytical approaches used to assess the delivery of the intended impacts are outlined below.

Project Logframe Analysis

The Cross Borders Project is considered to have been a groundbreaking project that was instrumental in introducing and piloting collaborative forest management practices in East

Africa. The project's terminal evaluation concluded that the intervention had been "Satisfactory", which was in agreement with the conclusions of the Project Logframe Analysis for the Sango Bay and Minziro forests. The logframe analysis determined that a good foundation had been laid in establishing a more "enabling" environment for forest conservation, through effectively influencing the development of new participatory forest policies and coordinating legislation in East Africa, and successfully piloting the participatory forest management practices on the ground. However, it was felt that the project did not make the hoped-for progress in building the capacity of the local government authorities and communities so that they were in the position at project closure to take over the project activities. Overall, the conclusion of the logframe analysis was that a good foundation had been established, but that further support would be needed for the achievements of the project to ultimately deliver impact and the identified GEBs.

GEBs-Threats Analysis

The direct measure of project impacts was extremely difficult to assess for Sango Bay and Minziro forests due to the lack of substantive research and monitoring data relating to the GEBs, and the absence of any monitoring following project closure. As a result, it was not possible to give a direct assessment of impact for the five species-level GEBs. However, based on the project's own threat reduction assessment (2000 - 2003), the demarcation of forest extent and consultations by the study team in 2007, the analysis did indicate that the status of the forest-grassland system GEB had been stabilised, which represents an important impact given the level of degradation prior to project implementation. However, there was uncertainty as to whether this impact can be sustained, due to the indications that threat levels have been rising following project closure. The threat levels are not yet believed to have returned to pre-project levels, but the absence of any post-project monitoring and the recent lifting of the logging ban for Minziro forest does not augur well.

Outcomes-Impact Analysis

For this case study, the role of the Outcomes-Impacts Analysis was especially critical to understanding impact, due to the limited ability of the GEBs-Threats Analysis to directly measure the change in the status of the GEBs. By understanding and testing the linkages necessary to convert project outcomes to the intended impacts, the analysis helped to determine whether the lack of direct evidence for impacts is a result of inadequate monitoring, or a reflection that impact has not yet been achieved.

The analysis identified two key aspects of the linkages between project outcomes and ultimate impacts that were crucial. These were:

- The adoption of the improved forest management practices and approaches by the relevant government authorities.

- Adequate technical and financial support to enable the collaborative forest management institutions to become sustainable and effective.

With regard to the first key aspect, the delivery of impact depended on the government forest authorities taking over the role of the project in facilitating and scaling up the improved forest management practices and approaches that were piloted. Although at the national level the relevant forest authorities were very supportive and committed to these new participatory management approaches, financial and other constraints meant that this did not necessarily translate into their ability to deliver on the ground. At Minziro Forest, the government did not endorse the collaborative forest management (CFM) plan and the District Forest Department subsequently did not have the resources or mandate to take over the project's CFM activities. At Sango Bay forest, despite a limited budget, the newly formed National Forest Authority is starting to fulfil its role in supporting the three pilot CFM community based organisations (CBOs) and is beginning to look to scaling up these activities in other neighbouring communities.

With regard to the second key aspect, it was evident from the logframe analysis that a great deal more financial and technical support was needed to build the capacity of the local forest authorities and the newly established community CFM institutions before they would become sustainable and able to undertake the improved forest management approaches. Unfortunately, these institutions have been largely left to their own devices following project closure, which has led to a loss of momentum in CFM activities. Despite this, the evidence from Sango Bay and Minziro shows that the CFM community-based organisations registered by the project have continued to function and, with the limited support provided by the government agencies, they have been able to access additional funds to continue activities for which they have the necessary skills and resources. However, a great deal more capacity building is needed before these community institutions can fulfil their roles and deliver the intended GEBs. In short, the Outcomes-Impacts Analysis confirms that the limited evidence for impact by the GEBs-Threats Analysis is an accurate assessment of the reality, for neither of the key aspects linking outcomes to impact have yet been adequately achieved.

Conclusion

This was the most ambitious of the three case study projects and the one that presented the greatest challenges in measuring impact. The three analyses all triangulate each other in the conclusion that the GEF intervention has led to limited impacts in terms of GEBs delivered. The Project Logframe Analysis showed that the project had been fairly successful in delivering the project outputs and outcomes, especially at the policy level. The GEBs-Threats Analysis then identified that there was limited evidence for measurable impact being achieved on the ground, with evidence only available to show that the system level GEB (evergreen swamp forest-grassland) had been stabilised. Finally the Outcomes-Impacts Analysis demonstrated that the lack of impact was to be expected due to the insufficient capacity on the ground to adequately implement the CFM activities introduced by the project. However, this analysis also indicated that over time and with continuing external support, the collaborative forest management mechanisms established by the project have a fair chance of maturing and playing a more significant role in realising impact.

3.3 Lewa Project

The **Lewa Wildlife Conservancy Project** was a three-year, medium-sized GEF/ World Bank project that was implemented between 2000 and 2003. The project aimed to strengthen and enhance the capacity of the Lewa Wildlife Conservancy (a not-for-profit private wildlife conservation company) to protect endangered species on the Lewa Conservancy and to support communities to conserve wildlife in the wider ecosystem.

GEBs

The Lewa Wildlife Conservancy ("Lewa") is located in the northern rangelands of Kenya, a significant component of East Africa's famous savannah plains. The northern rangelands differ from the savannah areas to the south due to the hotter and drier conditions, which are reflected in the unique assemblage of dryland "specialists". Within this fragile arid/ semi-arid ecosystem, wildlife is competing with human society for access to the scarce water and grazing resources, in particular with livestock, which forms the basis of the main livelihood in the area. This competition has intensified over the past few decades as a result of a number of factors, including an increase in the privatisation and sub-division of land, political and economic marginalisation of the region, and an increase in the frequency, length and unpredictability of droughts and floods. This study identified six key biodiversity components at the forefront of the Global Environmental Benefits provided by this semi-arid ecosystem. Three species-level GEBs were selected: the globally endangered Black rhino, Grevy's zebra and Wild dog. The other three GEBs were the indigenous tropical dry forest, which is one of the last remaining remnants in Kenya, the traditional elephant migratory routes, on account of the importance of elephant movements in shaping the ecosystem, and the Ewaso Ngiro River catchment area, which provides the lifeblood of this semi-arid region. To reverse the trend in degradation of these

GEBs and the displacement of globally endangered wildlife species, Lewa sought to conserve these global biodiversity values within its conservancy and, even more significant from an impact perspective, to act as a catalyst for supporting communities to follow suit in the wider ecosystem.

The findings of the three analytical approaches used to assess the delivery of the intended impacts are outlined below.

Project Logframe Analysis

The Lewa project is considered to be one of the GEF's most successful biodiversity projects, both in terms of what it achieved during project implementation as well as the rapid scaling up within the greater ecosystem that followed project closure. The terminal evaluation of the project assessed the project implementation to be highly satisfactory (the highest rating), which was endorsed by this study's Project Logframe Analysis. The logframe analysis considered that the project had successfully strengthened Lewa into a highly professional and effective conservation institution, with one of the best-equipped and trained wildlife security and management operations in East Africa. The conservation efforts in the broader ecosystem revolved around supporting the development of community conservancies, which produced impressive results in terms of raised awareness, willingness to set aside land for conservation, and financial returns from community eco-tourism ventures. However, the analysis found that the communities needed continued support to consolidate the initial conservation gains and that the project did not adequately address the need for more sustainable livestock and natural resource management practices. Overall, the conclusion of the logframe analysis was that an excellent foundation had been established by the project to deliver the intended impacts and GEBs of the project; the actual achievement of which is assessed by the remaining two analyses below.

GEBs-Threats Analysis

As explained in Annex C, the direct analysis of project impact only looked at two of the GEBs, the Black rhino and Grevy's zebra, which were the main focus for the project and were also considered a good proxy for the conservation status of the other four GEBs. This assessment was conducted only three and a half years following project completion, which is a short period for biodiversity impact to be detected. However, despite this short period, the GEBs-Threats Analysis indicated that there had already been a significant impact achieved in the improved conservation status and level of threats relating to the Black rhino and Grevy's zebra GEBs. In particular, the Black rhino population has almost doubled in the Lewa Conservancy, and Lewa has been instrumental in supporting the establishment and management of rhino sanctuaries in the wider ecosystem. Regarding Grevy's zebra, the population has remained stable in the Lewa Conservancy (despite an increase from natural predation) and, more importantly, the establishment of community conservancies has almost tripled the amount of "protected" habitat available to Grevy's zebra. The threat levels to the GEBs were also considered to have reduced, with the establishment of new secure areas for conservation and reduced levels of poaching - no recorded incidences of poaching on the Lewa Conservancy and qualitative evidence suggesting that poaching in the community areas had also reduced.

Outcomes-Impact Analysis

The Outcomes-Impacts Analysis identified three key aspects of the linkages between project outcomes and ultimate impacts that were crucial. These were:

- The development of institutional and collaboration mechanisms to facilitate conservation activities in the wider ecosystem.

- The expansion of wildlife protection and management systems to reduce threats and enhance the conservation status of the GEBs.

- The scaling-up of community support activities aimed at establishing community conservancies and promoting conservation-compatible livelihoods in the wider ecosystem.

With regard the expansion of institutional and collaboration mechanisms following project closure, the analysis indicated that Lewa had been extremely successful in establishing the necessary expertise, resources and political support to scale up the conservation initiatives and deliver impact in the broader ecosystem. Particularly important in this regard was the formation of the community-led Northern Rangelands Trust (NRT) to support new and established community conservancies under one umbrella, and the collaboration with Ol Pejeta Conservancy, which has brought in important expertise on natural resource management and livestock management issues - a weakness of project implementation that was identified in the logframe analysis.

With regard to enhancing wildlife protection, Lewa has been successful in undertaking joint wildlife security operations with government agencies (e.g. Kenya Wildlife Service and the Kenya Police) as well as in training and backstopping a comprehensive grassroots security network in the community conservancies, the latter having the additional benefit of increasing community support for conservation. Regarding the final aspect of scaling up community support, there was a substantial demand to establish new community conservancies following the successes of the pilot community conservancies. This demand has led to 15 community conservancies now being supported by NRT (2007), compared to three at the baseline (1997). The major challenge still remains the promotion of conservation-compatible livelihoods strategies in these conservancies that meet the community needs. However, NRT has made substantial progress in promoting new options besides ecotourism, through support for increasing household income from marketing and reduction of cattle numbers, and the development of markets for selling handcrafts and other community made products.

Conclusion

The three analyses point to the conclusion that the GEF support to strengthening Lewa has indeed led to measurable impacts in terms of GEBs delivered, and that these impacts are being scaled up throughout the greater ecosystem. The logframe analysis showed that the GEF project was very successful in delivering the expected project outputs and outcomes. The GEBs-Threats Analysis demonstrated that, despite the short lapse of time since the end of the project, there had been measurable impacts both in the enhanced conservation status of the GEBs and the general reduction in threat levels. The Outcomes-Impacts Analysis demonstrated that the linkages between project outcomes and the observed impacts had been well achieved. This latter analysis indicates that, if the current levels of activities can be maintained, there will be an even greater impact in the years to come.

3.4 Conclusions

The final section gives the main conclusions that emerged from the three case studies regarding how and why impact was delivered.

3.4.1 Strong and sustainable local institutions are essential to achieving impact

A major conclusion emerging from the Outcomes-Impacts Analysis was that, to deliver impact, long-term institutional mechanisms need to be put in place to consolidate and scale up the project activities following project closure. This is especially important when dealing with integrated conservation and development initiatives, which require many years before achieving significant livelihood benefits, let alone global environmental impacts.

Of the three case studies, the Lewa project was the most successful in establishing sustainable local institutions. The Lewa Wildlife Conservancy has become a well-established institution with a highly professional fundraising programme, which, as a result of GEF support, has benefited from its raised credibility with a broad range of external supporters. In addition, following the completion of the Lewa project, the Northern Rangelands Trust was established to scale up the community support activities. NRT has benefited from the support and association with Lewa and is becoming a strong local institution in its own right.

For the Bwindi project, the establishment of the Bwindi Mgahinga Conservation Trust proved essential to continuing the conservation and development initiatives. In particular, the Trust has been able to continue to support local communities in consolidating and maturing the conservation and sustainable livelihood activities introduced during project implementation. However, the Trust has not been as successful in generating funding and, due to downturns in the financial markets, has not had the expected income from the endowment fund. As a result, the institution has not developed as quickly as originally hoped.

The Cross Borders project worked with relevant government authorities, with the idea that these institutions would take over the field site activities following project closure. However, building the capacity of local government is a long-term process and assumes that central government have the finances and commitment to empower the local authorities to take over where the project left off. In addition, there is the problem that the government officers trained by the project at the field site may be transferred following project completion, which was the case at Sango Bay and Minziro forests. Overall the project lacked a clear and realistic institutional and financial sustainability strategy to ensure the effective continuation of activities following project closure. Ideally a follow-on phase was needed to consolidate the activities piloted by the project.

3.4.2 Locally-based project implementation agencies with a long-term commitment to the target area are more likely to deliver impact

For biodiversity projects that aim to work with local communities, project implementing organisations that have a long and positive history and commitment to the target area and that have already built up the trust and confidence of the neighbouring communities are best positioned to successfully introduce new community conservation initiatives and, with a relatively small amount of GEF funding, can achieve significant impact.

The Lewa Wildlife Conservancy was such an institution. Due to its evolution from a cattle ranch, it had a long history in the target area and had established a good level of trust with the neighbouring communities. As a result, it was in a strong position to successfully introduce the community conservation initiatives essential to achieving the impact of the project in the wider ecosystem. In addition, as a private organisation dependent on generating income to support itself, it had a strong interest in ensuring the continuation and geographical expansion of activities given the existence of external funding opportunities.

3.4.3 Adequate stable funding is essential to achieving impact

The projects that had the most success at achieving impact were those that secured post project funding. The success of Lewa in raising adequate long-term financing enabled it to hire qualified staff and invest in the necessary infrastructure and equipment to carry out its conservation activities. The Bwindi project also demonstrated that the Bwindi Trust and UWA can achieve high impact when funds are available. On the other hand, the lack of funding at Sango Bay and Minziro following project closure was a major factor leading to the decline in the collaborative forest management activities. The ability to secure funding is closely linked to there being a strong local institution on the ground that can provide the necessary stability.

3.4.4 Community-based institutions and alternative conservation-compatible livelihood strategies take time to establish and need continued post-project support

Establishing community-based institutions that can undertake conservation and sustainable development activities is critical to ensuring the long-term achievement of biodiversity impacts. All three projects proved that 3-5 years is insufficient time to develop sustainable community-based institutions and new livelihood strategies, and that continued support is needed to consolidate and develop these.

For example, the five-year Cross Borders Project proved to be too short a period to establish sustainable community collaborative forest management institutions. Although the project made a good start at Sango Bay, the CBOs could not support themselves at the project's end. Therefore, projects need to make provisions to ensure continued support post-project, until such time that these institutions are financially and institutionally independent, whether through adequately empowered government authorities or follow-up projects or programmes.

3.4.5 Successful biodiversity projects generate a snowball effect

All three projects have generated catalytic effects for generating biodiversity impact, both within the greater ecosystem and further afield. The Lewa project was the most successful in generating a catalytic effect through the geographical scaling up and institutional replication of the community conservancy model in the greater ecosystem. The Bwindi project had a notable catalytic effect by serving as the first environmental trust fund in Africa, which has since been replicated through the establishment of other similar funds elsewhere in Africa. The Cross Borders project, although it has not yet had a substantial impact yet at the site level, has had an impact (though difficult to quantify) through its role in strengthening an enabling policy environment for participatory forest conservation and through training a cadre of East African conservationists, who have since gone on to other positions of responsibility in the field of natural resources. In addition, the experience at Sango Bay is regarded as a model for collaborative forest management in Uganda, and is reported to host several visits a year from forest managers and students wanting to learn from their experiences.

3.4.6 Biodiversity projects can lead to negative impacts on local livelihoods

Biodiversity projects can have negative impacts on the livelihoods and well-being of local peoples, because the protection of biodiversity requires the exclusion of other competing but incompatible land uses. This was most evident with the Bwindi project, where the indigenous Batwa had been excluded from the Bwindi and Mgahinga forests. One aspect of the Bwindi Trust's work specifically funded by the GEF was the re-orientation of the livelihoods and lifestyle of the indigenous Batwa community. Fieldwork carried out under this study showed that this was only partially successful. The provision of land benefited some Batwa, but the failure to grant them access and controlled use rights for forest products, which they traditionally utilised, meant that these are now obtained illegally. Project efforts to promote income-generating opportunities were not supported by training in financial management and have in some cases led to negative social consequences.

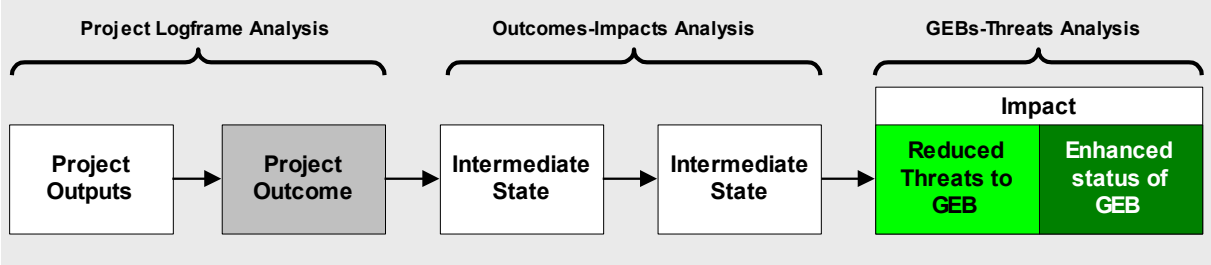
4. Assessment of the Impact Evaluation Analytical Framework

This section provides an assessment of the application of the study's theory of change based Impact Evaluation Analytical Framework, and its effectiveness in measuring and understanding impact. In particular, the assessment identifies the key features and innovations of the analytical framework that are critical to understanding impact, the shortfalls and limitations that were identified during this initial piloting phase, and the aspects of the framework that will need further development. The section also assesses the relevance of a statistically-based counterfactual approach to impact evaluation piloted by the GEF Evaluation Office, which potentially provides an alternative approach for addressing the challenge of attributing impact. The section concludes by identifying the challenges that need to be addressed in adopting and scaling up the theory of change based impact evaluation framework for routine application across the GEF portfolio.

