

DEV/ODG

Reports and Policy Papers

International Gorilla Conservation Programme Community Conservation: lessons learned

A report on the experience of community
conservation enterprises undertaken by the
International Gorilla Conservation Programme
Funded by the Buffet Foundation

Adrian Martin, Eugene Rutagarama, Maryke Gray,
Stephen Asuma, Mediatrice Bana, Augustin
Basabose, Mark Mwine



**International Gorilla
Conservation Programme**

2008

UEA

University of East Anglia

Overseas Development Group & School of Development Studies,
University of East Anglia, Norwich, NR4 7TJ, United Kingdom

DEV/ODG Reports and Policy Papers

International Gorilla Conservation Programme

Community Conservation: lessons learned

A report on the experience of community conservation enterprises undertaken by the International Gorilla Conservation Programme

Adrian Martin, Eugene Rutagarama, Maryke Gray, Stephen Asuma, Mediatrice Bana, Augustin Basabose, Mark Mwine

November 2008

This publication may be reproduced by any method without fee for teaching or nonprofit purposes, but not for resale. The papers should be cited with due acknowledgment. Copyright resides with the IGCP.

This publication may be cited as:

Martin, A., E. Rutagarama, M. Gray, S. Asuma, M. Bana, A. Basabose, M. Mwine, 2008, "International Gorilla Conservation Programme, Community Conservation: lessons learned", DEV/ODG Reports and Policy Papers, The School of Development Studies, University of East Anglia, UK.

About the Authors

Adrian Martin is a Senior Lecturer in Rural Development at the School of Development Studies at the University of East Anglia, Norwich, UK.

Eugene Rutagarama is Director of the International Gorilla Conservation Programme (IGCP)

Maryke Gray is an Information Management Officer of IGCP.

Stephen Asuma is the Uganda Programme Officer of IGCP.

Mediatrice Bana is the Rwanda Programme Officer of IGCP .

Augustin Basabose is the Conservation Science Officer and DRC country representative of IGCP.

Mark Mwine is the Regional Enterprise Officer and Uganda country representative of IGCP.

Contact:

adrian.martin@uea.ac.uk

University of East Anglia

Norwich, NR4 7TJ

United Kingdom

Tel: +44(0)1603 592329

Fax: +44(0)1603451999

About The DEV Working Paper Series

The Working Paper Series profiles research and policy work conducted by the School of Development Studies and Overseas Development Group. Launched in 2007, it provides an opportunity for staff, associated researchers and fellows to disseminate original research and policy advice on a wide range of subjects. All papers are peer reviewed within the School. Recent past work, provided it meets the standards required and has contemporary significance is also welcome.

About the DEV/ODG Reports and Policy Papers

These are reports and papers that reproduce consultancy, applied research findings and policy work conducted by the School of Development Studies or Overseas Development Group. Launched in 2007, the reports provide an opportunity for staff, associated researchers and fellows to disseminate studies and findings on a wide range of subjects. Recent past work, provided it meets the standards required and has contemporary significance is also welcome.

About The School of Development Studies

The School of Development Studies (DEV) applies economic, social and natural sciences to the study of international development, with special emphasis on social and environmental change and poverty alleviation. DEV has a strong commitment to an interdisciplinary research and teaching approach to Development Studies and the study of poverty. This has been developed over a forty year period, bringing together researchers and students from different disciplines (economists, social scientists, natural resource scientists) into research areas and teaching teams.

The Overseas Development Group (ODG)

Founded in 1967, the ODG is a charitable company wholly owned by the University of East Anglia, which handles the consultancy, research, and training undertaken by the faculty members in DEV and approximately 200 external consultants. Since its foundation ODG has provided training for professionals from more than 70 countries and completed more over 1,000 consultancy and research assignments. ODG provides DEV staff with opportunities to participate in on-going development work - real-world experience which adds a unique and valuable element to the School's teaching programmes.

For further information on DEV and ODG, please contact:

School of Development Studies

University of East Anglia, Norwich NR4 7TJ, United Kingdom

Tel: +44 (0)1603 592329

Fax: +44 (0)1603 451999

Email: dev.general@uea.ac.uk

Webpage: www.uea.ac.uk/dev

Contents

Executive Summary	5
Abbreviations	8
1. Introduction	9
1.1 Aim	9
1.2 Methodology	9
1.3 Structure of Report	10
2. Community Conservation: rationale, problems, responses	10
3. Background context	12
3.1 Biodiversity and ecosystem services	12
3.2 History	13
3.3 Population and livelihoods	14
3.4 Park-people conflicts	16
4. Community conservation strategies in the region	16
4.1 IGCP community conservation strategy	18
4.2 Strengthening policies and institutions	19
4.3 Resolving human-wildlife conflict	21
4.4 Conservation-related enterprise	24
5. Achievements	30
5.1 Effectiveness	30
5.2 Efficiency	33
5.3 Equity	34
5.4 Legitimacy	36
6. Lessons Learned	36
6.1 Lesson 1: Conservation activities are aligned and support each other	37
6.2 Lesson 2: Conservation will only be achieved through development when there is a strong conservation logic	38
6.3 Lesson 3: Strong information systems facilitate good planning	43
6.4 Lesson 4: The need for cross-scale and cross-sectoral partnerships	45
6.5 Lesson 5: Real partnerships require new ways of working	47
6.6 Lesson 6: Interventions need to be durable and flexible	50

Executive Summary

This report describes and analyses the community conservation component of IGCP's long-term programme to conserve the mountain gorilla and its forest habitat.

IGCP was founded in 1991 as a partnership between the African Wildlife Foundation, Fauna and Flora International and World Wide Fund for Nature. IGCP has three main strategies for achieving its goal:

- establishing a strong information base, which includes ranger-based monitoring;
- strengthening regional collaboration between DRC, Rwanda and Uganda, which includes Transboundary Natural Resource Management;
- supporting the livelihoods of the parks' neighbouring population through community conservation.

IGCP's work with communities can be classified into three main types of activity:

- Strengthening policies and institutions, which includes some advocacy work and support for developing community conservation efforts within government park authorities.
- Resolving human-wildlife conflict, which includes efforts to alleviate the costs to local people from park animals raiding their crops.
- Conservation-related enterprise, which includes IGCP's innovative model for developing multi-sector partnerships which involve a strong role for private businesses as well as communities and government agencies.

Globally, the record of community conservation initiatives has been mixed, with some reports of disappointing performance, especially for Integrated Conservation and Development Projects around protected areas.

As has been the experience for most conservation practitioners, IGCP has faced difficulties with implementing community conservation projects. These difficulties have often arisen from the socio-economic situation of the communities living around the parks. Typically, these communities are resource poor, do not have strong local institutions and have limited skills for managing collective action and business enterprises. IGCP's efforts to facilitate the establishment of robust, sustainable, community-run enterprises often takes more time, and more staff resources than initial plans expected.

The difficulties that have been faced working with local communities generate some of the 'lessons learned' in this report. However, these difficulties should not distract from IGCP's considerable achievements in the field. Indeed, it is IGCP's successes, set against the tough economic and political contexts of the region, that offer lessons that

are likely to be of most interest, and practical value, to the wider conservation community.

Lesson 1: Conservation activities are aligned and support each other

For conservation organizations who are planning to, or are in the process of moving more into community conservation, there is a lesson to be learned from this experience. Alignment of conservation activities contributes to both the effectiveness and efficiency of interventions, enabling work with a wide range of partners to build synergies that contribute to achieving the core goal. It is recommended that other components of the organisation's work be audited to identify the potential positive linkages with community conservation, as well as potential negative or constraining linkages. A strategy can then be developed to build alignment into a set of activities and develop the positive feedbacks between them.

Lesson 2: Conservation will only be achieved through development when there is a strong conservation logic

IGCP's most significant and successful community conservation ventures have a strong connection between conservation and development objectives. This connection is strongest where it involves two forms of linkage. Firstly, development outcomes are dependent in the long term on successful conservation and second, there is some contractual understanding that development benefits are provided with the expectation of certain conservation duties. IGCP and other conservation practitioners will benefit from regularly reflecting on the conservation logic underpinning their development projects, asking whether this is robust, and thinking creatively about ways to enhance this.

Lesson 3: Strong information systems facilitate good planning

RBM data has been used to establish the link between threats to the park and the livelihoods of people living around the park, and thus to provide an essential knowledge base for well conceived community conservation projects. Such linkage between monitoring data and community conservation design is excellent practice. IGCP is really quite unique in this ability to confidently establish conservation-livelihood linkages and to thereby design projects which are win-win in nature. It is the failure to identify genuinely win-win interventions that has contributed to the disappointing results for community conservation elsewhere. We certainly recommend that IGCP continues to explore the potential to integrate some easy-to-collect socio-economic data into RBM and to consider how this might further strengthen the design and monitoring of community conservation enterprises. For conservation practitioners without such extensive involvement in monitoring it might be possible to explore collaboration that could enrich the information base upon which community interventions are designed.

Lesson 4: The need for cross-scale and cross-sectoral partnerships

Community conservation benefits from linkages to other scales of activity. Particular policies (TBNRM, Revenue sharing) and institutions (ANICO, HUGO) can help to form bridges between different scales, to share resources such as information. Community conservation has also benefited from moving beyond community actors to involve private sector partners. IGCP's new financial and managerial model for community enterprises is innovative and shows promise at this stage. We would recommend continuation of this approach, ideally with a shift away from dependence on foreign aid.

Lesson 5: real partnerships require new ways of working with communities

As IGCP engages in closer partnerships with communities, development NGOs, and private businesses, there are benefits to be gained by moving towards more equal partnerships in which agendas are shared, incentive structures aligned and decision-making collectivized. In the Virunga-Bwindi region, there is little opportunity for co-management of resources within park boundaries. IGCP has created opportunities outside of the park boundaries, enabling experimentation with transfers of tenure and associated transfers of power. These are exciting developments and we recommend further creativity in linking enterprise with community empowerment.

Lesson 6: Interventions need to be durable and flexible

The low level of skills and organization in local communities means that long duration support will be necessary in many cases. Whilst IGCP's innovative models of working with highly capable private sector partners appears to offer earlier opportunities for taking a less active role, we would not recommend that this were to entirely replace the longer-term and more resource-intensive methods of building community capacity that IGCP has been gaining experience with elsewhere.

IGCP has found balance between being driven by its own agendas and methods whilst also operating a more demand-driven, responsive mode. In other words, IGCP has its own goal and priority, and it pursues this through specific strategies and ways of working. However, partners also greatly value the fact that there is also flexibility to respond to emerging problems in timely ways, sometimes breaking with old ways of doing things.

Abbreviations

ANICO	Animateurs de la Conservation (Rwanda)
AWF	African Wildlife Foundation
BINP	Bwindi Impenetrable National Park
CBO	Community Based Organisation
DRC	Democratic Republic of Congo
FFI	Fauna and Flora International
HUGO	Human Gorilla Conflict programme
ICCN	Institut Congolais pour la Conservation de la Nature
ICDP	Integrated Conservation and Development Programme
IGCP	International Gorilla Conservation Programme
MGP	Mountain Gorilla Project
MGNP	Mgahinga Gorilla National Park
NCDF	Nkuringo Community Development Foundation
NGO	Non Governmental Organisation
ORTPN	Office Rwandais du Tourisme et Parcs Nationaux
PNV	Parc National des Volcans
PNVi	Parc National des Virunga
RBM	Ranger Based Monitoring
SACOLA	Sabyinyo Community Lodge Association
TBNRM	Transboundary Natural Resource Management
UWA	Uganda Wildlife Authority
WWF	World Wide Fund for Nature

1. Introduction

The International Gorilla Conservation Programme (IGCP), a coalition of the African Wildlife Foundation, Fauna and Flora International and World Wide Fund for Nature, has been supporting conservation in the Virunga-Bwindi region since 1991. The goal of IGCP is the long-term conservation of the mountain gorilla and its forest habitat in Democratic Republic of Congo, Rwanda and Uganda. To achieve this goal IGCP employs a three-pronged strategy:

1. Establishing a strong information base to allow decision-makers to understand the dynamic between the human population and the natural habitat/wildlife.
2. Strengthening protection of the habitat and the mountain gorillas through regional collaboration by the three countries and structured mechanisms for transboundary natural resource management.
3. Reducing the threat to the conservation targets by assisting the human population in developing livelihood strategies that are complementary with and even contribute to conservation objectives.

(IGCP, 2008 Strategy doc)

Whilst it will become apparent that these three axes of IGCP's operations are connected and mutually supportive, the principle focus of this report is on the third axes, 'community conservation'.

1.1 Aim

The aim of this report is to analyse IGCP's experience with community-based ventures and to identify key lessons learned. This analysis will articulate the experiences, successes and weaknesses of a long-term conservation programme, contributing to conservation learning both in IGCP and the wider scientific and practitioner community.

1.2 Methodology

The main approach has been to synthesise existing knowledge. This has been captured in three ways. Firstly, a review of secondary data including published scientific work as well as internal IGCP documents and data. Secondly, key people within IGCP and partner organizations were contacted by email as a scoping exercise. The purpose of this was to prioritise elements of the IGCP experience for more intense analysis, as well as to ensure that critical issues were not overlooked.

Thirdly, a series of consultation meetings and site visits were held in March/April 2008 in DRC, Rwanda and Uganda.

We have relied heavily on the testimony of key stakeholders: IGCP staff, staff from ORTPN, UWA and ICCN, and leaders/representatives of communities where IGCP works. Where possible we have backed up this testimony with other sources of information, including scientific research published in journals and IGCP and consultant evaluations of particular programmes and projects.

Having described achievements, the study proceeds to an analysis of lessons learned, focusing on five positive features of IGCP's work: the strength of the conservation logic; the relationship between information and practice; the embedding of local community scale work in wider scales of activity; evolving partnerships; and flexibility.

1.3 Structure of Report

- The second section of this report reviews the theory and practice of community conservation, highlighting some of the common weaknesses and strengths that have been found elsewhere in Africa and beyond.
- The third section of the report provides some local context to the study through consideration of the history and geography of the region.
- Section four explains how IGCP's work with communities has engaged with this context, and evolved over time. It provides an overview of the main community conservation activities that IGCP is involved with.
- The fifth section assesses the achievement of IGCP's work and notes some of the weaknesses and critical challenges.
- The sixth section draws out the lessons learned by examining five features of IGCP's work in detail.

