Development AND gorillas?

Assessing fifteen years of integrated conservation and development in south-western Uganda

Tom Blomley, Agrippinah Namara, Alastair McNeilage, Phil Franks, Helga Rainer, Andrew Donaldson, Rob Malpas, William Olupot, Julia Baker, Chris Sandbrook, Robert Bitariho, Mark Infield

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Acronyms

BINP	Bwindi Impenetrable National Park
BMCA	Bwindi Mgahinga Conservation Area
BMCT	Bwindi and Mgahinga Conservation Trust
CAR	Central African Republic
CCA	Community Conserved Area
CPI	Community Protected Area Institution
DRC	Democratic Republic of Congo
DTC	Development Through Conservation Project
DSP	Dzanga-Sangha Project
GEF	Global Environment Facility
ICD	Integrated Conservation and Development
ICDP	Integrated Conservation and Development Project
IGCP	International Gorilla Conservation Programme
ITFC	Institute for Tropical Forest Conservation
MBIFCT	Mgahinga and Bwindi Impenetrable Forest Conservation Trust
MGNP	Mgahinga Gorilla National Park
NGO	Non-governmental organisation
NTFP	Non timber forest product
PA	Protected Area
PRA	Participatory Rural Appraisal
SW	South-western
USAID	US Agency for International Development
UWA	Uganda Wildlife Authority
WCS	Wildlife Conservation Society
WWF	Worldwide Fund for Nature

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All omissions and inaccuracies in this report are the responsibility of the authors, and the opinions expressed are those of the authors and not necessarily those of the institutions involved

Executive summary

Bwindi Impenetrable National Park and Mgahinga Gorilla National Park are two afromontane forests considered as extremely important biodiversity areas, with global significance, due to their population of highly endangered Mountain Gorilla. Threats to the two parks include uncontrolled exploitation of forest resources as well as fire damage and the indirect pressures of demand for land. Legal establishment through an Act of Parliament (gazettement) of the parks in 1991 caused high levels of conflict and resistance from the surrounding communities, seriously threatening the ability of the protected area authority to manage the parks. In response to these conflicts and threats, a range of 'integrated conservation and development' (ICD) strategies have been applied in and around Bwindi and Mgahinga.

This report summarises the findings of a study, conducted between 2001 and 2002, which aimed to test the effectiveness of these strategies in reconciling biodiversity conservation and socio-economic development interests, in particular through interventions that both improved livelihoods and resulted in increased support for biodiversity conservation, in terms of the attitudes and behaviours of local communities. Due to the transfer of a number of the key persons involved in this study to other positions, organisations and countries, the findings of the study were never published internationally. However, following support from the International Institute for Environment and Development (IIED), momentum was re-established, the findings were updated in 2009 and written up in this report. Despite the fact that much of the data is now a little dated, the findings and conclusions remain just as, if not more, important than they were in 2002.

Six ICD strategies were selected as priority research areas. Multiple use, tourism, revenue sharing and a local conservation trust fund aimed to provide communities with sustainable benefits derived from the parks; while sustainable agriculture programmes and on-farm substitution aimed to reduce demand for park resources. For each of these strategies, conceptual models were developed in collaboration with the various project implementers who had designed the initiatives, in order to elucidate and define the mechanisms by which each was expected to have a combined development and conservation impact. Key research questions were developed according to the critical linkages and assumptions identified in these conceptual models. The linkages included the impact of each strategy in improving community attitudes to conservation and cooperation with park authorities, and reducing illegal resource exploitation (both in terms of a behavioural change resulting from improved attitudes, and a direct reduction in need for forest resources). Data were collected from a range of sources, including previous socio-economic and ecological research, questionnaire interviews of almost 600 households, focal group discussions targeted at key groups of people from local communities and from organisations implementing ICD, and surveys of human impact in the parks.

Results from the study show that community attitudes to the parks have improved greatly in the period between gazettement and when the study was undertaken, and ICD strategies appear to have played an important role in this. The poorest people generally have less positive attitudes, but when they receive park-related benefits, it leads to a higher level of attitude change than for richer people. Crop raiding by wildlife has a negative impact on attitudes, and while this damage seems to affect different wealth categories equally, the negative impact on attitudes of the poor is much greater. Community cooperation with park authorities has also improved, particularly willingness to assist in fighting fires and to a lesser extent reporting of illegal activities, and ICD strategies have again played an important role in this improvement.

While both community members and park staff state that illegal resource extraction has decreased, there is little evidence to support this from data on illegal activities within the parks in recent years, nor is there evidence that areas which have received particularly intensive investment in ICD (such as multiple use zones) experience lower levels of illegal activities. Law enforcement is by far the most frequently cited reason as to why illegal activities are reduced, although ICD strategies are sometimes also cited as a secondary reason. It is the poorest people who are thought to be most involved in illegal activities, generally for subsistence purposes.

The exact nature of the impact on attitudes and cooperation with park authorities (in how they reach different wealth categories, the scale and magnitude of the effect, and how they affect different aspects of attitudes and cooperation) depends on the individual strategy. For example multiple use has been particularly effective in increasing cooperation in fire control, while agricultural interventions and the conservation trust fund have had the most significant impact on attitudes overall. A more detailed analysis of the strengths and weaknesses of each strategy is under way.

The study reviewed some of the common assumptions associated with ICD interventions, specifically those that seek to link local people to park resources and those that seek to break this link. Linked or 'coupling' interventions include multiple use (dependent on specific resources within the park), tourism, revenue sharing and the Bwindi and Mgahinga Conservation Trust (dependent on revenue generated from the park). De-linked, or de-coupled, interventions include agricultural development (designed to provide 'alternative' income sources and the substitution programme (designed to provide alternative sources of resources harvested from the parks, such as firewood, poles and stakes).

A key assumption behind coupling interventions was that linking local people to a resource and helping generate a steady stream of benefits increases willingness to manage and protect that resource over the long term. This study has confirmed the validity of this assumption, particularly with regard to the multiple use and tourism programmes. While this increased 'stake' in the management and

protection of the resource appears to be clearly demonstrated with regard to the reduced incidence of fires and the growing willingness to engage in fire control, it is less marked with regard to law enforcement. One example of this tendency is with multiple use, where beneficiaries (and in particular the beekeepers) have shown a very strong willingness to support fire control, but have been much more reluctant to engage in reporting illegal activities. This appears to be for a range of reasons, such as concerns over the integrity of some law enforcement rangers, as well as the significant implications that reporting illegal activities might have on the accused if found guilty and the social consequences of reporting community members to the reporter.

With regard to de-coupling interventions the picture appears to be less conclusive. There is very little evidence that agriculture provided 'alternative' income streams and therefore reduced park dependence. One reason for this is that the programme was relatively ineffective in reaching those with highest levels of dependence (the poor) despite deliberate efforts to do so. Furthermore, the relative success of the agriculture programme as an ICD strategy was less due to the substitution of one income stream with another, but more to do with a general positive attitude created by the programme, and an understanding that the programme was linked to the park through the CARE project. The relative success of the agriculture programme indicates that it is possible to develop strong conservation-development linkages around activities that have little or no relation to the resource itself, but which generate important benefits by responding to primary development needs.

The report concludes with some observations regarding some of the possible underlying factors that may account for the relative success of the ICD interventions in reconciling conservation and development interests. These are summarised below:

- **Institutional presence:** The external agencies supporting conservation and development initiatives in this region have been able to maintain a long institutional presence and have been able to secure long-term funding, well beyond the typical project life-span of four to five years. As a result, they have been able to develop relationships with each other, as well as build collaborative linkages with government agencies such as the Uganda Wildlife Authority and local governments.

- **Institutionalisation of project approaches:** in the early 1990s, all of the six ICD approaches were heavily supported by international non-governmental organisations – both in terms of financing as well as implementation responsibilities. Over the course of the past 15 years, however, there appears to be a decreasing dependence on external funding and support for the majority of the programmes. This has been mirrored by the incorporation of many of the strategies (such as multiple use) within the core programmes of government. Two of the six ICD strategies described in this study (agricultural

development and substitution) have not been taken up and implemented by governmental partners after the closure of the CARE Development Through Conservation project, and as a result, questions remain regarding the sustainability of conservation impacts generated through these programmes.

- **The nature of conservation threats:** Reviews of ICD programmes in other countries have indicated that failure is often attributed to an inability to correctly identify and respond to conservation threats. Since the establishment of the park and introduction of law enforcement, illegal use of the park appears to have shifted from commercial to subsistence use, fuelled by local demands. Similarly, other primary conservation threats identified in this review appear to originate locally. As a result, it would appear that ICD interventions implemented over the past 15 years are largely correctly focused, although this study has indicated the importance of securing greater levels of impact on poorer households if both conservation and development outcomes are to be maximised.

- **The importance of making explicit linkages between conservation and development.** The study has shown that a degree of success has been achieved with many of the ICD interventions in large part due to the fact that beneficiaries appear to have made the conceptual link between conservation and development. With de-coupled interventions, such as the agriculture programme, there have been efforts to ensure that beneficiaries associate the receipt of benefits with the presence of the parks. Similarly, when social infrastructure investments (such as schools) have been supported through the Trust and revenue sharing programmes, efforts have been made to create a conceptual link between the benefits and continued conservation.

Despite the convergence of high levels of biodiversity within two national parks, interfacing through a "hard edge" with poor rural households living in some of the most densely populated parts of Africa, the evidence from this study suggests that for a range of key conservation indicators, the ecological integrity and biodiversity values of the two parks are stable. There is strong evidence that conflicts between local people and the two parks have been reduced through the introduction of ICD interventions over the past two decades. Greater efforts will be needed, however, to ensure that the development benefits of many of these strategies reach the poorest and most vulnerable households living in the vicinity of these two parks if this momentum is to be maintained and the benefits sustained in the long term.

Introduction and background

1.1 Integrated Conservation and Development

Integrated Conservation and Development (ICD) is a strategy that aims to link conservation outcomes with development impacts. It arose in the 1980s and 1990s in response to the widespread failures of 'fortress conservation' and the growing trends within development policy towards local participation and stakeholder involvement. Despite general agreement on the concept of ICD at the overall programmatic level, there appears to be a wide disparity in definitions and approaches at the practical level. Consequently programmes employing an 'ICD approach' are diverse. Some differing interpretations of ICD are presented below to illustrate the rather loose theoretical framework that underpins this approach:

- 'Environmentally sensitive development' (Gartlan, 2001)
- 'Attempting to ensure the conservation of biological diversity by reconciling the management of protected areas with the social and economic needs of local people' (Brown and Wyckoff-Baird, 1992)
- '[ICD] is not conservation through development, or conservation with development, or even conservation adjoined with development... it is the achievement of conservation goals and development needs together' (Sanjayan *et al.*, 1997)
- 'A loose cluster of strategies and tools brought together to achieve both conservation and development goals' (Salafsky and Margoluis, 2001)
- 'ICD[P] aims to provide services and employment to park adjacent communities under the premise that when these communities become richer they are more likely to accept conservation policies and reduce their pressure on the environment' (Wells *et al.*, 1992)

These diverging definitions illustrate the long-running theoretical debate over the supposed conservation-development, means-end hierarchy, and in particular whether development is a prerequisite for conservation or whether conservation, as the primary goal should be linked to local development needs. The value of such arguments is perhaps limited and risks the development of circular arguments; and it also fails to answer the more fundamental question of 'conservation for whom?' (Adams *et al.*, 2004).

An alternative approach that neatly sidesteps the conceptual challenges of these means-ends discussions, while placing people in stronger focus, describes ICD as the reconciliation of the interests of different stakeholders in high biodiversity areas – be they stakeholders and interests at different levels – global, national or local – or differences within a given community (richer and poorer, marginalised and mainstream) (Franks and Blomley, 2004). Embedded within the process of reconciling interests, there is a process of establishing and agreeing trade-

offs between conservation and development outcomes. Due to the inherent imbalances of power between different stakeholder groups, however, it is important that trade-offs are negotiated in an equitable manner if a lasting solution is to be found (*ibid*). While this may be a noble aim, in practice, others have argued that it may not be possible to reconcile the very competing interests of conservation and development and that where trade-offs are established they may frequently be at the expense of the poor (Adams and Hulme, 2001).

More recent work on ICD has emphasised the significant costs that conservation places on local communities and the need for effective mitigation measures to address these problems, rather than simply focusing on conservation 'threats' (which often end up casting local people as the primary agents of natural resource degradation) (Franks, 2008).

Clearly, ICD is a concept that means different things to different people and has evolved over time, in response to criticisms and external reviews. A useful overview of how approaches have changed and evolved over time is presented below in Figure 1:

Figure 1. The evolution of ICD approaches

Substitution and/or compensation (1985–c 1995)
Buffer zone communities offered livelihood alternatives to reduce pressure on natural resources and investment in infrastructure to generate support for conservation.

Benefit sharing (c 1995–c 2000)
Benefit sharing mechanisms (e.g. for tourism revenues, NTFPs), interventions to add value to natural resources and mechanisms for community participation in decision making to give communities a 'stake' in conservation, plus substitution and/or compensation

Power sharing (c 2000–onwards)
Local communities empowered to have greater control/authority, and thereby promote equitable sharing of costs and benefits with external stakeholders and within communities, plus some of the above to enhance benefits/reduce costs (where necessary).

Source: Franks (2004)

1.2 Common problems associated with ICD projects

ICD projects (ICDPs) hold the promise of achieving 'win-win' outcomes, generating impacts for both conservation and local development and as a result have provided and continue to provide a framework for projects working around sites of high biodiversity. Despite this, there has been a very limited number of published assessments that critically assess the degree to which ICDPs have met either conservation or development objectives (e.g. Hodgkinson, 2009; Hughes and Flintan, 2001). A recent review of ICDP impact assessments found only one study that had quantitatively measured the ecological, economic, attitudinal and behavioural outcomes of an ICDP, and only two that had measured success in three of these areas (Brooks *et al.*, 2006). Holmes (2003) states that many studies reviewing the success of ICD strategies have measured local attitudes towards conservation, but few have made the link between these changes in attitude and behavioural changes (such as changed resource use patterns). As a result of these and other limitations, it becomes difficult to assess the overall validity of the ICD approach. Despite this, some key problems associated with ICDPs have been recognised and are briefly reviewed below.

1.2.1 The nature and dynamics of natural resource dependency and use

A common weakness in many ICDPs is a failure to correctly diagnose or understand the complex dynamics of natural resource use (and conflicts over resource use by different actors), the threats to the integrity of the resource in question, and how the costs of conservation are manifested at the local level. Due to the time and effort needed to understand these complex interactions and how they arise at the social, economic and ecological levels, projects are, instead, often initiated based on funding availability and institutional conviction (Robinson and Redford, 2001).

A review of 21 ICDPs in Indonesia found that '*the patterns emerging… point towards flaws in basic assumptions and planning, and a failure to address the real threats*' (Wells *et al.*, 1998) As a result, the report found significant inefficiencies in the use of project funds as problems were being addressed that were incidental or secondary to the long-term threats facing the protected area being managed. In many ICDPs, the implicit assumption is that one of the biggest conservation threats to conservation is 'local people' and their natural resource management practices (Hughes and Flintan, 2001) and therefore ICDPs aim to reorient 'unsustainable' practices in order to alleviate perceived human pressure. External threats such as illegal logging, large-scale land investment initiatives, or political demands to declassify protected area status, are often ignored or not considered (Linkie *et al.*, 2008)

An assessment of ICDPs supported by CARE International in the late 1990s around the Queen Elizabeth Protected Area in Western Uganda illustrates the risk and costs of implementing projects based on incomplete information and poorly tested assumptions. It was assumed that communities around the park

were having a negative impact on tree cover within the park as a result of collection of wood for fuel, Considerable amounts of time and effort were thus invested in establishing fuelwood plantations with these communities. Separate studies of vegetation change in the park, however, showed there had been a significant increase in woody biomass over the previous three decades due to reduction in hippo and elephant populations caused by poaching. Furthermore, the beneficiaries of the plantation project were later found to be the richer and more influential members of the local community, who used the trees for generating revenue from the sale of poles and timber; poorer households (that did use firewood from the park) were conspicuously missed by the project. (Blomley, 2000).

As a result of much of the criticism directed at ICDPs over the past decade (and in particular the limited conservation impacts achieved), donor funding for this type of project has declined significantly. Further, some conservation agencies, disillusioned with an integrated approach, have appeared to return to more 'traditional' conservation projects, with a reduced emphasis on support to social, economic and institutional development (termed by Hutton and Adams, (2005) as 'back to the barriers').

1.2.2 The validity of assumptions linking ICD strategies to programme objectives

Despite the very different social, political and ecological contexts in which ICDPs work, the types of interventions being promoted tend to be rather similar. A common approach is the on-farm substitution of specific products that were previously sourced from within a protected area, such as firewood, medicinal plants and building materials. Implicit in this approach is the assumption that current use levels are unsustainable and that 'pressure' can be reduced by reducing forest dependency and by de-linking livelihoods from the area in question. ICDPs often fail to undertake an adequate analysis of the constraints to livelihood security that different target groups within society face (most notably 'poachers', or those practising other forms of unsustainable harvesting). It is frequently assumed that local people are labour-constrained, so to facilitate a switch to the more desirable behaviour it is enough to offer them an 'alternative livelihood'. But there is often, little realisation that poor people are frequently constrained by access to land and capital rather than labour. This means that alternative livelihoods may simply become 'additional' to their current unsustainable practices rather than replacing them. Clearly, such simplistic approaches to 'alternative livelihoods' fail to understand the way in which poor households seek to reduce risk through the diversification of livelihoods, rather than simply substituting one resource / income stream for another (Hodgkinson, 2009).

1.2.3 The role of power and governance

A more recent criticism of many ICDPs is the failure to acknowledge the importance of governance and power in determining many conservation-development outcomes at the local level. Many programmes fail to realise (or chose to ignore) the disparities of power in the negotiation of trade-offs at the local level – in particular the limited ability of local interests to negotiate effectively with national institutions such as protected area authorities or powerful conservation interests (such as international non-governmental organisations (NGOs)) (see for example Borrini-Feyerabend *et al.*, 2004).

1.3 Bwindi Impenetrable and Mgahinga Gorilla National Parks

Bwindi Impenetrable National Park (BINP) is located in south-western Uganda between latitude 0° 53'S to 1° 8'S and longitude 29° 35' to 29° 50'E and covers an area of 330.8 km^2 It is situated on the edge of the Western Rift Valley, occupying the highest blocks of the Kigezi Highlands (Figure 2). The park lies along the border of the Democratic Republic of Congo (DRC), at about 29 km by road to the north-west of Kabale town and 30 km north of Kisoro town. BINP is located in Rubanda County of Kabale District, Kinkizi County of Kanungu District, and Mutanda County of Kisoro District.

Photo: Martha Robbins

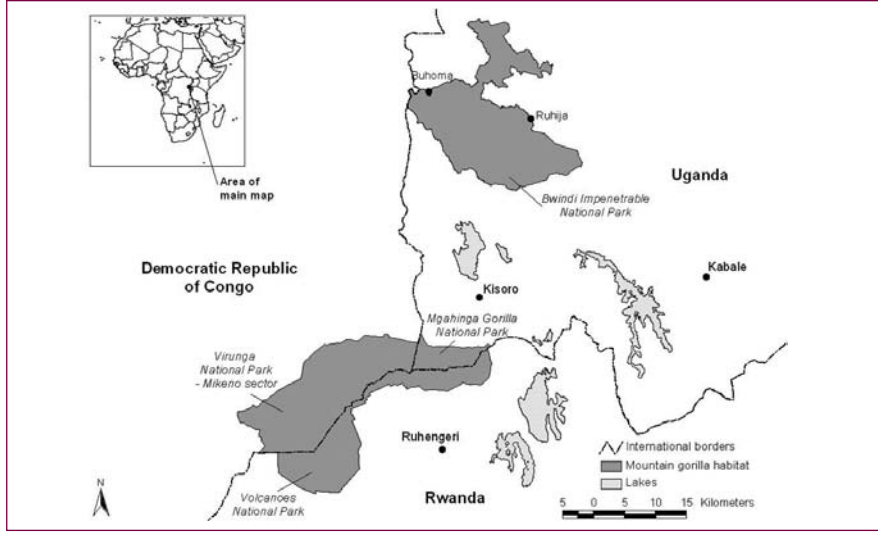
Bwindi Impenetrable National Park is home to about half of the world's population of mountain gorillas

Bwindi is home to about half of the world's population of mountain gorillas (*Gorilla beringei beringei*). It has been managed as a protected area since 1932. The colonial government first gazetted it as a forest reserve and then as a game sanctuary in 1961 under general notice 854 of 1961. From then up to 1991, it was managed as both a forest reserve and game sanctuary, under the joint management of the Forest and Game departments. In 1991, it was gazetted as a national park – this upgrading in status due to the forest being seen as a vital refuge for some of Uganda's rarest and most threatened flora and fauna. Other reasons included the need to conserve ecological resources of high biodiversity value in the forested area and to protect the forest as an important economic resource (UWA, 2002).The park was declared a World Heritage Site in 1994.