4.1 A critique of the evaluation framework

The assessment of the evaluation framework presented below examines the three main analytical components in the following order:

1. The Project Logframe Analysis, which reaffirms the achievement of project outcomes and provides the starting point for the remaining analysis
2. The GEBs-Threats Analysis, which identifies and characterises the potential project impacts and provides a direct measure for the delivery of impact
3. The Outcomes-Impacts Analysis, which is at the heart of the framework and, through the development of theory of change models, links project outcomes to ultimate impacts



4.1.1 Project Logframe Analysis

The Project Logframe Analysis enables a rapid assessment of project implementation success, based on the project's existing monitoring and evaluation data. In particular, the analysis reviews the project's detailed terminal evaluation in order to confirm that the evaluation findings are accurate and substantiated, and to reaffirm the extent to which project outputs and outcomes were delivered. Where the logframe analysis disagrees with the underlying rationale of the project or the findings of the terminal evaluation, it may be necessary to re-organise or re-formulate project outcomes to either retrospectively reflect the reality on the ground or reflect what the evaluators feel should have been done with the benefit of hindsight. For example, in the case of the Lewa project, the study team felt that addressing livestock and natural resource management issues was essential to achieving the intended impact of enhancing the conservation status of Grevy's zebra, and so added it as an important aspect of the project outcomes, even though it was not explicitly identified or addressed by the project. Agreeing the project outcomes considered necessary to deliver impact coupled with an accurate understanding of the extent to which these outcomes were delivered, provides the essential foundation and starting point for the impact analysis.

The main advantage of this analytical approach is that it builds on the GEF Evaluation Office's existing procedures and provides a useful and quick validation of the terminal evaluation's assessment of project implementation success. However, the approach does require the evaluator to have a good knowledge and familiarity with applying the logical framework approach and an in-depth understanding of interventions in the focal area. This has implications when considering the wider application of this methodology, both concerning the selection of evaluators and the need to provide guidance materials or training in the application of the technique.

4.1.2 GEBs-Threats Analysis

The GEBs-Threats Analysis serves two main functions: firstly, to identify and characterise the intended impacts of the project (i.e. the Global Environmental Benefits); and secondly, to directly measure the delivery of these impacts. The assessment of these two functions of the analysis is discussed below.

The identification of GEBs

The study team considered there to be two key aspects of a project that need to be confirmed at the start of an impact evaluation. The first is the reaffirmation of the project outcomes by the logframe analysis (as discussed above) and the second is the identification and characterisation of the expected project impacts (i.e. the global environmental benefits). Although project documents describe the intended impacts, these are often only stated in generalities and the full range of potential GEBs are not systematically identified, nor are their key features characterised. The GEBs-Threats Analysis provided a two-step process for identifying GEBs, involving the initial identification of the potential key environmental benefits arising from a project, followed by short-listing those environmental benefits of potentially global significance.

However, there are many aspects of biodiversity that can be considered to comprise an "environmental benefit" and the GEF currently lacks guidance as to which aspects it considers to be the most important. On the one hand, biodiversity has intrinsic value and as such representative or threatened components of biodiversity can be considered an environmental benefit. These values are easiest to identify at the species level. On the other hand, biodiversity also has economic and use values, which relate to the resources and processes that are supplied by natural ecosystems that are of importance to human society. These "ecosystem services" are wide ranging, including the supply of potable water, the regulation of climatic conditions, the support in crop pollination, spiritual and recreational benefits, and the maintenance of diversity to guard against uncertainty. Mechanisms for "payment for ecosystem services" are being increasingly developed to ensure that these previously free services of nature are given a monetary value whereby the beneficiaries of ecosystem services pay back the providers and maintainers of these services.

Therefore, capturing the project's environmental benefits depends on the underlying criteria that are being used: are species and intrinsic biodiversity values most important, or are the ecological processes of use to human society most important? The international prioritisation and ranking lists of globally important biodiversity that were used in this study focus on the intrinsic values of biodiversity, and in particular on charismatic and endangered species, whilst overlooking the important use values of biodiversity.

In addition, there is the challenge of whether a biodiversity benefit is actually of global, as opposed to local significance. The GEF's Local Benefits Study[2] demonstrated that there is a strong link between local and global benefits and in many cases local environmental and livelihood benefits were an essential means to achieve and sustain global environmental benefits. For example, the Lewa project produced livelihood gains to local residents in terms of

[2] *The Role of Local Benefits in Global Environmental Programs* (GEF, 2006)

security and income, which, whilst these benefit streams last, has led to changes in human behaviour that sustain the global environmental benefits of the project. Conversely, projects that restrict access to natural resources may impose local costs that may be unacceptable to the populations affected and produce behaviours in the local residents that generate environmental damage.

Given the vast range of potential environmental benefits and the inherent complexities and interdependencies of biological processes, the selection of a project's key environmental benefits is a substantive study in itself, and not a task that can easily be done by a short evaluation exercise. Overall, the adopted approach for this study was considered to provide a useful structure for GEB identification, but the study team felt that in the long-term, further GEF guidance and criteria are needed to provide greater focus. In conclusion, the explicit identification of GEBs is considered an essential component of all GEF impact evaluations.

Directly measuring impact

Directly measuring biodiversity impact is extremely difficult to achieve in practice due to the complexity of biological systems, the long timeframe needed to deliver impact and, perhaps most significantly, the fact that field projects are largely focused on implementation rather than monitoring. As a result, there is often an inadequate or non-existent baseline against which to measure achievements and the monitoring that is done is focused on the lower level objectives (e.g. outputs and to a lesser extent outcomes) and seldom on impacts.

For projects that have established long-term research and monitoring, the methodology utilises all the data that can potentially be generated; both regarding the threats to the GEBs and the status of the key attributes of the GEBs. Measuring these two aspects provides a useful cross check in developing a realistic and robust direct assessment of biodiversity impact. However, even though long-term research and monitoring programmes were in place for the Bwindi and Lewa projects, they were found not to be targeted at all the identified GEBs and their key ecological attributes and, as a result, the data was insufficient to make a complete assessment. For the Cross Borders project, there was no long-term biodiversity research and monitoring undertaken and it was only possible to make a partial assessment of the level of threats in general terms.

In conclusion, this direct measure of impact can only be considered a realistic part of impact evaluation for projects that put in place comprehensive and long-term biodiversity monitoring systems. Ideally all GEF projects should have in place such a monitoring component, but realistically this is not going to be feasible for certain types of projects, especially those that have a regional focus and are policy orientated. At a minimum, it is recommended that all GEF projects be required to adopt this approach in as far as identifying the expected GEBs, establishing a project baseline measuring the status of the GEBs and monitoring the GEBs for at least the duration of the project. The monitoring of the GEBs should ideally track the status of the GEBs and the trends in the threat levels to them, and at a minimum it should provide a comprehensive assessment of the changing threat levels to the GEBs (threats being more easily monitored than biodiversity parameters). It is desirable that all GEF projects attempt to put in place mechanisms for ensuring the continued long-term monitoring of GEBs following project closure, as this will require a certain degree of institutional and financial sustainability that will greatly increase the chances that the projects actually deliver sustainable impacts.

4.1.3 Outcomes-Impacts Analysis

This analytical component is the crux of the impact evaluation framework. The analysis uses the Theory of Change methodology to establish the logical sequence of events and conditions necessary for project outcomes to lead to the expected impact. By developing and validating the Theory of Change linkages between project outcomes and impacts, it is possible to obtain an indirect assessment of impact, to assess the extent to which the observed impacts identified by the GEBs-Threats Analysis are attributable to the GEF intervention, and to understand how the

observed impact has actually been achieved. This analysis also helps to identify unintended project impacts, both positive and negative. For example, the analysis identified some of the unintended negative social impacts of the Bwindi project with regard to the indigenous Batwa community, and the unintended positive impacts of improved general livelihood security in the local communities resulting from the Lewa project's wildlife security operations.

The main challenge of this analysis is to develop the theory of change models in the first place. Even more than the logframe analysis, the evaluator needs a very comprehensive understanding of the particular type of project being assessed and how it achieves impacts, as well as an in-depth knowledge of the local circumstances that could impact on the theory of change model. The development of theory of change models for the three case study projects confirmed that they are very difficult and time intensive to develop. Overall, it proved easier to develop theory of change models for site-level interventions (e.g. the Lewa and Bwindi projects) than national policy and capacity building interventions (e.g. the Cross Borders project); with the latter being more challenging as their outcomes were less directly linked to potential biodiversity impacts, and the assumptions and impact drivers were more complex and intangible.

Another major challenge is the complexity of actually measuring the key components of the theory of change model, be they impact drivers, external assumptions, or intermediate states. Although this does not require long-term and targeted datasets (as was the case for the GEBs-Threats Analysis), the assessment does require up-to-date knowledge about the situation on the ground. Gathering such information is not straightforward, as many key stakeholders will have moved away to new jobs and there is often limited relevant documentation following project closure. Even after overcoming the challenge of information collection, the analysis to test the models is complicated and subjective. Value judgements are needed to assess the relative importance of the identified impact drivers and assumptions. Some impact drivers or assumptions may be critical to whether project outcomes eventually lead to impact, whilst others may be of only minor importance. However, relying on the evaluator's reasoned judgement was considered preferable to introducing a ranking or weighting system, which would make the approach overly complicated and would introduce a level of precision inappropriate for the qualitative nature of the analysis and underlying data sets.

Despite these challenges, the Outcomes-Impacts Analysis provides a potentially powerful method for the proxy measure of impact and for truly measuring and understanding project impact.

4.2 Alternative counterfactual impact methodology

One of the main reasons for developing the theory of change methodology was because of the difficulty of attribution; i.e. linking observed impacts to GEF interventions. If there was a way of understanding attribution, this could provide an alternative to the theory of change approach adopted by this study. The GEF Evaluation Office tested one such alternative methodology, which was a statistical "quasi-experimental"[3] analytical approach comparing the outcomes of several GEF projects with other similar projects in Costa Rica.

The statistical analysis is based on the concept of a "counterfactual" or comparison group serving as the baseline against which GEF and non-GEF project impacts could be measured. The study sought to determine the effectiveness of protected areas (both funded and not funded by the GEF) on reducing deforestation in Costa Rica (see Andam *et al.,* 2007) in comparison to non-protected areas. The study concluded that the protected area strategy adopted by the Costa Rican government reduced deforestation by up to 8% (between 1986 and 1997) and 11% (between 1997 and 2005) and that the GEF-funded protected areas in Costa Rica were

[3] Quasi-experiments assign "treatment groups" non-randomly due to the retrospective nature of the analysis, but in a manner that mimics random assignment. Consequently, the counterfactuals or "comparison groups" are selected on the basis of having, as far as possible, identical characteristics to the intervention or "experimental groups", other than the fact that they did not participate in the intervention.

between 2% and 7% more effective at achieving avoided deforestation than similar projects funded by other sources.

The approach provides a statistically rigorous quantification of impact by ensuring all variables, other than the presence or absence of the intervention, are equal. In the Costa Rican study, this was achieved by ensuring that protected plots were only compared to unprotected plots that were similar in their observable characteristics and by taking into account *spatial spillovers* (e.g. the protection of one piece of forest may have either positive or negative effect on neighbouring land) and *spatial error correlation* (e.g. unobserved characteristics that determine the likelihood of deforestation, such as weather patterns and socioeconomic conditions). The methodology also allows for the impact of a GEF strategy implemented in different geographic areas to be aggregated and understood in the national context. However, the methodology only measures one aspect of conservation impact, which for this case study was avoided deforestation, and fails to consider the full range of potential positive or negative impacts, or to provide an explanation of why the impact was achieved.

Overall, the approach provided an interesting analysis for aggregating and comparing the effectiveness of various projects in delivering impact and placing this impact in the broader national context. However, it was felt that the methodology did not adequately address the issue of attribution, and left many questions unanswered. In particular, the methodology did not explain the underlying reasons for how and why a particular project had succeeded and another hadn't, which is essential if an impact evaluation is to provide guidance to enable the GEF to repeat project successes and avoid project failures in the future. As a result, the study team concluded that the only effective way to understanding impact is to look at the project processes of achieving impact in more depth, as advocated in the Theory of Change process adopted by this study's evaluation framework.

4.3 Scope to scale up use of the approach

Overall, the study team considers the Impact Evaluation Analytical Framework to be a robust approach that, with modifications and further development, can be adapted across the GEF portfolio and developed into a routine evaluation technique. The framework draws on the existing project evaluation (Project Logframe Analysis) and monitoring data (GEBs-Threats Analysis) and, through the Outcomes-Impacts Analysis provides an important third arm of analysis that links project evaluation and direct GEB monitoring together. This enables triangulation of impact findings and helps to understand how and why the project achieved the impact that it did.

It is recommended that the GEF Evaluation Office elaborates the evaluation framework process into a practitioner's manual that can be further developed, tested and illustrated with examples from projects from the various GEF focal areas, with the ultimate aim that it can be used in routine evaluations in future. This final section concludes by summarising the challenges that need to be addressed in scaling up the evaluation framework.

1. The Project Logframe Analysis is a quick approach to validate the findings of the terminal evaluation and to reaffirm that the project outputs and outcomes are the actual ones produced by the project. For this limited function, the approach is considered suitable for scaling up in its present form. However, it will be necessary for the methodology to be written up and the process clearly explained and illustrated in the proposed practitioner's manual.

2. The process to identify GEBs needs to be further developed by the GEF Evaluation Office in the form of general guidelines and criteria concerning what the GEF considers to be a global environmental benefit. For example, the guidelines should provide clarity on whether the focus should be on intrinsic values or use values; on ecological systems and processes or charismatic and endangered species; on truly global benefits only or also on local benefits that will lead to global benefits. In addition, considering the implications that the

identified GEBs have on project monitoring, it is recommended that the identification of GEBs should be incorporated as a mandatory component of the GEF project development and approval process.

3. GEBs-Threats Analysis only provides an effective direct measure of impact for projects with long-term monitoring. The applicability of this approach would be enhanced if the GEF put in place requirements that projects establish relevant baseline and monitoring systems targeted to measure the GEBs, their key attributes and the associated threats. Where possible, GEF projects should establish systems for ongoing monitoring.

4. The Outcomes-Impacts Analysis provides a potentially powerful method for the proxy measurement of impact and is the most innovative aspect of the framework, which requires the greatest amount of further development before it can be scaled-up. The main requirement will be the development of capacity within the GEF EO to undertake Theory of Change modelling in conjunction with the further piloting of the approach across other focal areas. Although it is not possible to develop generic one-size-fits-all models for each focal area, the further piloting should develop general templates for typical theories of change so as to facilitate its wider application. It will also be necessary to develop practical and cost effective processes to carry out the Theory of Change approach, which allows for the active involvement of people on the ground that are able to provide insights into better understanding the theory of change behind projects, and the local conditions that will need to be factored into the models.

5. Overall the evaluation framework provides a mechanism for thoroughly analysing impact. Although the direct measure of impact undertaken by the GEBs-Threats Analysis can be omitted if the data is not available, the other elements of the framework are essential to the process. As stated above, there is a need to test this framework in other focal areas of the GEF to see if it is more broadly applicable beyond the biodiversity portfolio. Although other focal areas will have different types of GEBs, and substantially different theories of change, the underlying principles are universal and, with some modifications, should be broadly applicable to all areas of the GEF portfolio.

Annexes

Annex A: Bwindi & Mgahinga Conservation Project

A.1 Project overview

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 Bwindi and Mgahinga national parks are located in south-western Uganda, covering 321 km² and 33.7 km² respectively. They protect afro-montane and afro-alpine ecosystems that are among the most biologically diverse tropical forests in East Africa and host over half the world's population of endangered Mountain gorillas. The integrity and survival of these unique forests is threatened by the rising natural resource demands of neighbouring human populations in areas adjacent to the forests, which represent one of the most densely populated parts of Africa. The **project objective** was:

> *To establish a long-term conservation finance mechanism to support biodiversity conservation in Bwindi Impenetrable National Park and Mgahinga Gorilla National Park*

As the original GEF project brief did not define a logical framework, it was necessary for the study team to develop a "retrospective logframe" based on the broad components identified in the project brief, coupled with an understanding of what the project actually achieved in practice. The four **project outcomes** identified were:

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

Under the first outcome, the **Bwindi Mgahinga Conservation Trust**[4] ("the Bwindi Trust", or BMCT) was established as the long-term financing mechanism for achieving conservation and sustainable development in the two national parks and neighbouring communities. BMCT was legally established through a Trust Deed registered under the Uganda Trust Act in September 1995, and the GEF provided the initial funding of US$4.3 million to capitalise the endowment fund. The capital was invested overseas, with the intention that the annual income, net of administration costs, was to be used to fund the Trust's programme of activities.