2. Community Conservation: rationale, problems, responses

Despite large investments – decades of work, hundreds of projects, thousands of trained professionals, and millions of dollars – progress in conservation has been slow and erratic. We have yet to fully discover the secrets of effective conservation. (Salafsky et al. 2002, p. 1470)

Tropical forests provide some of the planet's richest sources of biodiversity but amidst and adjacent to this biological wealth live many of the world's poorest people. Whilst National Parks and other Protected Areas have had some success in conserving forest biodiversity, it is often the poor who have shouldered the costs for this (Adams et al. 2004). It has been estimated that 90% of the world's poorest people 'depend substantially on forests for their livelihoods' (Scherr et al. 2004) and these people often lose access to resources when local forests become designated for strict preservation. IGCP operates in just such a context, and conservation of mountain gorilla habitat cannot ignore the livelihoods of those living adjacent to the region's parks.

Prior to the 1980s, Protected Areas were largely managed through methods that have been described as 'fortress conservation': the exclusion of local people both from the park and from decision making. Since the 1980s, there has been a global shift towards management approaches that seek to reconcile biodiversity conservation with local livelihoods. This has partly been driven by simple moral assertions regarding the perverse consequences of actions that worsen the situation of the poorest. Equally importantly it has been driven by pragmatic concerns about the long-term effectiveness of a strategy that alienates its nearest neighbours.

In the Virunga-Bwindi region, the link between gorilla conservation and local people's welfare began to be taken seriously in 1979 with the formation of the Mountain Gorilla Project (the predecessor to IGCP). The MGP sought to base conservation on an understanding of relationships between park and people, and engaged with the need to address local livelihoods (Weber and Vedder 2001). In Uganda, these new approaches to conservation began to be practiced by CARE whose Development through Conservation project began in BINP in March 1988 and subsequently widened to MGNP.

Community conservation covers a broad spectrum of initiatives. At one end of this spectrum is the devolution of management control to local communities, with the emphasis on development. At the other end lie initiatives to support national parks by improving relations with local people (Barrow and Murphree 2001). Initiatives in areas adjacent to parks are also commonly described as Integrated Conservation and Development Projects (ICDPs), which prioritise conservation, but which practice development. In ICDPs development activities might be described as 'instrumental', in the sense that improvements to livelihoods are the means to achieve conservation goals (conservation *through* development). ICDPs mainly occur in buffer zones and settlements adjacent to park boundaries. They involve activities that seek to enhance income through provision of substitute natural resources, enhancement of agricultural income and livelihood diversification into tourism and other park-related enterprises.

It is clear that although we may be winning a few battles, we are losing the war. With perhaps only another 20 years or so left to turn the tide, it is worth asking why. (Balmford and Cowling 2006)

The performance of ICDPs has often been disappointing and some authors have suggested that this lack of success might prove an obstacle to future funding of people friendly conservation. One method of evaluating ICDPs has been to question park managers and other 'experts' to collate their experience in the field. Bruner et al. (2001) survey 93 protected areas in 22 tropical countries and found a) that the parks system has been much more successful (at conservation) than is often stated, b) that park effectiveness is most strongly correlated to the density of guards and c) that there is no significant correlation between conservation effectiveness and community participation. Similarly, Struhsaker et al. (2005) survey 16 African rainforest protected areas and find that success is correlated with strong public support, but that such support is not itself correlated with ICDPs or provision of employment benefits. Such reliance on the views of protected area managers has drawn some criticism in academic circles. However, alternative methods of studying ICDPs have also failed to produce evidence of widespread success. Brandon and Wells (1992) survey 23 ICDPs and find that few have met their goals of linking development with conservation.

Some members of the conservation community are now worried that these negative evaluations are prompting a 'green backlash' against community conservation involving a call for a return to fortress conservation (Wilshusen et al. 2002; Hutton et al. 2005). Others see these disappointments more as teething problems. They point out that community conservation is still a relatively new approach and emphasise the need to learn lessons from this experience in order to improve its practice.

3. Background context

3.1 Biodiversity and ecosystem services

IGCP operates in the four national parks that contain the mountain gorilla's remaining habitat. Three contiguous parks cover the Virungas forest block: Parc National des Virunga (PNVi) in Democratic Republic of Congo (DRC); Parc National des Volcans (PNV) in Rwanda; and Mgahinga Gorilla National Park (MGNP) in Uganda. Thirty kilometres to the North lies the forest of the Bwindi Impenetrable National Park (BINP). For the purposes of this report we describe these collectively as the 'Virunga-Bwindi region'. This region forms part of the Albertine Rift, the western arm of the Great Rift Valley.

The current parks protect remaining fragments of montane rainforest which contain a rich diversity of flora, partly owing to the range of altitudes from 1100 to 4511 metres. A rich diversity of fauna also exists and this might have resulted from the area being a glacial refuge during the late Pleistocene (Infield and Adams 1999). As a result of high species richness and endemism, along with high level of threat, IUCN have rated the montane forests of the Albertine Rift as having the highest conservation priority in Africa (Lanjouw et al. 2004). Even within the greater Albertine Rift landscape, the Virungas and Bwindi stand out. Of 40 biodiversity rich areas surveyed in this landscape, the Virungas was found to be highest for both species richness and endemism, whilst Bwindi was ranked fourth (Plumptre et al. 2003). The region is perhaps best known for the mountain gorilla. The 2003 census in the Virunga mountains estimated a population of 380, whilst the 2006 census in Bwindi estimated 340; hence a global population of around 720, an improving but still fragile situation.

The montane forests of Virunga-Bwindi are also important for local and regional livelihoods. Part of this value derives from direct consumption of resources but the larger part is thought to derive from indirect 'ecosystem services' such as watershed protection, soil formation and protection, climate regulation and pollination. 'Ecosystem services' is an anthropocentric concept that refers to benefits to humans arising from the functioning of natural ecosystems (Myers 1996). There is some evidence that these functions provide more services, or more reliable services, where biodiversity is high. In other words, biodiversity itself plays an important role in sustaining functions that are valuable to humans. Whilst our knowledge of this connection remains limited, it potentially completes the picture of a mutually reinforcing link between biodiversity conservation and livelihoods.

3.2 History

The political boundaries separating DRC, Rwanda and Uganda were established in 1894 at the Conference of Berlin. As is well documented, this 'scramble for Africa' largely ignored existing geographical, cultural and ethnic continuities. Despite current national borders, the Virunga-Bwindi region have a number of similarities. Firstly, the large levels of movement across borders, often driven by conflict, has led to a situation today where 'similar languages, cultures and traditions are found on all three sides of the borders' (Lanjouw et al. 2004). Secondly, the region might be viewed as a single agri-ecological zone, characterized by similarities in physical conditions and in the agricultural systems that have evolved there. On the other hand, it is vital that those involved in conservation also recognize important historical differences that contribute to local context. Such context is also differentiated by, for example, war; legal provisions for conservation; political commitment; and level of resources.

PNVi and PNV were formed in 1925 and 1929 respectively and as they were gazetted as National Parks, have a long history of attempts to exclude local people. Whilst MGNP and BINP had forms of protective designation as early as 1930 and 1932 respectively, these were weaker and not strongly enforced. When Mgahinga became a national park in 1991, large areas had been encroached on for farming, resulting in the need to move an estimated 1773 people (Adams and Infield 2003). Bwindi did not have such a problem when it became a national park in 1991 although there was still an abrupt loss of resources for local people. In both Mgahinga and Bwindi, such losses caused considerable resentment against the parks and their authorities, exemplified by the 16 fires that threatened Bwindi in the first dry season following designation (Hamilton et al. 2000). Such was the animosity towards the park that employees were sometimes excluded from local stretcher-bearer societies, a form of social exclusion almost unheard of in rural Uganda (Blomley 2003). One of the attempts to defuse this conflict involved the granting of controlled use rights within multiple use zones, allowing collection of prescribed medicinal plants and other negotiated resources. Such an arrangement does not exist in Rwanda or DRC. The history of the different parks has influenced the ways in which park-people relationships have developed and provides important context for community conservation efforts.

3.3 Population and livelihoods

It has become unfashionable to identify population growth as the cause of environmental problems. Amongst other things, a focus on numbers ignores the vital role that technology and institutions play in mediating human use of resources. Nevertheless, the belief that this region is reaching or exceeding its carrying capacity began in colonial times and is still widely held. In the Kigezi highlands, colonial officers were concerned about 'over-population' as early as the 1930s and they began resettlement of Bakiga people to Ankole and Toro in the 1950s (Carswell 2003). More recently, some authors have even sought to explain war and genocide in the region as a result of land scarcity (Diamond 2006) and most reports on conservation in the region refer to the high population densities around the parks.

One thing is certain: there is a huge difference between managing a park in a remote and sparsely populated place and managing a park in one of Africa's most densely populated rural areas. In areas around Gisenyi and Ruhengeri in Rwanda (adjacent to PNV), population densities average over 500/km² and exceed 800/ km² in places. In DRC, population densities are lower, but still as high as 300/ km² around PNVi Mikenno sector (Plumptre et al. 2004). In Uganda, the 2002 census found densities of 323/ km² in Kisoro district, 290/ km² in Kabale and 160/ km² in Kanungu (Namara

2006). Despite some outmigration, densities have roughly doubled since the late 1960s (Musali 2008).

During times of peace, the difficulties of alleviating poverty in this region centre on the shortage of land, the quality of land, access to markets and the lack of alternatives to farming. Around PNVi, nearly all households practice agriculture with 73% of households involved in farming only, with others combining farming with preaching, government jobs and park jobs amongst others (Plumptre et al. 2004). Around PNV, 91% of households are agricultural with an average of less than 1 hectare of land per family of 6-7 people (IGCP 2008). In the Kigezi Highlands, most households farm, although Musali (2008) describes the complex forms of diversification that have occurred in some households. According to the 2004 Kabale State of the Environment Report, the average household has 2 hectares of land. However, there is probably much greater inequality in Uganda, with some very large dairy farms in the valleys. Poor households average more like 1 hectare of land and this is typically split into 6-7 small, dispersed plots.

The constraints on farming posed by the size and fragmentation of farm plots are compounded by problems of land degradation. Whilst the rich volcanic soils of the region remain highly productive in parts, there has long been concern that fertility is not being sustained and that agricultural productivity is now dropping consistently (IGCP 2008). A much repeated figure for Rwanda asserts that soil is eroded at rates of 10.1 tons/hectare/year and at more than 25 tons/ha on slopes over 20%. However, it is hard to now establish the scientific basis of this 1986 estimate and it would certainly need checking. Regardless of exact measures, the fact that there is a problem is there for all to see and is widely reported by farmers themselves. Whilst cultivation of slopes of 10% has long been commonplace, farmers have cultivated ever more precipitous plots. In Kabale district, farmers have now cleared plots on slopes of 30%; in Kisoro district, slopes of 40% have been cleared and 85% of cultivated land is now affected by soil erosion (Musali 2008). This current situation occurs despite a long history of soil conservation interventions. In the early 1930s, the colonial government identified physical structures such as bench terraces and contour bunds, together with planting of black wattle and eucalyptus. These works were often made compulsory to farmers, institutionalized through bye-laws and enforced in collaboration with local chiefs. This proved an early lesson in the limitations of top-down, command-and-control conservation, as maintenance gradually fell apart. For example, farmers found that contour bunds had become the most fertile part of their plots owing to the deposition of soil from up-slope. They planted sorghum and sweet potatoes (Musali 2008).

Since the 1970s development experts have retained strong faith in a 'small farms first' approach to development, i.e. the belief that support for small farms is the most effective way of alleviating poverty. Whilst this continues to be widely believed,

especially for regions blessed with good soils and rainfall, there is now more interest in rural people diversifying their livelihoods and becoming less dependent on agriculture. This seems eminently appropriate in a landlocked region with problems of land scarcity, steep slopes, and market access.

3.4 Park-people conflicts

More than 90% of rural people rely on fuelwood for heating water and cooking (MINECOFIN 2002). In most places, this demand is met by local woodlots but there are areas of shortage. In DRC it is more common to see charcoal in local markets such as Kibumba. This reflects shortage driven by refugee camps in the mid 1990s and even now, numerous IDP camps. In the dry season, many people rely on access to the parks to collect water, especially where geological conditions result in water running off the mountains too far underground to be accessed by well. Other extractive uses of the park include bushmeat, bamboo, wild honey, yams and medicines. Whilst not all activities are equally threatening, one of the concerns with people entering the parks is that human diseases may spread to gorillas, as happened with scabies in BINP. The worst case scenario is a disease such as the Ebola virus (ZEBOV) which is thought to have killed thousands of central African gorillas, including about 5000 in 2002-3 alone (Bermejo et al. 2006).

Whilst humans may threaten the park, so the park threatens human livelihoods. Elephants, forest pigs, buffalo and baboons are all difficult neighbours that render an already fragile livelihood even more vulnerable. To date there is no compensation system for crop-raiding, although ORTPN are in the process of drafting a system for Rwanda. The immediate loss of crops is not the entire problem because the response can be to employ school age children to act as guards during the day, undermining the education that is so vital to future diversification of livelihoods. Gorilla crop raiding are not a common problem in DRC, are becoming more so in Rwanda but have already become so in Uganda. As is the case for all parks, local people identify crop-raiding as a major problem and don't believe that park authorities do enough to help. A key challenge for community conservation is to reverse the perception that the costs of living near a park are greater than the benefits.

4. Community conservation strategies in the region

Since 1991, the opportunities for community conservation have grown dramatically. Firstly, IGCP and others have contributed to the strengthening of the capacity of ICCN, ORTPN and UWA, enabling these park authorities to take increasing responsibility for law enforcement activities. Secondly, the political situation has

improved. The fall of the Amin regime in Uganda in 1979 and the defeat of Obote's unpopular rule in 1986 had paved the way for better relations with conservation NGOs and greater opportunities for collaboration; the fall of the Mobutu regime in DRC in 1997 had a similar impact. Together with the improvement in the security situation in Rwanda and Uganda, such changes have enabled IGCP to shift its attention from urgent park protection activities towards its longer term conservation and livelihood objectives. Such a shift has been encouraged by donors who have come to favour community conservation approaches over fortress conservation. In DRC the situation is rather different, with continued war in the east making it essential for IGCP to maintain support for ICCN with urgent park protection activities. Nevertheless, FFI are currently supporting ICCN in developing a national level community conservation strategy.