Historically, local communities have used Bwindi forest as a source of timber, minerals, non-timber forest resources, game meat and agricultural land. These activities led to significant losses of forest over a period up to the late 1980s. Since 1991, the forest's tourism potential (mainly gorilla tourism) has been an additional direct economic value.

Mgahinga Gorilla National Park (MGNP) is situated in the western-most corner of south-western Uganda in Kisoro District, 10 km south of Kisoro town, bordered by the Republic of Rwanda to the south and the DRC to the west (Figure 2). It lies at latitude 1° 23′ S and longitude 29° 39′ E. MGNP is contiguous with Parc National des Virunga (240 km^2) in the DRC, and Parc National des Volcans (160 km^2) in Rwanda, all forming the transboundary protected area known as the Virunga Conservation Area with a combined area of 434 km^2.

Figure 2. Map showing location of Bwindi and Mgahinga Gorilla National Parks



Source: IGCP (2005)

The area covered by MGNP has fallen under various protected area categories since 1930. Originally it was managed by the colonial government as a gorilla sanctuary from 1930 to 1941, and later as both a game and forest reserve from 1941 to 1991 under the joint authority of the Game and Forest Departments. MGNP was formally gazetted as a national park in 1991. The total area of the park is 33.7 km^2, with boundaries corresponding to those of the 1930 gorilla sanctuary. The park area had been heavily encroached and settled, and its creation led to the displacement of over 2,400 people in 1991.

BINP and MGNP are now managed jointly (as Bwindi and Mgahinga Conservation Area). Surrounding them is the steeply sloping terrain of the Kigezi highlands, supporting one of the highest human population densities in Africa. The provisional results of the 2002 housing and population census indicate that Kisoro District (the most densely populated of the three districts surrounding the two parks) has an average population density of 323/km^2, and this density has increased by 48 people/km^2 since 1991 (UBOS, 2002). Rapid population growth in the south-west of Uganda has placed acute demands on the region's natural resources. Cultivation now extends to, and covers, most hilltops, wetlands are being drained, and very little of the original forest cover remains.

The people who live adjacent to the two parks have a variety of interests regarding their use and management. Within the communities are specialist user groups with common interests such as beekeeping, traditional medicines, basketry, pit sawing, game hunting and fishing, and gold mining. Of particular note are the 'Batwa', a marginalised ethnic group of hunter-gatherers, with their roots in the pigmy population of eastern Congo and central Africa. The two forests possess important social and cultural values for the Batwa such as religious/sacred sites, burial grounds and footpaths that connected family members and markets on opposite sides of the forest area. Today, no Batwa are known to be permanently living in Bwindi, having been evicted in 1961 when the forest became a game sanctuary. Many now squat near the perimeter of the two parks, in very primitive conditions, eking out a living from illegal hunting and honey gathering, as well as selling their labour to farming communities (GEF, 2007a; Kabananukye and Wily, 1996).

An important concept adopted by the CARE Development Through Conservation (DTC) project (and others working around the two Protected Areas) was that of the 'buffer zone'.[1] This was initially defined as the area of population around the two parks, the inhabitants of which had the potential to impact upon the park; but in the late 1990s this was modified to reflect the two-way relationship between the parks and the local people (in recognition of the fact that the parks generated both costs and benefits at the local level). The buffer zone was defined by the project as the 25 frontline parishes.[2] surrounding the parks, which included around 20,000 households (or 120,000 people).

1. Buffer zone in this context was used as a project concept, rather than a real zone that placed any kind of restrictions on resource use.
2. The 'parish' is the lowest level of functional local government in Uganda.

1.4 A history of conflict between parks and people

Prior to the designation of Bwindi Forest Reserve as a national park in 1991, local people had ready access to forest resources, such as firewood, timber, medicinal plants, fibres and game meat, although access to timber and game products was nominally controlled by the Forest Department. The upgrading of the forest reserve to a national park put an end to any form of legal resource use, leading to massive increases in prices for forest products, declining incomes for forest-dependent households and a reduction in local levels of food security (Wild and Mutebi, 1996). These impacts were felt most acutely by the poorest and most marginalised social groups (most notably the Batwa community) who tended to be most heavily dependent on forest products. Key products traditionally harvested by the Batwa, such as medicinal plants, honey, bamboo and fibres for basket making, all became scarce following park establishment, due to increased policing efforts in the park (*ibid*).

The closure of resource use in both BINP and MGNP, coupled with arrests of local people engaged in mining and timber harvesting, resulted in a heavy escalation in the conflict between local communities and park staff (Baker 2004; Blomley, 2003). This manifested itself in a number of very concrete ways. Following the establishment of BINP, 16 fires were started in or around the park during a drought in 1991, a third of which were later established to have been started by local residents with the deliberate intent of destroying government property. Relationships with park staff (many of whom were recruited locally) reached an all-time low, with frequent attacks by local people on rangers and their families. In many cases, rangers from the local community were refused the purchase of food, but most critically, refused membership of traditional 'stretcher' groups (locally called engozi). These widespread traditional institutions are, in effect, local ambulance and burial societies, providing physical and financial support to members in times of sickness or death. Expulsion from these institutions is almost unheard of, leaving the individual exposed and 'uninsured' in times of crisis (*ibid*).

Conflict was particularly intense in MGNP. In 1989, growing international pressure from conservation interests led to the establishment of the Gorilla Game Reserve Conservation Project by an international NGO and the enforcement of strict protectionist policies by the government in what is now MGNP. The gazettement as a national park in 1991 led to the eviction of 1,773 people who had been living permanently within this area since around 1970 (following the breakdown of law and order in Uganda around this time), and an additional 680 people who were cultivating land but lived elsewhere (Adams and Infield, 1998). This eviction (and the closure of the area to any form of consumptive use) fuelled huge resentment and alienation among the local population, much of which is still felt almost 20 years later.

Crop raiding by wildlife has also been (and continues to be) a further issue that contributes to hostility between the park and local communities (Baker, 2004; Namara, 2005 Olupot *et al.*, 2009). Around Bwindi the problem is caused mainly by baboons in northern areas and bush-pigs in the south. The frustration of local communities is heightened by somewhat unclear provisions within the Wildlife Statute and Local Government Act, leading to uncertainty over who should deal with the problem (Uganda Wildlife Authority (UWA) or the districts) and some reluctance on the part of UWA to consider the option of culling animals (Blomley, 2003; Namara, 2006).

1.5 Organisations and institutions supporting conservation and development in south-western Uganda

1.5.1 Uganda Wildlife Authority (UWA)

BINP and MGNP are managed by UWA, a semi-autonomous institution formed in 1996 through the merging of Uganda National Parks and the Game Department, as the Bwindi and Mgahinga Conservation Area. UWA fulfils four primary roles:

- law enforcement and the control of illegal activities;
- 'community conservation' activities designed to reduce conflict between the park and local communities and build local support for conservation;
- research and monitoring;
- supporting tourism development.

Despite severe limitations imposed by lack of resources and low staffing capacity, UWA has made deliberate moves in recent years to engage more meaningfully with local stakeholders, and working with local communities now forms a central part of its overall strategy. The development of park management plans[3] for Bwindi and Mgahinga covering the periods 1995–1999 and 1996–2000 respectively played an important role in this process. The plans were developed by planning teams with the participation of local people and a major component of both plans were provisions for ICD approaches including park outreach (community development), regulated resource access, revenue sharing, problem animal control, conservation education and tourism development. A new plan for both parks with a similar emphasis on ICD approaches was developed in 2001 for the period 2002–2012.

3. The planning process for both parks was jointly supported by CARE, ITFC and IGCP

1.5.2 Local governments

Surrounding the two parks are 25 'parishes', the lowest administrative level of local government in Uganda. The local government structure in Uganda is a five-level system starting at the village, and in order of geographical area rises up through parish, sub-county, county to district. Following the passing of the Local Government Act in Uganda in 1997, tax raising and government spending responsibilities have been largely decentralised from the national to the district level. Through a system of locally elected council representatives, supported by civil servant technical staff appointed by, and reporting to, the districts, district and sub-county governments have become important institutions of development and local governance.

Local governments in Uganda have little or no role in the management of protected areas – a function that remains centralised and exclusively under the administrative purview of UWA. Despite this, local governments are required to provide support to the control of 'vermin' – which are defined as non-threatened wildlife species that engage in crop raiding or cause other damage to property. Lack of resources available to local government with which to address this problem often means it is neglected or ignored. The absence of any formalised mechanism for local governments to communicate local problems and ultimately to resolve conflicts continues to impact negatively on park management efforts.

1.5.3 International and national NGOs

In addition to the governmental institutions present in the area, a number of national and international agencies have worked in and continue to support conservation and development initiatives in the region (Table 1)

Apart from CARE International, three of the four NGOs operating in and around the two parks do so with an explicit goal of conserving biodiversity. Despite this relatively heavy bias towards conservation interests, three of the four NGOs (namely International Gorilla Conservation Programme (IGCP), Bwindi and Mgahinga Conservation Trust (BMCT) and CARE) undertake activities designed to provide local development benefits.

1.6 A review of ICD strategies implemented to date

ICD strategies implemented in SW Uganda to date reflect the overall evolution of approaches. Starting with a modest set of interventions in 1987 funded by WWF, which supported tree planting and environmental education, the programme evolved over time to include a range of complementary interventions (Figure 3).

Table 1. National and international NGOs working on conservation and development in SW Uganda

Institution	Primary Focus and Period of Engagement
Institute for Tropical Forest Conservation(ITFC), University of Mbarara	Ecological monitoring, monitoring of resource use, biodiversity assessments and inventories, applied ecological and socio-economic research. Operational since 1991.
Mgahinga and Bwindi Impenetrable Forest Conservation Trust (MBIFCT) – now the Bwindi and Mgahinga Conservation Trust (BMCT)	Community development projects (rural infrastructure and income generating projects, support to Batwa). Supports park management and research (through ITFC). Funded through endowment and supplemented by additional donor funds. Operational since 1996.
International Gorilla Conservation Project (IGCP)	Gorilla tourism and conservation, community tourism, revenue sharing, human – gorilla conflict and transboundary natural resource management. More recently support to local income generating projects such as beekeeping. Operational since 1984.
CARE International (Development Through Conservation Project and Rights Equity and Protected Areas programme)	Community conservation, park planning and management, institutional development, sustainable agricultural intensification, income generating projects. More recent focus on working with marginalised groups (Batwa) and on mitigating conservation costs (such as crop raiding). Operational since 1988.

Figure 3. Timeline of key ICD initiatives in BINP and MGNP

1987 – start of conservation education and woodlot programme
1989 – start of agroforestry and agriculture
1991 – gazettement of BINP and MGNP (previously they were reserves)
1993 – start of participatory management planning and 'multiple use' (resource sharing) programme
1993 – start of gorilla tourism and tourism-based enterprise
1996 – start of tourism revenue sharing
1996 – start of Bwindi and Mgahinga Conservation Trust

By 2001, 13 different strategies were being implemented in or around the two parks by one or more of the institutions named in Section 1.5, to achieve conservation and/or development objectives. These strategies are summarised below:

1. Providing regulated access to park resources (known as multiple use)
2. Sharing tourism revenue (at a protected area through the revenue sharing programme, or more locally through community-based tourism)
3. Supporting community participation in natural resources management (in park and community areas)
4. Conservation education and awareness
5. Law enforcement
6. Providing substitutes for forest products to frontline communities
7. Supporting income and employment generating activities
8. Improving agricultural practices
9. Capacity building for communities to plan their own development
10. Support for social infrastructure development
11. Controlling problem animals
12. Promoting public health
13. Providing land, infrastructure and services for forest peoples displaced by the formation of the two national parks

In this report we review the effectiveness of six of these strategies based on a study carried out in 2001 and updated in 2009 and described in subsequent chapters.

Study aims and methods

2.1 Introduction

As discussed in Chapter 1, significant financial and human resources have been invested by a number of different agencies within and outside government over the past 25 years, with a common goal of achieving environmental conservation and sustainable development. In 2001 a number of the key players in the region were considering a re-focusing of activities, but questions remained regarding the overall effectiveness of the different ICD interventions and consequently which strategies should be supported in future, if impact and efficiency was to be maximised. As a result of these concerns, an applied research initiative was launched in 2001 with the objective of assessing the overall effectiveness of different ICD interventions implemented in and around the two protected areas since the mid 1980s by:

- determining whether interventions aimed at improving local livelihoods could also promote natural resource conservation;
- identifying and comparing strategies through which development interventions have conservation effect.

The study focused on the most commonly reported weakness of ICD, notably the poor performance of interventions targeted at local communities in terms of reducing threats to conservation. The study did not specifically seek to assess the overall development impact of these interventions on local livelihoods, but it did seek to identify how different ICD interventions had impacted upon, and were perceived by people from, different well-being (wealth) categories.

The design of the research programme and its conceptual framework was overseen by an inter-disciplinary team of staff constituted from the four organisations undertaking the study (Institute for Tropical Forest Conservation, Bwindi and Mgahinga Conservation Trust, CARE International, and the International Gorilla Conservation Programme). Two additional staff from the Nairobi-based Conservation and Development Centre were co-opted as external advisers.

A number of unfortunate circumstances meant that the findings of this research were not compiled or published until now. This paper reports the findings of that study, which was updated in 2009, through a review of literature in the intervening period, as well as consultations with key governmental and non-governmental institutions with an interest in the conservation-development agenda of the area.

2.2 Research methods

2.2.1 Conceptual framework for the research

For the purposes of this study, a working definition of ICD was developed as follows:

> *'ICD is an approach to the management of natural resources in areas of biodiversity importance that aims to achieve lasting reconciliation between the biodiversity conservation and socio-economic development interests of multiple stakeholders at local, national and international levels.'*

Major threats to conservation of the forests and wildlife of Bwindi and Mgahinga national parks were identified by the design team as follows:

- Illegal and unsustainable exploitation of forest resources.
- Forest disturbance caused by fire – initially used deliberately by local people to express anger over exclusion from the park but more recently as a result of human activity such as land clearance for agriculture and honey collection.
- Politically driven threats such as growing local demands for land for settlement and agriculture – demands that on occasions have been adopted by local politicians in election campaigns. Excisions of protected areas (such as national parks) have historically been one of the biggest conservation threats over the past 50 years. For example, one third of the Virunga National Park was excised in the 1960s and Mau Forest in Kenya was reclassified in the 1990s.
- General negative attitudes among local people and institutions towards the two protected areas and their staff (including violent attacks) – which continue to threaten overall management effectiveness and which underpin the three other threats above.

This study identified 13 different strategies that had been implemented at some point since the mid 1980s to address these threats (see section 1.6). This initial selection was then reduced to a final list of six by the application of the following criteria:

- Strategies must have been developed specifically to reconcile conservation and development interests in natural resource management (following the definition presented above). This effectively ruled out activities such as long-term ecological monitoring and law enforcement, which are implemented for conservation reasons alone.
- Strategies must have been implemented at a substantial scale for a period of at least five years.

The six selected ICD strategies are presented in Figure 4.

They are presented according to whether they are 'coupling' or 'decoupling' – that is, whether the pathway to achieving conservation impact is built around linking people to natural resource conservation or whether it is about reducing

Figure 4. ICD strategies selected for assessment

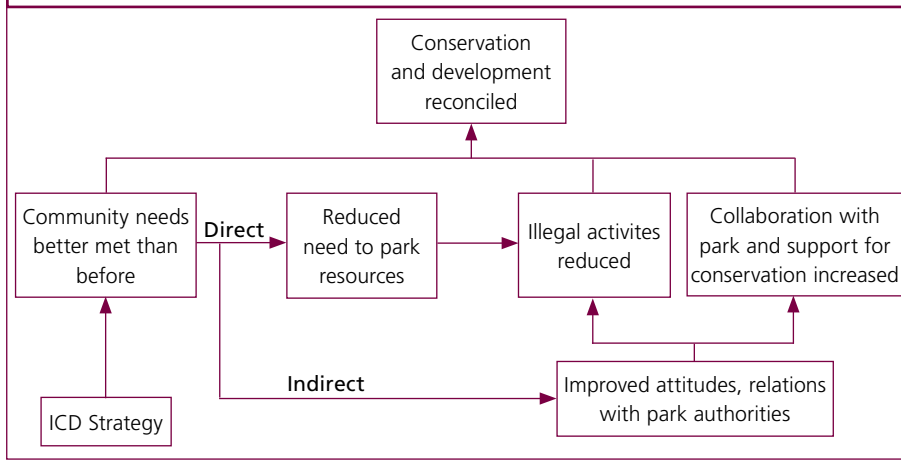
	Park resource dependent 'coupling' strategies	Park resource independent 'de-coupling' strategies
Financial resources-based strategies	■ Tourism ■ Revenue sharing ■ Conservation Trust Fund	■ Agriculture development
Natural resource-based strategies	■ Access to forest resources (multiple use)	■ Resource substitution

or breaking this link. Furthermore, strategies are classified according to whether they are based on financial benefits or direct, natural resource benefits. The development logic of coupling and de-coupling interventions is presented in Figure 5.

'De-coupling' interventions are assumed to reduce the need for resources within the protected areas and thereby produce positive conservation outcomes.

'Coupling' interventions are assumed to bring about a conservation effect through improving community attitudes and relations with park staff, creating changes in behaviour and ultimately increasing community support for conservation. One example of how a coupling intervention reconciles conservation and development interests is by generating more favourable attitudes among local people regarding the presence of the park, and reduces political demands for excision of land within the parks.

Figure 5. A conceptual model of coupling and de-coupling interventions



The first stage in the design of the research programme was the development of conceptual models showing the various pathways used to link each of the six strategies with conservation impact and the key assumptions that had to hold true if the pathway was to be effective. Conceptual models were developed for each of the six ICD strategies and are presented in Annex 2 of this report, but by way of illustration, one is presented below in Figure 6 illustrating the assumptions that underpin regulated resource access (known in this context as 'multiple use').

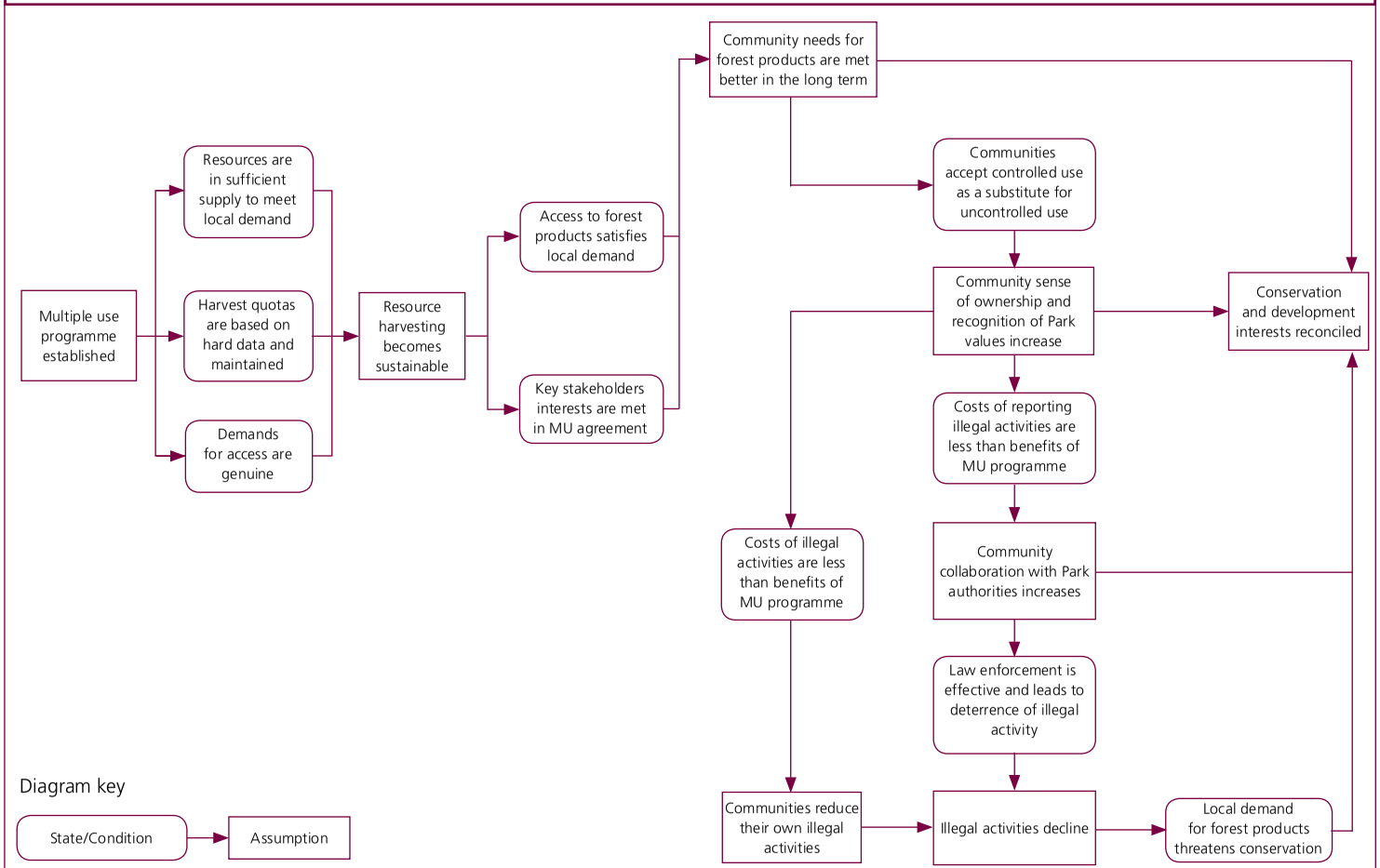
The conceptual models provided the framework for developing specific questions that could be used to assess the effectiveness of individual strategies as well as the validity of the underlying assumptions.