The **conservation support activities** carried out under Outcome 2 were to receive 40% of the endowment income, with the support evenly divided between: (a) ecological and socio-economic research and monitoring activities focused on improving park management and park/community interactions and (b) park management activities, in particular meeting the incremental costs of implementing management plans for the two national parks.

The **community development support activities** carried out under Outcome 3 were to receive 60% of the endowment income. The support was to focus on alternative income-generating activities and social infrastructure projects for local communities surrounding the national parks, consistent with biodiversity conservation. The support to the indigenous Batwa ethnic group under Outcome 4 was introduced during implementation as a stand-alone project with separate funding.

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) provided

[4] The original name at the time of establishment was Mgahinga and Bwindi Impenetrable Forest Conservation Trust (MBIFCT). This name was changed by the Trust Management Board in November 2005 to the current Bwindi Mgahinga Conservation Trust (BMCT)

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.

This case study introduces the project's intended Global Environmental Benefits as identified by the study team, and then describes the evaluation findings according to the three analytical components of the Impact Evaluation Framework, which are the Project Logframe Analysis, the Outcomes-Impacts Analysis, and the GEBs-Threats Analysis. For more information on these analytical approaches, see Chapter 2 in the main body of the report.

A.2 Project Global Environmental Benefits

Using the TNC's CAP methodology (see main report), the study team identified four main biodiversity conservation values of the project's target ecosystem which, provided they have been conserved and enhanced as a result of project interventions, represent the delivery of global environmental benefits. These four conservation values are referred to in this case study as GEBs. As per the CAP method, the GEBs are not the only conservation values and global environmental benefits that are provided by the target ecosystem, but rather are a crucial cross section of the ecosystem's conservation values at different levels of ecological organisation, that if conserved, will indicate that other ecosystem conservation values are also being conserved, and that a wide range of global environmental benefits are likely to have been delivered through project interventions. The identified GEBs are:

1. **Continuous altitudinal forest gradation**. This is the key system level GEB. Bwindi is the only site in East Africa encompassing an unbroken ecological continuum of lowland, transitional and montane forest.
2. **Montane forest habitat**. This is the key habitat in the target area and represents one of the most biologically diverse tropical forests in East Africa.
3. **Mountain gorillas.** They are one of two species level GEBs. The entire world population of approximately 600 Mountain gorillas (*Gorilla gorilla beringei*) are found within Bwindi National Park and the Virunga volcanoes network of national parks that extend between Rwanda, DRC and Uganda (incorporating the Mgahinga Gorilla National Park). About half of these "critically endangered" gorillas are found within Bwindi Impenetrable National Park itself.
4. **Grauer's rush warbler**. This extremely rare bird, the second species level GEB, is restricted to small swamp areas within the forest and is listed in the International Council for Bird Preservation's Red Data Book.

A.3 Assessment of project implementation success

The Project Logframe Analysis assessed the achievement of the four project outcomes defined in the retrospective logframe (see above). The study team's findings for each outcome are summarised below, followed by an overall assessment of project implementation performance.

A.3.1 Delivery of project outcomes

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

The Trust was successfully established to promote conservation in the Bwindi and Mgahinga Conservation Area. The multi-tiered management structure incorporated a management board, administration unit, advisory committee and community participation mechanism. This facilitated the involvement of high-level government officials, specialist advisors and, most significantly, the local communities. On the financial side, the investment of the endowment fund outperformed initial expectations and a good level of co-financing was secured for the first seven years of Trust operations. However, the main shortcoming was the lack of a long-term

plan to ensure the financial sustainability of the Trust. As a result, the limited progress made in developing the Trust's asset and fundraising base raised concerns that the Trust would become a sinking fund rather than a fund in perpetuity.

Outcome 2. Protected area authority's capacity to manage Bwindi and Mgahinga National Parks strengthened

The Trust successfully built up long-term ecological monitoring systems, sponsored applied research and provided vital funding for the basic operational costs of the parks at a time when the Uganda Wildlife Authority (UWA) was facing a financial and managerial crisis. This support laid the foundation for post-project management plan development (the original focus for this outcome). However, the Trust was less successful in promoting effective mechanisms for park-community dialogue, cooperation and conflict resolution, even though the Trust had itself built effective relations with communities under Outcome 3 (see below).

Outcome 3. Local communities' awareness, willingness and capacity to manage park and natural resources in sustainable manner strengthened

Overall the Trust's community support established a good working relationship with the targeted PA-adjacent communities, in particular through financing prioritised social infrastructure projects. This in turn provided a platform for conservation awareness raising and the conservation compatible natural resource management and income generating activities subsequently supported. Challenges include the limited community capacity to manage projects and the lack of indications of the development impact or sustainability of the grant-sponsored projects.

Outcome 4. The livelihoods of the indigenous Batwa improved

A good start was made by the Batwa Project to empower these communities through the purchase of land for over 50% of the Batwa community, support for education (with 25% of Batwa children supported to enrol in primary school) and representation on the Local Community Steering Committee (the Trust's community participation mechanism). However, the project did not adequately support the resettled Batwa to adopt sustainable land use planning and income generating activities and there was a missed opportunity to address the Batwa aspiration for access, and controlled user rights, to certain forest resources, which the study team felt would contribute to the long-term conservation objectives of the project.

A.3.2 Assessment of overall project implementation performance

The detailed analysis of project outcomes provides clear evidence that the project was successful in establishing the Bwindi Trust and in implementing a broad programme of activities that were responsive to the priorities of the stakeholders within the ecosystem. However, the study team identified several challenges facing project implementation, which the team felt resulted in the project's integrated conservation and development outcomes not being fully achieved. In particular, the lack of a clear project logical framework from the outset meant that some activities or strategies were not identified and addressed until project implementation (e.g. improving the livelihoods of the indigenous Batwa), and some activities, viewed by the study team to be important, were omitted (e.g. strengthening park-community cooperation mechanisms). In addition, the team felt that too much focus was placed on delivering and monitoring 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). This meant that the project was not always responsive to adapting its approaches and strategies, and resulted in limited evidence being gathered about the biodiversity conservation impacts of the project

Overall the Project Logframe Analysis evaluated the implementation of the Bwindi project to have been **partially achieved** to **well achieved**, as shown in the project performance summary

below. This is in line with the terminal evaluation's assessment of moderately to highly satisfactory.

Outcome 1	Outcome 2	Outcome 3	Outcome 4	Overall
✓✓✓	✓✓	✓✓✓	✓✓	✓✓ - ✓✓✓

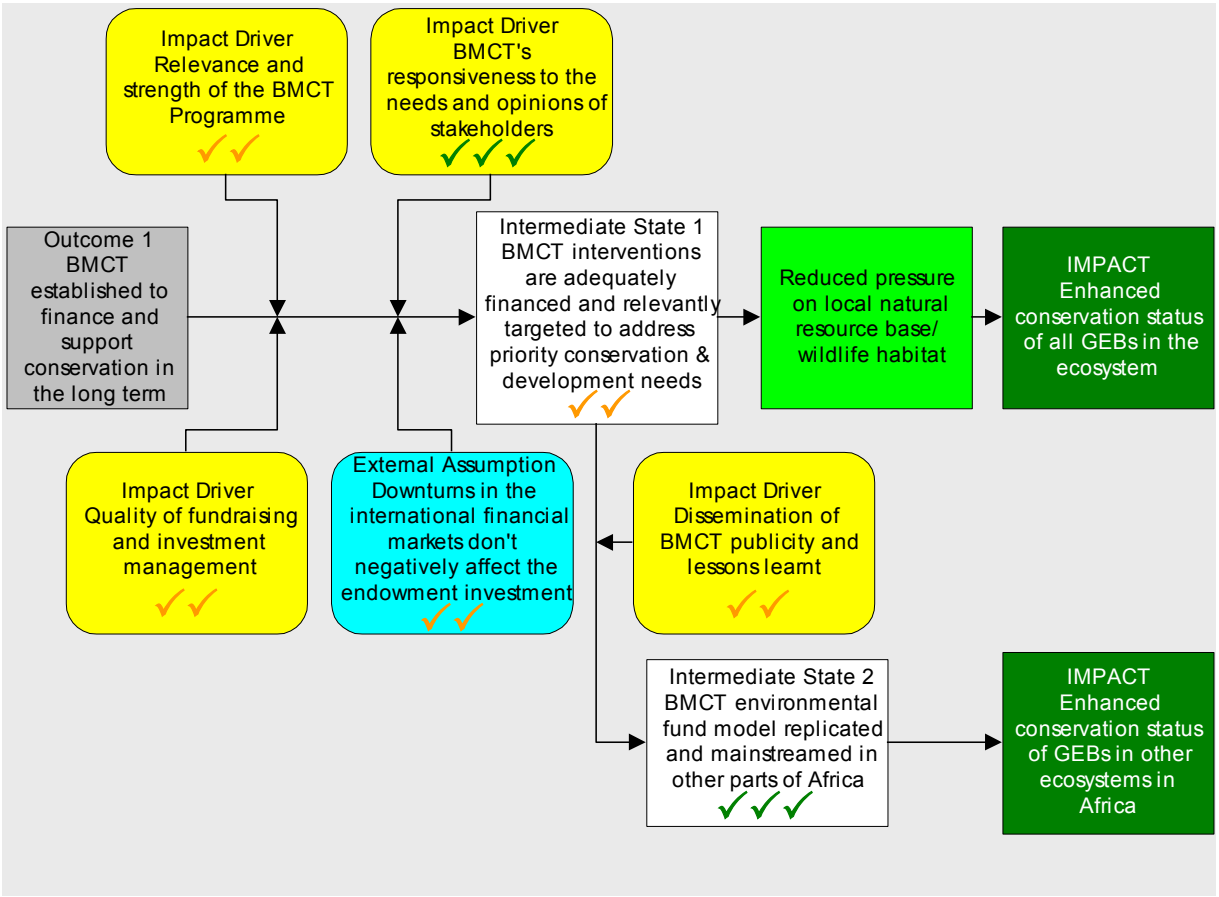
A.4 Assessment of the project processes to deliver impact

The Outcomes-Impacts Analysis assessed the extent to which the processes for converting the first three project outcomes to eventual lasting impact have been achieved, utilising theory of change modelling – see main report. The fourth project outcome concerning the livelihoods of the indigenous Batwa was not assessed by this component of the analysis, but evaluated by a separate special study (see Namara, 2007). The findings of the analysis are summarised by each outcome, followed by the overall conclusion.

A.4.1 Outcome 1: Establishment of the Bwindi Trust

The theory of change (TOC) model linking Outcome 1 to the intended impact of enhanced conservation status of the ecosystem is illustrated in Figure 7 below. The figure includes ticks to indicate the assessment score for achieving the various components of the model.

Figure 7 Bwindi Outcome 1 TOC model



The analysis for the two intermediate states is given below. The overall assessment of impact achieved by the first three project outcomes is given in section A.4.4.

Intermediate State 1: BMCT interventions are adequately financed and relevantly targeted to address priority conservation and development needs

There are two key aspects of this intermediate state that were considered essential pre-conditions to delivering the intended impact, *i.e. reduced pressure on the local natural resource base*. Firstly, the development of a clearly articulated strategic programme aimed at achieving long-term conservation objectives, whilst addressing the priority development aspirations of the local communities. Secondly, the establishment and development of a range of diverse funding mechanisms/ sources to ensure that there is secure, long-term finances to implement the Trust's programme.

Essential factors in the process to achieve this intermediate state are three impact drivers and one external assumption. Of the drivers, one was considered to be well achieved and two to be partially achieved, whilst the assumption that the endowment fund is not negatively affected by market downturns was assessed to be partially met (as shown in Figure 7 above).

As a result of the above key factors, the assessment of the intermediate state was **partially achieved**. In particular, the study team felt 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.

Intermediate state 2: BMCT environmental fund model replicated and mainstreamed in other parts of Africa

As the Bwindi Trust was the first environmental trust fund to be established in Africa, it has the potential to be held up as a model fund to be replicated and mainstreamed in other parts of Africa and worldwide. Promoting such catalytic effects is central to the GEF mission to improve the global environment.

Only one impact driver was identified as necessary to maximise opportunities to achieve the intermediate state, which was the dissemination of publicity materials alongside the development of lessons learnt and recommendations for initiating similarly targeted environmental funds. Despite the assessment that the impact driver was only partially achieved, the intermediate state was felt to have been well achieved. It seems that despite the lack of emphasis on publicity and promotion by the Trust, the Bwindi model was so compelling (and the demand sufficiently high) that it was not necessary to proactively publicise the model. Since the establishment of the Bwindi Trust in 1995, 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.

A.4.2 Outcome 2: Park support

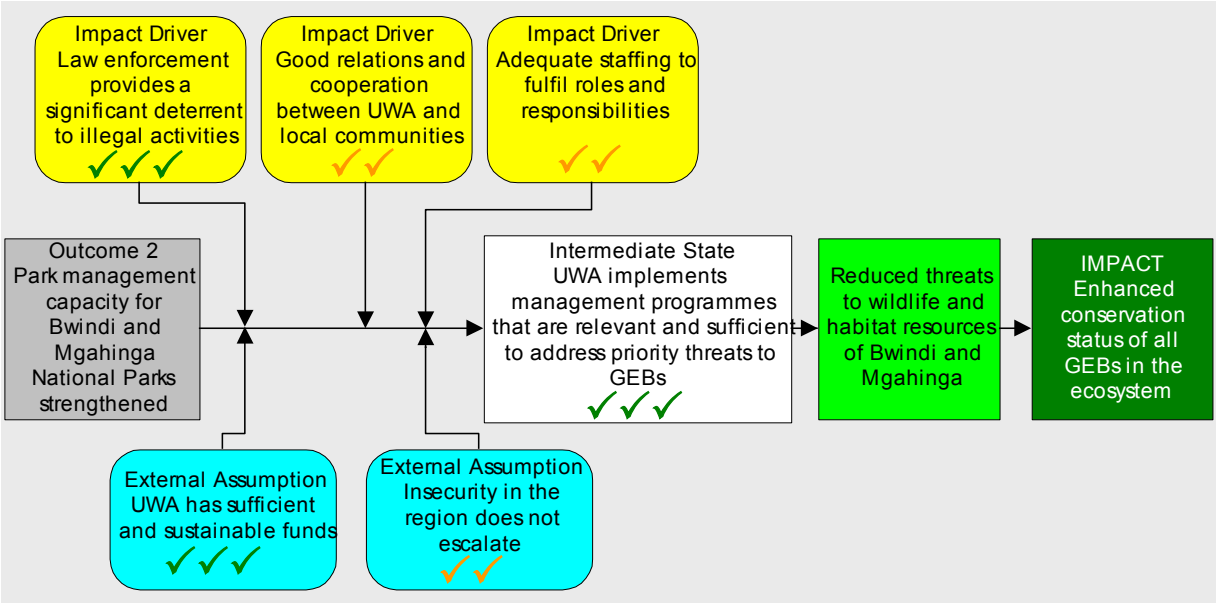
The theory of change model linking Outcome 2 to the intended impact of enhanced conservation status of all GEBs in the ecosystem is illustrated, with performance scores, in Figure 8 overpage. Only one intermediate state was identified as necessary to achieve the intended impact, as discussed below.

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

The achievement of this intermediate state was felt to cover the key aspects necessary for the park authorities to deliver the intended impact of *reduced threats to wildlife and habitat resources of Bwindi and Mgahinga*. As with the intermediate state for the Bwindi Trust

establishment (Outcome 1), the key requirements for the Uganda Wildlife Authority (UWA) are that they implement management activities that are appropriately targeted and adequately funded. In particular, the park authorities need to undertake a planning process that will clearly identify a package of realistic management activities to address the priority threats to ecosystem functioning and the GEBs, and for there to be the necessary funds and qualified staff to implement the planned activities in a timely fashion.

Figure 8 Bwindi Outcome 2 TOC model



The achievement of this intermediate state depends on a variety of factors, including three environmental and sustainability impact drivers and two external assumptions that were assessed to be partially to well met (see Figure 8 above). For the impact drivers, staffing and resources for law enforcement were assessed to be adequate and effective, with one ranger per 10km² and the fact that 76% of interviewees of a community attitude survey in 2002 attributed law enforcement to be the primary reason for the decrease in illegal activities. However, the study team felt that the community conservation and research and monitoring departments were insufficiently staffed and resourced to implement their ambitious programmes.