The genocide of 1994 saw a sea-change in working relationships in Rwanda. With ORTPN's capacity reduced to a largely symbolic presence, IGCP and others had to make the difficult decision to remain in the field. Inevitably, this led to a period in which IGCP had to focus its efforts and funds to protection-oriented activities: trying to maintain a flow of wages and equipment to those field staff who chose to remain in post, and subsequently helping to rebuild the capacity of ORTPN. In the aftermath of the genocide, the focus was very much on rebuilding state management capacity, with WCS and IGCP in particular helping with funding, training and equipment, and forming a strong alliance with ORTPN. On the one hand, the government of Paul Kagame presented greater opportunity for partnership than the previous, more authoritarian, regime. On the other hand, events had revealed starkly the need to work together. With the huge pressure for land for returning refugees, protected areas, including PNV, were under threat, and there was an urgent need for conservation NGOs to work with government agencies. Partnerships were thus forged by crisis, by opportunities presented by new political regimes, and by pragmatic decisions.

Partnerships with local government administrations, as well as community-based associations, did not begin in earnest until the early 2000s. With IGCP support and funding, ORTPN began working with sector administrations in 1996. However, it took wider trends in both politics and conservation to really begin the era of community conservation. On the political side, Kagame proved open to 'good governance' agendas that were prevailing within International Financial Institutions. Decentralisation was not only a policy direction that would be attractive to international aid donors, but also a policy that appeared to fit the particular Rwandan context, with the emphasis on building consensus politics and rebuilding Rwandan identity through local institutions. The Programme d'Appui a la Decentralisation et au Developpement Economique (PADDEP) proved an early catalyst for building relationships with local actors. With funding from USAID and the Dutch Embassy, and NGOs with rich experience in community-based approaches

(Care International and HelpAge), links were made, for example, to the African Indigenous and Minority Peoples Organisation and ARDI in 1999 and Imbaraga, who became working partners with the Gorilla Organisation (then DFGFE). On the conservation side, Rwanda clearly lagged behind new community-based approaches that had become increasingly popular in East Africa, and elsewhere, since the mid 1980s. This was not so much a result of the ethos of IGCP but a response to the priorities in the field. In Uganda, the political and legal context in which conservation interventions must be designed has been, and continues to be, more conducive to community conservation. The UWA's mission is to manage parks 'in partnership with neighbouring communities' and the capacity to do this is enshrined in 1996 Uganda Wildlife Statute that gives UWA the power to 'issue a permit to any person for the use of resources in wildlife protected areas' (Blomley 2003). Unlike the legal context in Rwanda and DRC, local people can, in principle, be given genuine co-management roles. Even before this Statute, local people around BINP and MGNP had been granted some rights of resource collection in 'multiple use zones'.

4.1 IGCP community conservation strategy

If asked to evaluate IGCP's achievements in relation to the three strategies stated in the introduction to this report, most would highlight a) the contribution of Ranger Based Monitoring to establishing a strong information base and b) the contribution of transboundary natural resource management to effective regional collaboration. Assisting local people with their livelihood strategies does not usually feature in initial reflections on IGCP's big achievements. However, close observers of IGCP's work recognize that this area of activity has been 'coming up fast'. In this section we briefly describe the kinds of community conservation ventures that IGCP has been involved with. We begin with a reflection on the importance of gorilla tourism, not perhaps the most obvious venture for inclusion under IGCP community conservation, but arguably one of the most significant.

In Rwanda, 10,000 hectares of the lower altitude habitat in PNV, valued by gorillas for its bamboos as well as its warmer climate, was cleared in 1968-9 for Pyrethrum cultivation. In 1978, PNV was again under threat from agriculture, this time under a government plan to clear 12,500 hectares for cattle raising. This was at a time of great global publicity for gorilla conservation, following the killing of Digit. Whilst Dian Fossey launched the Digit Fund, the Fauna and Flora Preservation Fund (now FFI) soon collected more than \$100,000 from the UK public. Joining forces with the African Wildlife Leadership Foundation (now AWF) and the World Wide Fund for Nature (WWF), the Mountain Gorilla Project was launched in 1979, and soon included a program to develop gorilla tourism (Weber and Vedder 2001). For the pioneers of tourism development, this was the only way to change perceptions of the park – both politicians and local people viewed the park as potential agricultural

land and both constituencies had to start seeing the park itself as a source of income and employment.

Whilst gorilla tourism has proved highly vulnerable to insecurity, it is probably fair to say that its development is one of MGP/IGCPs crowning achievements, benefiting from the depth of IGCP expertise of mountain gorilla behaviour and its accrued experience with ecotourism. The income derived from gorilla tourism has contributed to the transformation of government attitudes towards conservation, especially in Rwanda and Uganda, and forms the basis for much community conservation work today. IGCP's recent work with communities can be classified under three broad headings:

- Strengthening policies and institutions
- Resolving human-wildlife conflict
- Conservation-related enterprise

4.2 Strengthening policies and institutions

In Rwanda in particular, but also in Uganda and DR Congo, IGCP have become part of core policy-making communities consisting of state agencies and a small number of influential non-state stakeholders. In this role, IGCP has helped to introduce a number of policies and practices, including ranger based monitoring and transboundary management. In relation to community conservation, IGCP and partners played an advisory role in establishing revenue sharing policy in Uganda in 1994 and then a central role in spreading this to Rwanda in 2005 and, most recently, DRC (See Box 1).

It is worth noting that IGCP's niche as an 'insider' within the policy community, and especially the closeness of relationship to the state, creates opportunities but also problems. Around parts of PNVi for example, relationships between local people and ICCN are poor and this tension can extend to closely associated partners. More generally, an 'insider' role somewhat reduces the opportunity to serve as an advocate for the rights of local people. For example, whilst IGCP has long worked to try to alleviate problems of crop-raiding, it has not become an advocate for community calls for compensation schemes. Instead of a focus on advocacy, it is probably fair to say that IGCP has concentrated on institutionalizing community conservation within park authority practices, leading to a situation where these authorities themselves become advocates for communities. An important example is IGCPs support for the restructuring of ORTPN in 2003, which included the creation of a community conservation unit, headed by a community conservation manager in Kigali and with community conservation wardens at park level. Community conservation is institutionalized within similar structures in ICCN and UWA.

The importance of work to institutionalize community conservation can be illustrated through an example from the Nkuringo Conservation and Development Foundation at BINP (see Box 2). UWA strongly supported this IGCP project by agreeing to allocate the Foundation first refusal on 6 of the 8 daily gorilla trekking permits. This decision has not pleased all and there is currently a challenge from hotels in Kisoro which will suffer from this advantage given to NCDF. However, UWA staff at all levels appear adamant that local communities deserve such opportunities to receive benefits and look set to hold strong on their initial decision. The relationship appears to work both ways. Whilst UWA supports IGCP strategies, senior UWA staff are quick to explain that IGCP respond to UWA strategies. In particular, Uganda has a national framework, the National Environment Action Plan, which is strong on community conservation and which serves as a basis for co-ordinating activities.

Box 1: Revenue Sharing in Uganda and Rwanda

As has been stated, the designation of MGNP and BINP was initially marred by poor relations with communities including the deliberate use of fire to destroy areas of Bwindi. IGCP’s early work in Uganda was largely focused on its expertise in gorilla tourism, which began in Mgahinga in 1993, providing technical expertise for gorilla habituation and training of trackers. However, from its origins in Rwanda, IGCP always saw tourism as an activity that should benefit local people and, along with CARE, played a role in advocating for sharing revenue from gorilla tourism with local communities. This was piloted in 1994 and started in earnest in 1996. Whilst revenue sharing has contributed to improvements in park-community relations, the going has not been smooth. The initial scheme provided for 12% of total revenue from tourism to be shared. However, in 1996 revenue sharing became institutionalized in the national Uganda Wildlife Statute, with a provision for 20% of gate receipts. This represented a large reduction in funds. Today, of the \$500 paid for a gorilla trekking permit, only \$25 is for the entry permit (gate receipt), so only \$5 (or a mere 1% of total revenue) is collected. A partial response has been to institute a new \$10 ‘gorilla levy’.

Projects in communities around PNV have focused on water and schools. Projects in communities around BINP have mainly involved schools, health centres, roads and more recently, goat rearing.

IGCP played a central role in the introduction of revenue sharing to Rwanda. Since 2005, 5% of ORTPN’s tourism revenue (largely from gorilla permits) is set aside for investment in community projects, with 40% allocated to PNV and 30% each to NNP and ANP. ORTPN manage revenue sharing in partnership with district and sector governments. The impact of revenue sharing in Rwanda remains uncertain and has yet to be evaluated. There is a feeling that the size of the fund is too small to make a big difference because the projects are few and far between.

Year	BINP			PNV		
	1996	2002	2006	2005	2006	2007
Number of Projects	19	20	18	2	3	1
Total Expense (\$US)	47,500	55,500	71,500	29,000	136,500	109,000

Table 1. Revenue Sharing, BINP and PNV

Amongst ORTPN staff there is concern about having devolved responsibility for project selection to districts. They see a tendency for district and sector officials to select social infrastructure projects such as schools and health centres, partly as this helps them meet their own performance targets introduced through decentralisation. ORTPN see two major problems with this. First, it lacks a conservation logic because people do not understand that these projects are linked to the park and do not see a link to the damage they suffer from crop-raiding. Second, it is doubtful whether the poorest prioritise social infrastructure and it is therefore assumed that the poor are not finding a voice. We see a broader issue here which will benefit from attention. Neither ORTPN nor IGCP have the strongest records of working with local government, which has been growing in capacity through decentralisation. The Dutch Embassy has now pledged 2 million Euros to boost revenue sharing, which will be channeled via IGCP to the Transboundary Core Secretariat. How this relates to true 'revenue sharing' is apparently a matter of lively debate.

4.3 Resolving human-wildlife conflict

In the absence of compensation systems for crop-raiding, local people bear some of the costs of successful conservation. In BINP, for example, the numbers of gorillas is known to be rising and the chief warden also believes that numbers of elephants and bush pig have been rising. These increases in wildlife place greater pressure on local livelihoods. Whilst tourism and other enterprises have established some benefits for local people, it is clear that the immediate costs of conservation outweigh the benefits for very many households. IGCP has recognized this as a real threat to long-term conservation in the region.

Around the Virungas, but not Bwindi, IGCP has contributed to the construction of a buffalo wall, made of lava stones which have been collected from surrounding community fields. This has been constructed with assistance of local communities through voluntary labour. Whilst the wall is easily passable by humans, it serves to demarcate the park as well as preventing problems with buffalos. The work began in Uganda in the early 1990s, through Berggorilla & Regenwald Direkthilfe, and was taken up by CARE in 1995, and by IGCP in 2004. The wall is now nearly complete in Uganda, DRC and Rwanda. It is not a complete solution as it is aimed mainly at one species, and there are gaps for ravines (although these are being addressed), and places where maintenance is not good. Nevertheless, it is held to be a success by all stakeholders – a genuine 'win-win' project - and IGCP staff are proud of their association with this.

One of the toughest human-wildlife conflicts faced by IGCP has been the human-gorilla conflict around Bwindi, focused on Nteko and Mukono parishes. Whilst the problem has been largely caused by habituated gorilla groups, the more fundamental cause of human-gorilla conflict is the expansion of human settlement into territory previously part of the gorilla habitat (Figure 1).

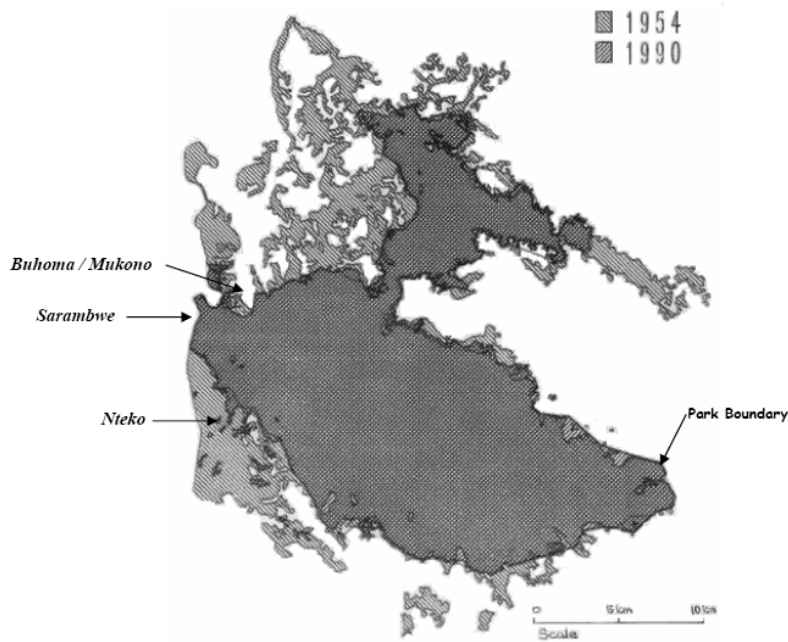


Figure 1. Change in Bwindi forest cover 1954-1990. Source: Macfie 2000, p. 5

The problem in Bwindi has been quite pronounced, with heavy loss of crops such as bananas and a number of attacks on humans, some resulting in injury. There is some uncertainty about whether habituation is a cause of this behaviour, but it is widely perceived as such amongst local people and park staff. This conflict was exacerbated by local people seeing UWA and others make money from the problem through gorilla trekking. Tourism also became problematic because tourists wish to see gorillas in their natural habitat, not devastating local livelihoods.