Conservation impact was defined as progress made in reducing the principle conservation threats (Table 2).

Table 2. Indicators used to assess conservation impact

Conservation threat	Indicator used	Source
1. Illegal and unsustainable exploitation of forest resources	– Overall levels of illegal activities and resource use – Willingness to report illegal activities – Changes in willingness to report illegal activities – People's perception of changes in occurrence and type of illegal activities	– Gorilla census – Edge effect study – Law enforcement records – Interviews with senior park staff – Ranger survey – Community survey – Focal group discussions
2. Forest disturbance caused by fire	– Frequency and extent of fire and whether fires were deliberate or accidental – Willingness to take part in fire control activities – Changes in willingness to take part in fire control	– ITFC ecological monitoring programme – Interviews with senior park staff – Ranger survey – Community survey – Focal group discussions
3. Politically driven threats such as demands for excision of park land and the construction of transport corridors/roads through the park	– Attitudes of local people towards the park (which, if they improved, would make it harder for local politicians to campaign for excision of park land) and park staff	– Interviews with senior park staff – Ranger survey – Community survey – Focal group discussions – Earlier and comparable attitude surveys

Figure 6. Conceptual model for multiple use



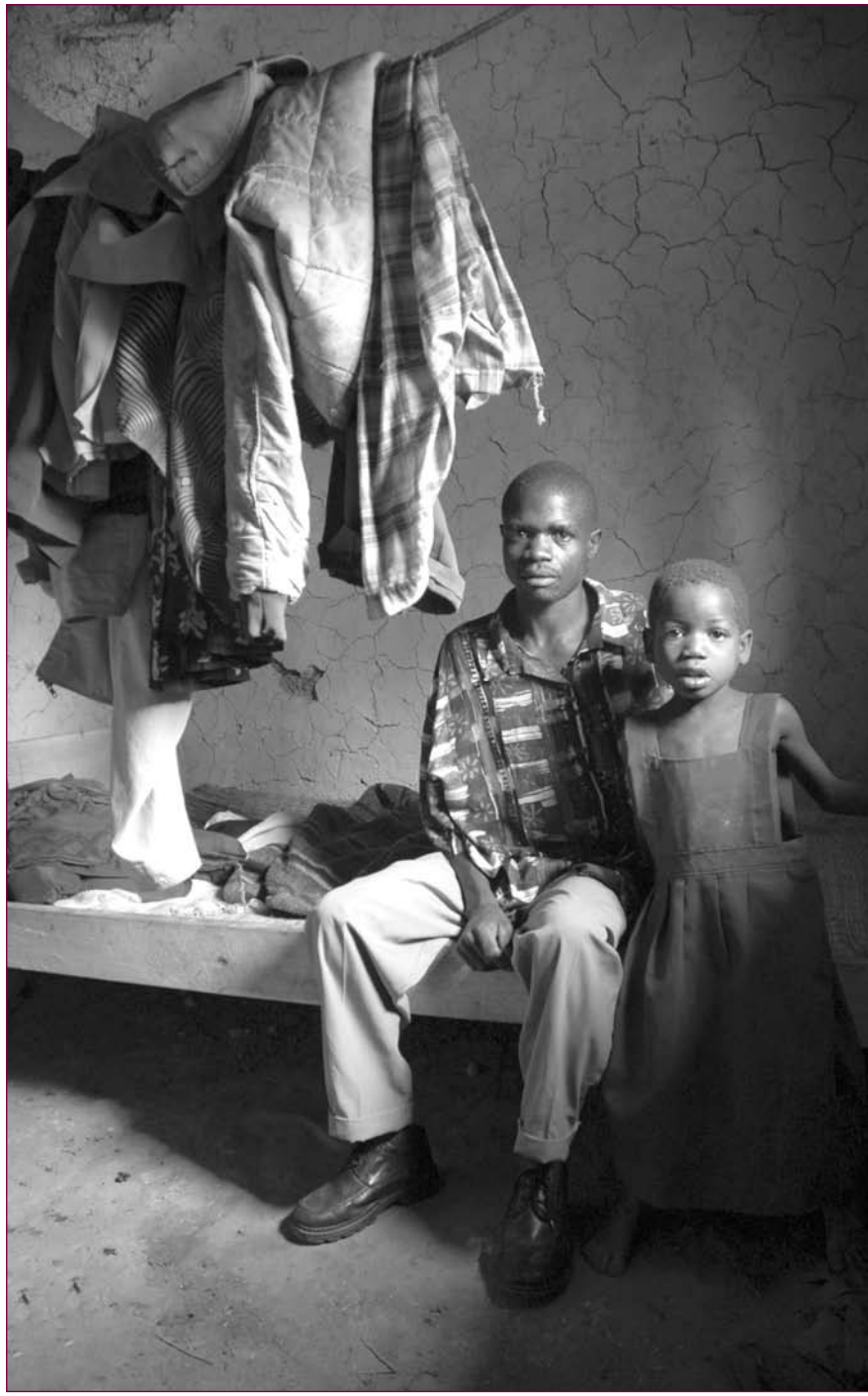


Photo: Jacob Holdt

Poorer households are less able to benefit from initiatives in tourism, agriculture and multiple use than richer households

2.2.2 Data collection

In general, data collection and the administration of questionnaires were undertaken with two main purposes. First, different stakeholders were asked if their attitudes towards the park and conservation, the incidence of illegal activities, and cooperation with park staff, had changed over recent years (either positively or negatively) and if so why. Second, people were asked if they had obtained direct benefits from the two parks or through any of the six ICD strategies being investigated. If so, further questions were used to probe how these strategies had influenced the attitudes, cooperation with park staff, and level of illegal activities within their communities. This double line of questioning enabled the study team to triangulate answers, by working along the conservation-development causal linkage chain from both ends. Furthermore, the beneficiaries of ICD strategies were probed further to assess the validity of some of the underlying assumptions embedded within each strategy.

In addition to collecting information on the contributions of different strategies to conservation (defined here as i) changes in attitudes of local people towards conservation; ii) changes in local cooperation with park staff and iii) changes in levels of illegal activities) the study collected a great deal of quantitative and qualitative information using a range of data sources and data gathering techniques with the aim of explaining the performance of each strategy (Table 3).

Questionnaires administered at the community level were undertaken in ways that ensured representative sampling from different well-being (wealth) categories. Four categories were identified, using PRA/wealth ranking techniques, ranging from the richest (group 1) to the poorest (group 4). More detail is provided on how wealth-disaggregated data were generated (as well as wider sampling techniques) in Annex 1.

The information generated through these particular surveys was complemented with additional data and information that had been gathered in earlier socio-economic and ecological research, including previous surveys of human impacts on the parks and gorilla censuses.

Table 3. Primary data collection methods

Survey type	Persons surveyed	Date
Ranger survey. Assessed the perception of park staff with regard to how attitudes and practices of local people had changed over the past 10 years	69 law enforcement and community conservation rangers, guides and trackers	March – April 2002
Community socio-economic survey. Assessed local perceptions of costs and benefits realised as a result of living around the two parks as well as how individuals had benefited or not from specific ICD interventions. If so, in what way and how had this changed attitudes or behaviour towards conservation and the parks	30 households in 19 villages sampled around the two national parks. 14 of the 19 villages sampled were from 'frontline' (first-tier) parishes adjacent to the parks, while 5 were from 'second-tier' parishes, i.e. near the park but separated by one parish.[4] In all 573 persons were interviewed within villages households, across different well-being groups sampled, as well as male and female headed households	November – December 2002
Focus group discussions. Used to further explore linkages between conservation and development and the validity of underlying assumptions, as perceived by local communities	19 focal group discussions, conducted in each of the 19 sample villages. Aimed to get equal representation of men and women	November – December 2002
Key informant interviews. Assessed the views of particular stakeholder groups – such as local government staff and councillors, participants in the multiple use programme and senior park staff	3 local government representatives; 3 resource users (registered within multiple use agreements); 7 senior park staff from both parks; 5 senior staff from 4 NGOs implementing ICD interventions	December 2002 – April 2003

4. Frontline parishes constituted the 'buffer zone' with the outer perimeter of this area, on average, around 5 km from the park boundary.

Overall impact of ICD interventions

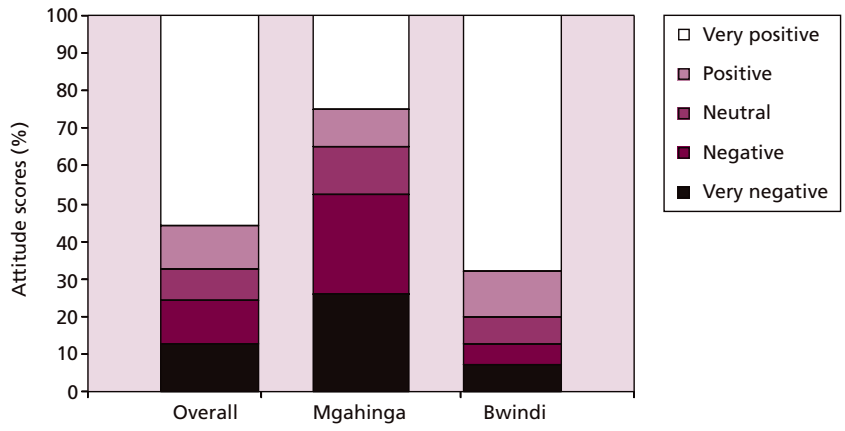
3.1 Introduction

In this chapter, results are presented according to three key indicators – changes in attitudes of local people towards conservation, changes in local cooperation with park staff, and changes in levels of illegal activities. This latter information is then compared with actual recorded incidence of illegal activities as recorded through gorilla censuses and studies of the forest edge.

3.2 Attitudes towards conservation

In general, the attitudes of communities living around the two national parks (Bwindi and Mgahinga), were found to be positive (with 68 per cent of respondents indicating 'very positive' attitudes).However, considerable differences were found in the responses from the two parks with Bwindi scoring much higher than Mgahinga (Figure 7). One possible explanation for this difference may be the higher levels of conflict in Mgahinga when the parks were gazetted as a result of the displacement of 2,400 people who had settled on reserve land during the 1980s. An additional reason for this difference appears to be the lower level of community benefits generated by Mgahinga compared to Bwindi – particularly since tourism is much less developed there.

Figure 7. Attitude scores among respondents around the two parks

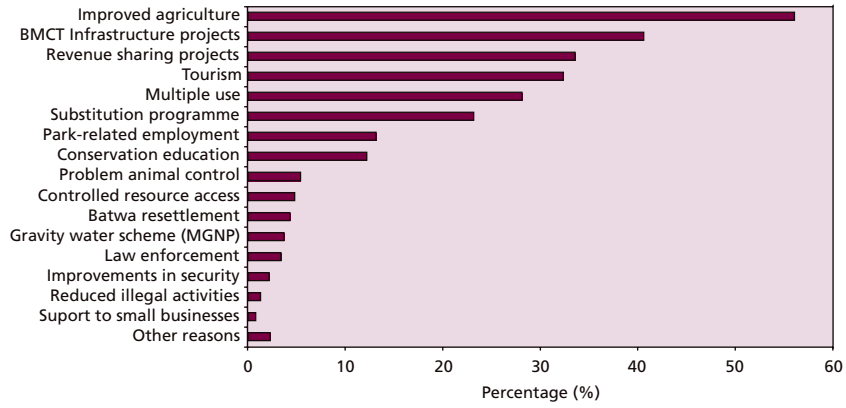


The responses were compared to the results of a similar survey conducted in 1992 and revealed an increasingly positive attitude over time – only 47 per cent of respondents having indicated very positive attitudes towards the parks in 1992. When community respondents were asked (in 2002) what evidence existed for improved attitudes towards conservation and the parks, and how this had been translated into concrete action, the following reasons were provided (ranked in order of importance):

1. Improved park–community dialogue and an increased willingness to be involved in park-related issues
2. Reduced involvement in illegal activities
3. Increased willingness to report illegal activities to park staff
4. Voluntary participation in fire control within the park
5. Communities more open and hospitable to park staff and tourists

Further questioning revealed that ICD interventions being promoted were the primary factors underlying these changes in attitude (Figure 8).

Figure 8. Percentage of people citing each factor as a cause of improved attitudes (n= 276)

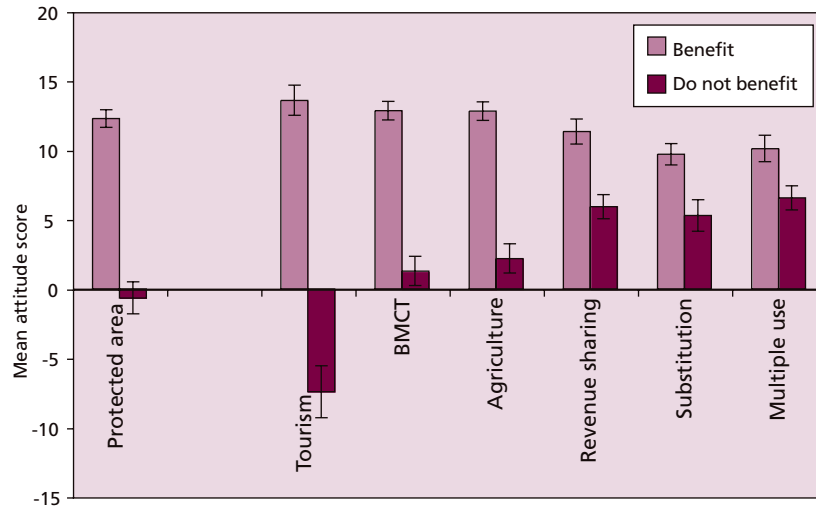


Source: Socio-economic study data

This is reinforced by a further finding that attitude scores towards the two parks were significantly higher for those people who identified themselves as direct beneficiaries of one of the six ICD strategies (Figure 9).[5]

5. Attitude scores' are composite indices derived from responses to a range of questions that described respondent attitudes towards the two parks.

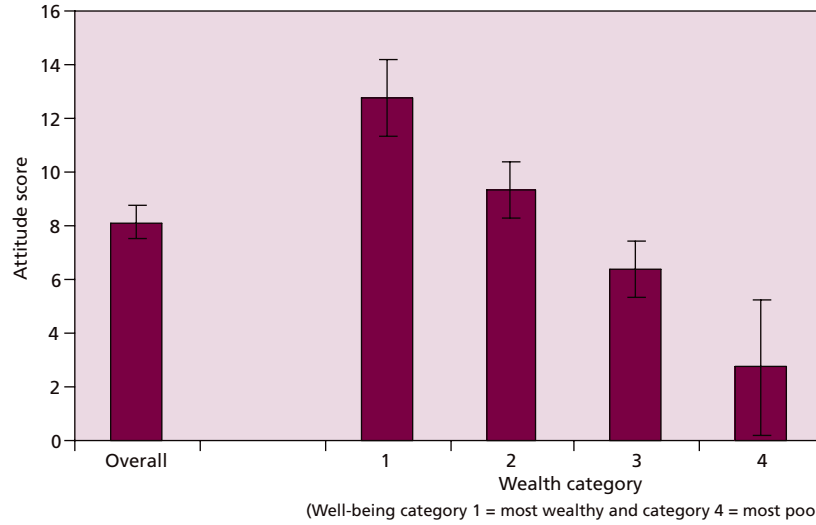
Figure 9. Attitude scores of ICD beneficiaries and non-beneficiaries (n= 422, bars indicate standard error)



Source: Socio-economic survey / frontline parishes only

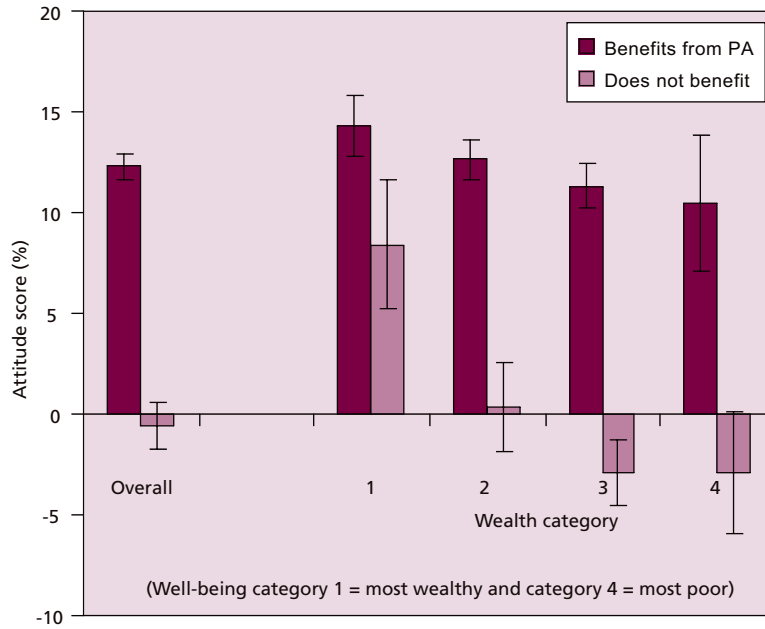
Community attitudes towards the parks varied according to the well-being of respondents, with wealthier households showing more positive attitudes when compared with poorer households (Figure 10) – regardless of the receipt of specific benefits. Poorer respondents however, while demonstrating less positive attitudes overall, appeared to be more influenced by whether they felt that they had personally benefitted from the park (Figure 11).

Figure 10. Overall attitude scores by well-being category (n= 422)



Source: Socio-economic survey / frontline parishes only.

Figure 11. Attitude scores of different wealth categories, beneficiaries and non-beneficiaries (n= 422)



Source: Socio-economic survey / frontline parishes only

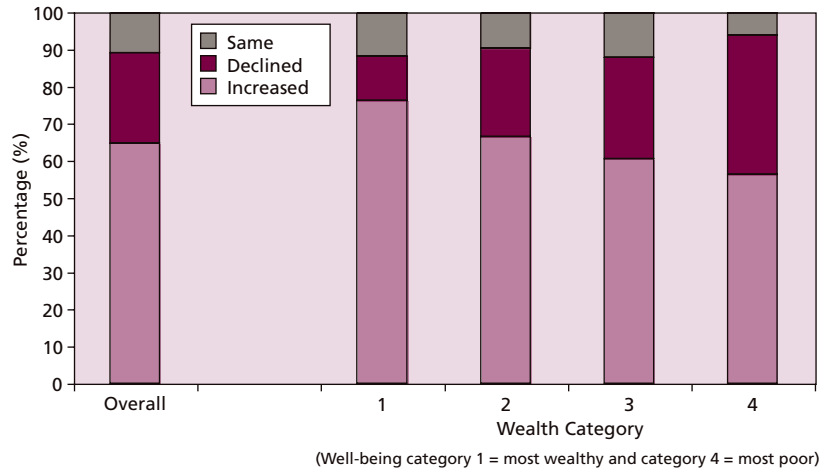
3.3 Cooperation with park authorities

The second variable that was investigated to assess overall changes in terms of reduction in conservation threats was the cooperation between local people and park authorities. 'Cooperation' was defined as i) willingness to assist park authorities in fire control, and ii) willingness to report illegal activities.

Willingness to cooperate over fire control was higher than willingness to report illegal activities. All park staff, and some 77 per cent of community members, indicated an increased willingness on the part of the community to participate in fire control between 1992 and 2002. But only 59 per cent of community members and 83 per cent of park rangers expressed an increased willingness on the part of the community to report illegal activities. One possible explanation for the difference is that illegal activities (such as trapping or snaring wild animals or pit sawing) are subject to strict penalties. The consequences of reporting the involvement of neighbours or even family members (for both the reporter and the accused) are therefore considerable, particularly when compared with the costs associated with supporting park staff fight fires.

Again there was a significant variation in the responses regarding perceived changes in willingness to report illegal activities among different wealth categories. Poorer respondents felt that there had been less positive change (increased willingness to report) and more negative change (reduced willingness to report) than those from higher well-being classes (Figure 12).