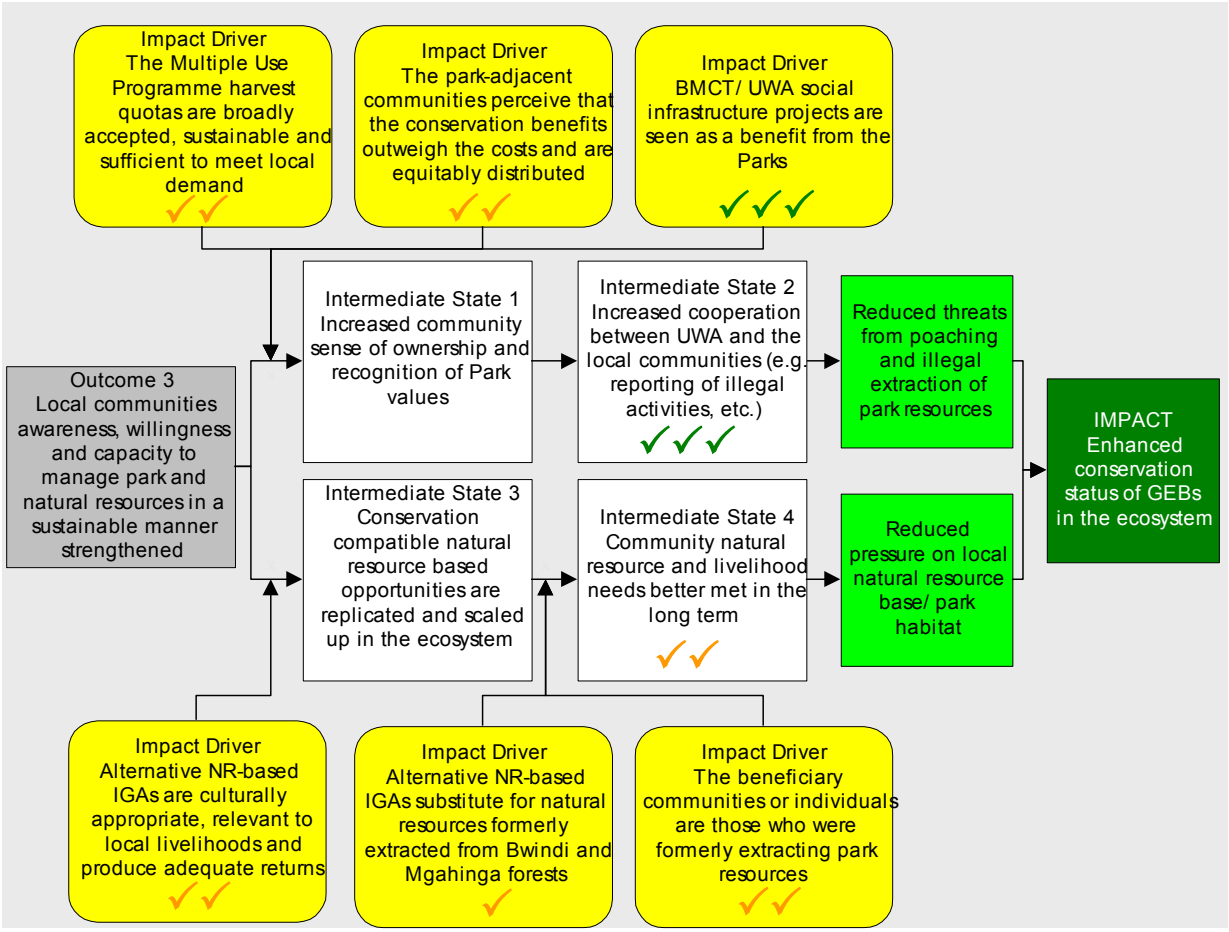
Regarding the external assumptions, UWA's funding levels were deemed to be sufficient and stable with high levels of financial accountability and a 75% increase in tourism revenues between 2000/1 and 2002/3. These revenues are set to increase further as gorilla tourism tracking permits continue to be fully booked, despite the continuing rise in price, and in light of plans to habituate two new gorilla groups for tracking at Bwindi. The conflict and political instability in neighbouring DRC continues to pose a threat to the parks, but apart from one incident in 1999 that led to the deaths of a warden and several tourists, the threat has not led to increased insecurity on the ground.

As a result of the above key factors the assessment of the intermediate state was **well achieved**. The study team felt 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 with management programmes guiding day to day operations. However, the plan lacks a clear mechanism for performance and impact monitoring, which may ultimately hinder the ability of park management to adapt their activities to the changing conservation needs of the parks.

A.4.3 Outcome 3: Community support

The theory of change model linking the community support activities of Outcome 3 to the intended impact of enhanced conservation status of all GEBs in the ecosystem is illustrated in Figure 9 below.

Figure 9 Bwindi Outcome 3 TOC model



The findings of the analysis for this model are presented for the four intermediate states. Due to their inter-dependence, the first two and last two intermediate states are assessed together, the main findings of which are presented below.

Intermediate State 1 and 2: Increased community sense of ownership and recognition of Park values/ Increased cooperation between UWA and the local communities

Underpinning these two intermediate states is the viewpoint that local communities will only truly cooperate and participate in conservation activities when they genuinely appreciate and respect the biodiversity values of the national parks as they stand. When these values are in place, cooperation with park authorities will be effective and will lead to the achievement of the intended impact, i.e. *reduced threats from illegal extraction of park resources.*

Key factors in the process to achieve these intermediate states are three environmental and socio-economic impact drivers, which ensure that park benefits (principally resource access and a share of park revenue for community development) are environmentally sustainable and that they are perceived by the community to be: (1) linked to the park, (2) greater than the costs of conservation and (3) equitably distributed. The study team considered these impact drivers to be partially to well achieved as shown in Figure 9 above.

As a result of the above key factors, the assessment of the two intermediate states was **well achieved**. The study team considered the Trust's community activities around Bwindi and Mgahinga to have generated a high level of conservation awareness, understanding and support for forest conservation. This has been reflected in improved park-community relations and increasing instances of cooperation on issues such as fire control and resource access. The community attitude surveys of 2002 also indicated good support for conservation, with 67% of people in park-adjacent parishes stating that they benefited from the PAs. However, whilst support has aimed to benefit the broadest section of society, especially through social infrastructure projects, it has proven a challenge to be truly equitable in its distribution. The community attitude surveys of 2002 still showed that about half the respondents perceived themselves to be worse off living near a park (mainly due to wildlife damage) and that the wealthier members of society were more positive towards conservation than the poorer people. The main reasons for this include:

- Livelihoods of poorer members suffer most from restricted access to forest resources
- Poorer members tend to live nearer park boundaries and consequently suffer most from wildlife damage
- Benefits from enterprise interventions often focus on the more literate and educated members of society (i.e. the wealthier ones).

Intermediate State 3 and 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

The previous two intermediate states focused on the positive attitudes of the local communities towards conservation. However, good attitudes alone are not sufficient to deliver impact. Intermediate states 3 and 4 focus on the conditions needed to practically convert community conservation support to practical conservation action. In essence, this requires park-adjacent communities to modify and adopt alternative livelihood strategies that are compatible with the conservation of the forests. However, such livelihood strategies will only be adopted on a sustainable basis in the wider ecosystem if they are seen to better meet people's household needs. The adoption of such natural resource and livelihood strategies is essential for the achievement of the intended impact, i.e. *reduced pressure on the natural resource base.*

Three socio-economic and environmental impact drivers were viewed as critical to achieving these intermediate states. One of the drivers was considered to be poorly achieved and two to be partially achieved. The main challenge was that the community often viewed alternative income generating activities as providing additional resources, rather than substitutes for park resources. For example, 39% of respondents in the 2002 community surveys stated that they continue to extract fuelwood from the park; a similar percentage to the 1992 baseline survey. The livelihood strategies were viewed as relevant and able to deliver adequate returns, with adoption predominantly by the wealthier community members, who own land, are located away from the park boundary (and wildlife conflicts) and have access to markets. However, the poorest of the poor, who are often the most dependent on the park resources, have not adopted these approaches.

As a result of the above key factors the assessment of these two intermediate states was **partially achieved**. To convert positive conservation attitudes into the wide-scale adoption of conservation-compatible natural resource use practices is the most challenging aspect of the Bwindi project and the one that will take the longest to achieve. The evidence shows that conservation compatible livelihood strategies have been successfully adopted (e.g. beekeeping, mushroom growing, handicrafts) and their success has led to new groups being formed to replicate these through approaching the model entrepreneurs trained by the Trust. However, there is a lack of resources and capacity to scale up these practices more widely.

A.4.4 Summary of the project's overall outcomes-impacts processes

Overall, the Bwindi Outcomes-Impacts analysis evaluated the processes to convert the project outcomes to impact to have been **partially achieved**, as shown in the performance summary below.

Under Outcome 1, 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 to expand fund-raising efforts. With regard the wider scaling up of the Trust's impact across the continent, which has been successful, still more could be achieved if the efforts to publicise and raise awareness of the Trust's successes and lessons learnt were strengthened.

Under Outcome 2, the Bwindi Trust's support has contributed and resulted in a strong park management, which is better placed to achieve impact in the Bwindi-Mgahinga ecosystem. A well-structured General Management Plan (2001-2011) has been developed and approved for the conservation area, incorporating recommendations of the Ecological Monitoring Programme that the Trust helped to establish. However, stronger 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, especially concerning community conservation and research and monitoring.

Under Outcome 3, the evidence suggests that good progress has been made to attain the local community support in achieving impact in the Bwindi-Mgahinga ecosystem. However, this is the most complicated of the TOC models and even after ten 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 programme. However, changing behaviours and practices of communities so that they are 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 the community support programme.

A major conclusion of the analysis was the importance of establishing ***long-term institutional mechanisms*** that continue beyond project closure. This is especially important when dealing with integrated conservation and development initiatives, which require many years before achieving significant livelihood benefits let alone global environmental impacts. The analysis also identified ***adequate stable funding*** as a critical impact driver and that both the Bwindi Trust and UWA can achieve high impact when funds are available. An important ***catalytic effect***, although not proactively pushed by the project, was the replication of BMCT pilot model by other environmental funds.

Outcome 1 - Impact	Outcome 2 - Impact	Outcome 3 - Impact	Overall
✓✓	✓✓	✓✓	✓✓

A.5 Direct assessment of project impact

The direct measure of the project impacts is provided by the third and final component of the Impact Evaluation Analytical Framework, the GEBs-Threats Analysis. The findings of the analysis are summarised firstly for the conservation status of the biodiversity values, and secondly regarding the changes in the threat levels impacting on these biodiversity values. The final section provides the overall conclusions to the assessment of project impact.

As identified in section A.2 above, four key potential Global Environmental Benefits (GEBs) were identified for the Bwindi project. 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 not possible to disaggregate information for montane forest.

A.5.1 Enhancement of GEBs

The assessment of the conservation status for each GEB is given below.

Continuous altitudinal forest gradation/ Montane Forest habitat

The conservation status for the key ecological attributes (KEAs) of the forest GEBs were assessed to have remained **stable** since the project baseline of 1995, as shown in Table 7 below. This is actually an improvement from the situation prior to the project (and the gazettement of the forest as national parks in 1991), when the status of the forest key ecological attributes were declining. For example, a comparison of aerial photos taken in 1954 and 1990 show a 27% reduction in the extent of Bwindi Forest during the intervening 36 years. In addition, there are encouraging indications that forest regeneration may be occurring in previously encroached areas of the forests (Mwima & McNeilage, 2003). However, the forest gaps arising from the legacy of intense pit-sawing and fire show very little evidence of forest regeneration.

Table 7 Changes in the conservation status of Bwindi forest GEBs

Key Ecological Attribute	Indicator	Conservation Status			Trend
		Baseline	Project end	Now	
Forest size and extent	Area of forest cover	No change in forest size since 1987			⇔
Canopy cover	Water quality indices	Since 2001, water quality is good and seems stable			⇔
Forest regeneration processes	Abundance of saplings and seedlings in forest gaps	There is little sign of regeneration in gaps caused by logging and fire. However, regeneration is occurring in previously encroached areas			⇔
Habitat diversity	No information				

Mountain gorillas

The conservation status for the key ecological attributes of the Mountain gorillas were assessed to be **stable to improving**, as shown in Table 8 below. The Bwindi gorilla censuses of 1997, 2002 and 2006 showed that the gorillas population have been increasing at approximately a one percent annual growth rate, which is indicative of a healthy and well-protected population. A comparison of distribution data from the three censuses also showed a negative correlation between human disturbance in the forest and gorilla distribution, i.e. the distribution of human disturbance in the forests has decreased, whilst the distribution of gorillas has increased. The increased distribution of gorillas in the 2006 census is also significant as it shows that for the first time in living memory gorillas have ventured into the northern sector of Bwindi.

Table 8 Changes in the conservation status of Mountain gorillas

Key Ecological Attribute	Indicator	Conservation Status			Trend
		Baseline	Project end	Now	
Population size	Total population size	300	320	340	↑
Population distribution	Locations of gorillas groups	Groups appear to be more spread out across the park by 2006			↑
Suitable undisturbed forest habitat	Areas of habitat	No change in forest size since 1987			↔
	Encounter rates of disturbance signs	See threats analysis. No clear indication of a reduction in disturbance			↔
Reproductive rates	Insufficient data to allow comparison of reproductive rates over different periods				

Grauer's rush warbler

The conservation status for the key ecological attributes of the Grauer's rush warbler were assessed to be **stable**, as shown in Table 9 below. Their populations in the Mubwindi Swamp in Bwindi, as well as in Echuya forest, have only been monitored since 2002. The initial results indicate that the population is stable in Echuya, and shows some sign of increase in Bwindi. 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.

Table 9 Changes in the conservation status of Grauer's rush warbler

Key Ecological Attribute	Indicator	Conservation Status			Trend
		Baseline	Project end	Now	
Swamp forest	Size and extent	No known degradation of swamps within Bwindi over this period			↔
Population size	Total population size			Stable	?

A.5.2 Reduction of threats to GEBs

The threats identified for Bwindi and Mgahinga tended to be cross cutting and not targeted at individual GEBs (except for disease). As a result, the assessment of each threat considered all GEBs. Overall the status of threats impacting the GEBs were assessed to be either **unchanged** or **decreasing**, as shown in Table 10 below.

Prior to gazettement Bwindi and Mgahinga forests were being rapidly degraded by pit-sawing and uncontrolled exploitation of natural resources. When Bwindi and Mgahinga were made into national parks in 1991, 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 park managers. However, there has subsequently been a considerable reduction in conflict and an improvement in the local communities' support for the conservation, in part due to the activities of the Bwindi Trust. As a result, all the identified GEBs are considered to be under less threat. The improved attitude of the neighbouring communities to the park is particularly important for the long-term protection of Mountain gorillas. The threat to the forest itself has dropped with the decreasing threat from encroachment and fire. However, both Bwindi and Mgahinga 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.

Table 10 Changes in threat levels before and after GEF support

Threat	Indicator	Threat level			Trend
		Baseline	Project end	Now	
Poaching	Encounter rate of poaching signs per patrol day	0.31	0.25	-	⇔
	Encounter rate of poaching signs per km of census recce trails	No consistent pattern from census data from 1997, 2002 and 2006			
Pit-sawing and tree cutting	Encounter rate of tree cutting per km of census recce trails	No consistent pattern from census data from 1997, 2002 and 2006. See attached report			⇔
Encroachment	Area of forest loss around boundaries of Bwindi	Satellite image analysis shows almost no loss of forest cover inside park between 1987 & 2000. Encroachment rarely reported since 1995			⇩
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			⇩
Lack of regeneration of forest gaps	Abundance of saplings and seedlings in forest gaps	Little sign of regeneration in gaps caused by selective/ intensive logging			⇔
Hostile neighbouring communities	Park adjacent community members expressing lack of support for the park, as percentage of community members surveyed	53	24	-	⇩
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			⇔
Disease (gorillas)	No information	No information			-

A.5.3 Summary of project's impacts on GEBs

Taking into consideration the general improvement in the status of the GEB's key ecological attributes and the evidence that certain key threats have decreased since the baseline, the conservation status of the three GEBs was assessed to be **stable** to **improving**, as summarised in the box below. It is a considerable conservation success 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. However, a number of key threats remain at the project baseline level, including poaching, illegal activities, the lack of regeneration in forest gaps and the potential loss of connectivity between the northern and southern sectors of Bwindi. Consequently, the maintenance of project impacts depends on continued conservation efforts to address these threats.

Forest GEBs	Mountain gorilla	Grauer's rush warbler	Overall
⇔	⇧	⇔	⇔ - ⇧

Annex B: Cross Borders Biodiversity Project

B.1 Project overview

The **Reducing Biodiversity Loss at Selected Cross Border Sites in East Africa Project**, known more briefly as the East Africa Cross Borders Biodiversity Project (CBBP) or "Cross Borders", was a regional five-year, full-sized GEF/ UNDP project that was operational between 1998 and 2003. The overall **project objective** was:

> *To reduce the rate of loss of forest and wetland biodiversity in specific cross border sites of national and global significance in East Africa*

The two **project outcomes** identified in the project brief to achieve this objective were:

1. An enabling environment developed which supports the sustainable use of biodiversity
2. Resource demands brought into balance with supply at key sites

The GEF funding for the project amounted to US$12.9 million with additional co-financing of US$5.5 million. The project concept was developed in response to requests from the East African Governments for a regional biodiversity project and the recommendations of an external evaluation of the first GEF regional biodiversity project *Institutional Support for the Protection of East African Biodiversity*, which was implemented between 1992 and 1996.

The project had components in each of the three participating countries (Kenya, Uganda, Tanzania), as well as a regional co-ordination component based in Arusha, Tanzania. The project sought to provide support at regional, national, district and community levels. Site-based conservation interventions took place at four paired cross-border sites, chosen on the basis of their biodiversity values, as illustrated in Figure 10 below.

Figure 10 The project cross border sites and global biodiversity importance

1. **Minziro Forest (Tanzania) and Sango Bay Forest (Uganda).** Its extensive swamp forest with West African and Afro-Montane forest species and endemic swamp podo (*Afrocarpus dawei*) represents a *unique ecological community* found nowhere else
2. **Karamoja (Uganda) and Loima Hills (Kenya)** dry montane forest representing an *ecological refugia/ island* for threatened ecological communities surrounded by arid and semi-arid pastoralist land
3. **Kajiado (Kenya) and Monduli (Tanzania)** dry montane forest, also providing an *ecological refugia* surrounded by arid and semi-arid lands
4. **Eastern Arc Forests: Pare Mountains (Tanzania) – Taita Hills (Kenya)**. Representing one of 25 *Global Hotspots* for plant diversity with exceptional levels of endemism

The project adopted and piloted the innovative participatory forest management approach, which started in the early 1990s in East Africa, to address forest biodiversity loss. Project interventions were targeted at two levels: firstly, to reduce the immediate loss of forest biodiversity by stopping encroachment and reducing the logging and harvesting of key species; and secondly, to prevent such loss in the future by putting in place specific long-term mechanisms that would deal with the root causes.