IGCP was involved in two responses to this problem. The HUGO (Human Gorilla Conflict Resolution) programme was established in 1998. This involves the creation of teams, including volunteer members from local communities, to chase gorillas back to the park. IGCP provided training and equipment and also provides funding to UWA which can be used, e.g. to pay for lunch for volunteers. It is proving popular, starting with 18 volunteers, currently up to 42, and more and more reportedly wanting to join. Similar systems exist in DRC and in Rwanda communities are represented by *Animateurs de Conservation* (ANICO). The impact of HUGO appears to be good, with initial evaluations suggesting a reduction in crop loss and in threats to human life (Musaasizi 2006). However, it is understood that gorilla learning requires long-term reinforcement and chasing may not be a durable solution to the problem. As a result, IGCP and UWA decided that land-use change was necessary for the long-term, and set about purchasing a 12 km strip of land in the Nkuringo area (Nteko and Rubuguri parishes), along the border demarcated by the Kashasha River (Figure 2). The strip is 350 metres wide and consists of two zones:

- Inner Zone: actively managed. This zone is 200 metres wide and solely owned and managed by UWA for alleviating problems with wildlife, and for research and gorilla tracking.
- Outer Zone: community exclusive use. This zone is 150 metres wide and co-owned by NCDF and UWA. In addition to control of problem animals, the zone is also for initiatives to support livelihoods.

Mauritius thorn has been planted along the outer boundary as a barrier to wildlife and non-palatable crops planted such as wheat, lemon grass and *Artemisia anna* (an anti-malarial), as well as pasture for heifers and beekeeping are being tested in the outer zone.

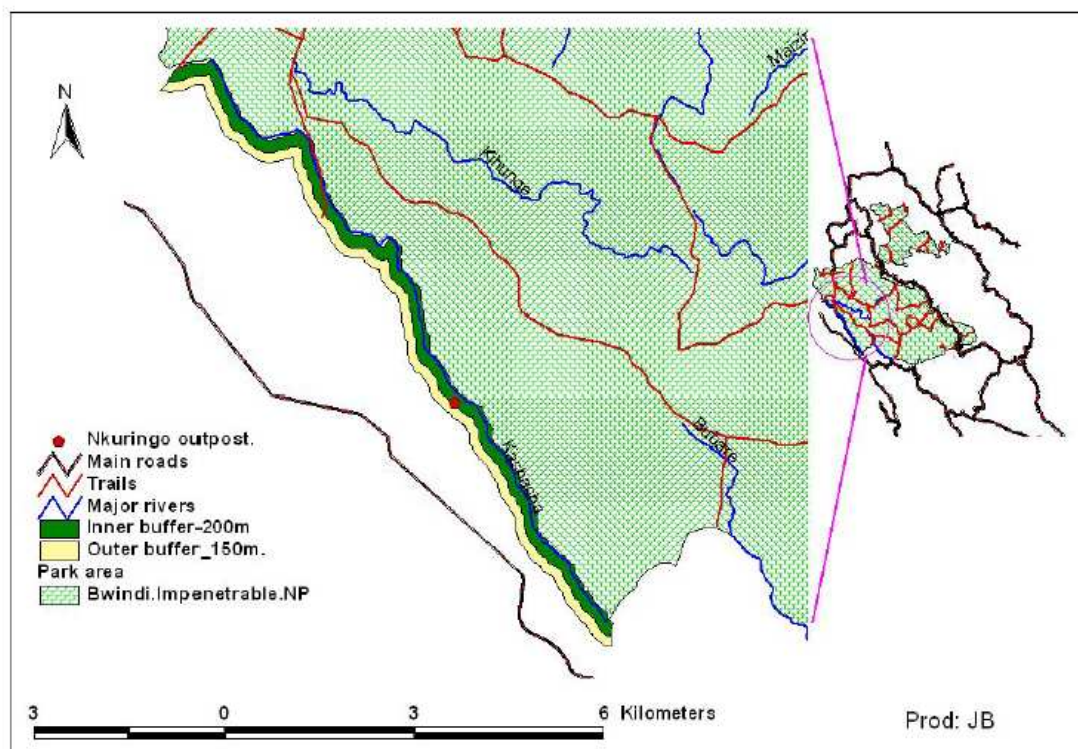


Figure 2. Nkuringo buffer zone. Source: NCDF 2007, p.2

The process of establishing the buffer zone has come under some critical scrutiny. Namara (2006) suggests that local farmers only sold their land because it had become useless for agriculture due to the gorillas, and that the process of valuing and purchasing land was undertaken without proper consultation and was characterized by unequal power relations. She states that the land purchase shows a reluctance to work as partners with the community, a missed opportunity for co-management, and suspicion from local people. The current study found no evidence in support of this account and we feel it is important to present the version of events that was revealed by our own research. The process of land purchase took place between 1999 and 2004 and involved extensive consultation with the land owners, their local leaders, neighbours, and the district administration. The valuing of land and property was

undertaken by a government valuer, using government rates for land in rural areas. Property on the land was also valued and compensated. In addition, each land owner who sold up was also paid a resettlement package. IGCP/UWA engaged a land lawyer to advise landowners during this transaction. As far as we are aware, neither IGCP or UWA have received a single complaint from sellers, either about the process or the outcome. The testimonies provided by stakeholders in this study gave a different picture, in which local people were given a very generous rate, and were able to buy larger and better land elsewhere. Some have built better houses, opened businesses and can now afford to send their children to better schools. One family bought two trucks and now provide a previously unavailable transport service between Nteko and Kisoro. In response to these positive experiences, UWA have found themselves being approached by more people who want them to buy their land.

It is true to say that local communities are in a position of educational, organisational and economic weakness compared to UWA and IGCP. In the past, park authorities and conservation NGOs sometimes exploited such weakness in the pursuit of fortress conservation. However, many of those we consulted now view such weakness as a constraint rather than an opportunity. Conservation professionals now understand that it is an advantage to work with communities who are well educated, well organized and less impoverished. Thus IGCP and partners are seeking to empower the community through creation of the Foundation. Whether such empowerment currently extends to the more marginal members of communities is more doubtful, an issue that will be discussed later.

4.4 Conservation-related enterprise

IGCP enterprise projects support local people to develop livelihood opportunities that are complementary with conservation. The objectives are to:

- Develop linkages between conservation and community livelihood improvement using conservation income generating activities as a tool for fighting poverty;
- To reduce the pressure of the population on the PA through diversification of livelihoods;
- To ensure that the poor as compared to the government and private sector also capture a share of economic benefits from wildlife and other conservation based enterprises.

The main types of enterprise are tourism accommodation, beekeeping, crafts, mushroom cultivation and medicinal plants. As has just been mentioned, one of the great challenges for community conservation, is the rather weak starting point for

local civil society, both in terms of individual learning and skills, and in terms of the level of social organization and capacity for collective action. In Uganda, IGCP and partners have sometimes been able to build on existing social organization, working with established societies, such as stretcher-bearer societies. In DRC, the same has to some extent been true where, for example, associations were established through previous WWF activities. In Rwanda, however, the local institutional landscape was pretty bare post-genocide and IGCP has had to facilitate the creation of associations and co-operatives largely from scratch (Table 2). This is a crucial and yet extremely challenging part of IGCP's work.

Neither IGCP nor local CBOs have all the skills necessary for establishing profitable and sustainable business ventures and partnership with private sector organizations is one feature of the enterprise strategy. Ideally, private partners will bring investment as well as skills, although the programme remains highly dependent on donor funding. It has been possible to find private partners for ecolodges (Box 2) because USAID grants make these ventures fairly gilt-edged business opportunities. However, it has proved harder to find private sector management or venture capital for honey production ventures (Box 3), partly because the production costs are relatively high (casting doubt on the feasibility of international marketing) and partly because of difficulties establishing timely supplies that meet quality standards.

Rwanda	
Imbaraga	Syndicat des Agri-eleveurs du Rwanda. Initiated in the 1990s with part EU funding, in partnership with DFGFE. Dutch Embassy funding from 1998. Began work with ORTPN and IGCP in 2003 for sensitization.
Association Abunganirana	Medicinal plants and traditional healers. Initiated in 2004 with IGCP. Financial support from IGCP who supplied land, logistic support from ORTPN (plants).
SACOLA	Sabyinyo Community Lodge Association. IGCP initiated in 2004. Has initiated relationships with a range of local associations: Elders Association, Wildlife clubs, Traditional Sorghum beer brewers, traditional banana beer brewers, Association Impereri, Association Ubuvumo, Women's handicraft association.
FECAR Inganzo	Federation des Collectifs des Artisans de Ruhengeri. Founded in 2002, with support from IGCP (and others), now with ORTPN representation on management board. Donors include Canadian International Development Agency.
KOPAV	A Kinigi based craft cooperative – an example of the FECAR network. Initiated with premise construction by IGCP.
COPEPEC	Mushroom growing cooperative with 12 member associations, laboratory in Ruhengeri. Initiated by IGCP in 2004.
La Bonne Semence FAV	Initiated by IGCP in 2005.
ANICO enterprise	Forum des Apiculteurs des Volcans. Beekeeping association. Initiated by IGCP in 2002.
Solidarity Fund	Animateurs de Conservation. Community volunteers who deal with crop-raiding problems and serve as link between ORTPN and communities.
	Fund for social development of widows of park rangers. Started by IGCP director, Eugene Rutagarama.
Uganda	
NCDF	Nkuringo Conservation and Development Foundation. BINP Community lodge tourism enterprise and buffer zone management. Formed with IGCP support in 2004.
Buhoma community campsite	Started 1993 by Peace Corps volunteers, supported by IGCP. BINP.
BBDA	Bwindi Beekeepers Development Association.
ASCAS	Associations for savings and credit run by HUGO community volunteers. Planned HUGO enterprises.
UOBDU	United Organisation for Batwa Development in Uganda. IGCP work with UOBDU locally to facilitate cultural tourism.
DRC	
Widows of park rangers	Based at Rumangabo, saving, loans, enterprises including mushroom growing.
Wives of park rangers	Based at Rumangabo, saving, loans, enterprises.
UDASEMINYA	Union des apiculteurs du secteur Mikeno et Nyamulagira. Umbrella organization for 7 associations of beekeepers. Premise in Kibumba.
HUGO enterprises	Planned enterprises for community volunteers.

Table 2. Associations and Co-operatives supported by IGCP

Box 2. Community Lodges: Sabyinyo and Nkuringo

IGCP's involvement in community-based tourism began in Uganda. In particular, there has been a long association with Buhoma Community Rest Campsite and the Buhoma Community Development Association (BCDA) which owns the camp. This was the first accommodation in Bwindi, opening in 1993 and has remained a viable business despite a glut of new lodges and around 150 bed spaces in the area. BCDA has used 10% of profits to support schools in particular, but also a health centre and other projects. Despite the effectiveness of BCDA, it is not a model that IGCP wishes to replicate due to the level of dependence that persists. On the one hand, IGCP's endurance as a partner is a great strength, providing the kind of durable commitment needed to build capacity in CBOs. On the other hand, IGCP has limited staff and is now reluctant to continue with such a model for community ventures. The community lodges represent a conscious change in strategy towards new forms of partnership in which private sector operators take on much of the management, leaving IGCP with a quick, if partial, exit strategy. The community lodges also involve a move into the serious luxury end of the tourism market.

The first luxury (\$700 per night) community lodge was constructed at the base of Mt. Sabyinyo, PNV and opened for business in August 2007. It was constructed by a grant from USAID, as well as support from IGCP/AWF and ORTPN. The lodge is owned by SACOLA (Sabyinyo Community Livelihoods Association) who have granted a 15 year lease to a private company to operate the business. The Kenyan company, Musiara Ltd (Governors' Camp), is contracted to pay SACOLA a 'bed-night fee' of \$50 plus 7.5% of income. Between August 2007 and February 2008, SACOLA received US\$34,500. SACOLA membership extends to those in cells adjacent to the park in Kinigi and Nange sectors, a total of approximately 33,000 beneficiaries. A committee of 11 members decides on projects to spend profits on and have so far prioritized road improvements, building houses for marginalized members of the community, water tanks, schools and health centres. Other benefits include employment, with 70% of jobs currently filled by local people; the hotel buys local produce from the community and the potential for supplying further services and attractions to tourists.

Members of SACOLA spoken with were not aware of any particular duties on their part, although they said they had undertaken some sensitization in January. They have not been much involved with planning and management, nor do they intend to take on such responsibility when they have the option in 15 years time.

This innovative financing and management model has been replicated, with minor differences at Nkuringo on the southern edge of Bwindi, a site where local communities have suffered particularly from crop damage from gorilla leaving the park. USAID once again provided funding for construction, with facility ownership going to the Nkuringo Conservation and Development Foundation. The operator is the Uganda Safari Company who will give a bed night fee of \$30 plus an annual rent of \$5000. The lodge is not fully completed but is virtually guaranteed success due to the NCDF having the right of first refusal on 6 of the 8 gorilla permits available. Members of the Foundation were aware of obligations on their part to ensure that the park is well protected.

Box 3 Beekeeping

The rationale for supporting beekeeping in the region is very strong indeed:

- It addresses a problem (hives in the forest) that was identified through Ranger Based Monitoring;
- The use of fire led to problems of dry season fires, especially in Bwindi;
- Beekeepers undertook other activities whilst visiting hives, including laying and checking snares, and firewood collection;
- Apiary in park-adjacent communities is dependent on forest flora: income is linked to conservation;
- If total bee numbers are increased, an additional pollination service is provided, potentially increasing yields of certain crops (this requires study);
- There are local and national markets for honey and related products;
- Bee-keeping is not labour intensive and can be combined with other livelihood strategies as a form of diversification.

The conservation and livelihood logic of supporting beekeeping on the edge of the forest is excellent. In Rwanda, IGCP and partners support beekeeping through work with the Forum des Apiculteurs des Volcans (FAV). This is the umbrella group for 77 local associations with a combined membership of about 1500 beekeepers. In DRC, IGCP support the Union des Apiculteurs du secteur Mikeno et Nyamulagira, (UDASEMINYA) an umbrella organization for 7 associations of beekeepers with about 980 members. Support is for technical advice, training, purchase of refinery equipment, construction of refinery premise, loans for purchase of modern beehives and harvesting equipment (smokers, veils), and marketing. Members of the associations receive a fixed price for their honey (currently \$2 per kg) and are obliged to provide a certain quantity during the year. FAV/UDASEMINYA refine and market the honey. At the end of the financial year, 20% of profits are re-invested whilst 80% is distributed to members.