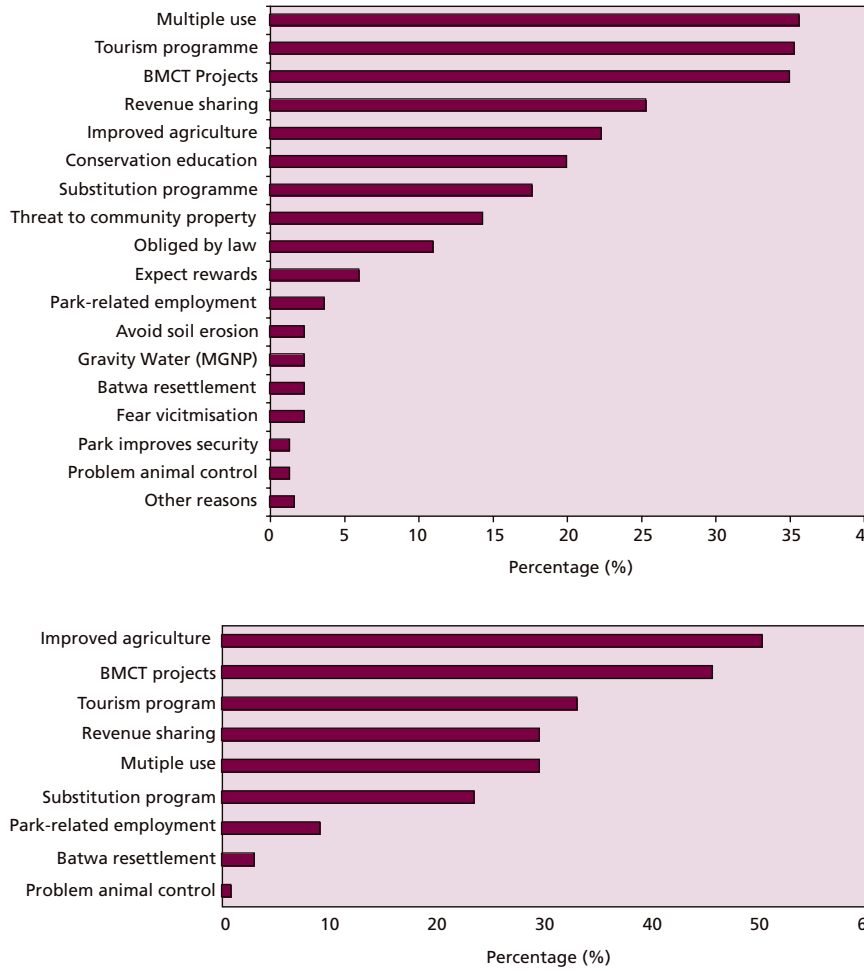
Figure 12. Perception of changes in willingness to report illegal activities among different well-being categories (n= 396)



Source: Socio-economic survey

Once again, these changes in attitude appear to be strongly linked to the presence of ICD interventions (Figure 13a and b). In particular, access to forest resources appears to be the primary reason explaining improved attitudes towards supporting fire control, most probably because fire is seen as one of the biggest threats to harvesting of non-timber forest products. Interestingly, access to forest resources was considered almost ngligible when accounting for increased willingness to report illegal activity. Support from the BMCT, however, was considered an important factor behind improved attitudes towards both fire control and reporting of illegal activities.

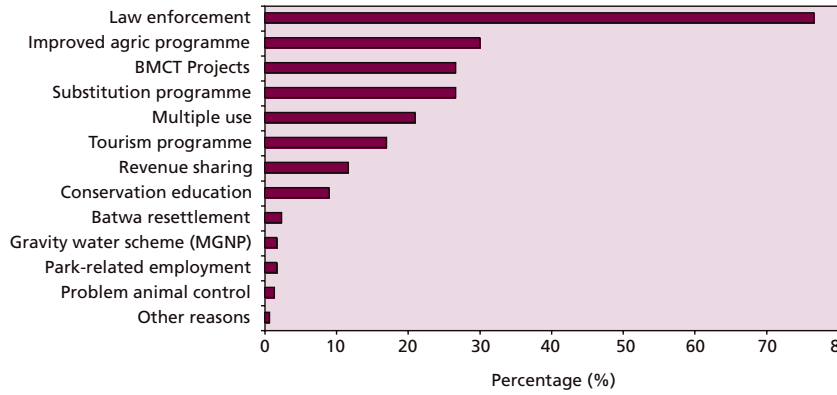
Figure 13. Reported factors accounting for improved attitudes towards a) supporting fire control (n= 300) and b) reporting illegal activities (n= 230)



3.4 Levels of illegal activities

The third variable explored was perceptions of change with regard to the levels of illegal activities. Just over three quarters of community respondents and all the park rangers indicated a decrease in illegal activities over the period 1992–2002. In contrast to factors used to account for changes in attitude towards the parks and changes in cooperation with the park authorities, the perceived reduction in illegal activities appeared to have little to do with ICD interventions, and much more to do with law enforcement efforts by park staff (Figure 14).

Figure 14. Percentage of people citing each factor as a cause of decrease in illegal activities (n= 230)



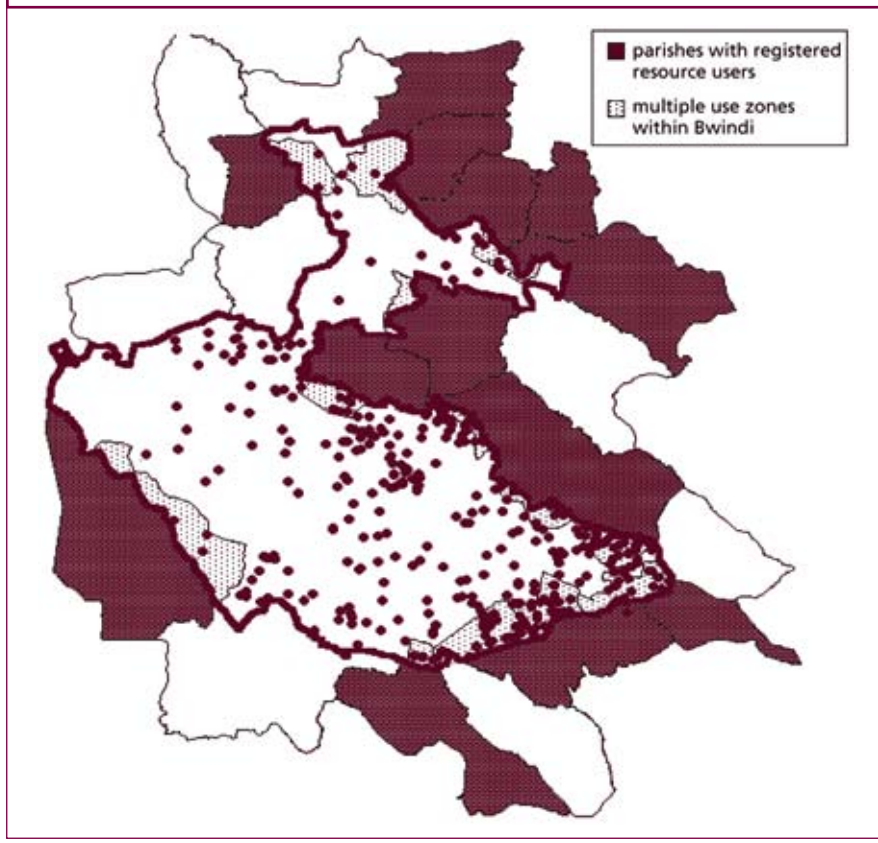
Secondary evidence compiled for this study from monitoring reports produced by the Institute for Tropical Forest Conservation, paints a somewhat different picture. Although illegal use within the park is almost certainly less than it was during the 1980s (before the establishment of the national parks) it still continues up to the present and is primarily driven by demands for subsistence uses. This contrasts with the situation before the parks were established, when illegal extraction for commercial purposes predominated (Baker *et al.*, in preparation). Furthermore, there is little evidence to suggest that illegal use in multiple use zones (shown in Figure 15) is any less than in areas outside these areas (Olupot *et al.*, 2009). Rather, the presence of law enforcement efforts by the park staff appears to have been a primary factor limiting illegal use, rather than the presence of ICD interventions. Some of the possible underlying factors may be that:

- Illegal activities are now mainly conducted by the poorest members of the community, who appear not to have benefited from many of the ICD interventions when compared with richer members of the same communities.
- Few explicit links were made between rights/benefits associated with the ICD strategies and responsibilities at community level to reduce illegal activities.
- The scope or reach of a number of the ICD interventions appears limited, and in some cases is confined to certain parishes, which restricts their potential to positively impact on a large proportion of the local population.
- The magnitude of development changes that would be required to significantly reduce peoples' direct need for forest resources is likely to be very large and it may not be realistic to expect a limited set of ICD interventions to be able to achieve this.

One possible explanation for the difference between the stated perceptions of the park staff and communities, and hard data generated through forest surveys, is the reluctance of either side to admit to the continuation of widespread illegal activities. Community members naturally fear possible recrimination if they admit openly to engaging in illegal activities while park rangers (largely responsible for law enforcement and controlling illegal activities) are reluctant to admit growing or stable levels of illegal activities since this implies they are being ineffective in their job.

As with the other variables, engagement in illegal activities appears to vary by wealth: 46 per cent of community respondents (selected across all well-being categories) indicated that poorer and poorest households were the primary group engaged in illegal activities. This trend was confirmed by park rangers, who reported that the majority of cases of illegal timber cutting were carried out by poor, unemployed men and youths who provided timber to wealthier dealers in the major towns – Kabale and Kisoro – near the two parks.

Figure 15. Recorded incidence of illegal use found during 2002 gorilla census at BINP



Source: ITFC monitoring records

Photo: Jacob Holdt

Support to agricultural development has improved local people's attitudes to conservation

Unfortunately, it was not possible to carry out an independent analysis of law enforcement records, with a view to assessing the socio-economic profile of those arrested for illegal activities, so these perceptions cannot be verified. However, recent research conducted in the area indicates a shift from commercially-driven harvesting prior to the establishment of the two parks, to subsistence-based harvesting in the period following legal establishment (gazettement) (Baker *et al.*, in preparation).

3.5 Factors that undermine the effectiveness of ICD interventions

The survey demonstrated that although ICD interventions have improved the relationship between local communities, the parks and the park authorities, frontline communities continue to face considerable costs as a result of living in close proximity to the two parks. By far the biggest problem faced by local residents (accounting for almost 80 per cent of responses expressing a negative attitude towards the park) is damage to crops from wild animals (Figure 16) – be they 'vermin' (which include baboons, bush pigs and vervet monkeys) or larger, protected species such as gorillas, buffalos and elephants. A further frustration is the apparent unwillingness of park or local government staff to address the issue – despite the magnitude of the problem for local people.

The problem of crop damage was found to have significant impact on community attitudes towards the two parks – particularly among the poorest households (Figure 17).

Figure 16. Problems faced by community members with regard to the parks (n= 294)

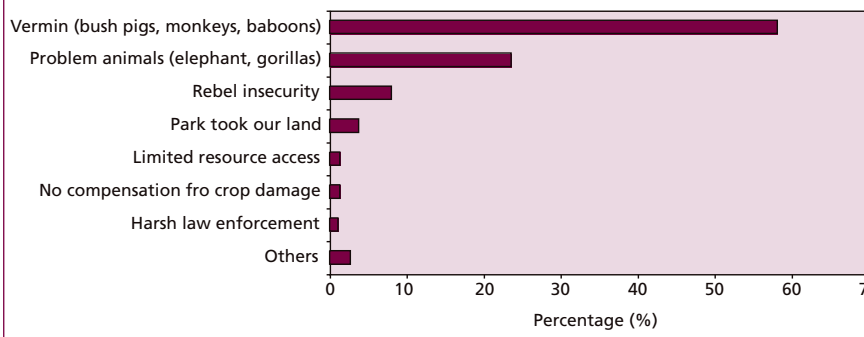
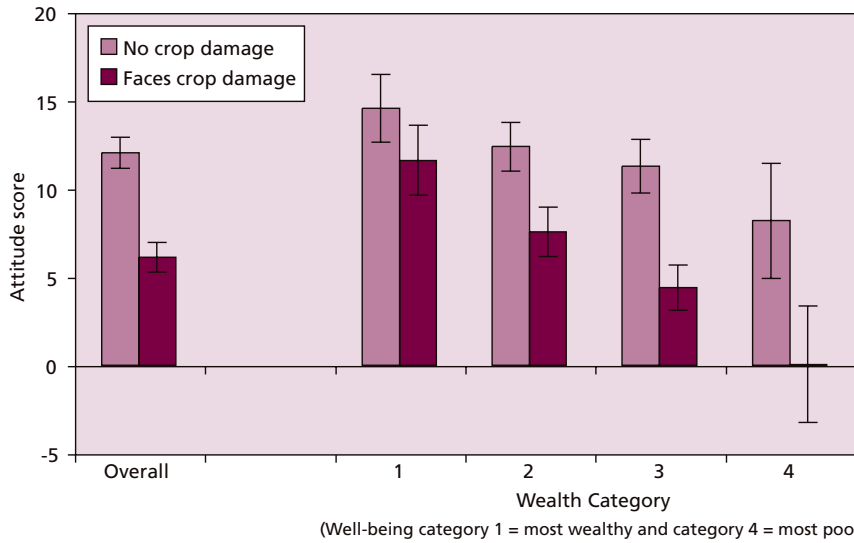


Figure 17. The impact of crop damage on community attitudes (n= 422)



Impact of individual ICD strategies

4.1 Introduction

In this chapter we present the results regarding each of the six ICD strategies that were selected for study. For each of the strategies assessed, a summary is provided describing:

- the beneficiaries, and in particular whether beneficiaries came from richer or poorer households;
- the attitudes of beneficiaries of the particular strategy towards conservation;
- the attitudes of beneficiaries of the particular strategy towards cooperation with park authorities;
- the perception of beneficiaries of the particular strategy towards changes in illegal activities;
- the conservation – development pathways as perceived by local communities and park staff, and the validity of assumptions generated during programme design).

We present results according to the two main categories of ICD strategies that were presented in Figure 4, namely park resource-dependent ('coupling' strategies) or park resource-independent ('de-coupling' strategies)

4.2 Park resource-dependent ('coupling' strategies) – an overview

Four of the six strategies selected for study fall into the park resource-dependent category namely: the multiple use programme, park revenue sharing, the Bwindi Mgahinga Conservation Trust (BMCT) and tourism. These are briefly described below.

The **multiple use programme** was established following the acute and rising levels of conflict caused by the establishment of BINP and MGNP in the early 1990s. Supported by CARE, UWA developed and in 1993 initiated a pilot programme to re-establish certain specific user rights of buffer zone communities to key resources within both parks such as medicinal plants, fibres for basket making and the production of granaries as well as beekeeping. Described in detail in Wild and Mutebi (1996), this was the first attempt within the Ugandan protected area system, and one of the first attempts in Africa, to develop resource use agreements with local communities. Multiple use agreements have been renewed and updated, following negotiations between UWA and user groups in 2009. Multiple use agreements in the two parishes bordering MGNP were negotiated in the mid 1990s and allow for beekeeping and the collection of bamboo rhizomes for on-farm planting.

For the purposes of this study, multiple use is characterised as a park-dependent, coupling strategy, which is based upon the use (consumption) and management of natural resources of the park. Consequently, of the six strategies reviewed in this study, the assumed linkage between development benefits and the conservation of the parks is strongest (See Figure 5 and Annex 2.1 for a modelling of assumptions and conservation-development linkages).

The **park revenue sharing programme**, overseen by UWA, supports community development projects within parishes bordering the two parks such as the rehabilitation or expansion of schools, and health centres. At the start of the programme in the late 1990s, the funds were generated from an allocation of 12 per cent of gorilla trekking fees but this subsequently changed to an allocation of 20 per cent of park entry fees. Given that the vast majority of funds collected by the two parks comes from gorilla trekking, this change resulted in a significant lowering of the total funds disbursed to local development projects. After lobbying by local government, residents and international organisations working in the area, an additional allocation of 1 per cent of the gorilla trekking fee (currently US$ 500 per person) is to be used to supplement these efforts from 2010 onwards in the form of a 'gorilla levy'.

The Mgahinga and Bwindi Impenetrable Forest Conservation Trust (now known as the Bwindi and Mgahinga Conservation Trust (BMCT)) was legally established in 1994 as an endowment fund (financed by the Global Environment Facility (GEF)) that provides small grants to support applied research, protected area management and small-scale development projects supportive of protected area conservation. In the period 1996–2009 the BMCT disbursed a total of US$ 4.01 million (including US$ 810,000 directed towards projects specifically designed to benefit the Batwa). The bulk of funds invested to date have been used for communal infrastructure projects, similar to those funded by tourism revenue sharing but with three significant differences: a) average grants have been larger, b) standards of construction have been generally higher, and c) projects have been funded in the second row of parishes surrounding the two parks as well as in park-adjacent parishes. Most of these projects (taking over 80 per cent of total available funding) have provided new classrooms for primary and secondary schools. (G. Dutki, pers. comm.).

The **tourism programme** generates local benefits though community-based tourism enterprises at key departure points for gorilla trekking (at the headquarters of Bwindi and Mgahinga parks, at Nkuringo and more recently at new tourist lodges in Ruhija and Nkuringo). These benefits are generated through local employment in a range of tourism-related activities, and multiplier effects such as sales of agricultural products to tourists and tourist lodges. In 2002, the 'Buhoma Village Walk' was established with support from BMCT in the community adjacent to Buhoma gate and park headquarters. Between December 2002 and June 2005 the walk attracted over 2,200 visitors and generated over US$ 15,000 (BMCT, 2007). The benefits generated through

tourism, while substantial, tend to be concentrated in those parishes where the tourist facility is located (less than 10 per cent of the total 2002 'buffer zone' area) (Sandbrook, 2008). Indirect benefits through the tourism programme are described in the next section.

The conservation-development linkages established by the park revenue sharing programme, BMCT and the tourism programme is based on the generation of financial benefits from the park, rather than the direct use of park resources (as with multiple use) and are described in greater detail in the conceptual model found in Annex 2.2.

4.2.1 Beneficiaries and distribution of benefits

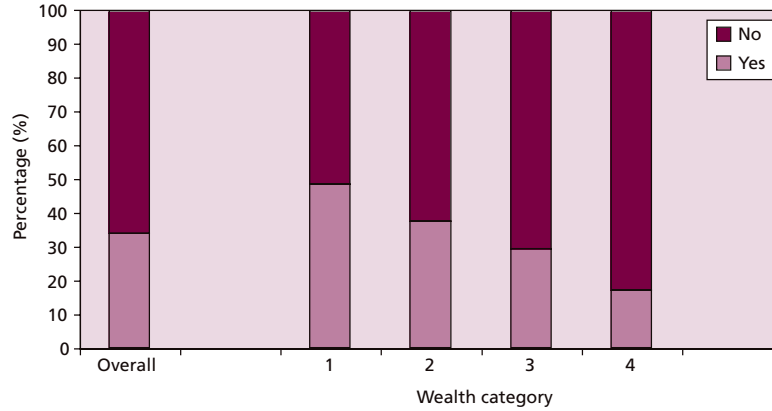
Currently, 13 parishes out of 21 surrounding BINP and both of the two parishes surrounding MGNP have some kind of multiple use agreement allowing access to approximately 20 per cent of the area of the two parks. The programme is not considered by park staff to be compatible with gorilla tourism and as a result does not operate in these areas. Within the multiple use programme, there are two main categories of beneficiaries. Primary beneficiaries are those who are registered and legally allowed to harvest the specified resources within the park; secondary beneficiaries are those who make use of the harvested products. Despite only 5 per cent of respondents being primary beneficiaries (resource users), 60 per cent considered themselves beneficiaries of the multiple use programme.

In contrast to multiple use, park revenue sharing and the BMCT appear to have impacted a significantly greater number of people living around the two parks. Just under half of those questioned at the community level knew that the park revenue sharing programme had supported one or more projects in their parish, and of these, 82 per cent said they were benefiting as a result. This compared with 60 per cent of respondents being aware of BMCT projects of whom 91 per cent have benefited directly.

The tourism programme differs from all others described in this study as its impacts are concentrated in two parishes where tourist operations take place, close to the park headquarters of both parks. Almost three quarters of the respondents in the tourist-impacted parishes said that they benefited directly from tourism. In both areas, a higher number of long-term residents appeared to be benefiting when compared to more recent migrants to the area. For example, only 5 per cent of persons who had been resident for five years or less reported benefits from tourism. There were significant variations in terms of reported benefits between the two parishes – with 98 per cent of respondents in Mukono parish (Bwindi) benefiting against only 45 per cent in Gisozi parish (Mgahinga). This is perhaps due to the more recent nature of tourism developments around Mgahinga as well as the nature of the facilities there, which have limited opportunities for sharing benefits with the wider community. Benefits obtained from tourism were described as the sale of crafts to tourists, employment within the tourism facility and the sale of agricultural produce.