Due to the extensive coverage of this project, it was not realistic for this case study to evaluate all the various aspects at all the cross border sites. Instead, this study only examined the Sango

Bay Central Forest Reserve (Uganda) and the Minziro Forest Reserve (Tanzania) cross border site, where collaborative forest management was piloted. This site was considered by former project staff to be the most successful of the field sites and would therefore provide the best opportunities for testing the case study impact evaluation techniques.

This case study introduces the project's anticipated Global Environmental Benefits as identified by the study team and then the evaluation findings according to the three analytical components of the Impact Evaluation Framework, which are the Project Logframe Analysis, the Outcomes-Impacts Analysis and the GEBs-Threats Analysis. See Chapter 2 in the main body of the report for more information.

B.2 Project Global Environmental Benefits

Based on the project documentation and using the TNC's CAP methodology (see main report), the study team identified six main biodiversity conservation values of the Sango Bay-Minziro ecosystem which, provided they have been conserved and enhanced as a result of project interventions, arguably represent the delivery of global environmental benefits (GEBs). As per the CAP method, these identified GEBs are not the only conservation values and global environmental benefits that are provided by the target ecosystem, but rather are a crucial cross section of the ecosystem's conservation values at different levels of ecological organisation, that if conserved, will indicate that other ecosystem conservation values are also being conserved, and that a wide range of global environmental benefits are likely to have been delivered through project interventions. The identified GEBs are:

1. **Evergreen swamp forest-grassland system**. This is the key system level GEB, which covers an area of around 850km² in the river Kagera flood plain and represents a unique assemblage of species from west, central and eastern Africa (montane, medium altitude and lowland forests).
2. ***Afrocarpus dawei*.** This was the one tree species identified as a GEB. It is an endemic coniferous tree to Sango Bay-Minziro forests with significant commercial value.
3. ***Pseudagrostachys ugandensis*.** This is one of two shrub species identified as a GEB. It is classified as Near Endemic in Sango Bay forest, although not present within Minziro forest.
4. ***Coffea canephora***. The second shrub identified as a GEB is a wild coffee, which is considered Globally Rare and found in several locations in both Minziro and Sango Bay forests.
5. **Blue swallow** (*Hirundo atrocaerulea*). This is one of two species of bird identified as a GEB. Sango Bay-Minziro forests contain significant numbers of Guinea-Congo biome restricted bird species and both forests have been classified as Important Bird Areas due to the presence of globally threatened species. The Blue swallow is classified by IUCN as Globally Endangered and is an intra-African migrant that winters in lowland areas such as Minziro and Sango Bay forests.
6. **Forest francolin** (*Francolinus lathami*). The second bird species GEB is classified as having a Restricted Range, with Minziro forest being the only site in which it is found in Tanzania. The species is not found in Sango Bay forest.

B.3 Assessment of project implementation success

The Project Logframe Analysis assessed the achievement of the two project outcomes defined in the project brief (see above). The study team's findings for each outcome are summarised below, followed by the overall conclusion of project implementation performance.

B.3.1 Delivery of project outcomes

Outcome 1. An enabling environment developed which supports the sustainable use of biodiversity

By the end of the project, notable achievements had been made at both the national policy level and at the field level in Sango Bay-Minziro Forests. At the policy level, the project had influenced the establishment of innovative and participatory forest policies and legislation as well as a logging ban in Tanzania, which was critical to reducing the illegal harvesting of threatened timber species at Sango Bay-Minziro. At the site level, mechanisms for community participation in forest management were successfully established, principally through the Local/ Village Environment Committees and, in the case of Sango Bay, through the formation of community-based organisations. Government bodies (e.g. the national forest authorities and NEMA/ NEMC[5]) and development agencies played an active role in promoting sustainable resource use by the communities. However, some aspects of this outcome were not fully achieved, including building in long-term sustainability into the collaboration/ community mechanisms (especially for cross-border collaboration) and developing the District and local policies and bylaws to support collaborative forest management.

Outcome 2. Resource demands brought into balance with supply at key sites

The two key aspects of this outcome were the development of participatory management plans to govern the use of forest resources, and the development of alternative sustainable resource use and income generating activities. The project successfully initiated a participatory process for developing the forest management plans and establishing collaborative forest management between the Forest Departments and the local communities. The completed plans contained frameworks for regulated use of key resource, which were approved by the communities. However, by the project end, the government agency had not approved the plans and collaborative forest management agreements, and there was not an effective monitoring system in place to measure regeneration of key natural resource species in the forests.

A good start was made in promoting alternative resource use, such as improved stoves, tree nurseries, agroforestry, cloned coffee and beekeeping, with high levels of adoption reported. However, it was not clear the extent to which these activities had reduced forest resource use and the terminal evaluation concluded that there was a weak linkage between these development activities and conservation.

B.3.2 Assessment of overall project implementation performance

The project was successful in creating an enabling environment through contributing to the development of new participatory national forest policies, and the establishment and strengthening of local community participation mechanisms to enable joint government-community management. In addition, a good start was made to bring resource demands in balance with supply through the development of participatory forest management plans with high levels of community buy-in and the adoption of alternative resource use/ income-generating practices. However, there was an inadequate project monitoring and evaluation system to measure the level of uptake of project activities by local communities and the resulting impact on local livelihoods, and to measure whether the delivery of project activities had the desired impact on biodiversity resources at the sites.

Overall the Project Logframe Analysis evaluated the implementation of the Cross Borders project to have been **partially achieved** to **well achieved**, as shown in the project performance summary below. This is in line with the terminal evaluation, which rated the achievement of the project outcomes as satisfactory.

[5] NEMA - National Environment Management Authority (Uganda)
NEMC - National Environment Management Council (Tanzania)

Outcome 1	Outcome 2	Overall
✓✓✓	✓✓	✓✓ - ✓✓✓

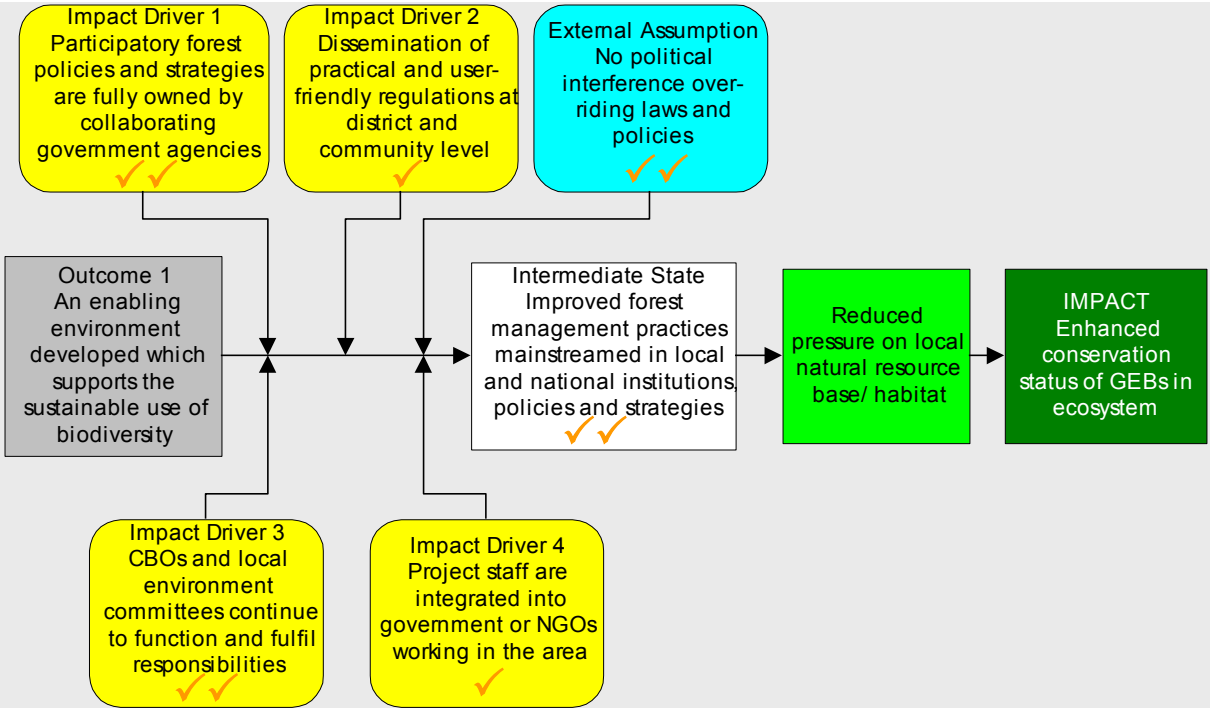
B.4 Assessment of the processes to deliver impact

The Outcomes-Impacts Analysis assessed the extent to which the processes for converting the two project outcomes to eventual lasting impact had been achieved. The findings of the analysis are summarised by each outcome, followed by the overall conclusion.

B.4.1 Outcome 1: Establishment of an enabling environment

The theory of change (TOC) model linking Outcome 1 to the intended impact of enhanced conservation status of the ecosystem is illustrated in Figure 11 below. The figure includes ticks to indicate the assessment score for achieving the various components of the model.

Figure 11 Cross Borders Outcome 1 TOC model



The analysis for the intermediate state is given below. The overall assessment of impact achieved by the two project outcomes is given in section B.4.3.

Intermediate State: Improved forest management practices mainstreamed in local and national institutions, policies and strategies

This intermediate state was considered to be essential to the ultimate delivery of the intended impact, i.e. *reduced pressure on the local natural resource base*. The project made a significant contribution to creating a more enabling environment for forest conservation through piloting innovative community participation mechanisms and sustainable use practices in conjunction with supporting the successful development of participatory national forest management policies. However, for these project successes to lead to impact, there is a need for the improved forest management policies and pilot approaches to be widely adopted and mainstreamed into the programmes and activities of both local and national natural resource management institutions.

Essential factors to achieve this intermediate state are four impact drivers and one external assumption. Of the drivers, two were considered to be partially achieved and two to be poorly achieved, whilst the assumption that there would be no political interference was assessed to be partially met (as shown in Figure 11 above).

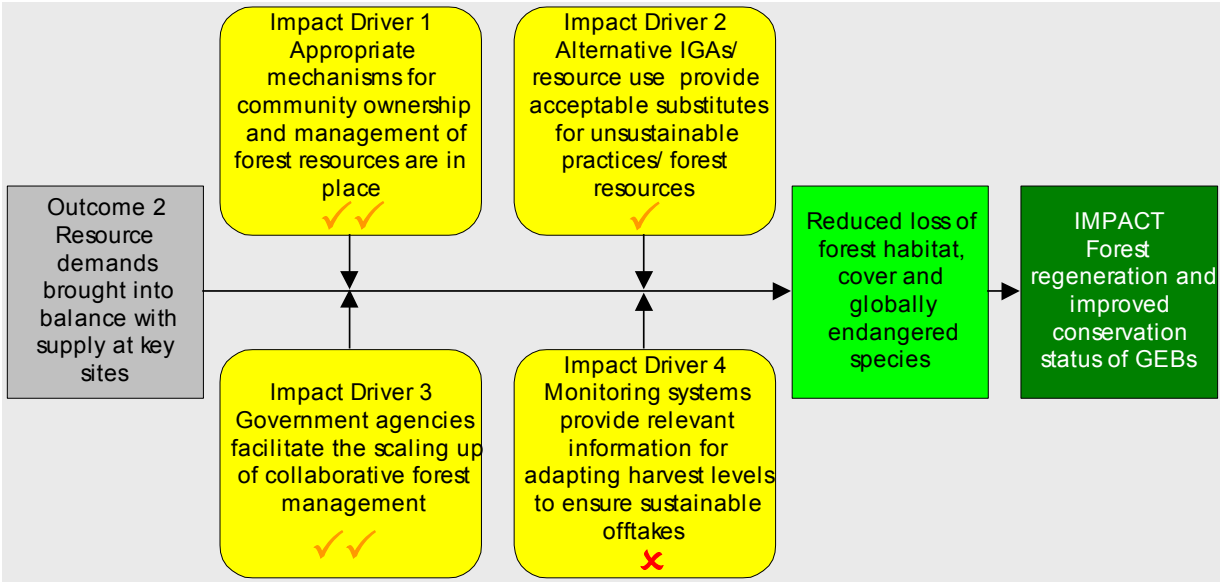
As a result of the above key factors, the assessment of the intermediate state was **partially achieved**. In particular, the study team felt that a good enabling policy and legislative environment has been created in Uganda and Tanzania where participatory forest management is now widely accepted as best practice. However, this enabling environment has only partially resulted in improved management practices on the ground. At Sango Bay-Minziro forests, the establishment and registration of community-based organisations has provided an effective and reasonably sustainable community institution for collaborative forest management, in part due to their ability to directly fundraise. However, the local/ village environment committees in both forest sites have ceased to function or support CFM since project completion.

The effectiveness of collaborative forest management was very much dependent on the government agencies taking the lead after project closure. In Uganda, the National Forest Authority[6] allocated financial resources in the financial years 2004/5 and 2005/6 (of between US$7,500 and US$10,000 per year) to take on this leadership role. However, in Tanzania, the District Forest Department lacked the resources and support to implement collaborative forest management, which was attributed to the parent body, the Forest and Beekeeping Division (in Dar es Salaam), not having endorsed the Minziro Management Plan. The lack of improved CFM practices on the ground is partly explained by the two poorly achieved impact drivers (#2 and 4 in Figure 11 above), which led to the loss of institutional knowledge and expertise in CFM following the departure of the senior project staff from the Sango Bay and Minziro area, and the lack of user-friendly CFM guidelines for local communities and district-level government agencies.

B.4.2 Outcome 2: Balancing of resource supply and demand

The theory of change model linking Outcome 2 to the intended impact of reduced loss of forest habitat, cover and globally endangered species is illustrated, with performance scores, in Figure 12 below.

Figure 12 Cross Borders Outcome 2 TOC model



[6] In Uganda, the closure of the GEF project in 2003 coincided with the restructuring of the Forest Department, which was split up into the National Forest Authority (in charge of all Central Forest Reserves), the District Forestry Services (in charge of other forest reserves), and the Forestry Inspection Division.

No intermediate states were identified as necessary to achieve the intended impact, as the study team felt that the project outcome would directly lead to impact. This is due to the fact that the outcome is a high level objective that deals directly with the sustainable use and reduction of threats to the global environment benefits.

Four impact drivers were considered essential to ensuring that, following project completion, the project outcome led to impact. The two drivers necessary to ensure the post-project engagement of stakeholders in the implementation and replication of collaborative forest management (CFM) were assessed to be partially achieved (Impact Drivers 1 and 3). The Sango Bay site in Uganda proved more successful, with the NFA formerly approving the CFM Agreements with the three pilot collaborative forest management CBOs in November 2005; two years after project closure. In addition to providing ongoing support to these three CBOs, NFA have started to replicate the CFM approach in a further eight new communities around Sango Bay, although progress is slow due to a modest annual budget. Moreover, Sango Bay is now regarded as a model for CFM in Uganda, and consequently hosts at least one CFM study visit every two months. At the Minziro site in Tanzania, no CFM agreements were established during or following the project and, due to a disempowered and under-resourced District Forest Department (as explained in the previous section), no new initiatives have been undertaken to replicate the activities of the project.

The study team considered it essential that the alternatives resource uses promoted by the project actually provided the beneficiary communities with acceptable substitutes to the forest resources (Impact Driver 2). This driver was assessed to be poorly achieved, for although the promotion of improved cooking stoves has been reported to reduce the need for firewood collection, the other successful project-sponsored alternative activities (woodlots and beekeeping) are yet to start to produce financial returns and none of these activities address the key forest threats from commercial timber harvesting (which resumed in 2007 at Minziro Forest) and the sporadic encroachment of non-resident pastoralists.

The study team did not consider the final impact driver to have been achieved, i.e. the uptake of monitoring systems to ensure the sustainable harvesting of designated forest resources (Impact Driver 4). The Threat Reduction Assessments carried out by the project have not been repeated and the forest authorities at Sango Bay and Minziro forests have not adopted a systematic forest resource assessment or monitoring system. The NFA Sector Manager for Sango Bay stated that there was currently no way to measure whether their activities were having any impact on forest biodiversity or the local community livelihoods. Perhaps more concerning is the lack of any detailed stocktaking and harvesting plans for Minziro since the lifting of the logging ban in 2007.

As a result of the above key factors, the assessment of the conditions needed to convert this project outcome to impact was **poorly achieved**.

B.4.3 Summary of the project's overall outcomes-impacts processes

Overall the Cross Borders Outcomes-Impacts analysis evaluated the processes to convert the project outcomes to impact to have been **poorly to partially achieved**, as shown in the performance summary below.

Under Outcome 1, the study team concluded that there was a good level of buy-in for collaborative forest management at the national and community level. The enabling policy environment created can be expected to have a trickle-down effect to field sites in the longer term. In addition, the good start made towards establishing sustainable site-based institutions in the form of the collaborative forest management CBOs are expected to realise greater impact as they mature. However, a great deal more financial and technical support is deemed necessary to strengthen, replicate and institutionalise the collaborative management processes piloted. In particular, the capacity and commitment of the government agencies to implement

this process needs to be strengthened to fully bridge the gap between the project outcomes and impacts.

Under Outcome 2, there was limited evidence that the conditions were met to deliver the intended impact. It seems that the innovative collaborative management mechanisms established by the project have not yet matured sufficiently. There is limited evidence that the alternative resource uses promoted by the project are generating household income or being replicated and the lack of monitoring makes is difficult to assess whether these alternatives are in fact reducing pressure on the forest resources.

A major conclusion from this analysis is that five years is too short a period to establish sustainable community institutions. Although the project made a good start at Sango Bay, the CBOs could not support themselves at the project's end. Therefore, provisions need to be made during project implementation to ensure continued support post-project, whether through government agencies or follow-up projects or programmes, until the institutions are financially and institutionally independent.