For those who can afford the joining fee of roughly \$120 (a problem for poor people who want to be members) the returns can be good. Looking at cases of 'model' members, Case 1 allocated 20% of his labour time to apiculture and made \$800 (400,000 RwF) per year. Case 2 visited hives three times a week and drew on family labour during harvest time, making \$400 (200,000 RwF). More typically, the average beekeeper in the association has 6 traditional hives, with average production of 10kg per year each. Whilst few have done this, the addition of a modern hive would produce another 40kg per year, giving a total of 100kg (a potential for \$200 in sales plus a profit share). Furthermore, those beekeepers consulted in Rwanda and DRC emphasized the use of some of this money for school fees, a highly desirable use from a development perspective.

Whilst the rationale and potential are good, and whilst considerable progress has been made, FAV and UDASEMINYA face some operational difficulties. Firstly, building robust and effective local associations requires more effort, over a longer period, than is generally anticipated. This is due to the inherent difficulty of the challenge, together with the particularly low levels of technical and organization skills at the outset. Providing such intense and extended support does not always fit donor expectations for creating successful enterprises and it is important that IGCP does not over-state the potential for exit strategies: constancy of support is a strength of IGCP which cannot be easily given up, especially in the absence of a strong private sector partner. As IGCP scaled down its field level staffing support for FAV, problems were reported with the quality of honey, with use of modern hives and so on. Targets have not been met for the introduction of new hives, nor for increased production (FAV 2005; Dushimimana 2007). The marketing of

Box 3 (continued)

premium honey has not been fully developed, with no apparent outlet for Virunga honey in Kigali supermarkets, despite other Rwandan honeys available at \$2-3 per 500g.

The second problem is one that has plagued community conservation projects throughout the world. 'Communities' are not homogenous and egalitarian entities with members who all prioritise the common good. Assumptions of homogeneity lead development workers to communicate with local elite who they assume to represent all people, including the most vulnerable. At worst, the outcome is 'elite capture' of benefits in which influential local actors manage to subjugate project activities to their own interests. Whilst we don't have particular evidence, such concerns were mentioned by a number of those consulted and a 2007 evaluation of FAV suggests that this perception exists amongst some beekeepers. Nevertheless, IGCP field staff are well trained and sufficiently in touch to recognize such problems as they arise, although rectifying local leadership problems is not always easy. In DRC for example, there is no suggestion of malpractice, but the president is obviously hard to work with and probably not very good for the success of the venture. IGCP rightly insists on local election to such positions and this is one of those cases where the need for legitimacy (by allowing local people to select) must trade off against effectiveness.

The third problem is a lack of tracability in the supply chain, which can potentially undermine the conservation logic and premium market opportunities. An example of this problem stems from the fact that members are expected to sell honey to FAV/UDASEMINYA. If they are unable to produce this themselves, it is acceptable to buy honey from a third party to sell on. This can undermine conservation logic in that honey might be bought from poachers. It can undermine possible future marketing strategies ('fair trade' or 'gorilla friendly') because the origins of all the honey is unknown.

The fourth problem is specific to DRC, where the operation has been spoilt by break-in and looting at its property in Kibumba. This apparently local act of sabotage is a sad reflection on the difficulty of trying to undertake any development activity in a war zone. However, it is also useful to reflect that this may not have occurred if the premise had been more integrated into the local community – if it had not stood out as a relatively grand structure; if it had been located within the community rather than standing alone on the other side of the road (figure 3); if its large water storage tanks had provided for some community use.



Figure 3. Recently looted UDASEMINYA premise (top centre) and market place, Kibumba, North Kivu

5. Achievements

Before explaining the lessons learned from IGCPs community conservation work, it is important to understand something of the achievements to date. In this section, we patch together the existing evidence to consider the impact of projects on livelihoods, but most particularly, the impact on IGCP's goal to conserve mountain gorillas and their habitat.

Achievements are considered within a framework that identifies four main criteria.

- *Effectiveness*, which is a measure of the extent to which project-specific objectives are met, as well as IGCP's broader objectives. This involves asking questions about the kind of changes to livelihood opportunities and, crucially, the extent to which these are complementary with conservation objectives.
- *Efficiency*, a measure that asks whether achievements have been secured at reasonable cost, and whether more cost-efficient means of achieving the same outcomes are readily available.
- *Legitimacy*, a measure of how acceptable the approach is to various stakeholders. The importance of this criterion is that interventions are less likely to be sustainable where they do not achieve buy-in from key stakeholders.
- *Equity*, a measure of the distributional implications of community conservation, in relation to gender, wealth and other forms of social stratification. Equity can refer to the distribution of power as well as the distribution of more tangible costs and benefits flowing from project implementation.

5.1 Effectiveness

The impact of IGCP activities on livelihoods has not been measured in any formal way, although it is clear that successful ventures bring a range of direct benefits such as increased investment in social infrastructure, new job opportunities and increased income from sales of honey or crafts. Individual cases of successful honey producers, mushroom growers and basket weavers tell us that IGCP enterprises can dramatically effect the fortunes of some beneficiaries. It is also clear that these ventures bring indirect benefits to education, by investing in infrastructure and teacher education (e.g. Buhoma campsite), by alleviating the need for children to guard crops (e.g. Nkuringo buffer zone and HUGO/ANICO), and by securing income that can be spent on school fees. In this region, education can be argued to be a very special asset to build because it provides flexibility and options and because of its resilience in the face of social and environmental threats.

Those consulted also believe that, in Uganda and Rwanda at least, this support to livelihoods has translated into conservation benefits. Around BINP, a park that had poor relationships with local people in the mid 1990s, we heard repeatedly that relationships are now good, with the majority (not all) having positive attitudes towards the park. UWA staff described it as one of the most stable parks in Uganda in terms of community-park relations. Ten years ago, rangers and even IGCP staff would be called ‘baboons’ (or worse) by local people and would feel threatened if their vehicle broke down in the field. Now they feel safe and are confident they would be helped. This is a remarkable transformation. IGCPs contribution cannot be isolated from the interventions of many other NGOs in this area, although revenue sharing, HUGO and tourism (in combination with effective monitoring) have all contributed to the change.

Whilst internally consistent, our information is nonetheless largely based on hearsay. Where possible, we have therefore triangulated with earlier surveys, and RBM data. Surveys by CARE in the late 1990s provide some support for our findings in BINP, highlighting a fairly dramatic shift, over just two years, in perceptions of costs and benefits of living next to the park (Table 3). In 1997 they found that the majority believed that the costs of living next to a park outweighed the benefits. In 1999 the majority believed the benefits exceed the costs.

	Men		Women		Total	
	1997	1999	1997	1999	1997	1999
Costs exceeded benefits (%)	66	36	71	56	68	44
Benefits exceeded costs (%)	34	64	29	44	32	56

Table 3. Changing attitudes towards BINP, 1997-9. Source: Blomley 2003

This is also largely supported by a survey by WCS, IGCP and CARE in which field data was collected in 2002 (Table 4).

	Personal benefit from park	Community benefit from park	Benefit from conservation organisations	Problems with the PA	Problems with staff of PA
BINP	54	79	77	48	13
MGNP	73	77	95	81	12
PNV	88	67	77	27	10
PNVi	61	30	88	73	15

Table 4. Percentage of respondents perceiving benefits and problems from parks. Source: Plumptre et al. 2004

Slightly confusingly, some of the least positive findings came from locations which have received the greatest benefits from tourism and community conservation. The majority at Kinigi (PNV) felt that the community did not benefit from the park whilst there were relatively low levels of perceived personal benefit around BINP (Plumptre et al. 2004). One reason for this is likely to be the lack of diffusion of tourism benefits. Firstly, tourism enterprises are concentrated in specific locations, such that only 2 of the 24 parishes around BINP have tourism sites. Secondly, to be able to personally benefit from tourism either requires some level on entrepreneurship, skills and capital, or, for those lacking such means of direct involvement, a mechanism for benefit sharing within the community.

In principle, georeferenced RBM data can be used to support an evaluation of the conservation impact of selected IGCP activities. For example, it might be possible to test whether observations of beehives in the park are associated with rates of membership of beekeeping associations in adjacent sectors of the park. Similarly, where water collection has been reduced by provision of water butts, it would be possible to test whether this is associated with reduced wood-cutting. In other words, the conservation logic underpinning some of IGCP’s community conservation ventures might be explored using RBM data, albeit there would be difficulties identifying causation. Whilst such an analysis has not been possible as part of this study, example data for PNV (Figure 4) suggests that some illegal activities in the park may have reduced in recent years (although it is not possible to isolate particular causes of this). For PNV, notable changes during this period were the creation of a community conservation unit in 2003, the launch of FAV in the same year, and the introduction of revenue sharing in 2005.

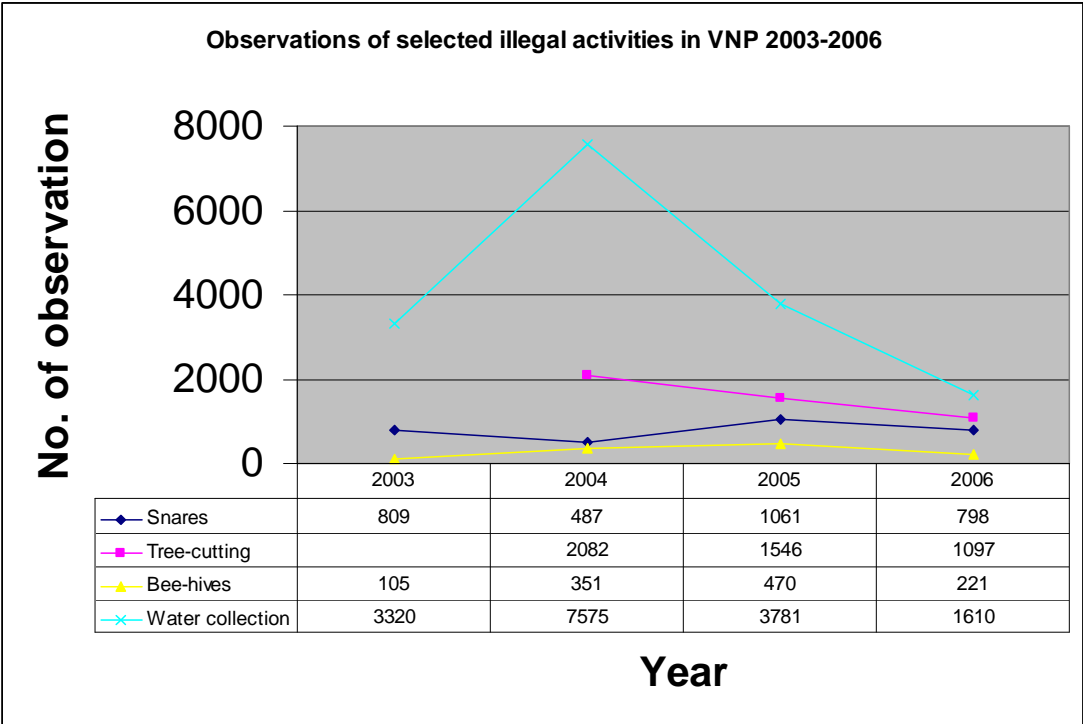


Figure 4. Illegal activities observed in PNV, 2003-6. Source: selected data from ORTPN

Whilst earlier reductions in illegal activities have been observed, for example between 1991 and 1997 in MGNP (Infield and Adams 1999), this earlier data is less reliable in terms of data collection methods, and is more likely to reflect increasing levels of law enforcement. Both data collection and law enforcement have been more consistent in the 2000s.

Box 4. Womens Associations, Rumangabo, DRC

There are two women's associations supported by IGCP, one for the wives of park rangers and the other for widows. Both are based in the ICCN compound in Rumangabo. Neither have been effective, due to war but also due to insufficient support.

The widows association was initially given \$3000 and has 42 members and the wives, \$3200, with 72 members. The intention is to promote enterprise but unfortunately these have mainly failed:

- A canteen was invested in but meals were given on credit to people outside the compound and money was lost.
- Goat rearing was promoted but goats could not be kept securely and were stolen.
- Mushroom growing was attempted but production failed.
- Money-lending was tried but they lent to people from Jomba who left their debts unpaid when they fled war.
- Onions and cabbages are grown with some success.

For one group, the loss of money through failed enterprises was compounded by fraudulent withdrawal of money from their account.

The unfortunate outcome is that several women are worse off than when they started. A typical case involves a woman being given \$50 credit from the fund, with the objective to begin a profitable enterprise. With few options, she spends \$30 of this on a goat which has to be kept outside the compound and is quickly looted. She has to pay back the \$50 at \$2 per month.

It is extraordinarily difficult to make things work here. Rumangabo is surrounded by rebel held territory and it is perhaps unwise to expect successful enterprises to flourish. The institutional infrastructure for savings and credit – and even secure banking – appears to have failed these women, and the scope for building physical assets is equally problematic, as the beekeepers have also found. Added to this, the women simply don't have the functional literacy and other skills to operate ventures without systematic and regular support and it is not clear whether IGCP has the field staff to offer this level of support at this time. Without such support, a rethink is needed of the kind of support that can be provided to these women, and the kind of assets that can be built. Plans for a second attempt at mushroom growing might be worthwhile if sufficient training and reinforcement can be given. At least the laboratory in ICCN compound should be secure. However, this needs careful thought.

5.2 Efficiency

It is hard to identify a sensible basis for evaluating efficiency. We could pose the question of whether similar conservation impacts could be achieved at lower cost, through for example additional law enforcement efforts. However, even if the data were available to enable such a cost-benefit analysis of different approaches to conservation, the usefulness would still be doubtful. Building the state's capacity to enforce rules might be a very efficient means of achieving goals during times of peace, but might offer very little resilience in times of insecurity or even during times of particular economic hardship. In other words, the true value of community conservation is only likely to be realized under non-normal 'shock' conditions.

In principle, substantial efficiency gains can be achieved through the use of RBM data to identify problems (with beekeeping, with water collection, etc) and to tailor the type and location of its interventions accordingly. We will say a bit more about this advantage in section 6.