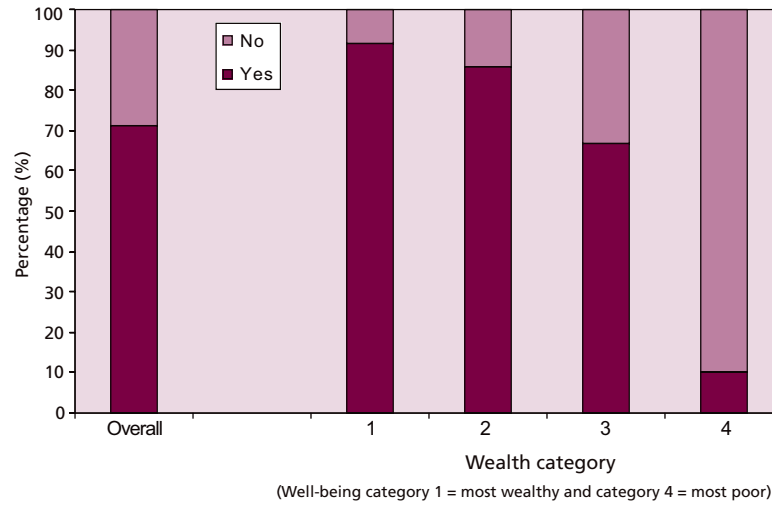
With regard to the distribution of benefits among well-being categories, clear differences were seen. Multiple use and the tourism programme exhibited clearest differences in terms of beneficiaries, with more wealthy community members appearing to benefit significantly more than the poor (Figures 18 and 19). In terms of the distribution of benefits across different well-being categories, tourism appears to show the greatest levels of inequality (when compared with other ICD strategies studied), with very few of the poorest households registering any benefit at all.

Figure 18. Distribution of beneficiaries of multiple use across well-being categories (n= 570)



Source: Socio-economic survey.

Figure 19. Distribution of tourism beneficiaries among well-being categories (n= 119)

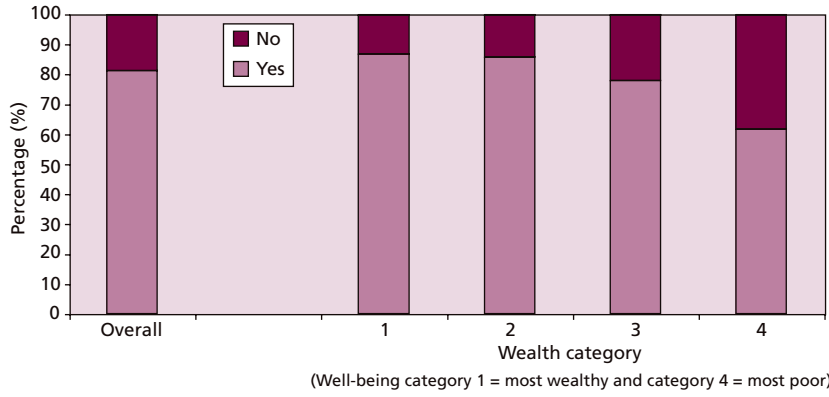


Source: Socio-economic survey.

The skewed distribution seen above appears to differ when compared with the distribution of benefits seen within park revenue sharing and BMCT (Figures 20 and 21). This is quite possibly explained by the fact that many of the projects supported by both revenue sharing and BMCT are 'public good' in nature, providing benefits at the community level such as the construction of schools, clinics and village water systems.

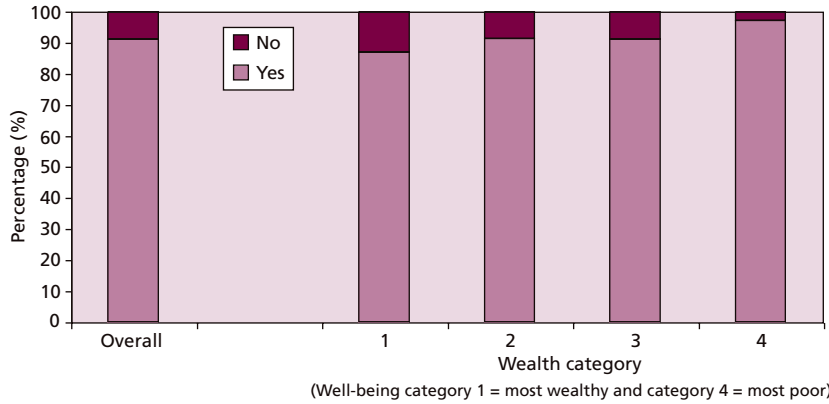
There appears to be some tension inherent in the design of the park revenue sharing programme and BMCT with regard to the types of projects supported and the profile of direct beneficiaries. Individual households appear to favour projects that generate income and can be used to offset some of the direct costs of conservation (such as crop raiding by wildlife); on the other hand local leaders

Figure 20. Distribution of revenue sharing beneficiaries among well-being categories (n= 207)



Source: Socio-economic survey.

Figure 21. Distribution of BMCT beneficiaries among well-being categories (n= 344)



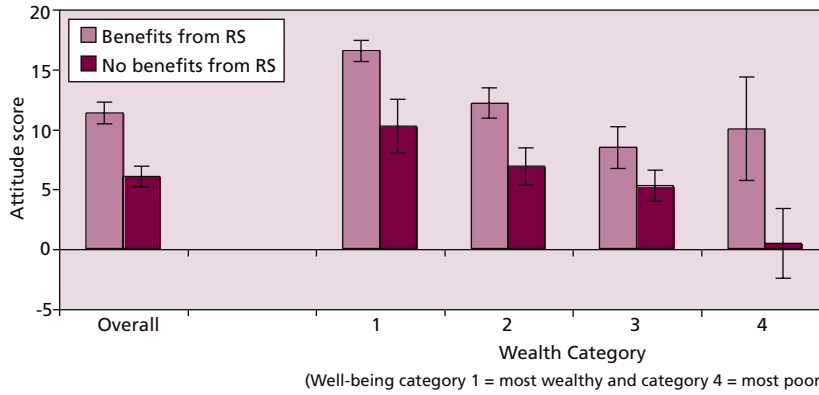
Source: Socio-economic survey.

and politicians are more in favour of social infrastructure projects (such as schools, clinics and water systems) which have the potential to generate a broader level of political support for the parks as well as creating a wider spread of net benefits within society. To date the bulk of projects supported through BMCT and park revenue sharing have tended to be social infrastructure, public good projects such as school construction or refurbishment, health centres, roads and bridges. Projects providing individual benefits (such as income generating activities) constituted only 6 per cent of responses received.

4.2.2 Attitudes towards conservation

As might be expected, clear differences in terms of attitudes towards conservation were found between those who had benefited directly from one of the ICD strategies studied and those who had not. With regard to revenue sharing and, in particular, BMCT, this difference in attitudes was most pronounced among the poorest well being category (Figure 22 and 23) This data suggests therefore that infrastructure projects funded by BMCT have had the greatest impact (when compared with other ICD strategies) in influencing the attitudes of the poor and poorest wealth categories.

Figure 22. Attitude scores of beneficiaries and non-beneficiaries of revenue sharing (n= 422)

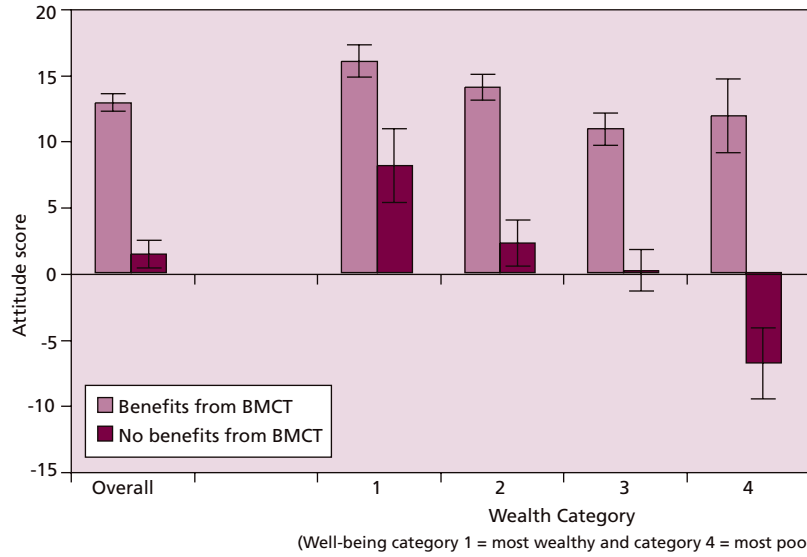


Source: Socio-economic survey

This trend was visible for other two coupling strategies (multiple use and tourism).

The perception of linkages between individual strategies and the two parks was strongest with regard to park revenue sharing, as this was clearly seen as a park-centred programme. Despite the similarities in approach, this link was less strong with BMCT, perhaps due to its visibility and identity as an independent NGO, rather than as an integrated aspect of protected area management.

Figure 23. Attitude scores of beneficiaries and non-beneficiaries of the BMCT (n= 572)



Source: Socio-economic survey

4.2.3 Cooperation with park authorities

Of the four park resource-dependent strategies reviewed, multiple use and tourism appeared to account for the highest levels of cooperation between local communities and park authorities, and in particular with regard to undertaking fire control. This link was less strong with regard to cooperation around reporting of illegal activities, however.

Within the two tourist-affected parishes, tourism was ranked highly as a factor explaining improved cooperation with park staff. Tourism was cited by 78 per cent of community members as a factor in increased reporting of illegal activities and cited by 76 per cent as a factor in increased willingness to assist in fire control. Park staff reported that community members in Buhoma parish (where gorilla tourism is concentrated) were the most active and willing to engage in fire control when compared with other parishes around BINP.

4.2.4 Levels of illegal activities

Beneficiaries of the multiple use programme cited law enforcement efforts by park staff as the most important factor behind any reduction in illegal activities. Patrolling / policing efforts of resource users were also important (ranked fifth). But only 20 per cent of park rangers, and no senior park staff, said that multiple use reduced illegal activities. While the multiple use programme has resulted in increased reporting of illegal activities to park law enforcement staff, the primary

Photo: Jacob Holdt

Poor households are bearing the highest costs of conservation and suffer most from crop raiding by wild animals

way in which this strategy has impacted upon illegal activities is by legalising and regulating the use of some of the park resources – which previously were harvested illegally and largely unsustainably.

Some of the reasons for the limited success of multiple use in reducing illegal activities, as expressed by community members, relate to the ineffectiveness of park rangers, due to their limited numbers and cases of collaboration with illegal users. Others reported that they no longer saw reporting of illegal activities as their responsibility, having been discouraged by the poor performance of rangers in dealing with specific cases. Finally, some community members feared the consequences of reporting neighbours, relatives or other community members might lead to victimisation.

Income generating projects are increasingly being funded by BMCT (covering initiatives such as mushroom growing, honey production and processing, and handicraft making) and provide important additional income sources to local communities. In focal group discussions, the point was made that diversifying income sources also has the effect of reducing the need of poorer households to harvest and sell forest products (assuming that these interventions can successfully reach poorer households).

4.2.5 General conclusions

Overall, the following general conclusions can be drawn on the four park resource-dependent strategies, their impact on conservation and the ways in which they generate conservation – development linkages:

The multiple use programme

- Multiple use appears to deliver conservation impact through principles of sustainable use, rather than improved law enforcement, and as a result appears to address threats related to fire as well as politically-driven demands for park excisions, but not illegal and unsustainable exploitation of park resources. This appears to contradict the assumptions on which the programme was based (that granting of legal rights to users would lead to increased self-policing and reporting of other forms of illegal use).
- Multiple use appears to be an important factor in promoting support for fire control but otherwise does not significantly increase the role of local people in park management and protection.
- The primary beneficiaries of multiple use are few in number but they generate a multiplier effect that impacts on secondary beneficiaries (who access products mainly through commercial transactions).
- Poorer households appear less likely to be primary beneficiaries of the programme.

The park revenue sharing and BMCT programmes

- Revenue sharing and BMCT reconcile conservation and development interests by creating an appreciation for the two parks. This is achieved by:
  - providing important (and hitherto non-existent) social infrastructure in remote areas that have been somewhat neglected by local government;
  - reducing the financial burden on the community of infrastructure development (taxes, fees); and
  - offsetting some of the conservation costs experienced by individual households through receipt of income generating projects.
- The conservation impact of revenue sharing and BMCT seems to be mainly through changing attitudes towards conservation, which also may indirectly contribute to increased cooperation and reduction in illegal activities
- Given that the revenue used to fund projects supported under this programme come directly from tourist revenue, and this link is clearly understood locally, park revenue sharing appears to be a strong ICD strategy. There is still some confusion as to the link between BMCT the two parks and the support provided to local development projects. Clearly, if conservation impact is to be assured, this link needs to be strengthened in the eyes of the beneficiaries
- The benefits of revenue sharing appear to be relatively evenly distributed within different well-being categories at the community level. This is perhaps explained by the fact that to date, projects supported have tended to be public-good investments, which are available to all community members.
- If revenue sharing and BMCT are to be effective, it will need to satisfy two important constituencies. On one hand, households impacted negatively by the parks (through for example, crop raiding) are keen to use revenue sharing to offset conservation costs, while on the other hand, politicians and local leaders are keen to see impact at a wider community level, increasing overall support for conservation
- Despite the strong focus on infrastructural investments, in recent years there has been a gradual shift of BMCT and revenue sharing support towards income generating and livelihood-based projects focused at the household, rather than community level. This shift seems to result from an explicit recognition that funding public services was displacing local government money into other areas, on the logical grounds that the park is funding the adjacent parishes so local government doesn't have to. This obviously results in no net gain for the adjacent parishes and passes the benefits of ICD on to areas totally removed from any costs of conservation

The tourism programme

- Tourism reconciles conservation and development interests by:
  - Creating appreciation for the park through providing an alternative income source
  - Generating a clear link between the park, gorillas and the flow and distribution of tourist income
  - Providing an anticipation of future benefits conditional upon the protection of the park and gorillas
  - Increasing local provision of social services (some of the funds generated from the Buhoma tourist facility are invested in local infrastructure projects)
- Tourism appears to be a strong ICD strategy because it changes attitudes and increases cooperation, and this appears to have translated into strong local support for conservation.
- Tourism has the potential to impact a wide number of people living in the vicinity of tourist facilities. Its overall impact at the local level is reduced, however, by its failure to reach poorer members of the community, who appear to have the most negative attitudes towards cooperation with the park and lowest levels of support for conservation.
- While the impact of tourism appears to be highly localised, it is important to remember that tourism provides the revenue base for other ICD strategies (such as revenue sharing and the gorilla levy), both of which impact households around the entire perimeter of the two parks.

4.3 Park resource-independent ('decoupling' strategies) – an overview

The **resource substitution programme** comprises on-farm planting of trees, bamboo and non-timber forest products, which provide alternative materials to those sourced in the forest of the national parks. These substitution activities date back to the very beginning of ICD programming in south-western Uganda in the late 1980s. This strategy was promoted by the conservation extension agents of the CARE DTC project who were stationed in every parish bordering the two parks. The programme was more or less discontinued around 2002, but tree planting activities continue, with minimal external support.

CARE DTC support to the **agriculture programme** started around 1991 and like the substitution programme ran until around 2002. In its early stages, the main interventions were improved crop varieties, improved crop management (especially bananas) and soil conservation. In the last five years of CARE's support, greater emphasis was placed on three types of intervention: those appropriate for people with less land (e.g. home gardening), soil fertility management, and marketing of agricultural products. The agriculture programme was promoted by the conservation extension agents of the CARE DTC project. It should be noted that there are major differences between these parishes in terms of food security, land availability and quality, and market access, and hence the relevance of different types of agricultural interventions. Although support to agricultural development by CARE has now been largely discontinued, income generating projects related to agriculture and beekeeping continue to be supported by IGCP and BMCT.

The substitution and agriculture programmes are characterised as park-independent (de-coupling) strategies that are assumed to reduce the local demand for park resources, which in turn should reduce the incidence and drivers of illegal activity (for both subsistence and commercial purposes). The substitution programme aims to provide alternative sources of natural resource products, while the agriculture programme aims to diversify livelihoods, increase income and thereby reduce the need to harvest forest products. The conservation-development pathway and assumptions implied in these programmes are described in more detail in Annex 2.4 and 2.5.

4.3.1 Beneficiaries and distribution of impact

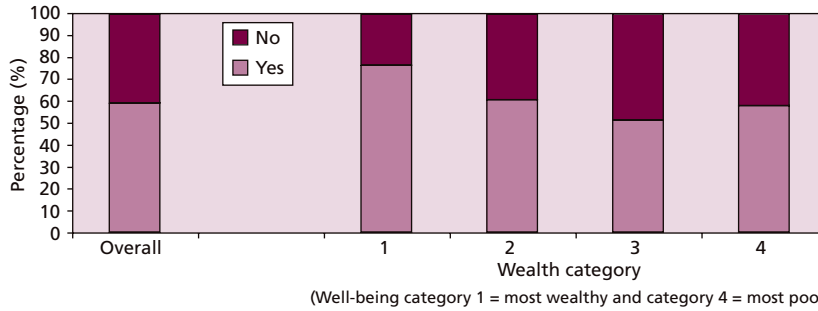
Tree planting appears to have been relatively widespread among frontline communities, with clear visible changes over the past 10 to 20 years. Just over three quarters of community respondents had planted trees on their own land and 63 per cent had done so during the period when the substitution programme was operational. Villages directly bordering the two parks appeared to have slightly lower levels of tree planting and woodlot establishment when compared with second-tier villages in frontline parishes. This appears to be explained by a number of factors. First, trees close to the boundary may attract wildlife out of the parks, which could in turn impact upon crops. Second, some stated that if they planted trees, they were worried that the park authorities would extend the park boundaries into the forested areas and, finally, because frontline parishes were able to satisfy some of the energy demands from firewood collection in the parks.

Trees planted on-farm were generally considered to provide an adequate substitute for fuelwood, poles and stakes (in terms of quality), but not for timber. Tree and bamboo products grown on-farm were mainly for subsistence use, although some were sold. Where markets existed for forest products (such as firewood for tea factories), men tended to dominate production and marketing, whereas trees used for domestic purposes (firewood or stakes for farming) was the responsibility of women.

Just over half of community respondents reported benefits as a direct result of the agriculture programme. Justified from both conservation and development rationales, CARE International aimed to ensure the participation of poorer households through this strategy from 1995 onwards and increasingly adjusted the focus of the programme to make it more relevant to the needs of the poor. This was achieved through the promotion of 'poverty-neutral' interventions such as chicken rearing (rather than zero-grazing cattle and fish ponds, which required greater investments of capital, time and risk). This was justified largely from a social justice perspective, as poorer households were considered to be bearing a disproportionate share of conservation costs.

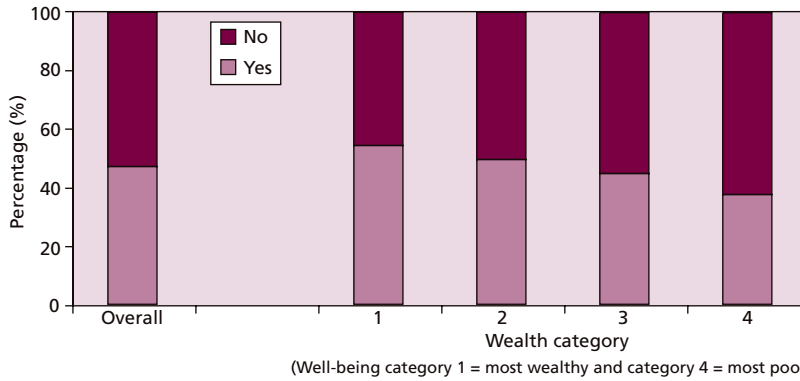
No clear trends were found to exist with regard to the participation of beneficiaries from different wealth categories in the substitution programme (Figure 24), although it seems that there was limited success in securing even levels of participation in the agriculture programme, which appears to have been skewed in favour of richer households (Figure 25).

Figure 24. Distribution of substitution beneficiaries among well-being categories (n = 570)



Source: Socio-economic survey

Figure 25. Distribution of agriculture programme beneficiaries among well-being categories (n = 570)



Source: Socio-economic survey

4.3.2 Attitudes towards conservation

Substitution was ranked low in terms of influencing attitudes (and improving cooperation with park authorities – both were ranked sixth in the household survey). But both community members and park staff stated that it did have a greater impact on reducing illegal activities. Community members cited substitution as the third most significant factor (after law enforcement and agriculture) in explaining a reduction in illegal activity and 92 per cent of park staff rangers said that substitution reduced illegal harvesting. However, if the substitution programme had had such a significant effect on the harvesting of timber, poles or firewood, a noticeable drop in illegal activities would have been recorded over the past five to 10 years, when the impacts of the tree planting programme of the 1990s would have been realised. Yet law enforcement records do not show any discernible effect of this programme over time, nor do they show a reduction in illegal harvesting in areas adjacent to villages with high tree planting rates.

The agriculture programme was ranked by community members as the single most important factor in influencing community attitudes to conservation. As observed with revenue sharing and BMCT, the relative impact of agriculture on community attitudes was greater with people who felt that they had themselves benefited from the programme than with non-beneficiaries, and this difference was greatest in the poorer wealth categories.