Another conclusion at the village level is that registered community based organisations are more institutionally sustainable than more informal committees, in part due to their ability to establish a bank account and fundraise. The CBOs established by the Cross Borders project, have all managed to access additional funds from international donors, such as the GEF-funded Nile Basin Initiative, and have managed to access technical support.

Although, there is limited evidence for achievement of impact at the Sango Bay-Minziro forests, the fact that Collaborative Forest Management CBOs are starting to be replicated and scaled up in Sango Bay does indicate that over time and with continuing external support, these community institutions have a fair chance of maturing and playing a more significant role in joint forest management, and ultimately in realising impact.

Outcome 1 - Impact	Outcome 2 - Impact	Overall
✓✓	✓	✓ - ✓✓

B.5 Assessment of project impact

The direct measure of the project impacts is provided by the third and final component of the Impact Evaluation Analytical Framework, the GEBs-Threats Analysis. The findings of the analysis are summarised firstly for the conservation status of the biodiversity values and secondly regarding the changes in the threat levels impacting on these biodiversity values. The final section provides the overall conclusions to the assessment of project impact.

As identified in section B.2 above, six key potential Global Environmental Benefits (GEBs) were identified for the Sango Bay-Minziro forests, which formed the basis for this analysis.

B.5.1 Enhancement of GEBs

The project did not emphasise the direct measurement of the conservation status of the global environmental benefits accruing from Sango Bay-Minziro forests, due to a number of factors including the difficulty in establishing biodiversity baselines, the lack of easy to measure keystone species and the long timeline needed for changes in ecosystem biodiversity to occur.

As a result, the project's participatory resource monitoring and evaluation framework did not measure the KEAs of the species-level GEBs. Instead the project monitored species that were legitimately used by local communities (e.g. for medicine, food plants, sources of income), problem animals, or indicators of environmental change. Although this theoretically provides information on the rate of biodiversity loss, it did not provide detailed information on the "20 species of conservation concern" (including the five species level GEBs) identified in the project

documentation. The project did attempt to establish a baseline inventory for the "species of conservation concern" with the intention that follow-up surveys and monitoring would be conducted post project to assess change. But no such follow-up surveys have been undertaken.

Evergreen swamp forest-grassland system

The conservation status for the key ecological attributes (KEAs) of the system level GEB were assessed to be **stable** since the project baseline, as shown in Table 11 below. The project monitoring only focused on the first KEA, the size and extent of the forest-grassland system, which was considered to be stable. This finding was based not only on there being no reported incidences of encroachment or degazettement, but also due to steps to improve the conservation protection status and demarcation of the reserves. These measures included upgrading 6,000 hectares of Minziro Forest Reserve (32% of the total forest area) and 12,000 hectares of Sango Bay Forest Reserve (30% of the total forest area) to strict Forest Nature Reserve status and initiating a participatory process to re-establish and clearly demarcate the forest boundaries with beacons and trenches (and in places with live marker trees).

Although there was no project data collected for the other two Key Ecological Attributes, the study team was provided with a rough assessment of the last KEA, ***forest regeneration processes***, based on a quick assessment of available satellite images by UNEP Division of Early Warning and Assessment (August 2007). The assessment indicated that Sango Bay-Minziro forests appeared to have been affected by fire in the past, and that there was visible regeneration of vegetation in previously bare patches. This finding was also supported by the consultations undertaken during the 2007 field visit, in which both local community members and the Sango Bay NFA Sector Manager stated that there had been regeneration of certain forest patches (although these have not been quantified).

Table 11 Changes in the conservation status of evergreen swamp forest-grassland

Key Ecological Attribute	Indicator	Conservation Status	Trend
Forest-grassland size and extent	Incidences of degazettment or encroachment	No incidences recorded. In part due to participatory exercise to re-establish and demarcate boundaries	⇔
Canopy cover	Not directly measured	-	-
Forest regeneration processes	Vegetation changes in forest gaps	Visible regeneration of vegetation in previously fire damaged areas	⇧

Flora GEBs

It was not possible to give an assessment of the conservation status for the key ecological attributes (KEAs) of the flora GEBs due to lack of any substantive data. However, the available information for the three GEBs is summarised below.

The *Afrocarpus dawei*, a coniferous timber tree, was assessed by the project to be present at two sites out of ten in Minziro forest and at 39% of sites in Sango Bay forest. Its status at the end of the project was considered to be 'widespread and recovering' (Rodgers, 2004). However, the study team did not get any indications as to whether this status was an improvement on the pre-project level, nor what the post-project trend was. The forest authorities and communities interviewed at Sango Bay during the 2007 consultations indicated that during the year following project closure, there was an increase in illegal harvesting of timber, although following the establishment of NFA in mid 2004, the illegal harvesting level reportedly dropped again.

Regarding the two shrub species GEBs, the *Coffea canephora* (wild coffee) was found in several locations in both Minziro and Sango Bay forests and *Pseudogrostachys ugandensis* was assessed by the project to be widespread and regenerating within Sango Bay forest,

although not present within Minziro forest (Rodgers 2004). The basis of these assessments was not clear to the study team, as well as the baseline for future monitoring efforts.

Avian GEBs

It was not possible to give an assessment of the conservation status for the key ecological attributes (KEAs) of the avian GEBs due to lack of any substantive data. The information collected by the project for these two GEBs is summarised below.

Independent surveys were commissioned by the project in Sango Bay between 2000 and 2001 (Pomeroy, 2001) and in Minziro over a 12-day period in July/August 2000 (Baker, 2001). The purpose of these surveys was to provide baseline data of the avifauna of Sango Bay-Minziro and their associated habitats. The Minziro forest bird survey provided specific counts for the two identified species as described below.

The Forest francolin is found in Minziro forest and several sightings were made between 100 and 200 metres into the Minziro forest, the largest group being five individuals (Baker, 2001).

The Blue swallow is found in both Sango Bay and Minziro forests. At Minziro forest only four individuals were recorded during the 12-day survey of 2000 (Baker, 2001). The Sango Bay bird survey report did not identify the Blue swallow but it did measure bird species numbers and total species counts at various sites, which had previously been measured in 1994 (Kasoma & Pomeroy, 1996). Although the dataset was too small for statistical analysis, the overall trend between 1994 and 2001 was an overall decline in forest bird and grassland bird species (Pomeroy, 2001).

B.5.2 Reduction of threats to GEBs

The project invested substantial resources into Threat Reduction Assessments (TRA) aimed at measuring the change in the main threats to forest biodiversity in order to provide a proxy measurement for biodiversity status and conservation impact. It was considered by the project to be a more realistic, participatory and effective approach than direct biodiversity measurements. The basic methodology for TRA is outlined in the box below.

The basic steps in a Threat Reduction Assessment[7]

1. Define the project area of focus for the TRA (spatially and temporally), e.g. village-forest reserve interface over two year period
2. List all the direct threats to the biodiversity at the project site, which were present at the project start date
3. Rank each threat on three criteria: area, intensity and urgency
4. Add the scores across all 3 criteria to get total ranking
5. Determine the degree to which each threat has been met. This requires project stakeholders to first define what "100% threat met" means
6. Calculate the raw score for each threat
7. Calculate the final threat reduction index score – represented as a percentage

The Threat Reduction Assessment provides an assessment of the degree to which major threats to forest cover were managed or reduced, rather than the threat level itself, and consequently it was only initiated following the start of the main project interventions in 2000/2001 up until the end of project activities in 2003. Unfortunately, despite the successful application of the TRA methodology, the Sango Bay-Minziro forest authorities have not adopted this methodology following project closure, which has made it difficult for this study to assess the post-project threat levels.

[7] Adapted from (Persha & Rodgers, 2002)

The threats identified for Sango Bay and Minziro cut across the identified GEBs and as a result the analysis of threats was not differentiated by GEBs. Overall, the status of threats impacting the GEBs was assessed to be either **unchanged** or **decreasing**, as shown in Table 12 below.

At the start of the project, the main threat to the biodiversity of the Sango Bay-Minziro forests was logging, which was considered to be very severe and widespread due to the lucrative markets for hardwoods. The other main threats identified were uncontrolled fires, encroachment and unsustainable resource extraction. The TRA assessment provided good evidence that the threat levels from logging, encroachment and fire were reduced at Sango Bay and to a lesser extent at Minziro forest over the lifespan of the project. Although there are no TRA assessments on post-project threat levels, the opinions of local communities and the forest authorities during the study team's 2007 consultations were that although threat levels had subsequently increased, they were lower than before the project intervention. As a result, all the identified GEBs are considered to be under less threat. The substantial reduction in the threat of uncontrolled fire at Sango Bay is particularly important to the protection of the Blue swallow, whose dwindling grassland habitat within the forest reserves were previously being burnt for cattle grazing. The impressive reduction recorded in the logging threat is particularly important to maintaining the endemic hardwood species, *Afrocarpus dawei*. However, the lack of threat monitoring following project closure has led to uncertainty as to whether the achievements of the project in reducing threats can be maintained.

Table 12 Changes in threat levels before and after GEF support

Threat	Indicator	Threat level			Trend
		Baseline	Project end	Now	
Encroachment / conversion of forest land	Incidence of encroachment/ land conversion	No incidences of successful encroachment or land conversion since project			⇩
	Measures put in place to prevent the chance of future conversion	The project initiated re-establishment and demarcation of forest reserve boundaries, which continue to be respected and maintained			⇩
Logging	Percentage of threat met (Minziro Forest)	25	70	-	⇩
	Percentage of threat met (Sango Bay)	40	85	-	⇩
	Maintenance of reduced threat level after project closure	The lifting of the logging ban in Minziro and the reduced level of CFM activities seems to indicate the threat level has increased post project, although not to previous levels			⇔
Uncontrolled fires	Percentage of threat reduced (Sango Bay)	40	90	-	⇩
	Percentage of threat reduced (Minziro)	No data available			-
Over-harvesting of selected species	Sustainable off-take levels	TRA (2003) indicates limited success at reducing threat in two forest blocks during project implementation, but no monitoring system since project closure			⇔

B.5.3 Summary of project's impacts on GEBs

Although there was limited data available to measure the status of the GEBs' key ecological attributes, the threat reduction assessment provided good evidence that threat levels from logging, fire, encroachment and extractive use had been reduced at Sango Bay and to a lesser

extent at Minziro Forest during the lifespan of the project. Based on this information, the general conservation status of the GEBs was considered to be **stable**, although it was not possible to give individual assessments for the species-level GEBs, as shown in the box below. Considering the remote location of these forests, the project made an important contribution in raising the profile of conservation and promoting more conservation-compatible behaviours. The challenge and uncertainty facing the forest authorities and local communities at Sango Bay-Minziro is whether they can maintain the reduced threat levels following project completion. Based on the consultations, there was some evidence that the reduced threat levels were being maintained, especially at Sango Bay, however the threat from logging is still very much present following the removal of the logging ban at Minziro in 2007.

Forest-Grassland	Flora GEBs	Avian GEBs	Overall
	?	?	

Annex C: Lewa Wildlife Conservancy Conservation Project

C.1 Project overview

The **Lewa Wildlife Conservancy Project** was a three-year medium-sized GEF/ World Bank project that was implemented between 2000 and 2003. The Lewa Wildlife Conservancy ("Lewa", or LWC), is a not-for-profit private wildlife conservation company that operates on 62,000 acres of land in Meru District, Kenya. The GEF awarded Lewa a grant of US$0.75 million, with co-financing amounting to US$3.193 million. The **project objective** was:

> *To enhance the capacity of Lewa and collaborating local communities to conserve biodiversity and to generate sustainable benefits from the use of natural resources*

As the original GEF project brief did not define a logical framework as such, the GEF Terminal Evaluation Review evaluated the project against the project outcomes identified in the "retrospective logframe" developed with the participation of senior Lewa staff during the GEF Lewa Local Benefits Study (2004). This logframe was based on the general objectives identified in the project brief, coupled with an understanding of what the project actually achieved in practice. For the purposes of this study, the five outcomes identified in the retrospective logframe have been reformulated and simplified into three main outcomes, as follows:

1. *Long-term institutional and financial capacity of Lewa to provide global and local benefits from wildlife conservation strengthened*
2. *Protection and management of endangered wildlife species in the wider ecosystem strengthened*
3. *Community-based conservation and natural resource management initiatives strengthened*

These three outcomes encompass the original retrospective logframe outcomes except for the policy-related outcome that deals with issues of mainstreaming. However, the mainstreaming aspects of the project are, comprehensively addressed through the Outcome-Impacts Theory of Change Analysis (see section C.4).

Outcome 1 above, dealing with the **institutional and financial strengthening of Lewa Conservancy**, was the main focus of the project, with 80% of the GEF funds allocated to it. The funding was earmarked for improving Lewa's infrastructure, consolidating its management and financing systems, and the purchase of machinery and equipment necessary to maintain infrastructure and carry out conservation activities. The creation of a well-resourced, effective and sustainable conservation institution was viewed as essential to delivering the other two outcomes and achieving lasting conservation impact.

The **wildlife protection and management activities** to be carried out under Outcome 2 were targeted at globally endangered wildlife species; which provided the principal justification for the GEF funding. The approaches for achieving this objective were two-fold: firstly, to ensure the effective protection of wildlife within the boundaries of Lewa itself; and secondly, to re-establish secure areas in the wider ecosystem for re-establishing wildlife in its natural range.

The **community development and conservation activities** carried out under Outcome 3 were considered essential to the realisation of the Lewa Conservancy's vision of restoring and securing the traditional wildlife range within the greater ecosystem, and in particular the range of endangered species. In this regard, a key premise of the Conservancy was that conservation awareness on its own is insufficient to secure wildlife range, but needs instead to be part of a broader package involving the provision of conservation-compatible economic benefits to communities that are competitive with other land uses. Particular focus was to be on the pastoralist communities to the north of Lewa, where increasing livestock numbers were displacing wildlife and degrading their natural habitat.

This case study introduces the project's Global Environmental Benefits (GEBs) as identified by the study team followed by the evaluation findings according to the three analytical components of the Impact Evaluation Analytical Framework, which are the Project Logframe Analysis, the Outcomes-Impacts Analysis and the Targets-Threats Analysis. For more information on these analytical approaches, see Chapter 2 in the main body of the report.

C.2 Project Global Environmental Benefits

Using the TNC's CAP methodology (see main report), the study team identified six main biodiversity conservation values of the project's target ecosystem which, provided they have been conserved and enhanced as a result of project interventions, represent the delivery of global environmental benefits. These conservation values are referred to in this case study as GEBs. As per the CAP method, the GEBs are not necessarily the only conservation values and global environmental benefits that are provided by the target ecosystem, but rather are a crucial cross section of the ecosystem's conservation values at different levels of ecological organisation, that if conserved, will indicate that other ecosystem conservation values are also being conserved, and that a wide range of global environmental benefits are likely to have been delivered through project interventions. The identified GEBs are:

1. **Ewaso Ngiro River catchment area.** This is one of two system level GEBs for the target area. The Ewaso Ngiro River is arguably the single most important factor in this semi-arid region, which influences habitat types as well as the distribution and movements of wildlife populations.
2. **Traditional elephant migratory routes.** The second system level GEB relates to elephants, which are themselves rated as globally vulnerable on the IUCN Red List. However, as a keystone species in the ecosystem, it is the traditional migration routes of the elephants that are being considered here as a GEB, due to the importance of elephant migrations in influencing and shaping the ecosystem.
3. **Indigenous Tropical Dry Forest.** This is the only habitat level GEB identified for the target area, with the most significant occurrence in the Ngare Ndare Forest that borders Lewa. Due to deforestation in Kenya, there are now only a few remnants of this once widespread and species-rich highland habitat. Most significant to global conservation is the rare example of an intact dry highland *Olea-Juniperus* forest community at Ngare Ndare.
4. **Black rhino** (*Diceros bicornis*). This is one of three species-level GEBs for the project area. The Black rhino has an estimated global population of less than 4,000 individuals. It is included in CITES Appendix 1 and is rated as critically endangered by the IUCN Red List. Kenya contains the eastern subspecies (*D.b. michaeli).*
5. **Grevy's zebra** (*Equus grevyi).* This species-level GEB is rated as endangered on the IUCN Red List, and has undergone one of the most substantial reductions of range and numbers of any African mammal (Kingdon, 1997). Today, the total global population is estimated to be about 2,000 (Williams & Low, 2004).
6. **Wild dogs** *(Lycaon pictus).* The last of the three species level GEBs is rated as endangered on the IUCN Red list. Wild dogs have disappeared from much of their former range with 25 of 39 former range states no longer supporting populations (Fanshawe *et al.* 1997). It is only in recent years that Wild dog populations are starting to be observed within the target area, after years of absence.

C.3 Assessment of project implementation success

The Project Logframe Analysis assessed the achievement of the three project outcomes defined in the retrospective logframe (see above). The study team's findings for each outcome are summarised below, followed by the overall conclusion of project implementation performance.

C.3.1 Delivery of project outcomes

Outcome 1. Long-term institutional and financial capacity of Lewa to provide global and local benefits from wildlife conservation strengthened

At the end of the project, very good progress had been made in strengthening Lewa's human resources (e.g. more senior professional staff were hired and general staffing levels rose from 190 to 282); consolidating and streamlining their management systems (e.g. the introduction of bespoke computerised accounting systems, the development of a 10-year strategic management plan and the implementation of a comprehensive fundraising strategy); and in upgrading Lewa's equipment and infrastructure (e.g. the building of new offices and staff accommodation, upgrading roads and airstrip, purchasing of communication systems). Overall the study team assessed that Lewa had been successfully strengthened as a conservation institution that could take a significant lead in promoting and supporting conservation efforts in the broader ecosystem. A consequence of this institutional strengthening was that the associated operational costs also increased. However, the financial and fundraising systems put in place were considered sufficient to ensure these costs are met, as long as external events, such as a major downturn in tourism, don't take place.