The ability to gauge effectiveness and efficiency is likely to improve in the future. Firstly, because IGCP planning now includes a much stronger basis for evaluation including a system of measurable indicators. Secondly, there are plans for RBM to be broadened to include collection of some social indicators in neighbouring communities. In addition it might be useful to consider some simple and quick forms of community-based monitoring. For example, beekeepers or mushroom growers might keep simple diaries.

5.3 Equity

There are pragmatic and moral reasons for ensuring equitable treatment of potential beneficiaries. The pragmatic reasons are rooted in the view that the poorest are the most often involved in illegal activities in the park. Morally, it is a blemish on the conservation fraternity if certain groups are marginalized in the process of achieving conservation goals.

In the Virunga-Bwindi region, perhaps the greatest moral hazard relates to the indigenous tribal people known as the Batwa, or pygmies, who previously lived as hunter-gatherers in the forests but have been evicted to surrounding areas over the last eighty years. The survey by Plumptre et al. (2004) found some stark differences between the Batwa and the rest of the population. For example, only 10% of the Batwa around MGNP said that they benefited from conservation organizations, and only 8% of those around PNV. The corresponding figures for non-Batwa were 95% and 77%. Likewise, 80 % of Batwa around MGNP, and 71% around PNV said that

relationships with park authorities were getting worse (20 and 18% for non-Batwa). Neither park authorities nor IGCP have had much of an appetite for specifically targeting the Batwa for development projects, partly as a result of the significant difficulties of working with this group. There are histories of failed projects in large part arising from the lack of specialist skills needed to work with Batwa people. Despite the undoubted difficulties, it is probably fair to say that a failure to do more to help alleviate the Batwa's problems will continue to blemish the conservation success story in this region. Recent initiatives are beginning to address this problem. In Uganda, there is a programme for developing culture based tourism whereby the Batwa are organized, trained and equipped to interpret the forest and their culture. This is a joint project between the Batwa, under their organization UOBDU that has been facilitated by AWF/IGCP over the last two yrs. The development stage was completed in May 2008 and so benefits have not started flowing.

There is a wider concern about whether interventions such as revenue sharing, community lodges and beekeeping benefit the poorest. One of the problems for the poorest is having the assets needed to access new opportunities, frequently lacking the social capital (social status and networks), human capital (education, skills), physical capital (land, buildings) and/or financial capital (cash, access to credit) to take advantage of NGO projects. For example, IGCP-supported associations for crafts, beekeeping and mushroom growing in Rwanda mainly require a 60,000Fr (\$120) joining fee; tourism jobs often require some level of education; mushroom growing requires use of an indoor room.

A number of those consulted suggested that the social infrastructure projects funded by revenue sharing tend not to be priorities for the poor. The poorest are less likely to see e.g. an improved school building as symmetrical compensation for their losses from crop-raiding and therefore there is a break-down in the conservation logic.

Gender is another issue which has been considered under the title of equity. Women are often key users of forest products and therefore important stakeholders. There are also many women-headed households in the region and these are often amongst the more vulnerable. It is therefore important to ask whether ventures are accessible to women. Whilst IGCP does not have specific gender policies, their recruitment policy does ensure that field staff are sensitive to gender issues and consultations bore this out. It is also encouraging to note that activities that began as heavily male dominated – such as beekeeping and mushroom growing – now show a widening of participation.

Finally, some concern has been expressed about the distribution of IGCP effort across the three countries, and especially with regards the limited programme in DRC. This issue is raised in the context of transboundary management and the potential for communities to perceive inequitable treatment across boundaries. The cause of this

situation is of course war and insecurity, and there is little IGCP can do to resolve this. IGCP has already ensured that an equitable share of its core funding goes to DRC. The difference comes in the project funding that comes from a range of donors, many of whom are understandably nervous about funding projects in a war zone and where it is hard to achieve success.

5.4 Legitimacy

Conservation interventions often fail because local people, or some other constituency, simply don't recognize the validity of what is being done. The principle way to test and build legitimacy and establish community 'buy-in' is through consultation and other procedural aspects of project planning. IGCP uses a number of tactics to build local support for its actions, such as consultation meetings, exposure visits to other sites/countries and democratic processes for election of leaders. Furthermore, IGCP seeks to test local commitment by a) not paying for attendance at meetings and b) where possible securing voluntary contributions of labour or other resources. Not paying participants can be difficult to keep up, especially in war zones where people are used to handouts, and where other organizations typically pay some per diem for attendance. As has been noted previously, the commitment to democratic process can sometimes cause problems, mainly where a difficult character is elected. It is also recognized that such elections will tend to reflect pre-existing social hierarchies within an area, thus elections can serve to consolidate positions of already powerful men (rarely women).

Despite some difficulties, IGCP appears to have secured a good relationship with communities and all of its work with communities is supported. In the case of the buffalo wall, for example, community labour for construction and maintenance was important in Uganda and Rwanda, whilst around Mikeno in DRC, construction labour was secured through the "Food for Work" programme. As ever, DRC poses the greatest challenge.

6. Lessons Learned

Inevitably for an ambitious, long-term and wide-ranging programme of conservation intervention, there have been successes and failures over the years. In section 2 of this report we saw that the global trend towards community conservation has often led to disappointing results. In sections 4 and 5 of the report we have seen that IGCP's efforts at community conservation have faced difficulties, but have in many cases been effective. Furthermore, there are signs that these interventions are becoming more sustainable, due to improving relations between park and people, core funding

that enables long-term support, and innovative exit strategies based on involvement of private partners.

In this section we build on this evaluation of outcomes in order to identify and analyse some of the reasons behind successes, as well as their constraints. These are the lessons to be learned from IGCP's experience with community conservation.

6.1 Lesson 1: Conservation activities are aligned and support each other

IGCP is involved in a wide range of activities relevant to its goal of conserving mountain gorillas in their natural habitat:

- Community conservation
- Protection and law enforcement (including Ranger Based Monitoring)
- Capacity building
- Transboundary Natural Resource Management
- Tourism development
- Policy advocacy

Looked at from the perspective of community conservation, these different components of IGCP's work also appear to be aligned and mutually supporting. The following are example of this alignment:

- Law enforcement is valued by local people who, on the whole, expect ICCN, UWA and ORTPN to uphold park regulations for all. It is important to remember that the large majority of people living around forests, here and elsewhere, want to see rules upheld, especially in respect to outsiders undertaking illicit activities. IGCP's long-term support for law enforcement has not only helped to control illegal use of park resources, but also helped to establish the credibility of park authorities and the basis for cooperation. For example, when local people report illicit activities, they can increasingly expect the park authority to respond in an appropriate way.
- Ranger Based Monitoring has not only contributed to law enforcement and tourism development, but also to efficient identification of priorities for community conservation. For example, data collected on collection of water from inside the parks has been used to identify priority areas for provision of water facilities.
- Capacity building interventions have helped to train rangers and others to work in cooperation with community members. At a larger scale, capacity building has also helped to strengthen national level community conservation functions. For example, in Rwanda the 2003 restructuring of ORTPN involved building the capacity for community conservation through creation of a dedicated unit.

- Transboundary Natural Resource Management operates at a completely different scale to community conservation. However, even this component of IGCP's work has positive outcomes for community conservation, for example through the improvements in law enforcement activities, in the opportunities for communities to visit and learn from successful initiatives across borders, and in the potential to develop cross-border markets for products such as crafts and honey.
- Tourism development has been another central component of IGCP's work over the last fifteen years. Gorilla tourism is widely held to have had positive impacts on government commitment to conservation, and financing law enforcement activities. It has also provided opportunities for community conservation, through community based tourism accommodation and revenue sharing schemes.
- As has been described, IGCP works very closely with governments through their park authorities. This work has sometimes involved providing the impetus, advice and support for new policy initiatives such as TBNRM. Some policy areas, such as TBNRM and RBM have positive knock-on impacts for community conservation; others, such as revenue sharing have more direct impacts.

Lesson and Recommendation

For conservation organizations who are planning to, or are in the process of moving more into community conservation, there is a lesson to be learned from this experience. Alignment of conservation activities contributes to both the effectiveness and efficiency of interventions, enabling work with a wide range of partners to build synergies that contribute to achieving the core goal. It is recommended that other components of the organisation's work be audited to identify the potential positive linkages with community conservation, as well as potential negative or constraining linkages. A strategy can then be developed to build alignment into a set of activities and develop the positive feedbacks between them.

6.2 Lesson 2: Conservation will only be achieved through development when there is a strong conservation logic

Attempts to integrate conservation and development objectives through community development projects often achieve some success in their development objective but little or no success in their conservation objectives. Thus, the 'disappointment' with the impact of community conservation is often directed at what IGCP has called the 'conservation logic' of the intervention. This is the component of project design that should 'integrate' conservation and development. For example, a water resource project may have a conservation logic where it provides an attractive alternative to people who previously entered the forest to collect water. On the other hand, it may not have a conservation logic, for example in cases where the community never

relied on the park as a source of water, and where the community does not know why the water facility has been provided. In the latter case, the water facility might be very good for livelihood improvements, helping to reduce health problems from unclean water, and reducing time spent on water collection. However, it would probably not lead to any desired change in behaviour with respect to the park.

In an attempt to understand and learn from IGCP practice, it is useful to ask 'what was the conservation logic?' of particular interventions and 'was this logic robust?'. In order to do this we consider three different types of conservation logic.

i) Development outcome is dependent on the conservation outcome

Some forms of income generating activities seem very well suited to conservation because their success is in some way linked to successful conservation. As a rule of thumb, if the income from the activity would decline as a direct result of forest degradation, it falls into this category. In the Virunga-Bwindi region, beekeeping and ecotourism are examples of income generating activities that depend upon conservation. If the forest were degraded, it would undermine the resource upon which the enterprise depends. Clearly the level of dependence can vary considerably, which makes this quite a broad 'type' of conservation logic. Ecotourism, for example, relies on fairly strong protection of ecosystem functions and services, and may even rely upon biodiversity itself, or upon the achievement of the principal goal (in this case gorilla conservation). Beekeeping on the other hand is dependent on suitable flora, but is probably less vulnerable to changes in the natural flora, and may even tolerate considerable loss of native species.

This type of conservation logic may only be effective where sufficient income can be derived from the conservation-dependent activity. In principle, the benefits should be enough to tip the balance between choosing to behave in ways that degrade the park and ways that conserve it. For example, when a significant proportion of a household's income comes from tourist-related activities, they may cease activities such as poaching that could be detrimental to the future of tourism.

This is theoretically robust and can in principle be successful where the conservation-dependent activity is subsidized in such a way that it becomes more attractive than alternative sources of income that are less compatible with conservation. Academic studies tend to find that this type of conservation logic is most likely to result in integrated conservation and development (e.g. Salafsky and Wollenberg 2000).

Whilst the logic is good, conservation practitioners will be aware that there are relatively few income generating activities that fall into this category and few locations where such conservation-dependent activities can become viable enterprises. Fortunately, the Virunga-Bwindi region is quite well off in this respect, mainly due to a world class tourism product and flora that supports bee-keeping.

The harvest of some (but not all) non-timber forest products also falls into this category of activity. In principle, for example, sustainable harvesting of medicinal plants is strongly dependent on conservation: it is an activity that is dependent on intact forest and on biodiversity. So far the model employed in Uganda for collection of medicinal plants has not been replicated in Rwanda or DRC.

Before moving on it is worth highlighting the buffalo wall which illustrates this type of logic in its most simple and irrefutable form. The development benefits (reduced crop loss) are completely dependent on construction of the wall, which is good for conservation because it effectively demarcates the park.

ii) The development outcome is linked to conservation through an agreement

Even when projects are not physically dependent on biodiversity conservation, it is possible to introduce some contingency to the provision of support, such that a form of dependence is established. For example, mushroom culture is not at all physically dependent on forest conservation but, in principle, an agreement could be drawn up in which beneficiaries agree to certain conservation duties in return for the livelihood support being offered. Not all examples are as clear cut as this, as our water tank example will illustrate. In this case, we talked of a water collection and storage facility being provided in a location where people had not collected much water from the forest. Here, you could argue that the new facility is dependent on the forest due to the hydrological services provided by trees. For that reason, park sensitization processes often involve explaining to local people that there is a relationship between forest, local climate, and run-off regimes. This education effort may serve to establish 'dependence' on conservation. However, the link is not that strong (and the science is context-specific – in some situations trees *reduce* run-off due to enhanced evapotranspiration). So in this case, it is probably best to augment scientific arguments with a more contractual form of linkage such as a Memorandum of Understanding. This might be formal or informal; anything that clearly establishes *why* the benefit is being provided and perhaps *what* is expected in return for this provision. A similar analysis can be made of enterprises such as Abunganirana that are mainly dependent on ex situ conservation (i.e. cultivated medicinal plants) rather than in situ conservation. Although it can be argued that this enterprise relies on wild, in situ conservation for its gene bank and future stock, such logic may well benefit from a second, more contractual form of logic.

Drawing on the IGCP experience, it seems that these first two types of conservation logic can work well in combination. Many of IGCP's community enterprises are either very clearly and directly dependent on conservation of intact ecosystems (gorilla tourism), or partly dependent on conservation (beekeeping, medicinal plants, water collection). However, this form of logic is sometimes backed up by explicit forms of contingency: you will receive this development support *if and only if* you agree to this support for conservation. For example, support for beekeeping outside

the forest is contingent on beekeepers removing hives from inside the park and, more generally, supporting park management. Furthermore, membership rules for beekeeping associations exclude poachers from being beneficiaries, a rule which seems to be monitored by local communities. Ecolodges provide a similar example: ecotourism is clearly dependent in the long term on the conservation of mountain gorillas and their habitats. But this logic can again be backed up through clear understanding that support for lodge development is contingent on beneficiaries taking on certain responsibilities towards the park. In Nkuringo, such linkage is understood by those we met; in Sabyinyo we found people to be less aware of responsibilities, and this is something that IGCP might develop further.

iii) Higher income leads to reduced demand for forest resources

In the absence of either of the first two types of conservation, this is the most likely default position. This conservation logic assumes that rising income leads to reduced demand for natural resources. It is not often explicitly stated in project rationales, but it is nonetheless the most common form of conservation logic underpinning ICDP design. It is an appealing form of conservation logic, based on a very prevalent view that poor people are the ones who are most responsible for illicit activities in the parks. This view was endorsed by nearly everybody we met in the field.