4.3.3 Cooperation with park authorities

Agriculture was highly ranked by communities in terms of cooperation with park authorities, 50 per cent citing agriculture as a factor in increased reporting of illegal activities, and 35 per cent citing agriculture as a factor in increased willingness to assist in fire control. In contrast, park staff gave agriculture a low ranking with respect to fire control and did not cite is at all as a factor accounting for increased reporting of illegal activities.

4.3.4 Levels of illegal activities

In the community survey, agriculture was ranked second as a factor contributing to reduction in illegal activities. As with the overall levels of participation in the programme, the degree to which agriculture was cited as reducing illegal activities was clearly wealth-dependent: 44 per cent of the wealthiest well-being group cited the agriculture programme as a key factor, compared to only 19 per cent in the poorest well-being group.

4.3.5 General conclusions

Overall, the following general conclusions can be drawn on the two park resource-independent strategies, their impact on conservation and the ways in which they generate conservation – development linkages.

The resource substitution programme

- Substitution was introduced as a means to reduce dependency and use of park resources. Results gathered indicate no discernible impact in mitigating the primary conservation threat identified in Table 2 (unsustainable use of park resources). This suggests that the substitution 'pathway' adopted by this (and other similar) ICD projects is invalid.
- Tree planting has, however, been well received and provides a range of subsistence as well as cash-based needs. It would appear that tree planting is continuing despite the closure of the substitution programme by CARE.
- Participation in the substitution programme does not appear to have been heavily influenced by wealth or poverty and its benefits appear to have been distributed relatively equitably within participating communities.
- But despite this 'feel-good' factor it appears not to have impacted strongly on improving attitudes or cooperation (and therefore in mitigating the conservation threat 3 in Table 2). The reasons for this are unclear, but it might be related to the fact that tree planting did not respond to a priority 'felt need', in the same way that the agriculture programme did.

The agriculture programme

- Though not primarily geared to changing attitudes towards the park, the agriculture programme has had significant impact on attitudes and, to a limited extent, on cooperation with park authorities.
- The relative prominence of agriculture in community responses is probably explained by the widespread impact of the programme across the villages surrounding the two parks – 56 per cent of respondents reporting benefits corresponds to more than 10,000 households within the first-tier parishes – and impact was realised at the individual level. Furthermore, it addressed a priority development need – food and livelihood security.
- Despite some success in increasing the number of poorer households benefiting from the agriculture interventions, wealthier households continued to benefit more, which reduced the impact on reconciling conservation and development versus what could have been achieved through a more explicit pro-poor targeting strategy.
- The conservation impact of the programme does not appear to have been achieved through providing alternative incomes to those obtained from illegal harvesting, or by reducing illegal activities – as it was originally assumed. Instead the programme appears to have had an indirect conservation impact by changing attitudes of local communities and building local support for conservation.
- Despite the 'de-coupled' nature of this programme, community beneficiaries appear to have made the conceptual link between the programme and conservation, mainly through association of CARE staff and activities with the park, but also through earlier efforts by CARE on conservation education.
- Given that the programme was implemented by an international NGO (and not by government) and that this programme has now ended, the sustainability of the agricultural programme (expressed as its potential to continue to deliver benefits to more farmers and create conservation impact) may be limited. Despite that it is clear that the programme was able to reach a great number of farmers and impacted them positively.
- Crop raiding from the two parks impacts negatively on the achievements of this programme and undermines some of the goodwill generated as a result.

Discussion and conclusions

5.1 Introduction

In this chapter we use the findings of the review to assess the overall impact ICD interventions have had on conservation and in addressing the major conservation threats facing the two parks. This is followed by an assessment of how interventions appear to have performed with regard to supporting local development, as well as the distribution of these benefits among different groups within society. Third, we reviews how and where conservation and development interests appear to have been reconciled most effectively and some of the underlying factors behind these linkages. Finally, we present overall conclusions with regard to some of the underlying factors that explain the relative degree of success achieved in securing conservation and development objectives as well as some of the lessons that have been learned as a result. Where relevant throughout the chapter, comparisons are drawn with efforts to link poverty reduction and great ape conservation elsewhere in Africa, as reviewed by Sandbrook (2010).

5.2 Impacts of ICD strategies on conservation

Three primary threats to conservation were identified during the design of this study, namely the illegal and unsustainable exploitation of forest resources, forest disturbance caused by fire, and politically-driven threats such as demands for excision of some or all of the park land. In the following section, we review the evidence regarding the degree to which these three threats have impacted between 1991 and the present.

5.2.1 Levels of illegal use

Historical records indicate high levels of human use of forest resources prior to the establishment of the two parks from widespread timber harvesting, agricultural production, hunting and gold mining, and the gathering of firewood, poles and stakes (Butynski, 1984). The impact (manifested through clearance of trees and forest, encroachment of small-scale agriculture and local damage caused by small-scale mining) was seen across the whole of the conservation areas, but most intensively within 1 km of the park boundary (Butynski, 1984). By 1990, 61 per cent of Bwindi was heavily impacted by logging (*ibid*). A number of studies conducted recently have established that since the two parks were established, levels of harvesting and illegal activities have dropped (Baker, 2004) and that the overall level appears to have remained relatively constant since the mid to late 1990s up to the present (GEF, 2007b). Furthermore, while much of the resource use associated with harvesting prior to, and during, the establishment of the park appears to have been driven by commercial objectives, this appears to have changed in the period after the park's formation to subsistence use (Baker *et al*., in preparation). Finally, the overall impact of illegal use appears to have become more concentrated in the edges of the park and has reduced in core areas (Olupot *et al*., 2009).

Despite the fact that many of the ICD strategies implemented in and around the two parks were designed to reduce illegal and unregulated use of park resources, effective and increased law enforcement efforts by park staff, rather than the positive impacts of ICD interventions, appear to be the primary reason accounting for a perceived reduction in illegal activities between 1992 and 2002.

5.2.2 Forest disturbance caused by fire

Data gathered by the ITFC Ecological Monitoring Programme indicate that the incidence of fire has been decreasing over the past 15 years. In 1999, 37 fire incidences were recorded; in 2004, only four. Furthermore there was evidence of an increase in willingness on the part of the community to participate in fire control (GEF, 2007b). While it is important to consider that fire incidence is also influenced by other factors (such as the weather conditions at the time that farmers clear their fields), the data do indicate a significant reduction in the incidence and cause of fire.

5.2.3 Politically-driven threats

Politically-driven threats such as demands for excision of park land and the construction of transport corridors/roads through the park were identified as important potential conservation concerns, as were generally negative attitudes among local people towards conservation and the parks. Similar concerns exist in Rwanda, where tea factories around Nyungwe Forest National Park are lobbying for access to forest land, with the support of local politicians (Sandbrook, 2010). In contrast, the extremely high value of gorilla tourism at Parc National des Volcans in Rwanda has lead to higher level political pressure for the park size to be *increased*, with likely negative impacts for local people (*ibid*). This illustrates the crucial role of the cash value of natural resources in determining land use decisions, and it seems highly unlikely that any of BINP or MGNP will be degazetted for as long as gorilla tourism attracts high-level political support.

The data presented in this report indicate overall a majority of people expressing very positive attitudes towards the parks, but with significant differences between the two sites studied. The primary factors explaining positive attitudes that were identified by community respondents were the agriculture programme and BMCT. BMCT and the revenue sharing programme appear to be delivering important social benefits through infrastructure projects such as school classrooms, clinics and road construction. These types of investments are popular with local leaders and politicians and may play an important role in reducing the impact of populist calls for the excision of parts of the two parks. However, infrastructure investments associated with ICD are not always linked by local people to conservation. In Central African Republic (CAR), infrastructure investment supported by the Dzanga-Sangha Project (DSP) did not improve local attitudes to conservation, and local people continued to resist anti-poaching patrols (Hodgkinson, 2009). In addition, there are concerns that investment by ICD mechanisms in public goods such as schools and hospitals can result in the displacement of spending by local government into other areas that lack ICD support. This seems to have occurred

in both Rwanda and Uganda, with plans now established in Uganda to ensure that money from the new gorilla levy is spent on local enterprises or projects that directly tackle problems associated with parks, such as problem animal control, rather than on schools and hospitals (Sandbrook, 2010).

5.2.4 Changes in conservation status

If assumptions made regarding the nature of conservation threats, and the relationship between these threats and conservation is correct, a decrease in threats should result in improved conservation status. Mountain gorillas constitute one of the flagship species of the two parks, and significant levels of research has been conducted on their numbers and ecology. In this section, we use gorilla populations as an indicator of conservation status.

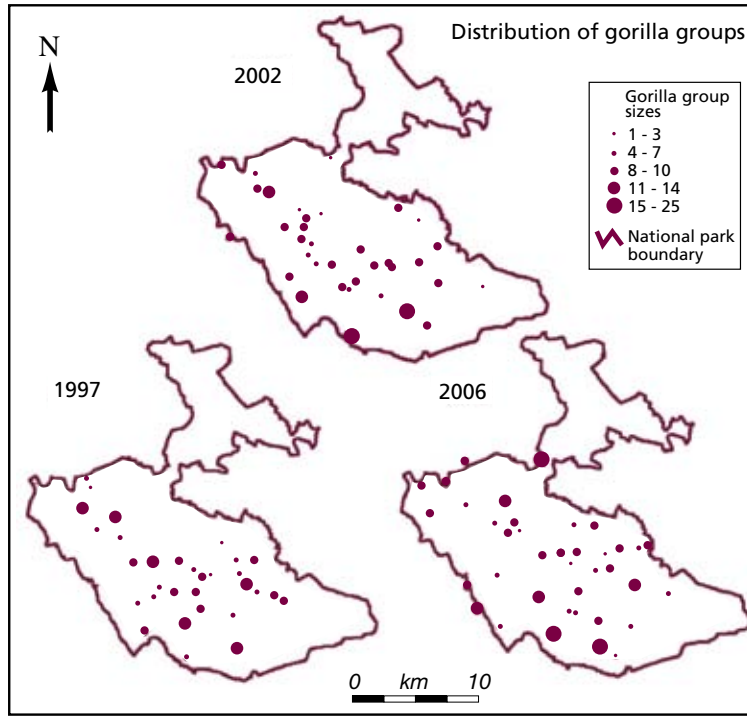
Gorilla populations (which form the basis of tourism for the two parks) appear to have increased slightly over the past decade. The current population of mountain gorilla in Bwindi is currently estimated as 336. This represents a 5 per cent increase over the 2002 census estimate of 320, which was itself a 7 per cent increase upon the estimate of 300 in 1997 (Guschanski *et al*., 2009). This situation compares very favourably with almost all other great ape sites in Africa where numbers have been in sharp decline for decades (Caldecott and Miles, 2005). The only confirmed exception is the mountain gorilla populations in Rwanda and DRC, which share many of the same conditions as the gorilla populations in BINP and MGNP.

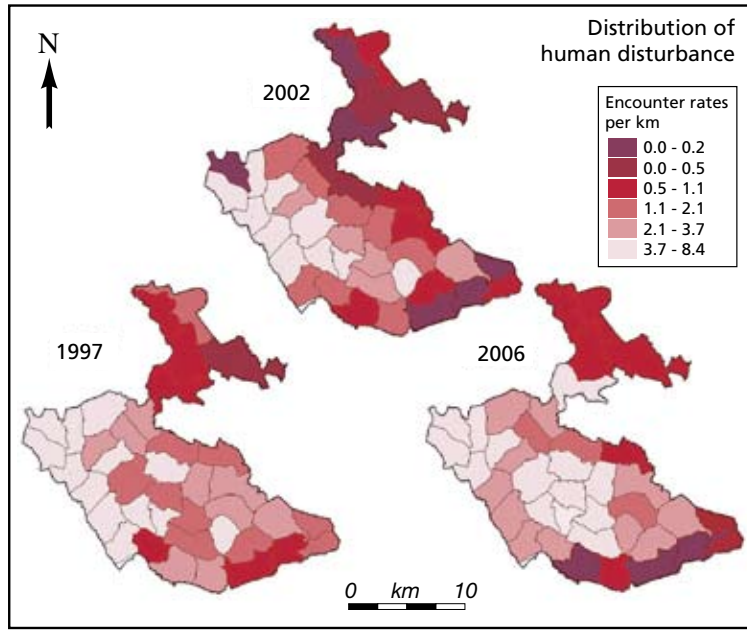
In addition to a small increase in the overall population, gorillas appear to be ranging across larger areas of the park. In the 2006 census one group was found to have crossed a short distance into the northern sector for the first time in living memory, while more were also found in the exterior sectors of the park (Figure 26). Despite this, human disturbance does appear to be affecting the behaviour of gorilla populations, particularly through encounters with traps or snares set by hunters. Furthermore gorillas, and other species sensitive to disturbance, do not appear to be using multiple use zones for ranging (Baker, 2004).

In addition to the changes in gorilla populations, satellite image analysis indicates that the park boundary has also stabilised and there has been almost no loss of forest cover inside the park between 1987 and 2000. Incidences of encroachment have been rarely reported since 1995 (GEF, 2007b).

Attributing overall changes in conservation status to the impacts of ICD interventions is a challenging task. Data gathered from this study would indicate that ICD interventions over the past two decades have played an important role in mitigating some of the conservation threats, as expressed through improved attitudes towards conservation and the two parks, as well as increased willingness to cooperate with park authorities on fire control and reporting of illegal activities. However, as indicated above, effective law enforcement, as reported by both park staff and communities, is seen as the most effective way of reducing the incidence of illegal activities.

Figure 26. Gorilla and human disturbance distribution patterns between 1997 and 2006 at BINP





Source: GEF, 2007b

5.3 Impact on poverty reduction and impacts on the poor

This study did not set out to assess the overall development impacts of ICD in terms of reducing poverty and sustaining livelihoods. However, some observations are presented below regarding the extent, geographical reach, targeting, sustainability and duration of the six different ICD interventions reviewed, and how these in turn may influence wider impacts on poverty.

5.3.1 Overall impact levels

The **multiple use programme** has a rather narrow impact with regard to its primary beneficiaries (the resource harvesters), but this study has shown the significance and benefits that have been generated across a much wider group of secondary beneficiaries, some of whom were reported in parishes that were not involved with multiple use. Recent work by the International Gorilla Conservation Programme (IGCP) to support the marketing and sale of honey by multiple use beekeepers appears to be reinforcing the economic impacts being felt by beekeepers around both parks. Indications from more recent surveys indicate that beekeeping is increasingly being seen as a viable and attractive economic activity (whereas previously it was viewed as a cultural activity confined to beekeeping families and local experts), and women appear to also be getting involved.

Tourism generates important benefits at community level but its impact appears to be heavily concentrated within a limited geographical area around tourist facilities. For example, tourism in Mukono parish brings in almost four times more revenue for local people than any other external source, even after accounting for high levels of leakage (Sandbrook, 2009), but this is certainly not the case in any other park-adjacent parish. The present study has shown that when deliberate steps are taken to spread the effects of tourism revenues (as seen in Buhoma) benefits can be realised through a range of channels, such as local employment and the sale of crafts and vegetables. Similarly, the study has highlighted how when these deliberate steps are not taken there is a very real risk that the benefits are concentrated in the hands of very few. This finding is confirmed by a separate study at BINP, in which Sandbrook (2008) demonstrates that those gaining the most lucrative tourism benefits through employment tend to be young, well educated and wealthy men, whereas those making more limited returns on handicraft sales tend to be older, wealthier women. Despite this inequitable distribution of benefits, it is important to consider that tourism provides the funds required with which to run the revenue sharing scheme as well as the gorilla levy, both of which have been able to generate benefits around the entire periphery of the two protected areas.

The BMCT and the **park revenue sharing programme** appear to have generated important impacts with regard to building social infrastructure such as schools, clinics and water systems. At the time of undertaking the study, the BMCT programme was more widespread and the impact of revenue sharing was still rather limited. With the growth in tourist numbers and the addition of the

gorilla levy it is likely that the impact of revenue sharing will increase. The BMCT and park revenue sharing programmes are increasingly supporting individual households and groups on income generating projects that provide an important local benefit and complements the wider 'public good' investments supported previously. This shift in focus may reflect a concern that public good investments result in a displacement of local government spending, as mentioned above.

The **substitution programme** and the **agricultural development programme** have demonstrated widespread impact, largely due to the fact that they were introduced around the whole perimeter of the two parks and implemented over a long period. Agriculture in particular appears to have generated important benefits in terms of improved food security and raised incomes. The fact that the two programmes were implemented by a single NGO, which has now discontinued these activities, brings into question the sustainability of the delivery mechanism, and thus the conservation impact, although evidence gathered through this study indicates that with regard to tree planting at least, this is continuing without external assistance.

Despite the considerable investments made over the past 20 years, the study has revealed that communities living around the two parks continue to face significant costs associated with conservation. Of particular significance is crop raiding by wildlife, which appears to be significantly undermining much of the progress that has been made on agricultural development and raising local incomes. Consequently, a majority of people living around the park indicate that conservation costs exceed benefits and that it would be better to live further away from the park, rather than close by. This confirms similar findings in other studies that have looked at the distribution of conservation costs and benefits around the two parks (see Bush and Mwesigwa, 2008; Namara, 2005; and Hatfield, 2005). Crop raiding is also a problem at great ape sites elsewhere in Uganda and Rwanda, as reviewed by Hockings and Humle (2009). In Rwanda there are plans to implement a compensation mechanism for crop raiding as part of a newly reformed national wildlife policy, but this is not on the agenda in Uganda as it is considered too complicated (Sandbrook, 2010). Further concerns with crop raiding are that successful conservation initiatives can potentially make it worse by increasing wildlife populations, and that it can have a disproportionately negative impact on attitudes relative to material damage (*ibid*). Indeed, WCS staff in Uganda argue that negative attitudes towards conservation can be caused by crop raiding even in households that themselves do not receive any damage, meaning that a relatively few raiding events might undermine the positive attitudinal impacts of successful ICD initiatives (A. McNeilage, pers. comm.).

Fears were expressed from a number of quarters (particularly conservation interests) that the heavy investment in ICD interventions around the two parks would attract in-migration from households wishing to take advantage of the benefits that were being offered. This would then increase demands for park resources and increase conservation threats. These fears appear unfounded,

perhaps because levels of benefit to households are relatively modest, except in the case of tourism, compared to other livelihood activities available to local people This contrasts with the situation around the DSP site in CAR, where the almost complete lack of alternative economic activities following the cessation of logging in the area has seemingly contributed to in-migration to the project area of people in search of jobs (Hodgkinson, 2009).

The findings of this study and others conducted in recent years would indicate that significant levels of out-migration has been seen in many frontline parishes (see also Olupot, 2009; Namara, 2005; Bush and Mwesigwa, 2008). Oluput (2009) states that local people have reported the presence of the park as the primary reason for out-migration, while Bush and Mwesigwa (2008) indicate that 43 per cent of households surveyed around Bwindi have said that the park is causing out-migration. The only indication of ICD interventions acting as a 'magnet' for in-migration appears to be in Buhoma, following the establishment of community tourism activities, although more research would be needed to establish this conclusively.

5.3.2 Pro-poor impacts of ICD interventions

The ability of the six ICD strategies to impact upon poorer households appears to vary considerably. The impact of the Trust, park revenue sharing and the substitution programme appears to have been relatively unaffected by wealth or poverty status, with a fairly even spread across all well-being classes. Both the Trust and the revenue sharing programme appear to have concentrated initial support on financing public good investments, which have the potential to benefit rich and poor alike. The even distribution of benefits from the substitution programme is somewhat harder to explain as conventional wisdom would suggest that tree planting is a practice that requires the availability of land (owned and not rented) and labour. The agriculture programme (discussed below) which is similar in some senses to the substitution programme appears to have been much more prone to an inequitable distribution of benefits despite efforts midway through the 1992–2002 period to adjust the strategy to be more pro-poor.

The beneficiaries of the agriculture, multiple use and tourism programmes all appear to have been disproportionately from higher wealth categories, with tourism showing the most marked failure to impact upon the poor. Similar results were found in Hodgkinson's study (2009) of the DSP in CAR, where only well educated people in the right location were able to access tourism employment, and revenue sharing schemes were plagued by accusations of corruption. Clearly, while deliberate efforts have been made to spread the effects of tourism interventions in Buhoma parish (and with good results) this study would indicate that additional deliberate measures are needed to ensure that benefits flow to the poorest. Similar efforts to distribute additional tourism revenue to local communities were also made at the Nkuringo tourism site, through the provision of a gorilla permit concession and support for handicraft development and a

community walk. Further analysis of the success of this programme to not only increase the tourism revenue to local communities but also reach the poorest groups would need to be conducted.

The agriculture programme, implemented by CARE, aimed to ensure an even distribution of benefits across different wealth groups and to avoid the common tendency towards skewed benefits in favour of richer households. Evidence gathered by this study indicates that the ability to access benefits from this programme is heavily dependent on wealth. Research into the uptake of projects to produce protein alternatives to bush meat in Equatorial Guinea has found similar results, with the wealthiest families most likely to get involved (Allebone-Webb, 2009). This underlines that significant challenges are commonly faced in pro-poor targeting and there is a need to revisit targeting strategies if this goal is to be realised.