Outcome 2. Protection and management of endangered wildlife species in the wider ecosystem strengthened

The achievements under Outcome 1 to improve Lewa's infrastructure, equipment, communication systems and staff capacity significantly increased their ability to protect and manage endangered wildlife within the conservancy and enabled a good start to supporting the community conservancies to protect and manage wildlife in the broader ecosystem. Lewa's success at managing and protecting their resident Black rhino and Grevy's zebra populations enabled it to start translocations of these species to other secure protected areas in the greater ecosystem. In addition, a good foundation had been laid for the protection and monitoring of Grevy's zebra in the greater ecosystem, through the support given to community conservancies in wildlife protection and monitoring. The resulting improvement in security in the community conservancies also contributed to the increased support for conservation in the ecosystem.

Outcome 3. Community-based conservation and natural resource management initiatives strengthened

The project made significant progress towards increasing community support for conservation. In particular, success was achieved in improving economic benefits to local communities from activities that are compatible with conservation, mainly through strengthening security and business management aspects of existing community ecotourism initiatives. These successes helped to leverage support for new conservation initiatives in other pastoralist communities and around the Ngare Ndare Forest Reserve. Despite the success of the community conservancy model, the study team felt that issues of pastoralist natural resource management and livestock management and marketing were not adequately addressed by the project.

C.3.2 Assessment of overall project implementation performance

The detailed analysis of project outcomes provides clear evidence that the project was especially successful at increasing Lewa's institutional and financial capacity (Outcome 1), and in the protection and management of globally important biodiversity (Outcome 2). These two Outcomes were the central thrust of the project. In addition, a strong foundation was laid with the project's work on improving community livelihoods and their capacity and willingness to support conservation in the wider ecosystem (Outcome 3); however, this was the area that was identified as needing additional attention in future if the project's initial gains are to be consolidated.

Overall the Project Logframe Analysis evaluated the implementation of the Lewa project to have been **well achieved** to **fully achieved**, as shown in the project performance summary below. This is in line with the terminal evaluation's assessment of Lewa Wildlife Conservancy of Highly Satisfactory (the highest rating).

Outcome 1	Outcome 2	Outcome 3	Overall
✓✓✓✓	✓✓✓	✓✓✓	✓✓✓ - ✓✓✓✓

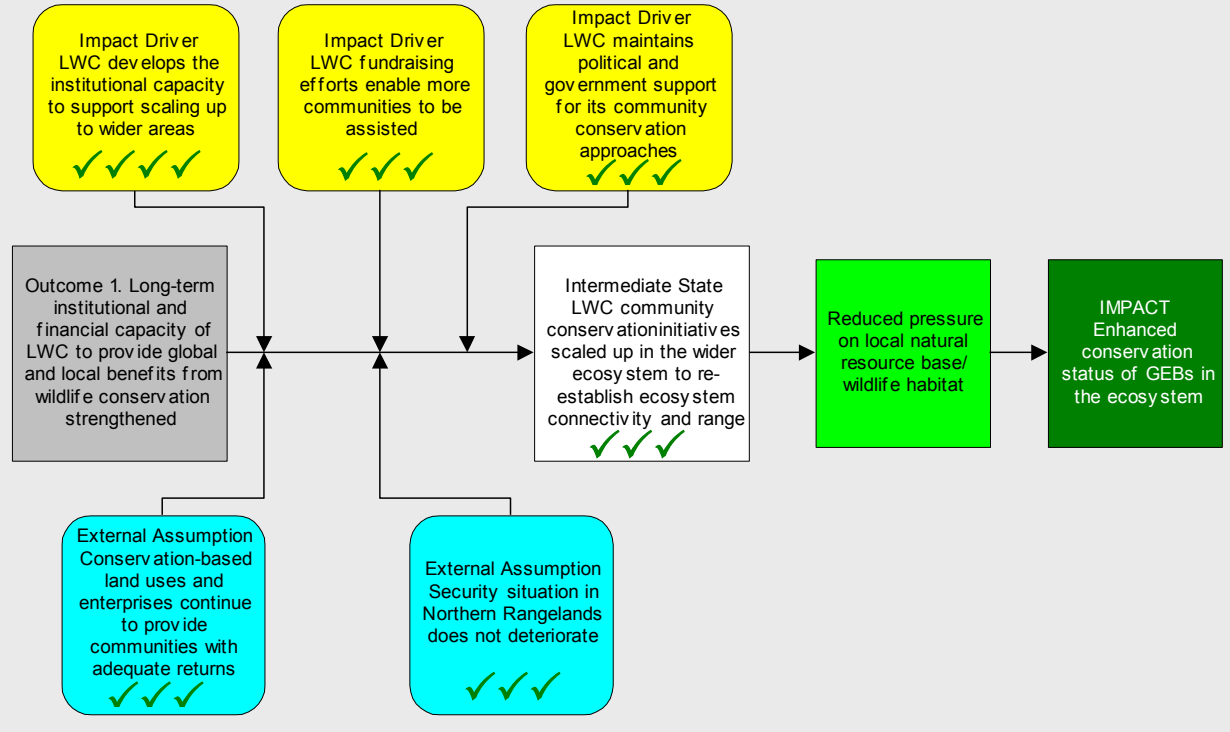
C.4 Assessment of the processes to deliver impact

The Outcomes-Impacts Analysis assessed the extent to which the processes for converting the three project outcomes to eventual lasting impact had been achieved.

C.4.1 Outcome 1: Strengthening the long-term institutional and financial capacity of Lewa

The theory of change (TOC) model linking Outcome 1 to the intended impact of enhanced conservation status of the ecosystem is illustrated in Figure 13 below. The model includes ticks to indicate the assessment score for achieving the various components of the model.

Figure 13 Lewa Outcome 1 TOC model



The analysis for the intermediate state is given below. The overall assessment of impact achieved by the three project outcomes is given in section C.4.4.

Intermediate State: Lewa community conservation initiatives scaled up in the wider ecosystem to re-establish ecosystem connectivity and range

This intermediate state was considered to be essential to the ultimate delivery of the intended impact, *i.e. reduced pressure on the local natural resource base and wildlife habitat*. The initial successes of Lewa towards the protection of endangered species in the wider ecosystem will not be fully realised or sustained unless the pilot community conservation initiatives are not only sustained, but also adopted and replicated by other communities living on connected land in the

broader ecosystem. In essence, the Lewa project needs to act as a catalyst for conservation on community land.

The ability to scale-up and replicate activities is a major challenge to any project and the study team felt that the achievement of this state for the Lewa project was dependent on three impact drivers and two external assumptions. The first of the three impact drivers were considered to be fully achieved and the other two to be well achieved. The external assumptions were considered to be well met, as shown in Figure 1 above.

The impact drivers revolved around the ability of the strengthened Lewa to develop the institutional capacity to broaden its conservation support activities into the wider ecosystem, and for there to be sufficient funding and political/ community support to do this. By the project end, Lewa realised that it could not play this challenging role alone and in 2004 took two steps to develop the necessary institutional capacity by:

1. Initiating the formation of the **Northern Rangelands Trust** to take over Lewa's role in supporting the establishment and strengthening of community conservancies in the broader ecosystem. NRT has become an empowered community-led institution with effective oversight provided by a Board of Trustees, supported by a Council of Elders, and technical support provided by an Executive Team of conservation, development and finance professionals.

2. Forming a mutually beneficial collaboration with the **Ol Pejeta Conservancy**. Lewa provided the management expertise in developing the conservancy into the largest Black rhino sanctuary in East Africa, whilst Ol Pejeta provided the technical capacity and facilities (e.g. abattoir) of its continued cattle ranching operations to support the Northern Rangeland Trust's community livestock programme, aimed at improving access and returns from marketing livestock, and thereby reducing livestock densities and pressure on wildlife.

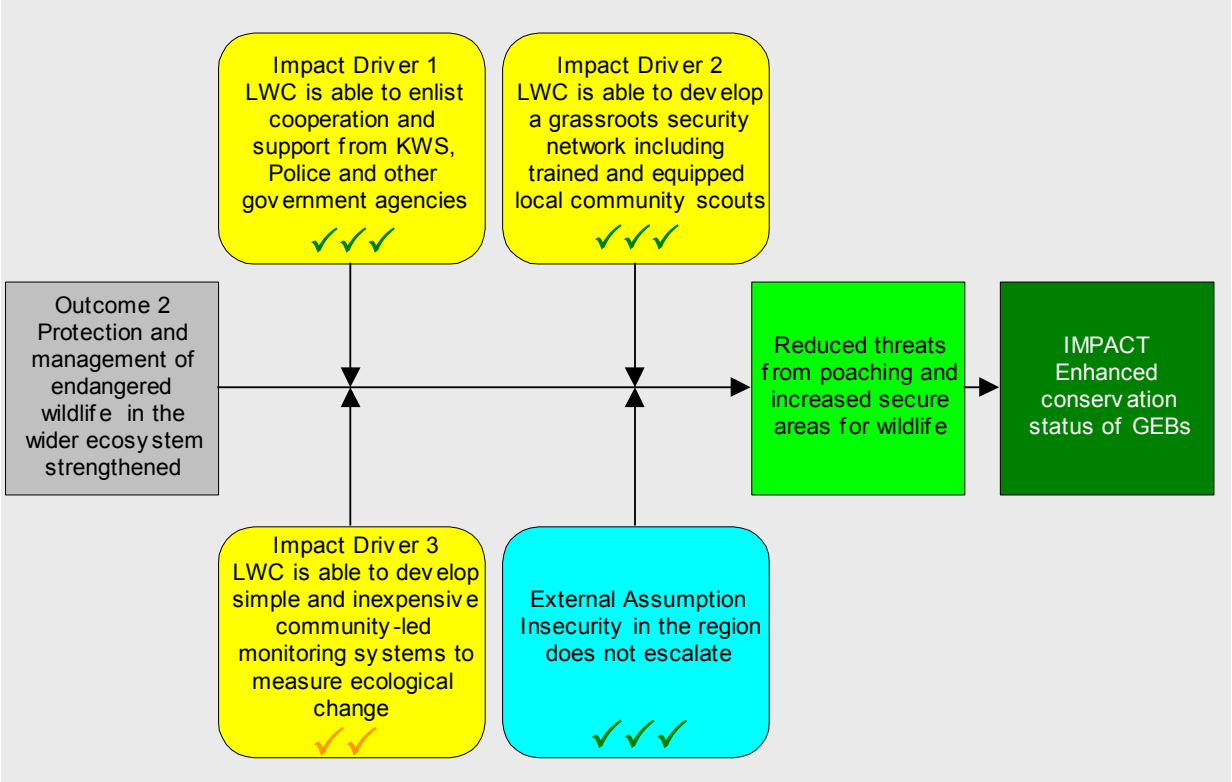
There was a high level of community and political support for these scaling-up activities, with membership of the Lewa and NRT Boards comprising politicians (including the Speaker of the National Assembly), local county councils representatives and community leaders. In addition, funding to achieve the scaling up activities was successfully found. Lewa's revenue generation and fundraising efforts led to an increase in annual income, from US$1.7 million during project implementation (2000-2003) to US$2.8 million from 2004-2006. In addition, NRT has successfully established a separate fundraising programme to cover the operational costs of the newly-established community conservancies.

As a result of the above key factors, the assessment of the intermediate state was **well achieved**. In particular, the study team considered the increased amount of community land set aside for conservation as compelling evidence to support this finding. During the GEF project, the area under conservation in the region increased from 364,420 acres at the 1999 baseline to 670,210 acres in 2003. Since NRT has taken over responsibility for supporting community conservancies, the area of land under conservation has increased from the 2003 figure to over 1.2 million acres in 2007 (see the maps in Figure 4 at the end of this annex). This is particularly important to the endangered Grevy's zebra whose range lies in these community areas. Although factors beyond the control of Lewa and NRT, such as insecurity, remain a threat to these substantial conservation gains, the success achieved in the past few years towards increasing land set aside for conservation, and the increased institutional and financing capacity and political support, all suggest that scaling up will continue.

C.4.2 Outcome 2: Protection and management of endangered wildlife species

The theory of change (TOC) model linking Outcome 2 to the intended impact of enhanced conservation status of the GEBs is illustrated in Figure 14 below.

Figure 14 Lewa Outcome 2 TOC model



No intermediate states were identified as necessary to achieve the intended impact, as the study team felt that the project outcome would directly lead to impact. This is due to the fact that the project outcome deals directly with the reduction of threats to the global environmental benefits.

Three impact drivers and one external assumption were considered essential factors in ensuring that, following project completion, the project outcome led to the intended impact. The first two impact drivers concerning the scaling up of wildlife security operations in the broader ecosystem were assessed to be well achieved, whilst the driver relating to community ecological monitoring was assessed to be only partially achieved. The external assumption relating to insecurity was considered to be well met, as shown in Figure 14 above.

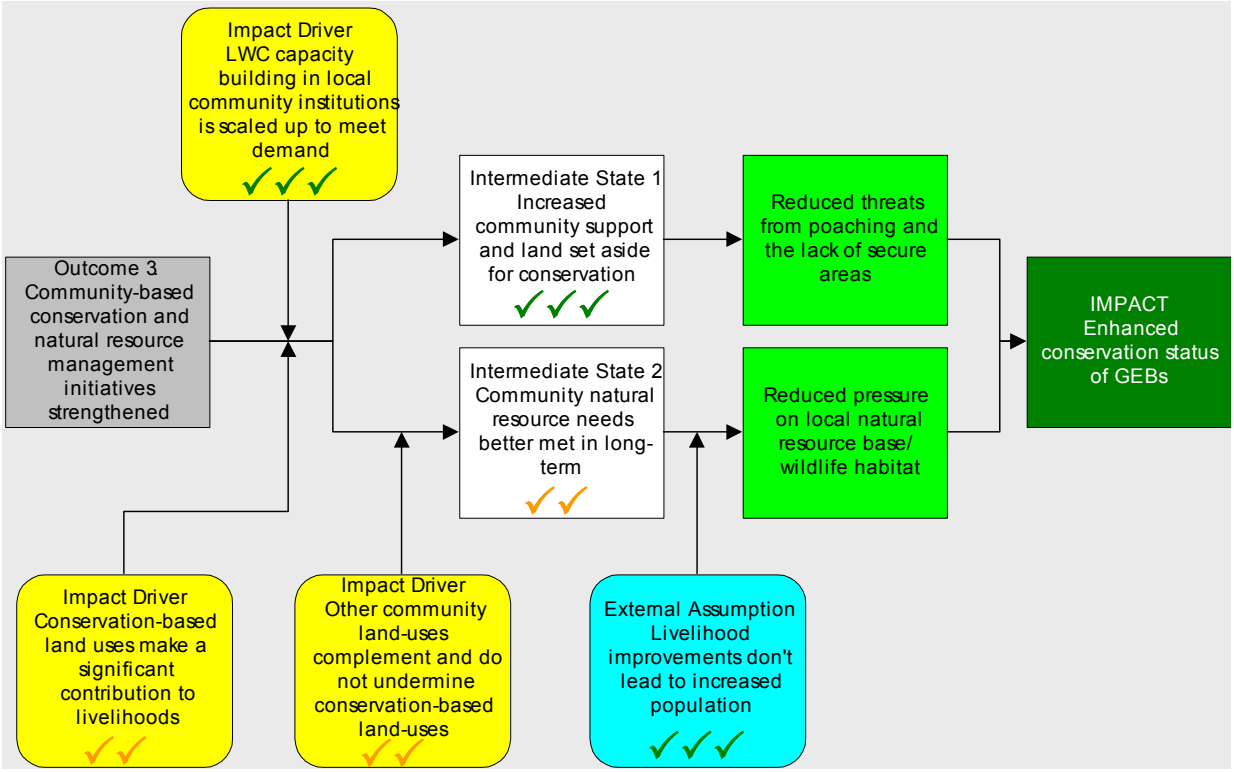
The scaling up of the project activities into Kenya's Northern Rangelands presented new security challenges, as it is a region of high insecurity due to cattle rustling and banditry, in which Lewa has neither the mandate nor capacity to adequately combat. However, following the project closure, Lewa used its good standing in the region to develop a comprehensive and cost effective security network, which involved cooperating in joint operations with government agencies (e.g. Kenya Wildlife Service, Kenya Police Reservists and the anti stock theft unit) and training and equipping community scouts in the newly-established community conservancies. By 2007, NRT estimated that in the ten most developed community conservancies, there was an average of one community scout per 28km^2, who were linked by radio to aerial back-up, tracker dogs and armed security (either from Lewa or the government). The improved security established by these operations is critical to providing the community support for wildlife that is needed to establish the community-led ecosystem monitoring programme of key wildlife species that NRT is in the process of developing.

As a result of the above key factors, the assessment of the conditions needed to convert this project outcome to impact was **well achieved**. The success in developing an effective security network is critical to reducing the threats in the ecosystem. However, the region still remains prone to violent conflict.

C.4.3 Outcome 3: Community-based conservation and natural resource management initiatives strengthened

The theory of change (TOC) model linking Outcome 3 to the intended impact of enhanced conservation status of the GEBs is illustrated in Figure 15 below.

Figure 15 Lewa Outcome 3 TOC model



The findings for the analysis for the two intermediate states are given below.