In order to fully understand this logic it is necessary to dig a bit deeper and to identify some of its key assumptions:

- Firstly, it tends to assume that people have a finite need for certain resources, especially the kind of goods that come from forests. If projects can help people to meet this required resource level from activities outside of the park, then people will have no need to go into the park. So, for example, if people earn enough money to be able to buy meat in markets, they will satisfy that need from outside the park and not need to go poaching.
- Second, it assumes that people are busy and have to allocate and prioritise use of their own time. When out-of-park activities are subsidized, they will therefore switch their time allocation away from in-park activities. An example will help illustrate this. Suppose that you allocated 3 hours a day to collecting fuelwood from the forest. A project then comes along that provides employment opportunities at \$2 a day wage. You accept this new income generating activity despite the fact that you will no longer have time to collect fuelwood – you have to re-allocate your labour. The reason you do this is that you will be earning enough to purchase fuel at a market.
- Third, for the above two assumptions to hold, it must also be assumed that substitution between resources is possible. In other words, you need to be able to get what you need through a market. If you don't poach, you buy meat at a market; if you don't collect bamboo from the forest, you buy

alternative bean poles at a market; and so on. Markets enable people to specialize in out-of-park activities such as agriculture and use the derived income to purchase substitutes for forest-based resources.

One quite well known example of this kind of logic is the 'fuel ladder hypothesis'. This hypothesis states that as people become wealthier they tend to switch away from self-collected or lower order types of fuel such as wood, crop residues and dung. Instead, they use their extra income to purchase substitutes. The ladder might eventually take people from wood and crop residues through charcoal, to gas or electricity. The switch is based on the perceived inferior nature of lower order fuels, the fact that it starts to make poor economic sense to allocate your time to collecting such fuel, and the availability of alternatives in local markets.

This conservation logic is extremely important and very commonly asserted, but it is not very reliable. The main reasons to be cautious with this conservation logic are:

- In the Virunga-Bwindi region, the relationship between poverty and forest use is not that well known. It is widely believed that the poorest are the biggest illicit users but this needs confirmation.
- Studies from elsewhere in Africa suggest that the link between income and demand for natural resources are not straightforward. In fact, for the poor, demand for forest products such as fuel and meat often grows with wealth - as your income increases you consume more of them, not less (see e.g. Cavendish 2000).
- The lack of efficient labour markets often limits the ability of people to re-allocate their labour from forest to non-forest enterprises, whilst the lack of markets for substitute resources can make it hard to move up the fuel, or any other, ladder.

It is noticeable that IGCP projects tend not to fall into this conservation logic, which is almost certainly a good thing and a good lesson to take away. There is a danger that some activities could veer towards this logic in the future if there is not sustained effort to insist on a contractual type linkage: mushroom growing and even craft enterprises need careful handling in this respect.

Whilst IGCP tends not to rely on this form of conservation logic for its enterprise strategy, it does largely underpin revenue sharing. The problem we have seen with this logic is that local people do not make the association between the revenue sharing projects and conservation. They do not see a new school or health centre as compensation for losses from crop-raiding and there is therefore reason to doubt the robustness of the conservation logic.

Lesson and Recommendation

IGCP's most significant and successful community conservation ventures have a strong connection between conservation and development objectives. This linkage is strongest where it involves two forms of linkage. Firstly, development outcomes are dependent in the long term on successful conservation and second, there is some contractual understanding that development benefits are provided with the expectation of certain conservation duties. IGCP and other conservation practitioners will benefit from regularly reflecting on the conservation logic underpinning their development projects, asking whether this is robust, and thinking creatively about ways to enhance this.

6.3 Lesson 3: Strong information systems facilitate good planning

IGCPs ability to establish a strong conservation logic is greatly enhanced by its emphasis on building a strong information base and in particular the establishment of RBM across all four parks. RBM was developed in PNVi in 1997, and introduced to PNV and MGNP in 1998 and BINP in 1999. It is primarily a monitoring programme that directs law enforcement activities by guiding park wardens in where to send patrols. However, the systematically collected data on human exploitation of park resources, as well as locations of selected species including gorillas, can also serve to target community conservation interventions. RBM has been used to identify and clarify the causes of park-people conflicts, enabling effective and efficient responses. For example, Figure 5 uses geo-referenced ranger monitoring data to describe the nature of the human-gorilla conflict in western BINP. Such detailed ranger monitoring information can clarify the nature and extent of a problem and provide the necessary basis for designing solutions. Ranger-based monitoring can also identify and provide information about cases in which the livelihood needs of local people is linked to illicit forms of park use. Examples we have seen of this include the collection of water and bean sticks. Whilst such information has historically been met by intensification of law enforcement, it has more recently been met by targeted activities to meet community needs in alternative ways. Principle examples are the decision to help with provision of water in places where run-off from the hills occurs too deep for dry season access; and support for beekeeping following observation of beehives in the park.

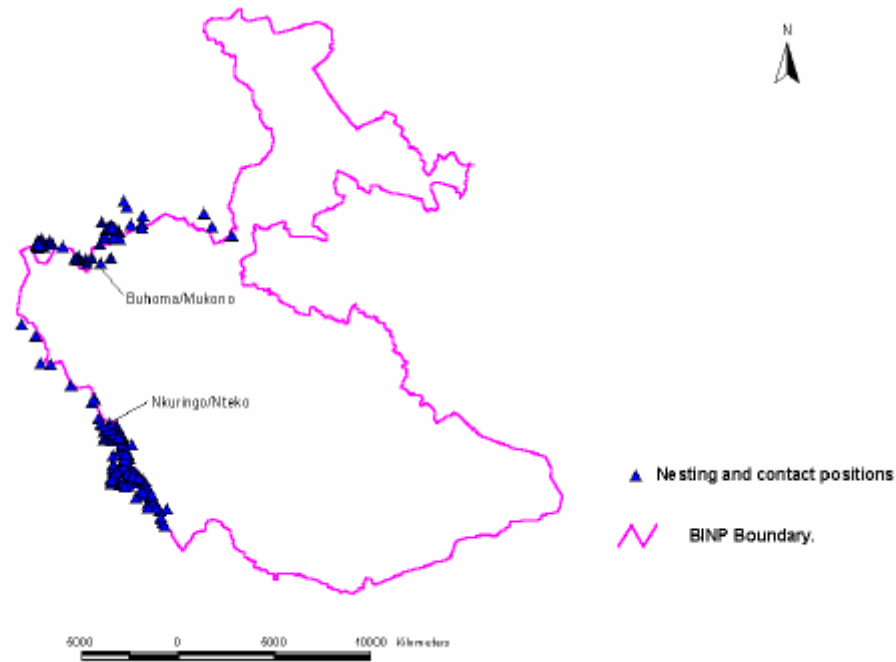


Figure 5. The ranging area for habituated gorillas, 1998-2000. Source: NCDF 2007, p.1

Whilst it is important to highlight this as good practice and as a key lesson learned, it is also fair to say that the capacity to use RBM data for directing community conservation is not yet fully realized, nor should it be the only method for targeting activities. RBM is mainly viewed as a tool for directing law enforcement patrols and only within IGCP is its secondary importance recognized. Partly as a result, this secondary purpose is not that well exploited. IGCP is currently planning to develop and pilot the integration of some socio-economic data collection into RBM, presumably by identifying some easy-to-monitor livelihood indicators. If developed, this might further extend the usefulness of RBM as a tool for park-people planning. Elsewhere, conservation organizations have experimented with community involvement in monitoring and there might be scope for this. One possible entry point is local schools, with the possibility of introducing simple survey work into science curriculums.

Lesson and Recommendation

RBM data has been used to establish the link between threats to the park and the livelihoods of people living around the park, and thus to provide an essential knowledge base for well conceived community conservation projects. Such linkage between monitoring data and community conservation design is excellent practice. IGCP is really quite unique in this ability to confidently establish conservation-livelihood linkages and to thereby design projects which are win-win in nature. It is the failure to identify genuinely win-win interventions that has contributed to the disappointing results for community conservation elsewhere. We certainly recommend that IGCP continues to explore the potential to integrate some easy-to-collect socio-economic data into RBM and to consider how this might further strengthen the design and monitoring of community conservation enterprises. For conservation practitioners without such extensive involvement in monitoring it might be possible to explore collaboration that could enrich the information base upon which community interventions are designed.

6.4 Lesson 4: The need for cross-scale and cross-sectoral partnerships

One of the lessons learned from the first generation of community conservation projects in Africa is that conservation could not often be carried out by communities alone – there needed to be collaborations with governments and other partners. As we have previously discussed, one of the most theoretically robust approaches to integrating conservation and development is to develop opportunities for local people to earn income from enterprises that are dependent on conservation and/or which are linked to conservation through some contractual mechanism. Such enterprises typically require a range of skills, assets and authority that will not be found in any individual partner. In the past, IGCP projects have worked by building partnerships with the community, park authorities and other NGOs (such as CARE) whose development expertise complements IGCP’s conservation expertise. More recently, there has been a strategy to work more closely with the private sector. Private sector partners have become involved in tourism and handicrafts enterprises, and there is potential for partners in other enterprises such as honey and mushroom production. The example of ecolodges (Box 2) showed that such innovative conservation partnerships can yield rapid results and can produce a better exit strategy for IGCP. Having demonstrated the potential for such multi-sectoral partnerships, the next stage will be to leverage more private sector capital investment, thus reducing reliance on donor funding. There will also be a need to reflect on the particular challenges of working with both private sector and community partners. For example, differences in attitude towards the speed of progress, or towards the priority outcomes, can sometimes result in conflict.

Cross-scale and transboundary partnerships may seem peripheral to learning lessons about community conservation, but in fact such integration of conservation effort is essential. It is worth reflecting further on some of the causes of failure of community conservation efforts elsewhere in Africa and the rest of the world:

Scale related reasons for community conservation failure	Benefits of cross-sectoral and cross-scale partnerships
Mis-match between desired work with local communities and national legal or policy provisions.	In the Virunga-Bwindi region, revenue sharing is a key example of the need to work at national level in order to facilitate community level intervention. IGCP advocacy and support for revenue sharing has (work at national scale with government as key partners) has facilitated the objective to support local livelihoods (work at local scale with community as key partner).

<p>This involves a misfit between the scale at which a problem is identified and the scale of management. Community conservation has often suffered from the fact that local management cannot deal with large-scale problems or problems that require wide networks. This kind of conservation problem can often be compounded by problems of information – where information is collected at the wrong scale and therefore cannot establish the true nature of a problem.</p>	<p>For example, in the Virunga forest block, an increase in problems with elephants and buffalo were reported in DRC, Rwanda and Uganda. These problems may initially have appeared as discrete events that required local community-level solutions. However, transboundary communication between rangers established likely association between these events and helped to identify the cause. For security reasons, the Mwaro corridor between Mikeno and Nyamulagira sectors in PNVi had been deforested. This had cut off normal migration routes, leading to unprecedented crop-raiding by elephants (Gray and Kalpers 2005). Cross-scale partnership had enabled knowledge to be collated at a scale that matched the scale of the problem, and also identified that this was not a problem that could be dealt with at community level.</p>
<p>Mis-match between location of costs and benefits of conservation. Costs such as crop-raiding tend to be felt locally whilst the benefits from conservation (biodiversity, carbon storage, hydrological services) are enjoyed at a range of scales up to the global. Thus work with communities can benefit from institutional mechanisms that create ‘bridges’ across scales. Bridging institutions can help with the sharing of information and other resources.</p>	<p>For example, one outcome of transboundary collaboration is that IGCP brokered an agreement for sharing tourism income between countries to reflect the roving nature of the resource. This arose particularly because one of DRC’s habituated gorilla groups migrated into Rwanda, where tourism revenue could accrue. The arrangement to share the income from this gorilla group will help in the current move to establish revenue sharing in DRC despite the collapse of tourism. More generally, arrangements at this scale can provide some resilience to the unpredictability of nature, making revenue sharing more stable in all countries.</p>
<p>Law enforcement failures. One of the interesting features of community conservation initiatives is that they often increase community demands for law enforcement. Local communities can find</p>	<p>In the Virunga-Bwindi region law enforcement has to operate beyond community level and has even benefited from transboundary collaboration. IGCP has helped to link communities and park authorities through ANICO and HUGO initiatives and more general attempts to</p>

<p>themselves with responsibilities to help reduce illegal activities by providing information and can develop high expectations of the rule of law to prevent free-riding – one of the most common causes for the failure of collective action.</p>	<p>facilitate information sharing for law enforcement. Communities regularly contact UWA and ORTPN with information. Transboundary collaboration has also helped with law enforcement – especially where offenders could previously escape across borders.</p>
--	--

The fact that IGCP operates across the three countries and four parks also brings some direct benefits to enterprises, both through opportunities for learning and for marketing. Tourism, craft and bee-keeping enterprises have all benefited from transboundary links in some way.

Lesson and recommendation
 Community conservation benefits from linkages to other scales of activity. Particular policies (TBNRM, Revenue sharing) and institutions (ANICO, HUGO) can help to form bridges between different scales, to share resources such as information. Community conservation has also benefited from moving beyond community actors to involve private sector partners. IGCP’s new financial and managerial model for community enterprises is innovative and shows promise at this stage. We would recommend continuation of this approach, ideally with a shift away from dependence on foreign aid.

6.5 Lesson 5: real partnerships require new ways of working

Community conservation in the region has grown to involve a wider range of activities, beginning with sensitization and branching out into revenue sharing and community-based business enterprises. Most recently, IGCP has begun working with a form of co-management involving community partners, notably in the outer buffer zone at Nkuringo, for which the Foundation has joint tenure. This progression of approaches has required changes in the relationship between IGCP, its partners, and the community.

Figure 6 provides a generalized view of different ways in which conservation practitioners have engaged communities as partners, and looks at how these changing forms of engagement have involved changes in how partnerships are structured. The overall picture is of evolution towards more equal partnerships.