The study was unable to provide information regarding whether people had 'graduated' from lower well-being groups to higher ones as a result of specific ICD interventions. Indications from responses provided by beneficiaries of the tourism and multiple use programmes (particularly beekeepers) indicate that both of these interventions do provide considerable potential to generate improvements in income. However, results of previous research at BINP suggest that beneficiaries of tourism are often already relatively well off, suggesting that although their well-being may be improved, they are unlikely to be moving from lower to higher wealth groups within the community (Sandbrook, 2006).

The poor appear to bear a disproportionate share of the total cost of conservation. With fewest livelihood options they are faced with few alternatives other than resource use from the park, but in turn are impacted heavily by park law enforcement efforts (Bush and Mwesigwa, 2008). Furthermore, this study has indicated that the poor appear relatively unable to secure legal access through registered multiple use groups. This lack of capacity of the poor to take advantage of potential benefits from governance reforms that allow multiple use, or even the establishment of community protected areas, is a concern at numerous African great ape sites, significantly undermining the potential benefits to poor people (Sandbrook, 2010). The present study has also highlighted that poorer households tend to live close to the park boundary, where land is cheaper and more inaccessible. However, this area is also impacted most significantly by crop raiding and wildlife damage.

One particular group that has been heavily impacted by the park is the Batwa, who prior to the park's establishment depended almost entirely on forest produce such as honey, wild foods and bushmeat. All Batwa interviewed in this survey were found to be in the poorest well-being group. At the time of undertaking the survey, very few Batwa were beneficiaries of the multiple use programme. This does appear to be changing however, and during the current round of negotiations on the multiple use agreements, Batwa members have

been included within existing groups and the range of products expanded to a limited extent to include products favoured by the Batwa (although notably not the collection of wild honey, which was considered too much of a fire risk). The Trust and CARE's Rights, Equity and Protected Area Programme have introduced programmes that explicitly target the Batwa community, providing support for agricultural development (on land purchased for them), savings schemes and the construction of schools. Other forest peoples of Central Africa have faced similar negative impacts of conservation on their livelihoods. However, advocacy organisations, such as the Forest People's Programme, claim that they could play a role as partners in conserving biodiversity if they were granted rights to access and use resources at a low level, while helping to exclude non-local resource users (Sandbrook, 2010).

5.4 The effectiveness of ICD interventions

This study set out to explore the effectiveness of ICD interventions by:

- determining whether interventions aimed at improving local livelihoods can also promote natural resource conservation;
- identifying and comparing strategies through which development interventions have conservation effects.

In the following section we seek to answer these two questions, as well as identifying how and where conservation and development interests have been most effectively reconciled. We go on to provide general conclusions with regard to the validity of assumptions made within the design and delivery of the six ICD strategies studied.

5.4.1 Overall conclusions

The study has shown that across the two protected areas, conservation and development objectives appear to have been most effectively reconciled through the agricultural development programme, the Trust and the multiple use programme. At a local level the tourism programme also appears to have been highly effective. That is particularly the case at Buhoma as it was able to deliver individual benefits to households (through the sale of crafts and farm produce, or employment) as well as public-good benefits through the construction of schools and a clinic.

The clear link made from these benefits, to the presence of tourists and ultimately to the presence of the park and gorillas is easily seen and understood by local people.

While tourism scores highly as an effective ICD intervention, it failed to reach the poorer households to a significant extent. However, when it did, it had the greatest potential to influence attitudes towards conservation. At the same time, this and other studies has highlighted that poorer households have the

Photo: Jacob Holdt

Many Batwa families were displaced from the two gorilla reserves. They are amongst the poorest households neighbouring the reserves

most negative attitudes towards the presence of the park, appear to bear a disproportionately high cost of conservation, and are heavily reliant on the use of park resources. The effectiveness of ICD interventions, and tourism in particular, could be considerably sharpened, with deliberate efforts made to encourage more active participation of poorer households.

This study raises some important questions regarding the cost-effectiveness of different ICD strategies, as well as the trade-offs made between the achievement of conservation and / or development outcomes. The agriculture programme, implemented by CARE, involved a team of 45 field-level extension workers and a significant share of the total project budget, spent over a 10-year period. While it generated very important development benefits that appear to have been spread across a large number of people, might greater conservation impacts been generated through investing much of this money into helping launch the revenue sharing scheme under development by the park authorities? Instead of the significant amounts of funding used to establish the BMCT (which in effect creates a parallel funding stream to revenue sharing) could the money have been more usefully spent in reinforcing and strengthening the government's own revenue sharing programme?

An additional area that this study has highlighted is changing attitudes towards conservation, the underlying factors determining these changes and how changes appear to be distributed across different well-being categories. While

the study appears to show significant improvements in attitudes of local people, these do not appear to have significantly reduced levels of illegal use. A number of other studies conducted around protected areas in Africa have pointed to the complex relationships that exist between changing attitudes – and behaviour (Holmes, 2003; Infield and Namara, 2001). Other studies in Asia have indicated that attitudinal change may be less attributable to the impact of ICD interventions than to other factors such as natural resource dependency (Arjunan *et al.*, 2006) or levels of education, human–wildlife conflict, or profession (Gubbi *et al.*, 2008). Furthermore, this study has indicated that while positive attitudes may be generated through one aspect of the park or its conservation (such as gorillas, tourists and tourism revenue), this 'surplus goodwill' may not be 'spent' to make people feel better about other, unrelated costs, such as crop raiding or harassment by park guards (a finding similar to those of Hodgkinson, 2009). It may be simplistic to talk of improved attitudes towards conservation or the parks, as a more nuanced understanding of the different elements that generate either costs or benefits is required. Clearly, more research is needed to assess how these other potential factors may be influencing attitudes of poorer households, and the degree to which these changes may influence behaviour.

The study has shown some interesting feedback mechanisms that appear to operate in a number of the ICD interventions. Growing demands for handicrafts from tourism is providing valuable income to residents in Buhoma. However, there are signs that many of the materials used for the production of these handicrafts come from within the park. Due to the presence of tourism, Buhoma is not within a multiple use zone and so it is likely that the materials are sourced illegally and may be unsustainable. Success in one area has the potential to undermine success in another. In the agriculture programme, the promotion of climbing beans produced a massive increase in demand for stakes to support the growing beans. Park staff have expressed a fear that this may be fuelling increasing demands and unsustainable use of saplings and small trees from within the park. In a different way, the increased numbers of wildlife within the park, coupled with efforts to support park-edge communities diversify agriculture, may be fuelling conflict related to crop raiding. A similar feedback issue has emerged at the DSP project in CAR, where households earning money from project employment consumed more bushmeat than other, lower income, households, demonstrating that increased wealth can lead to greater resource consumption, even among those working for a conservation project (Hodgkinson, 2009). Clearly it is important to track and assess unanticipated feedback mechanisms that conservation may be generating on local development, or vice versa.

5.4.2 The validity of ICD assumptions

This study divided interventions into two basic groups – those that were dependent upon park resources for the continuation of benefit flows (coupling interventions) and those that were independent of the park (de-coupling interventions), such as the agriculture and substitution programmes.

The assumption behind de-coupling interventions was that it would reduce overall levels of dependence on park produce – or the income that was generated as a result of harvesting. The evidence gathered from this study has been somewhat inconclusive with regard to whether the substitution programme has reduced demand for park produce. Respondents appeared willing to switch park-sourced firewood and simple construction building materials, but were in no doubt that for timber, hardwoods could not be substituted by on-farm production. It is likely therefore that the substitution programme has not been effective in switching patterns of resource use, rather it appears to be complementing park use for certain low-value products. This finding is in line with results from studies of other substitution programmes in Africa, which have found various problems with the approach (reviewed by Sandbrook, 2010). These include the risk that those taking up the intended substitute may not be the same people exploiting natural resources in the first place (Allebone-Webb, 2009), and that introducing substitutes may encourage in-migration and increased pressure on natural resources (Hodgkinson, 2009). Despite these concerns there remain an alarmingly large number of ICDPs that introduce intended substitutes without giving adequate thought to how they may fit into local livelihood portfolios, and how to ensure that they are not simply incorporated as additional to, rather than in replacement of, previous resource use (Sandbrook, 2010).

A key assumption behind linking agriculture to conservation was that agriculture would provide alternative incomes, which would reduce the need to generate income from the sale of park-sourced resources. The survey indicates that this linkage is not clearly visible in practice. However, it is clear that the agriculture programme ranked highly in terms of reconciling conservation and development, had a widespread impact and addressed primary needs of the local community. It would seem therefore that the conservation-development linkage generated through agriculture was less linked to a substitution of one income source with another, but more to do with a general positive attitude generated by the programme, and an understanding that the programme was linked to the park through the CARE project. The relative success of the agriculture programme indicates that it is possible to develop strong conservation-development linkages around activities that have little or no relation to the resource itself, but which generate important benefits by responding to primary development needs so long as the project is recognised as existing because of the park.

Another key assumption was that linking local people to a resource and helping to generate a steady stream of benefits would increase willingness to manage and protect that resource over the long term. This study has confirmed the validity of this assumption, particularly with regard to the multiple use and tourism programmes. While this increased 'stake' in the management and protection of the resource appears to be clearly demonstrated with regard to the reduced incidence of fires and the growing willingness to engage in fire control, it is less marked with regard to law enforcement. One example of this tendency

is with multiple use, where beneficiaries (and in particular the beekeepers) have shown a very strong willingness to support fire control, but have been much more reluctant to engage in reporting illegal activities. This appears to be for a range of reasons, such as concerns over the integrity of some law enforcement rangers, as well as the significant implications that reporting illegal activities might have on the accused if found guilty and, for the reporter, the social consequences of reporting community members.

Multiple use had an assumed link between rights and responsibilities, and in particular with regard to law enforcement. This study has shown that the 'self-policing' aspects of multiple use to be weak and its conservation impacts appear to be more indirect – perhaps through a regularisation of a previously unmanaged harvest, as well as an increase in overall goodwill that the programme generates.

As has been pointed out elsewhere in this report, an increase in benefits does not necessarily imply a reduction in costs and without this, the effectiveness of ICD interventions may be undermined.

Law enforcement appears to have played an important role in reducing illegal activities and it is doubtful that ICD interventions (in their current form) implemented alone would have provided sufficient incentives to reduce illegal activities to an acceptable level. This reflects the situation in Rwanda, where park and project staff at Nyungwe Forest NP report that ICD benefits have led to increased tolerance of law enforcement, but have not in themselves persuaded local people to take an active role in law enforcement (Sandbrook, 2010). It may be the case that local people are more likely to get involved voluntarily in law enforcement activities under alternative governance regimes granting them a greater sense of ownership over natural resources than is the case in the strict national parks included in this study. This possibility is discussed in Section 5.7 below.

Given that the poor around BINP and MGNP are highly dependent upon park resources, law enforcement efforts appear to be negatively impacting upon the poor. With better focusing of ICD interventions in ways that provide positive benefits to the poor, it is likely that law enforcement efforts could be reduced (in turn reducing park management costs), and that their current impact on the poor could be mitigated.

5.5 Success factors and lessons learned

The results presented in this report indicate some level of success with regard to the reconciliation of conservation and development objectives, in an area that was known to have extremely high levels of conflict between park staff and local people in the early 1990s. Here we reflect on some of the possible factors that may have contributed to the successes described in this study.

Institutional presence: The external agencies supporting conservation and development initiatives in this region have been able to maintain a long institutional presence and have been able to secure long-term funding, well beyond the typical project life-span of four to five years. This in turn has had many important effects:

- Relationships between external organisations could develop and mature over time, allowing for complementary collaboration and partnerships.
- Relationships between external organisations and government partners (such as UWA and local governments) could develop and levels of mutual trust grow.
- A long period of field presence in the area allowed organisations to develop and adjust their strategies over time and to develop a strong understanding of the local context.

Institutionalisation of project approaches: In the early 1990s, all of the six ICD approaches were heavily supported by international NGOs – both in terms of financing as well as implementation responsibilities. But over the course of the past 15 years, there appears to have been a decreasing dependence on external funding and support for the majority of the programmes. This is particularly the case for multiple use, which at the outset was heavily supported by CARE working together with ITFC (Wild and Mutebi, 1996; Cunningham, 1992). At that time, Bwindi was the only protected area in Uganda that was supporting sustainable use. This programme has now been mainstreamed within the UWA community conservation programme and is being implemented at a number of other parks in the country. Similarly, the increased involvement of the private sector in tourist activities (in line with the significant growth in demands for gorilla-based tourism) has meant that the role of external organisations in this sector has decreased significantly in recent years. Two of the six ICD strategies described in this study (agricultural development and substitution) have not been taken up and implemented by governmental partners after the closure of the CARE Development Through Conservation project, and as a result, questions remain regarding the sustainability of conservation impacts generated through these programmes. However, it might equally be argued that even if government had taken over the implementation of the agricultural development programme implemented though the CARE DTC project, it would not have had the same conservation impact, as the link to park conservation and management would have been lost.

The nature of conservation threats: Reviews of ICD programmes in other countries have indicated that failure is often attributed to an inability to correctly identify and respond to conservation threats and also that threats may be driven by external factors, which cannot be addressed through routine project interventions (Hughes and Flintan, 2001; Wells *et al.*, 1998). Since the establishment of the park and the introduction of law enforcement, illegal use of the park appears to have shifted from commercial to subsistence use (Baker *et al.*, in preparation), fuelled by local demands. Similarly, other primary

Photo: Jacob Holdt

Handicrafts made by households living around Gorilla tourism sites have brought important local benefits and increased local support for conservation

conservation threats identified in this review appear to originate locally. As a result, it would appear that ICD interventions implemented over the past 15 years are largely correctly focused, although this study has indicated the importance of securing greater levels of impact on poorer households if both conservation and development outcomes are to be maximised. Furthermore, conservation impact appears to have been delivered most notably through pathways that were not initially identified during programme design (particularly with regard to agriculture, substitution and multiple use strategies).

The importance of making explicit linkages between conservation and development: The study has shown that a degree of success has been achieved with many of the ICD interventions in large part due to the fact that beneficiaries appear to have made the conceptual link between conservation and development. With de-coupled interventions, such as the agriculture programme, there have been efforts to ensure that beneficiaries associate the receipt of benefits with the presence of the parks. Similarly, when social infrastructure investments (such as schools) have been supported through the Trust and revenue sharing programmes, efforts have been made to create a conceptual link between the benefits and continued conservation. This demonstrates that

it is possible to support priority development needs, such as agriculture, income generating projects and public-good investments (which by their nature are not necessarily associated with conservation) while meeting conservation objectives, and indeed this can be a quite effective if done in the right way – by clearly associating the activity with the existence of the park.

5.6 Assessing the Ugandan experience within the wider context of ICD programming

Successful implementation of ICD programmes appear to be heavily dependent on the correct identification of conservation threats and the crafting of strategies that successfully mitigate those threats. The examples provided in this study would indicate that governmental and NGO agencies working on the identification of conservation threats did this relatively accurately. Strategies were developed with which to address these threats – and implicit within those strategies were a range of assumptions that linked conservation impacts with development outcomes. Due to a certain amount of luck, conservation impact appear to have been realised through most of the ICD strategies implemented, but often in very different ways to those that were originally conceived.

The research described in this study was developed in the early 2000s and notable in this review is the absence of a wider discussion around protected area governance – something that has come to dominate much of the literature on this subject in the intervening years. During the late 1990s and early 2000s, a number of the NGO players involved in the two parks worked with UWA to develop and strengthen park-wide community forums (now known as Community Protected Area Institutions – or CPIs), which were meant to provide a platform for dialogue (and ultimately management) between community and park interests. However, for much of the time covered by this research, collaborative management was achieved through a 'building block' approach, whereby individual initiatives such as multiple use and revenue sharing were launched with the aim of bringing the two parties more closely together. The degree to which a broader collaborative management approach is feasible in the Ugandan context is an interesting question, particularly in light of the rather limited benefit streams that are generated by the two national parks, and whether these benefits are sufficient to provide real incentives at the local level for a more significant role in management.

Recent research conducted around Bwindi (and other protected areas) has highlighted how the costs of conservation are unevenly distributed among people from different well-being categories living around the parks (Franks, 2008; Bush and Mwesigwa, 2008). This has also been illustrated through the findings of this study. What is indicated is the need for greater attention in future programming of this sort (both in Uganda but also elsewhere) to ensure that the benefits of ICD strategies are targeted and captured by those paying the highest conservation costs.

5.7 Assessing the Ugandan experience within the broader context of efforts to link great ape conservation and poverty reduction in Africa

The study area for research in this report is, perhaps, along with the other mountain gorilla habitat in Rwanda and DRC, the most famous of all the great ape sites in Africa. This is due to the presence of mountain gorillas, and the highly developed tourism industry in the area that raises its international profile. However, various types of chimpanzee are found in forest and woodland habitats from Senegal in West Africa right through to Tanzania in East Africa, and different types of gorilla are found from Nigeria in the west through to the mountain gorillas in the East. These species are almost always found in forest, but beyond that one shared characteristic, there is enormous variety in the social and ecological conditions of their habitat and the people living in or around it. Efforts to link ape conservation and poverty reduction, with similar goals to those reviewed in this study, have been made in many sites across many countries, with mixed results. The aim of this final section of the report is to place the ICD work at BINP and MGNP into the broader context of this work.

Before beginning any comparative analysis, it is important to highlight the lack of data on impacts, both for conservation and local livelihoods, of the great majority of ICD interventions at African ape sites. Like those reviewed in this study, most such interventions are driven by some kind of donor project, and it seems that the quality of reporting and dissemination of results at their end is very poor. In fact, the results presented in this report make the BINP and MGNP sites some of the very best-studied of all such projects in Africa, emphasising the value of this work. An exception to this rule is the study of DSP in CAR by Hodgkinson (2009), which includes data not only on livelihood and attitudinal impacts, but also on changes in behaviour towards a national park.

Despite the lack of quantitative impact data from elsewhere, much can be learned from discussion with stakeholders and a review of project literature, as conducted by Sandbrook (2010). The findings of that review suggest considerable overlap with other sites in the success factors identified here. Long-term presence of project partners is clearly valuable as it takes time for people to adjust to changes in resource accessibility or new initiatives in their area, like tourism or agricultural programmes. Results elsewhere suggest that a long-term presence should begin with an almost pure research phase, to ensure that as much as possible is understood about a system before attempting to influence it through a project (e.g. the LAMIL site in CIFOR, in Sandbrook 2010). Long-term institutionalisation of activities is a goal of many other projects, such as the Wildlife Conservation Society (WCS) project at Nyungwe Forest NP in Rwanda. The logic, as in the BINP/MGNP example, is that without such incorporation of ICD activities into local institutions these will disappear once projects are complete, as has been the case with many ephemeral projects. A theme strongly emerging from elsewhere in Africa is the role of local capacity building to make

Photo: Alastair McNeilage

Crop raiding by gorillas and other wildlife often impacts negatively on poor, park-adjacent households

such institutionalisation possible (e.g. the CARPE programme in Central Africa (Yanggen *et al*., 2010). Correctly identifying the nature of threats has also proved important elsewhere, and is again made easier by detailed preliminary research. A well-known example of non-local drivers of threat to biodiversity is the bushmeat trade in Central and West Africa, which is often driven by urban demand. Newer projects such as the work of ZSL in Gabon focus on reducing demand in such urban centres as well as on providing protein alternatives where hunting takes place, greatly increasing the likelihood of success. This kind of work forces conservation actors to broaden their focus beyond the habitat and species they are trying to protect, and this has proven very challenging for them. Under such circumstances bringing in expert development partners seems to increase the chances of delivering poverty reduction, as in the present case with the involvement of CARE, and other examples such as the work of the Village Enterprise Fund (a development organisation) with Jane Goodall Institute (a chimpanzee conservation organisation) around Budongo forest in Uganda (Sandbrook, 2010).

As well as these points of overlap in experience between the present study and other great ape sites in Africa, there are also many examples of divergence, often due to differences in context. First, there seems little evidence from elsewhere of agricultural or substitution programmes having such a clear impact on conservation attitudes as in the present study. In other cases, such as Hodgkinson's study (2009), support for infrastructure and alternatives to park resources are not associated with ICD programmes by local people. Further research to identify what it was about the CARE DTC programme that enabled this link to form would be very useful.

Second, other than the nearby gorilla habitat in Rwanda and DRC, there are no other sites in Africa that have such a successful tourism programme as BINP and MGNP. This greatly constrains the ability of projects at other sites to identify viable income generating activities, particularly in places far away from any roads or rivers that can facilitate market access, such as much of the Congo basin forest. In this sense BINP and MGNP are very unusual, because they can generate enough revenue through tourism to create jobs and opportunities local to tourism areas, and to raise funds for revenue sharing. Where such tourism is not possible, projects are looking to carbon-based funding mechanisms such as REDD as a possible alternative.