Intermediate State 1: Increased community support and land set aside for conservation

The rationale for this intermediate state is that local communities will only truly cooperate and set aside land for conservation when they genuinely appreciate and respect the biodiversity in their midst and see it as a viable land-use option. When communities take the initiative to set aside land for conservation, it will lead to the achievement of the intended impact, i.e. *reduced threats from poaching and the lack of secure areas.*

Only one impact driver was considered essential to achieve this intermediate state and this was assessed to be well achieved (as shown in Figure 15 above). The role of Lewa in developing NRT as the new mechanism for establishing and strengthening local community conservation institutions has been highly effective. Between 2004 and 2007, the support given by NRT has seen the number of community conservancies in the region increase from six to 15, which represents nearly a doubling of land set aside for conservation.

As a result, the assessment of the intermediate state was **well achieved**. The study team assessed that there was good evidence that Lewa's community supported initiatives have been scaled up to re-establish ecosystem connectivity and range and that there is an effective network of well-trained and equipped community scouts.

Intermediate State 2: Community natural resource needs better met in long-term

The previous intermediate state focused on local community support for conservation. However, this support will only be sustained if the quantity and quality of the returns from conservation-

based and conservation-compatible land uses are sufficient to satisfy community needs or aspirations. Intermediate State 2 focuses on the livelihood strategies needed to achieve the win-win scenario whereby conservation and development interests are both met, which is considered essential for the achievement of the intended impact, *i.e. reduced pressure on local natural resource base/ wildlife habitat.*

Essential factors in the process to achieve this intermediate state are two impact drivers and one external assumption. The drivers were considered to be partially achieved, whilst the associated assumption that the realisation of improved livelihood needs will not lead to increased populations was assessed to be well met (as shown in Figure 15 above). Eco-tourism ventures have been proven to be the most effective and profitable conservation land use, with two conservancies putting back 60% of the profits into community prioritised projects. Although most of the newer conservancies are still in the process of establishing eco-tourism and other land uses to generate income, they have been successful, through the support of NRT, in securing donor funding to cover their basic operational costs. Initial progress is being made in piloting alternative conservation-compatible activities, such as a fair trade enterprise for handcrafts (NRT Trading) and the NRT community livestock programme.

As a result of the above key factors, the assessment of the intermediate state was **partially achieved**. This is the most challenging intermediate state to achieve, and the study team felt that many innovative ways to develop conservation-compatible sources of income had been initiated since the end of the GEF project, in addition to eco-tourism, which has been proven to work well in the more established conservancies. However, these new initiatives were in the early stages of development and it was too early to assess their long-term potential to generate sustainable income, whilst conserving the ecosystem.

C.4.4 Summary of the project's overall outcomes-impacts processes

Overall the Outcomes-Impacts analysis suggests that the processes to convert the project outcomes to impact have been **well achieved**, as shown in the performance summary below.

Under Outcome 1, Lewa has made significant progress towards scaling up community conservation initiatives. The expanded institutional and collaboration arrangements created since project closure were critical to securing the expertise, resources and political support necessary to scale up the conservation initiatives and impact into the broader ecosystem.

Under Outcome 2, Lewa and the NRT have made good progress toward strengthening wildlife protection within the wider ecosystem, through collaborating closely with the relevant government agencies and establishing a network of community scouts in the conservancies. Greater impact will potentially be achieved with further expansion and consolidation of the community security network, supported by the NRT community-led ecosystem monitoring programme. The community security operations are especially important to conserving the Grevy's zebra natural range.

Under Outcome 3, Lewa and NRT have built on the achievements of the GEF project to make good progress in achieving the intermediate states needed to generate impact. The success of eco-tourism ventures in the well-established community conservancies has been critical to encouraging other communities in the ecosystem to establish conservancies on their land. The conservancies have shown that they can sustain conservation-compatible land uses that deliver conservation impact. Although livelihood development is a slow process, the study team felt that if the current initiatives proceed as expected then substantially greater impact will be realised in future.

The major finding of the Outcomes-Impacts analysis was the importance of sustainable and appropriate institutional mechanisms in achieving global environmental benefits. The establishment of the Northern Rangeland Trust as a local umbrella organisation to facilitate and catalyse the further replication and scaling up in the wider ecosystem was both very innovative

and effective. In addition, the formation of a collaborative partnership with Ol Pejeta Conservancy demonstrated the synergies created by matching different skill sets and capacities, which added a new and important dimension to the scaling up of activities that were not adequately addressed by the GEF project - namely livestock marketing and improved natural resource and rangeland management.

The Lewa project demonstrates the practical conservation impact of a relatively small investment by the GEF that subsequently has been successfully scaled up. However, the situation in the northern rangelands ecosystem is still precarious and it will be a while before the community institutions are institutionally and financially independent. Until that time, it will be important for continued levels of support, otherwise the situation could quickly reverse.

Outcome 1 - Impact	Outcome 2 - Impact	Outcome 3 - Impact	Overall
✓✓✓	✓✓✓	✓✓✓	✓✓✓

C.5 Assessment of project impact

The direct measure of the project impacts is provided by the third and final component of the Impact Evaluation Analytical Framework, the GEBs-Threats Analysis. The findings of the analysis are summarised firstly for the conservation status of the biodiversity values and secondly regarding the changes in the threat levels impacting on these biodiversity values. The final section provides the overall conclusions to the assessment of project impact.

As identified in section C.2 above, six potential Global Environmental Benefits (GEBs) were identified for the Lewa project. However, the GEF Lewa project and the subsequent scaling up focused on only two of the GEBs, the Black rhino and the Grevy's zebra. As a result, the monitoring and research undertaken by Lewa and NRT has primarily focused on these two species and their habitats, which has meant that there was insufficient data available to make an assessment on the other four GEBs. However it was felt that the two GEBs provided a good proxy for the conservation status of the other GEBs. For example, the Key Ecological Attributes for the migratory Grevy's zebra rely on the Ewaso Ngiro River catchment and utilise a similar range to the elephants (the two system level GEBs) and the Indigenous Tropical Dry Forest is a natural habitat for the Black rhino.

C.5.1 Enhancement of GEBs

The assessment of the conservation status for the Grevy's zebra and Black rhino GEBs is given below.

Black Rhino

The conservation status for the key ecological attributes (KEAs) of the Black rhino was assessed to be **improving** since the project baseline of 2000, as shown in Table 13 below. The Black rhino population size in Lewa Conservancy has almost doubled in the past seven years, which is attributed to the highly professional management of this metapopulation. As a result, not a single rhino has been lost to poaching and, through translocations, Lewa have been able to ensure genetic diversity and a healthy population structure. The Lewa population of the eastern subspecies of Black rhino now represents 8% of the entire global population and has achieved a growth rate of 15%, which is substantially higher than the national recommended minimum rate of 5%, as well as that of other Black rhino populations in Kenya.

Within the broader ecosystem, Lewa has been instrumental in providing management support to Ol Pejeta Conservancy, where the rhino sanctuary was increased from 24,000 to 75,000 acres in 2006. This trend in increasing secure Black rhino areas is likely to continue with Lewa

planning to remove its fences with neighbouring Borana Ranch and Il Ngwesi Conservancy to form a much larger rhino sanctuary.

Table 13 Changes in the conservation status Black Rhino GEB

Key Ecological Attribute	Indicator	Conservation Status			Trend
		Baseline	Project end	Now	
Suitable woodland and habitat	Size of Lewa rhino sanctuary (acres)	55,000	55,000	62,000	↑
Population size	Total population size of Black rhino on Lewa	29	40	54	↑
Productivity	Annual growth rates at Lewa (%)	12	13	15	↑
Genetic diversity	Degree of genetic variation	No information			

Grevy's Zebra

The conservation status for the key ecological attributes of the Grevy's zebra was assessed to be **stable to improving**, as shown in Table 14 below. The KEA for the Grevy's zebra can only be accurately assessed for the resident population on Lewa, where the numbers have remained stable and healthy, which is in contrast to the declining national trend. Lewa's resident population represents between 18 and 35% of the global population. Although no data is yet available on the population dynamics of Grevy's zebras in the community areas, the increase in secure land in their natural rangeland has increased three fold following the establishment of new community conservancies. Early indications show Grevy's zebra are moving into these community conservancies, especially at Il Ngwesi, West Gate, Kalama, Namunyak and Sera, which have set aside core conservation areas where livestock are excluded.

Table 14 Changes in the conservation status Grevy's zebra GEB

Key Ecological Attribute	Indicator	Conservation Status			Trend
		Baseline	Project end	Now	
Population size	Total population size of Grevy's zebra on Lewa	497	435	430	↔
Productivity	Annual foaling rates on Lewa (%)	11	11	12	↔
Population distribution	Number of known sub-populations & connectivity	No data available			
Suitable habitat (grassland & secure water)	Community conservancies set aside for conservation under NRT	3	6	15	↑
Genetic diversity	**No information**				

C.5.2 Reduction of threats to GEBs

The nature of the threats affecting the two GEBs differed for each species. Overall the status of threats impacting on the GEBs was assessed to be either **unchanged** or **decreasing**. The change in threat levels to the two GEBs is shown in Table 15 and Table 16 below.

Black Rhino

The main threat to Black rhinos is from poaching and the lack of secure areas. Whilst the threat from poaching still remains high, Lewa has successfully ensured that this threat has not led to the loss of a single Black rhino within its area. This has been achieved by a comprehensive security operation that provides coverage of one ranger per 4km² in the Conservancy. In addition, Lewa's security department are playing an increasingly important role in supporting the development and security operations of other rhino sanctuaries in Kenya, which are estimated to contain 40% of Kenya's Black rhino population.

Table 15 Changes in threat levels to Black rhino before and after GEF support

Threat	Indicator	Threat level			Trend
		Baseline	Project end	Now	
Poaching and snaring	Black rhinos poached and snared in Lewa	0	0	0	⇔
	Black rhinos poached and snared nationally	2 (1998-1999)	15 (2000-2002)	15 (2003-2006)	⇔
Insufficient secure areas	Black rhino areas nationally	12 (1993)	13	16	⇩
	Land set aside for Black rhino conservation in Kenya (Km^2)	6,749 (1993)	7,376	8,607	⇩
Habitat loss (due to elephant density)	Changes in density of woody vegetation on Lewa	Aerial photos show that the density of woody vegetation on Lewa has increased between 1962 and 2000			⇩

Grevy's zebra

The key threats to Grevy's zebra were disease, habitat loss and predation. The threats from habitat loss and degradation are mainly a result of competition with livestock keeping, the main economic activity of the region. This threat has been reduced through the establishment of community conservancies, where livestock access is restricted, and the NRT community livestock programme, which is seeking to reduce cattle densities through supporting pastoralists to improve livestock quality and access markets. The main disease threat is from the transmission of anthrax from unvaccinated cattle. Following an anthrax outbreak in 2005, steps are being taken to reduce future outbreaks with the development of a *Preparedness and Action Plan for Disease Epizootics in Grevy's Zebra Range* by Kenya Wildlife Service. The only threat to increase was from predation, which was localised to Lewa due to the increasing size of its resident lion populations, an unfortunate consequence of successful conservation. In the community areas, the threat of predation is not significant.

Table 16 Changes in threat levels to Grevy's zebra before and after GEF support

Threat	Indicator	Threat level			Trend
		Baseline	Project end	Now	
Poaching	Grevy's zebra poached	Poaching levels reduced in the community land under conservation due to community security personnel and awareness			⇩
Disease	% of Kenya's Grevy's zebra population killed by anthrax	0	0	5	⇔
Predation	Lion population at Lewa	0	25	16	⇧
Habitat loss/ degradation	Land secured for conservation in the region (acres)	364,420	670,210	1,236,483	⇩

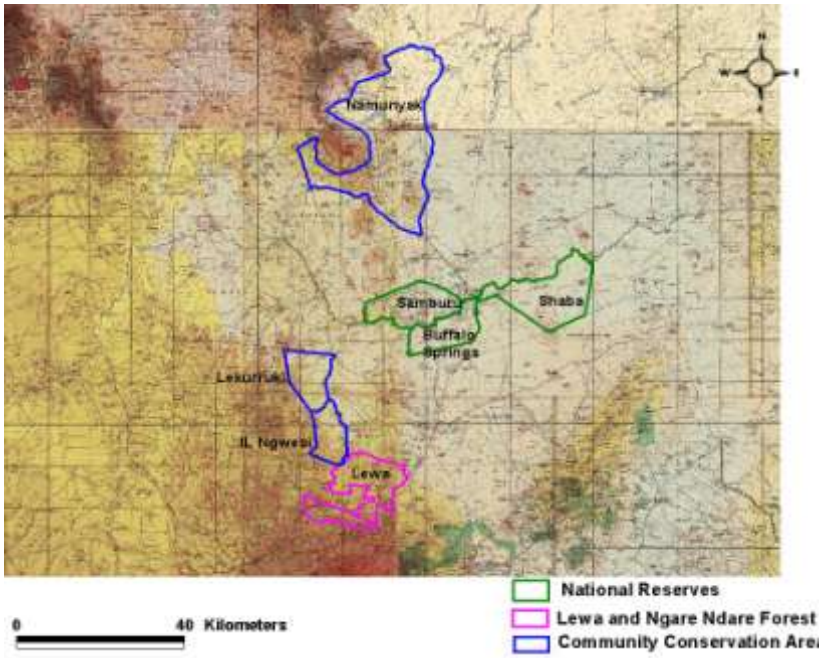
Threat	Indicator	Threat level			Trend
		Baseline	Project end	Now	
Insufficient secure areas	Established NRT community conservancies	3	6	15	⇩
Hybridisation	Confirmed Grevy's - Burchell's hybrid populations	4	4	4	⇔

C.5.3 Summary of project's impacts on GEBs

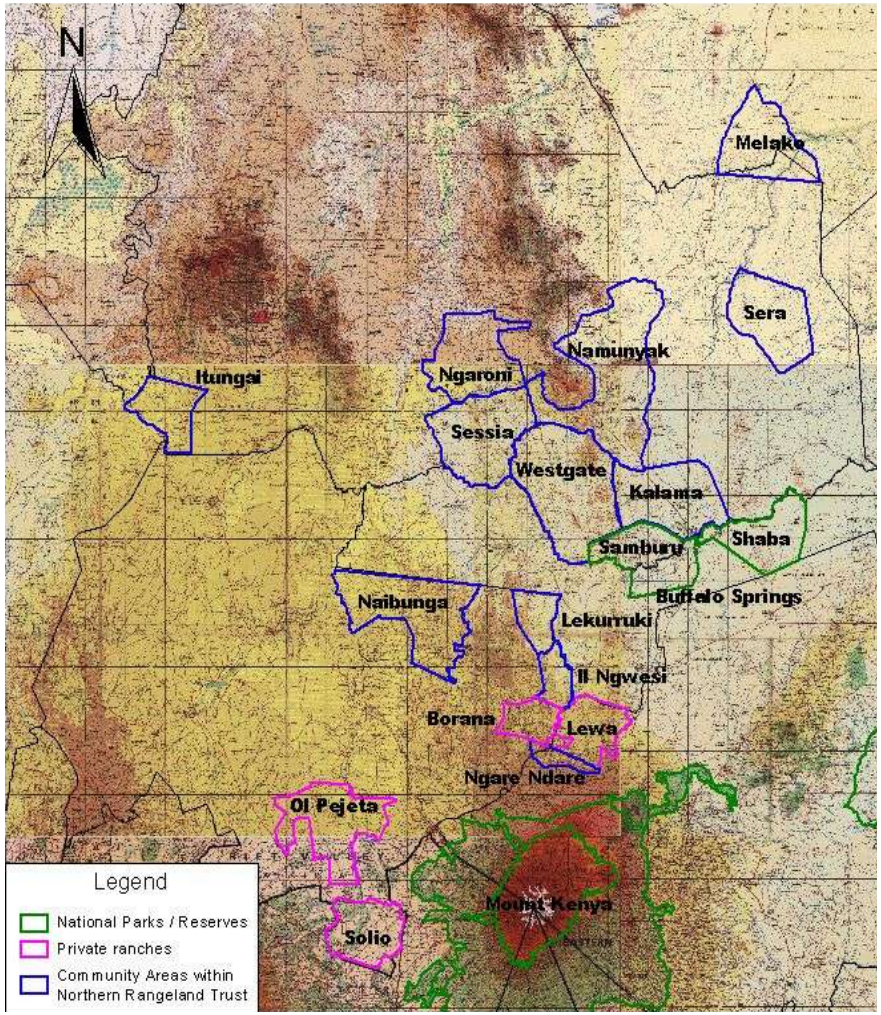
Taking into consideration the stable and improving status of the key ecological attributes of the two GEBs investigated and the general downward trends in the level of threats since the project baseline, the overall conservation status of the two GEBs was assessed to be **improving**, as summarised in the box below. Lewa has become a model wildlife conservancy for the conservation of endangered species, with 8% of the global population of the eastern subspecies of Black rhino and about 25% of the global population of Grevy's zebra. However, perhaps the most notable achievement is the visionary and catalytic role that Lewa has provided for the conservation of these endangered species in the broader ecosystem. Lewa is playing a key role in the protection and management of about 40% of Kenya's Black rhino population and is providing leadership in finding innovative ways to increase the coverage of secure sanctuaries for Black rhino. Regarding Grevy's zebra, Lewa's role in the establishment of community conservancies, which have added almost one million acres of land set aside for conservation, has been unprecedented in East Africa and is enabling the recovering of Grevy's zebra populations within their natural range. However, the costs and resources required to manage and protect this increasing conservation estate are substantial and are reliant on maintaining continued and increasing financing streams.

Black Rhino	Grevy's Zebra	Overall
⇧	⇔ - ⇧	⇧

Figure 16 Increase in the area under conservation between 1997 and 2007



A. Area under conservation in prior to start of Lewa GEF Project in 1997 (364,420 acres)



B. Area under conservation in 2007 (1.2 million acres)