The first type of engagement is purely focused on law enforcement and not a genuine partnership. This is typical of ‘fortress conservation’ and represents a stage of relationships with communities that pre-dates the transition towards community conservation. There is little or no sharing of resources with communities, conservation management is determined by expert, scientific knowledge (with little

emphasis on local knowledge), and decision-making is top-down in nature. All-in-all this can be considered a coercive relationship in which communities are required to adhere to imposed rules, under threat of fines or other sanctions.

As different types of community conservation begin to be introduced, including sensitization, revenue sharing and enterprise development, relationships with communities begin to develop into partnerships. Firstly, there is sharing of resources. The sharing of funds is an important but one-way process whereas the sharing of knowledge can involve mutual learning, including consultation processes that seek to collect local knowledge and opinions. Decision making tends to remain largely top-down in orientation but involves increasingly more participation through consultation. Partnerships are not equal, but communities are increasingly in a position where they can negotiate the details of projects and take on certain management functions. For example, revenue sharing programmes allow communities to discuss social development priorities and to propose projects that they have prioritized through some process of local participation.

In the last few years, IGCP has introduced new forms of partnership with communities which involve transfer of tenure to communities. The principle examples are the tourism lodges at Sabyinyo and Nkuringo, and the buffer zone management plan undertaken in partnership with the Nkuringo Conservation and Development Foundation. These latest initiatives might be viewed as a move towards genuine co-management arrangements in which community associations are further empowered. In the case of the lodges, genuine decision-making powers have been devolved and enshrined within legal provisions. As a result community associations should be able to play a fuller role in agenda setting and neither local nor expert knowledge are prioritized: knowledge is co-produced in the sense that problems and solutions are identified through multi-stakeholder discussions.

It is perhaps too early to identify the outcomes of IGCP's more recent ventures into ways of working that devolve tenure and control to local communities. However, it appears that the further partnerships with communities evolve, and the more equal the partnership, the more that interests are aligned. Interests become aligned when all stakeholders want much the same outcomes – or to put it another way, incentive structures are the same. For example, all partners at Nkuringo have an interest in resolving the problem with gorilla crop-raiding. When interests are aligned, there is a strong basis for collective action. However, IGCP staff also have some concerns: such loosening of control over the agenda is well and good if it tightens protection of the park and enables IGCP to achieve its primary goal of mountain gorilla conservation, but given the high stakes, and the track record of community conservation elsewhere, cautious progress is the byword.

Lesson and recommendation

As IGCP engages in closer partnerships with communities, development NGOs, and private businesses, there are benefits to be gained by moving towards more equal partnerships in which agendas are shared, incentive structures aligned and decision-making collectivized.

In the Virunga-Bwindi region, there is little opportunity for co-management of resources within park boundaries. IGCP has created opportunities outside of the park boundaries, enabling experimentation with transfers of tenure and associated transfers of power. These are exciting developments and we recommend further creativity in linking enterprise with community empowerment.

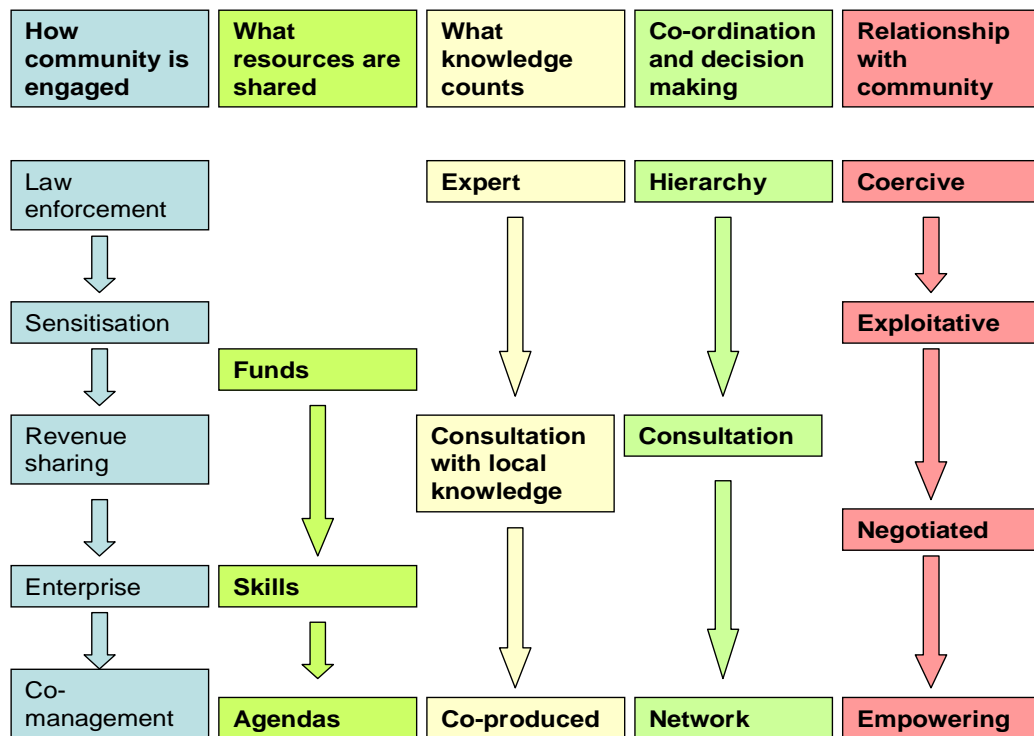


Figure 6 Changes relationships with communities

6.6 Lesson 6: Interventions need to be durable and flexible

IGCP has learnt that community conservation in the region requires long-term commitment. Local communities typically have low levels of organization and lack important skills in business and management. The challenge has proved a difficult one, often with slow progress, requiring time-scales that don't fit neatly with donor project cycles. It is therefore important that IGCP has achieved consistency in support, something which has been strongly emphasized to us, both by community groups, park authorities and other partners. This is partly achieved through its own model of core funding for long-term commitment. However, it is also facilitated by support for the institutionalization of community conservation in the region within organizational structures of park authorities and through revenue sharing policies. An example of this that has previously been discussed is the support for the restructuring of ORTPN in 2003.

Community and other partners value flexibility and responsiveness as much as they value consistency. We have previously noted the importance of a strong information system in order to identify and analyse problems as they arise. Socio-ecological systems are unpredictable and it is sometimes necessary to respond to unanticipated problems. For example, at Nkuringo, one of the 'solutions' for improving park-people relations was to habituate a gorilla group for generating tourism benefits. The solution, according to many at least, turned out to be a cause of another problem: the gorillas leaving the park to feed on agricultural lands. Whether this version of events is strictly correct, is not essential here. The point is that, even with the best available information, combined with expert analysis, surprising and sometimes undesirable outcomes will happen. In this particular example, IGCP was able to respond relatively quickly due to the monitoring systems in place, the availability of resources, and the strong partnership with UWA. This ability to respond to demand, sometimes arising from new information being fed into management decision-making, is well valued by park authorities who often struggle with bureaucracies that make it hard to spend money on anything not in a management plan.

Lessons and Recommendation

The low level of skills and organization in local communities means that long duration support will be necessary in many cases. Whilst IGCP's innovative models of working with highly capable private sector partners appears to offer earlier opportunities for taking a less active role, we would not recommend that this were to entirely replace the longer-term and more resource-intensive methods of building community capacity that IGCP has been gaining experience with elsewhere.

IGCP has found balance between being driven by its own agendas and methods whilst also operating a more demand-driven, responsive mode. In other words, IGCP has its own goal and priority, and it pursues this through specific strategies and ways of working. However, partners also greatly value the fact that there is also flexibility to respond to emerging problems in timely ways, sometimes breaking with old ways of doing things.

References

- Adams, W. and Infield, M. (2003) Who is on the Gorilla's Payroll? Claims on tourist revenue from a Ugandan national park, *World Development* 34, pp 177-190
- Adams, W., Aveling, R., Brockington, D., Dickson, B., Elliott, J., Hutton, J., Roe, D., Vira, B. and Wolmer (2004) Biodiversity conservation and the eradication of poverty, *Science*, 306: 1146-49
- Balmford, A. & Cowling, R. (2006) Fusion or Failure? The future of conservation biology, *Conservation Biology* 20: 692-695
- Barrow, E. and Murphree, M. (2001). *Community Conservation: From concept to practice*. In *African Wildlife and Livelihoods: The Promise and Performance of Community Conservation*, eds. D. Hulme and M. Murphree. James Currey Ltd, Oxford
- Berkes, F. 2002. Cross-scale institutional linkages: Perspectives from the bottom up. In: *The Drama of the Commons* (E. Ostrom, T. Dietz, N. Dolsak, P.C. Stern, S. Stonich and E.U. Weber, eds.) National Academy Press, Washington, DC, pp. 293-321
- Berkes, F. 2004. Rethinking community-based conservation. *Conservation Biology*, 18: 621-630
- Bermejo, M., Rodríguez-Teijeiro, J., Barroso, A., Vilà, C and Walsh, P. (2006) Ebola Outbreak Killed 5000 Gorillas, *Science* 314, p. 1564
- Blomley, T. (2003) Natural resource conflict management: the case of Bwindi Impenetrable and Mgahinga Gorilla National Parks, southwestern Uganda, in A. Castro and E. Nielsen (Eds.) *Natural Resource Conflict Management Case Studies; an Analysis of Power, Participation and Protected Areas*, FAO, Rome, pp. 231-250
- Musali, P. (2008) *Rethinking Participatory Natural Resource Management in the Kigezi Highlands: a vulnerability and process management approach*, PhD Thesis, School of Development Studies, University of East Anglia
- Brandon, K. and Wells, M. (1992) Planning for People and Parks: design dilemmas, *World Development*, 20: 557-570
- Bruner, A., Gullison, R., Rice, R. & da Fonseca, G. (2001) Effectiveness of parks in protecting tropical biodiversity, *Science*, 291, pp. 125-126
- Gray, M. and Kalpers, J. (2005) ranger based monitoring in the Virunga-Bwindi region of East-Central Africa: a simple data collection tool for park management, *Biodiversity and Conservation*, 14, pp. 2723-2741

- Hamilton, A., Cunningham, A., Byarugaba, D. and Kayanja, F. (2000) Conservation in a Region of Political Instability: Bwindi Impenetrable National Park, *Conservation Biology*, 14: 1722-1725
- Hutton, J., Adams, W. and Murombedzi, J. (2005) Back to the Barriers? Changing narratives in biodiversity conservation, *Forum for Development Studies*, No.2, 2005, 341-70 (see also Sian Sullivan's response in 2006, No.1: The elephant in the room?)
- IGCP (2007) Programme Profile, October 2007, IGCP Nairobi
- IGCP 2008. IGCP Strategy Document Virunga. Five Year Strategy (2006-2010). Updated Jan. 2008
- Infield, M. and Adams, W. (1999) Institutional Sustainability and Community Conservation: a case study from Uganda, *Journal of International Development*, pp. 305-315
- Kalpers, J., Williamson, E., Robbins, M., McNeilage, A., Nzamurambaho, A., Lola, N. and Mugiri, G. 2003. Gorillas in the crossfire: population dynamics of the Virunga mountain gorillas over the past three decades. *Oryx* 37 (3): 326-337
- Lanjouw A., A. Kayitare, H. Rainer, E. Rutagarama, M. Sivha, S. Asuma, and J. Kalpers. 2004. Transboundary Natural Resource Management: a case study by IGCP in the Virunga-Bwindi region
- MacFie, L. (1999) Human – Gorilla Conflict Resolution: recommendation for component within IGCP Uganda programming, IGCP
- Musaasizi, J. (2006) Evaluation of the Human Gorilla Conflict resolution Programme, Bwindi Impenetrable National Park, report prepared by African Wildlife Foundation
- NCDF (2007) Nkuringo Buffer Zone Management Plan 2007-2012, NCDF/UWA/IGCP
- MINECOFIN, 2002. A Profile of Poverty in Rwanda, February 2002, Ministry of Finance and Economic Planning, Rwanda
- Myers, N. (1996) Environmental services of biodiversity, *Proceedings of the national Academy of Sciences of the USA*, 93: 2764-2769
- Namara, A. (2006) From Paternalism to Real Partnership with Local Communities? Experiences from Bwindi Impenetrable National Park (Uganda), *Africa Development* 31, pp. 39-68
- Plumptre, A., Kujirakwinja, D., Treves, A., Owiunji, I and Rainer, H. (2007) Transboundary Conservation in the Greater Virunga Landscape: its importance for landscape species, *Biological Conservation*, 134, 279-287

- Plumtre, A., Behangana, M., Ndomba, E., Davenport, T., Kahindo, C., Kityo, R., Ssegawa, P., Eilu, G., Nkuutu, D and Owiunji, I., 2003. The Biodiversity of the Albertine Rift, Albertine Rift Technical Reports No. 3, Wildlife Conservation Society
- Salafsky N and Wollenberg E 2000 Linking livelihoods and conservation: a conceptual framework and scale for assessing the integration of human needs and biodiversity *World Development* 28 1421-38
- Salafsky, N., Margoluis, R., Redford, K. and Robinsons, J. (2002) Improving the practice of conservation: a conceptual framework and research agenda for conservation science, *Conservation Biology* 16, pp. 1469-1479
- Scherr S, White A and Kaimowitz D 2004 A new agenda for forest conservation and poverty reduction: making markets work for low-income producers, *Forest Trends*, Washington, DC
- Struhsaker, T. Struhsaker, P. and Siex, K. (2005) Conserving Africa's rain forests: problems in protected areas and possible solutions, *Biological Conservation*, 123: 45-54
- Webber, B. and Vedder, A. (2003) *In the Kingdom of Gorillas*, Simon and Schuster, New York.
- Wilshusen, P., Brechin, S., Fortwangler, C. and West, P. (2002) Beyond the Square Wheel: critique of a resurgent "Protection Paradigm" in international biodiversity conservation, *Society and Natural Resources*, 15, 17-40
- Plumtre, A., Kayitare, A., Rainer, H., Gray, M., Munanura, I., Barakabuye, N., Asuma, S., Sivha, M. and A. Namara (2004) The socio-economic status of people living near protected areas in the Central Albertine Rift, *Wildlife Conservation Society, Albertine Rift Technical Reports* 4