A third point of divergence with other sites is that BINP and MGNP are fragments of habitat in one of the most densely populated rural areas on the African continent. With the exception of ape sites in Rwanda, eastern DRC and fragmented forests in Nigeria, Ghana, Côte d'Ivoire and further west, the majority of African ape sites are in relatively large tracts of forest with very low human population densities. In such areas it should be possible to have a considerable impact on poverty if an income generating mechanism can be identified, but at BINP and MGNP the scale of poverty is such that meaningful

poverty reduction impacts of ICD are likely to be impossible. This was clearly recognised by the projects studied in this report, and is a major constraint on ICD success when compared to sites with fewer people. It is interesting to consider the kind of ICD impacts that could be achieved in areas with a population density of fewer than five people per km^2, if they had a tourism product as lucrative as that in BINP / MGNP.

Finally, as mentioned in Section 5.6.above, while BINP and MGNP might have been trailblazing sites for ICD as then understood in the 1990s and early 2000s, they have not changed to reflect newer thinking about governance reforms, particularly emphasising local rights to take decisions about resource management. Various examples of new community conservation areas (CCAs) are emerging elsewhere, such as the UGADEC network of CCAs at lowland gorilla sites in eastern DRC (reviewed by Sandbrook, 2010). These seem to be effective at encouraging local engagement in resource conservation activities at relatively low cost, but questions remain about their ability to generate meaningful benefits for local people, and hence their longer term sustainability. Given the obvious pressure on BINP and MGNP, the level of concern over gorilla conservation and the resources available for law enforcement, it is perhaps not surprising that the protected area authorities have designated them as national parks and have not been willing to consider sharing management rights, but this does represent a departure from cutting edge ICD thinking elsewhere.

Overall, comparison of ICD experiences at BINP and MGNP with ape sites elsewhere in Africa reveals important similarities in factors contributing to success, such as long-term projects, institutionalisation of ICD activities, accurate identification of threats and working with expert development partners. At the same time, the successful linking of agricultural and substitution programmes to conservation in the minds of local people at BINP / MGNP seems unusual, and other aspects of BINP / MGNP make them very different from ape sites elsewhere. Most important in this respect are the quality of the tourism product, the scale of poverty in the area, and the continuing emphasis on protected areas and outreach, as opposed to governance reforms that would enable sharing of management rights. Unfortunately there are too few sites with good enough data to draw more powerful comparative conclusions, and there remains a need for further research similar to that presented in this study.

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Annex 1. A note on methods – wealth ranking

Understanding how ICD interventions appeared to impact differentially on different well-being groups within a given community was an essential aspect of this study, as was seeing how the poor, in particular, were impacted by the parks and their overall attitudes towards conservation. This was realised through a wealth ranking exercise, explained in brief below.

Meetings were held with local council chairpersons of the selected villages (known as Local Council 1 councillors – or LC1) and the purpose of the study and methods were explained. five male and five female councillors were invited to a meeting at which wealth ranking was undertaken (if five female councillors were not available, alternative female candidates were invited to make up the numbers, such as school teachers or health workers). First, councillors were asked to develop 'well-being criteria', which could be used to describe or characterise different well-being groups. Different villages came up with different criteria of wealth, and sometimes different numbers of wealth groups. Indicators ranged from ownership and quality of assets (permanent house, fertile/large/sufficient land, livestock (numbers, types (big as opposed to small livestock)), stocks of food, transport means and liquid cash, to more qualitative and non-material indicators of wealth. Examples given of descriptors included: '*a rich person and his children are clean, dress well, eat well (balanced diet), are healthy*' while '*a poor person's children are poorly dressed, eat poor food, cannot attend good schools because he can't afford fees or even uniform*'. Other people mentioned children and wives as wealth indicators. Thus in one village in Kisoro, a materially rich man who had no children or other dependants in his home was considered poor because, as one of the participants put it, '*what is the use of wealth if you are not using it to bring up children or look after other people in need?*' Two groups mentioned participation in community activities as an indicator of wealth. One group stated that the poorest cannot attend meetings because they do not know the value, cannot even feel confident to sit among other people; another stated that rich people do not attend meetings because they think they do not need them.

After the wealth categories had been defined, the group was asked to list the names of household heads in the village on paper, indicating which households were male and female headed. Female-headed households were then further described or classified, using descriptions such as 'divorced/widowed/separated', and those whose husbands had migrated to work elsewhere, or were living with other wives. In villages with Batwa communities, Batwa households were identified. Names were clearly numbered. Concurrently the researchers numbered card cut out of manila paper so that each name on the list had a corresponding card number.

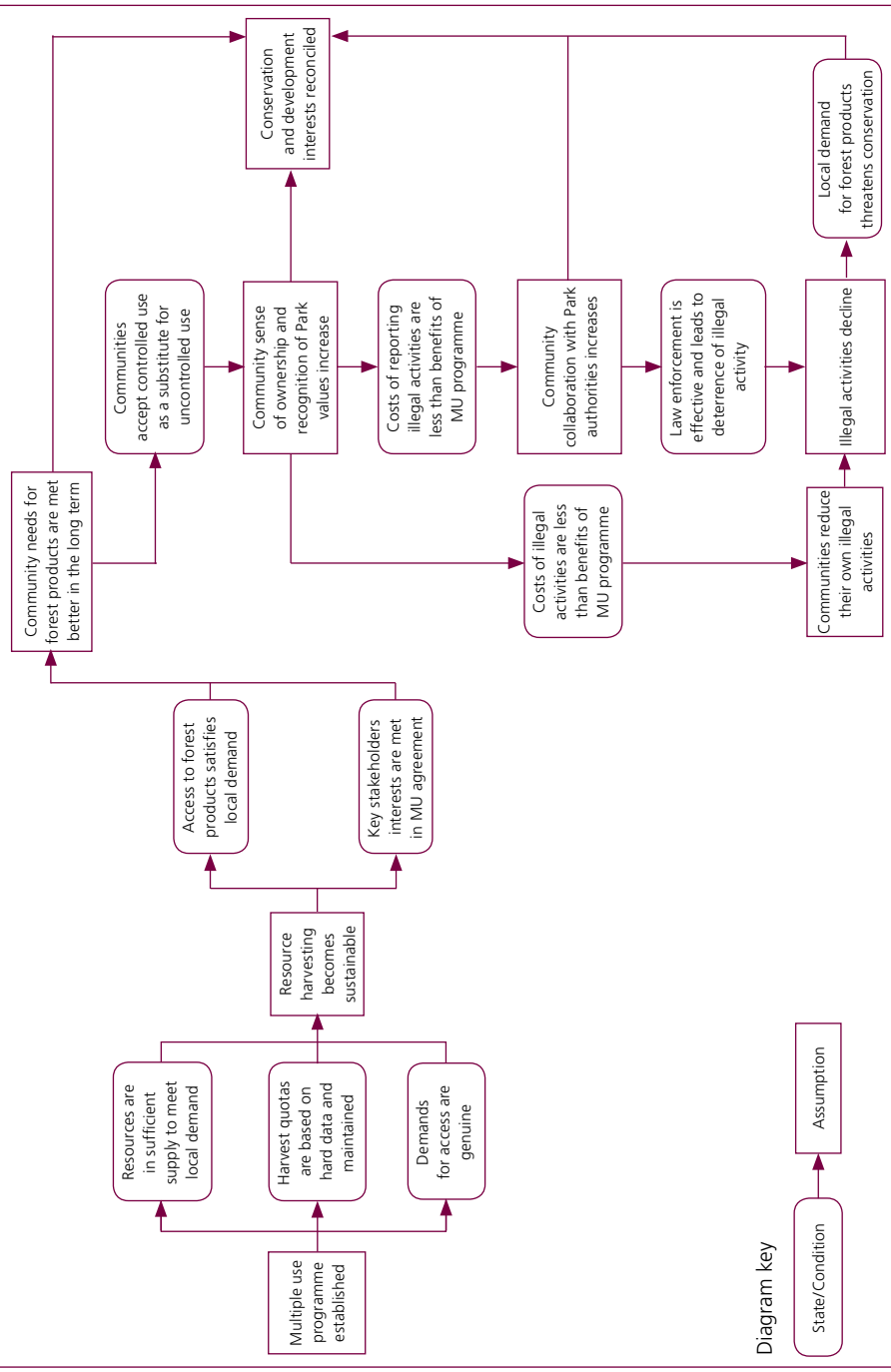
The group then went through the list of all households (and their numbered cards) and sorted each household into one of the four well-being categories – taking note of some of the other factors described above. Representative random samples were then taken from each well-being category. In other words, if 25 per cent of the village population was found in well-being category 2, then 25 per cent of the sample came from this same well-being group. For logistical reasons, 30 households were sampled per village, a figure that was deemed to be sufficient statistically. Thirty households also represented about 30 per cent of the average village population. The LC chairperson or other LC members guided the enumerators to the respondents' homes. A total of 573 people were interviewed.

Overall, the distribution of well-being groups across the sampled villages is illustrated in Figure 27 below and shows a fairly typical distribution with the bulk of the population in the middle two wealth groups.

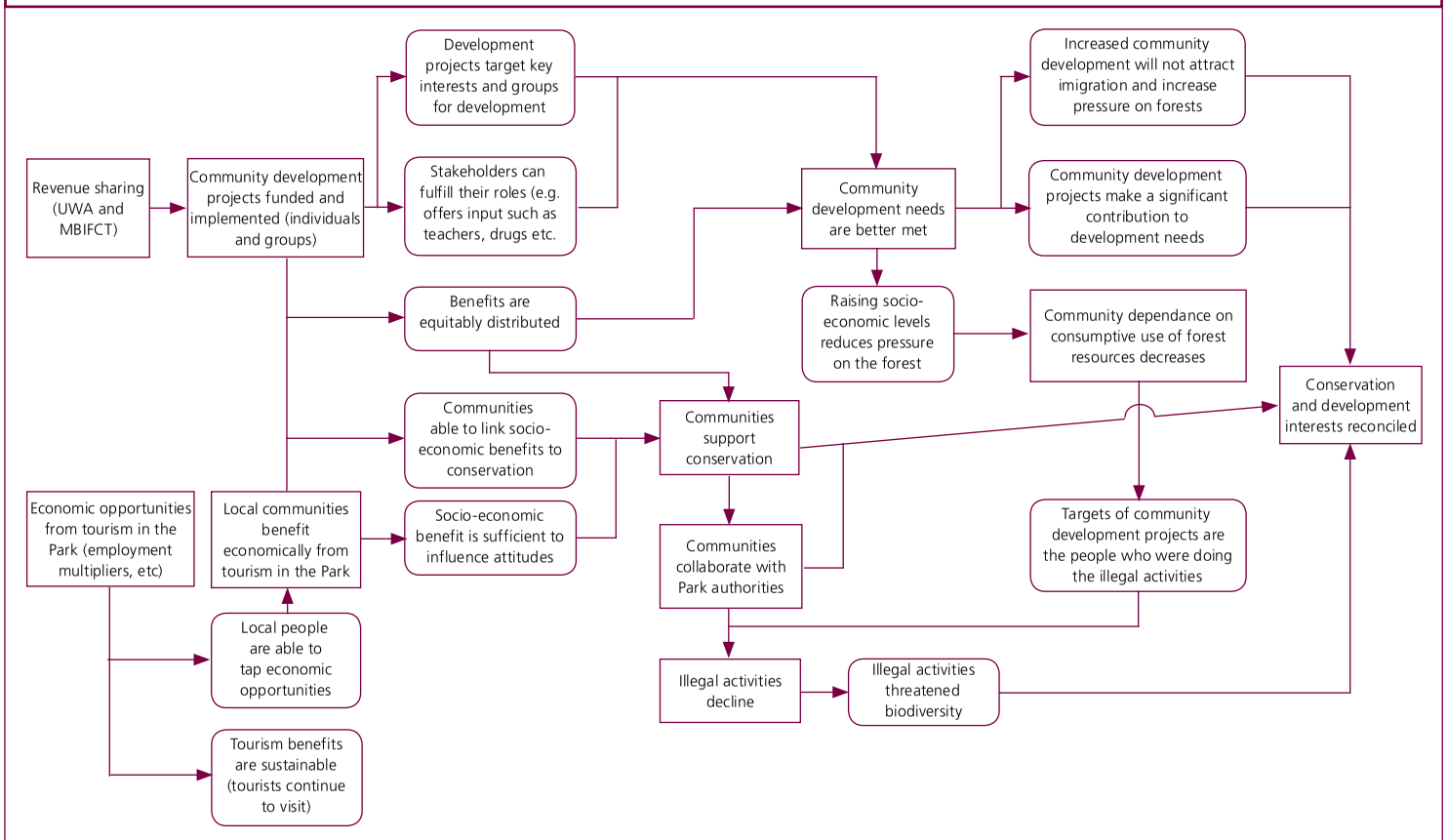
Figure 27. Distribution of well-being groups across all 19 sampled villages

Annex 2.
Conceptual models for selected ICD strategies

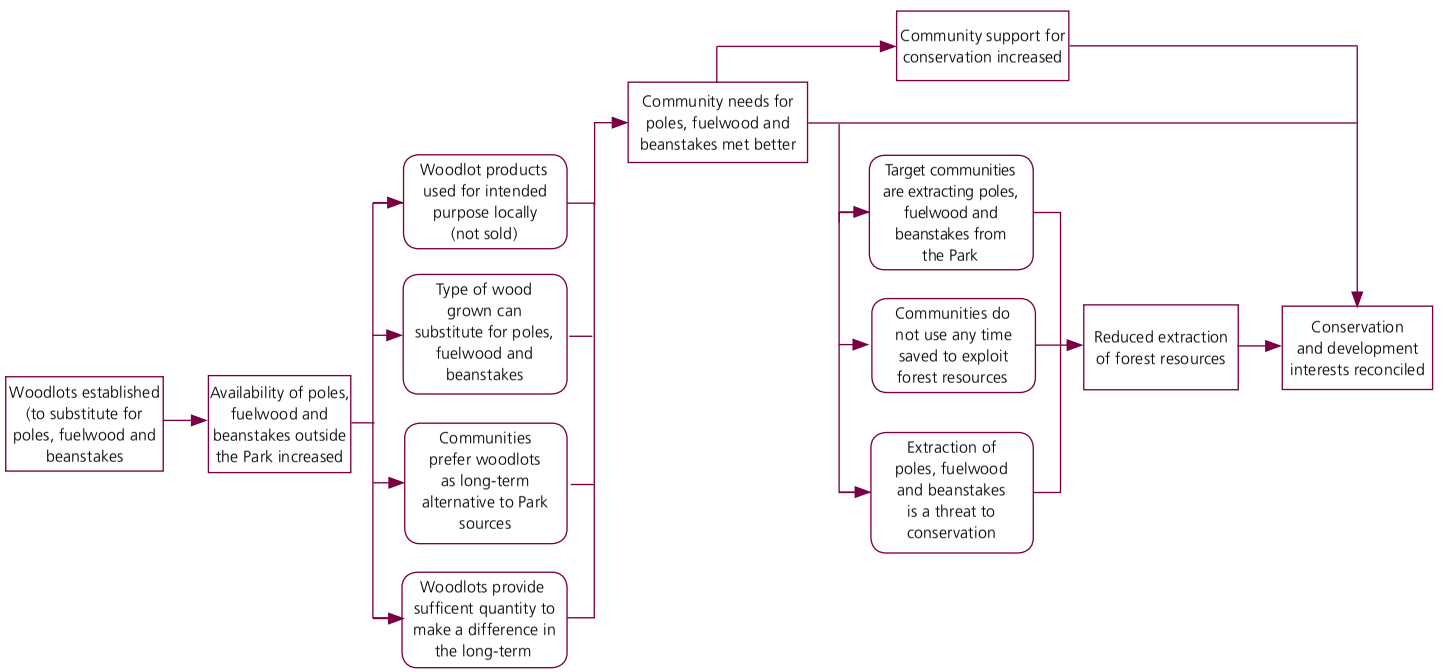
Annex 2.1 Multiple use



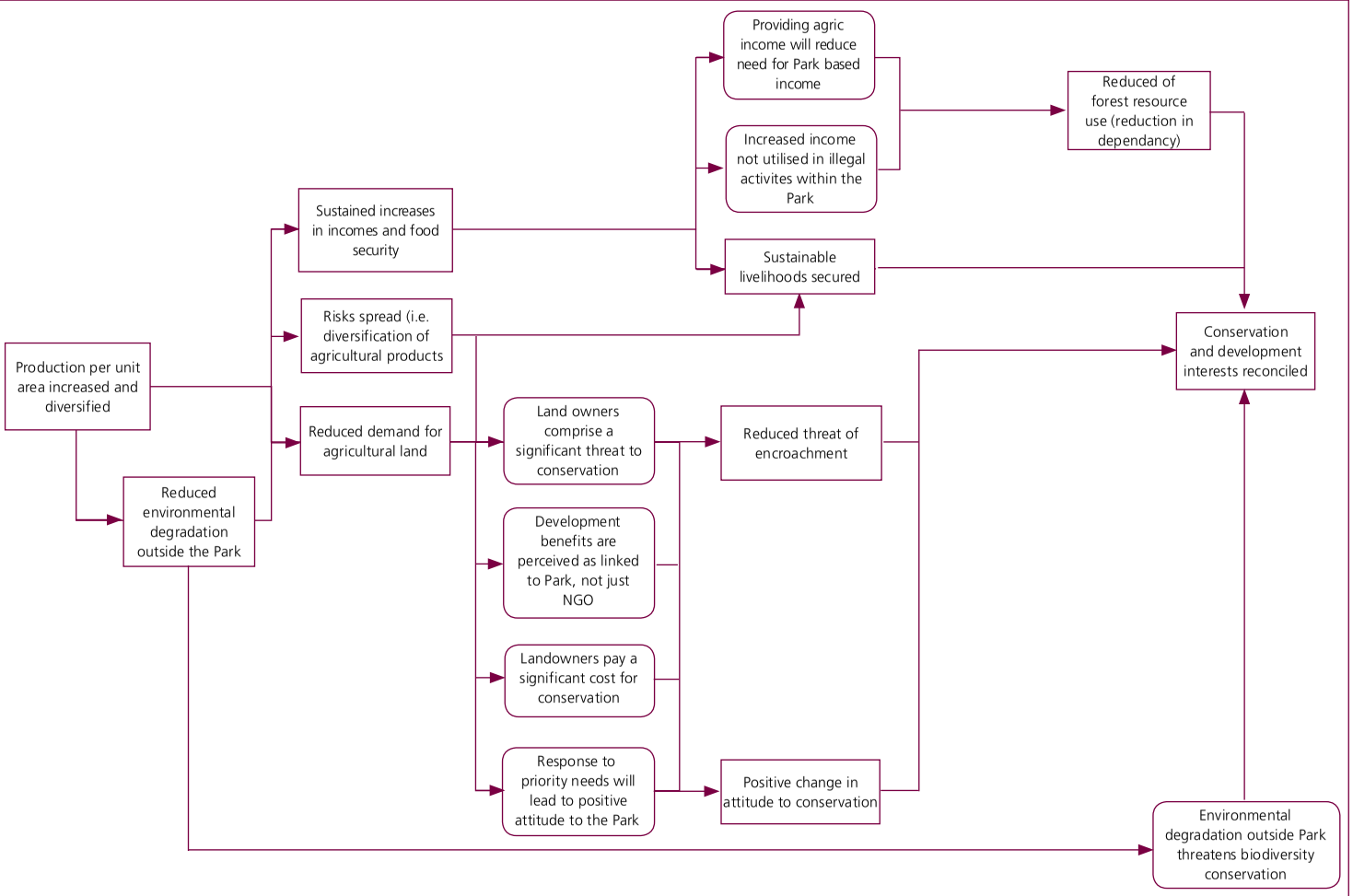
Annex 2.2 Revenue sharing / Bwindi Mgahinga Conservation Trust / Tourism programme



Annex 2.3 Substitution programme



Annex 2.4 Agriculture programme



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Development AND gorillas?

Assessing fifteen years of integrated conservation and development in south-western Uganda

Uganda's Bwindi Impenetrable National Park and Mgahinga Gorilla National Park are globally important biodiversity areas due to their populations of highly endangered Mountain Gorillas. But that means little to some people living beside them. After the Parks were created in 1991, conflict and resistance from the surrounding communities seriously threatened the ability of the protected area authority to manage the parks. In response, a range of "integrated conservation and development" (ICD) strategies have been applied in and around Bwindi and Mgahinga supported by the government and a number of national and international NGOs.

ICD is a strategy used in many countries for linking the conservation of biodiversity with local economic development. It rests on the assumptions that a) linking local people to a resource, and helping generate a steady stream of benefits from its management, increases their willingness to manage and protect that resource over the long term; and, b) the provision of alternative sources of livelihood will reduce dependence on resources within a protected area. This report tests those assumptions, and compares strategies through which development interventions have achieved conservation effect. The report concludes that many of the ICD interventions have achieved successes, in large part due to the practical link that the beneficiaries have been able to make between conservation and development, but often in different ways to that which was originally envisaged. But it is also clear that greater positive impacts for poorer households are needed if both conservation and development outcomes are to be maximised.

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