

Tourism revenue-sharing around national parks in Western Uganda: early efforts to identify and reward local communities

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Summary

Throughout much of the tropics, human-wildlife conflict impedes local support for national parks. By channelling tourism revenue to local residents, conservationists hope to offset wildlife costs and improve local attitudes toward conservation. To date tourism revenue-sharing (TRS) programmes have met mixed success. Local conditions and national policies that shape the success of TRS programmes were identified by comparing the experiences of both implementers and beneficiaries of pilot TRS programmes at three parks in western Uganda. Between 1995 and 1998, communities around these parks used a total of US \$83 000 of tourism revenue to build 21 schools, four clinics, one bridge, and one road. In 1996, the Ugandan parliament passed legislation that changed both the amount of money available for TRS and the institutions responsible for sharing the money. The programme was suspended at all three parks while the implementing agency (Uganda Wildlife Authority) struggled to design a programme that complied with the new legislation. TRS funds collected before 1996 were shared through 1998, but since then no revenue has been shared. However, a revised TRS programme is expected to resume in 2001. In semi-structured interviews, both implementers and beneficiaries evaluated local TRS programmes and compared them to other benefit-sharing projects, particularly those promoting sustainable use of non-timber products within park boundaries ($n = 44$). Both groups of respondents listed revenue-sharing as the most important advantage of living next to a national park. Seventy-two per cent of respondents indicated that they thought TRS had improved attitudes towards the protected areas, and 53% thought TRS was more important than sustainable use of non-timber forest products. Although respondents were generally positive about TRS, in informal discussions respondents repeatedly mentioned four potential obstacles to TRS success, namely poorly defined TRS policies and

unsteady implementing institutions, corruption, inadequate funds, and numerous stakeholders with differing priorities. From this survey and literature from experiences in other African countries, there are four key components of successful revenue-sharing programmes: long-term institutional support, appropriate identification of the target community and project type, transparency and accountability, and adequate funding. With firm institutional support and realistic expectations, TRS can play an important role in improving local attitudes towards conservation.

Keywords: ecotourism, revenue-sharing, community-based conservation, wildlife, Uganda, national parks

Introduction

Throughout the tropics, people residing near national parks bear disproportionate costs of wildlife conservation, whether they lose crops and livestock to raiding wildlife, or must forgo access to natural resources (Ferraro & Kramer 1997; Naughton-Treves 1997; Shyamsudar & Kramer 1997). To offset these costs and build support for parks, conservationists aim to transfer economic benefits to local communities (Western & Wright 1994). Despite the widespread promotion of integrated conservation and development projects (ICDPs) around protected areas, there are relatively few success stories (Brandon 1994; van Schaik *et al.* 1997). Political ecologists blame ICDPs around parks for failing to devolve wildlife management authority to local communities, or provide them with tangible economic benefits (Neumann 1992; Little 1994; Sibanda & Omwega 1996). By contrast, conservation biologists protest that wildlife populations are at risk when local economic concerns have priority over ecological principles (Terborgh & van Schaik 1997; Hackel 1999; Oates 1999). Both groups of critics recognize that ICDPs must do more to link local economic benefits directly to wildlife survival (Wells & Brandon 1992).

Linking economic benefits to wildlife conservation is difficult where wildlife is highly endangered, local poverty is acute, and stakeholders are numerous. In cases where species are legally protected from any form of hunting, sustainable wildlife harvest schemes are not feasible (Matzke & Nabane 1996). However, at sites where charismatic species are

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present, channelling revenue from tourism to residents adversely affected by wildlife offers a non-consumptive means to generate income for local citizens. Conservationists struggle to design programmes that effectively benefit diverse groups of stakeholders all of whom feel entitled to benefits. Implementation of tourism revenue-sharing (TRS) programmes raises two challenging questions, namely who should receive tourist revenue, and how should this revenue be disbursed?

Establishing equitable and effective revenue-sharing programmes requires that we define the 'local community', an entity much celebrated but poorly understood (Agrawal 1997). Most conservationists agree that economic benefits should be shared with those who most immediately affect and are affected by a protected area (Wells & Brandon 1992; Western & Wright 1994; Sibanda & Omwega 1996). Yet, those who have the greatest impact on biodiversity conservation are not necessarily the same as those suffering the greatest costs of conservation (Little 1994; Barrett & Arcese 1995). For example, urban elites running illicit timber harvest schemes seldom depend on parks for daily fuelwood (L. Naughton-Treves, unpublished data). Furthermore, the costs to residents living near protected areas vary considerably both within and between communities (Shyamsudar & Kramer 1997). Farmers at one site may suffer catastrophic crop losses to wildlife, while their neighbours lose nothing (Ngure 1995). Similarly, the economic benefits of tourism are distributed unevenly around parks (Lewis & Phiri 1998). For example, farmers in several villages surrounding a park in Zanzibar suffer crop damage from the endangered red colobus monkey (*Procolobus kirki*), however, to date, only residents near tourism headquarters have received benefits (Archabald 2000). The highly uneven distribution of wildlife assets and wildlife costs makes it difficult to identify appropriate beneficiaries for TRS projects.

Here we report the experience of participants in pilot revenue-sharing programmes around three national parks in western Uganda, namely Bwindi Impenetrable, Mgahinga Gorilla and Kibale (Fig. 1). During 1995–1998, a total of US\$ 83 000 of tourism revenue was distributed to 27 parishes neighbouring the three parks. In all three parks, the targeted 'local community' was defined according to nationally-sanctioned criteria emphasizing proximity to the park, and pre-existing administrative units. All three parks followed the same general guidelines for distributing tourism revenue. In 1996, the Ugandan parliament passed legislation that changed both the amount of money available for TRS and the institutions responsible for sharing the money. The programme was suspended at all three parks while the implementing agency (Uganda Wildlife Authority) struggled to design a programme that complied with the new legislation. TRS funds collected before 1996 were shared through 1998, but since then no revenue has been shared. However, a revised TRS programme has been designed and the programme is expected to resume in 2001. We asked both implementers and beneficiaries of TRS programmes at the

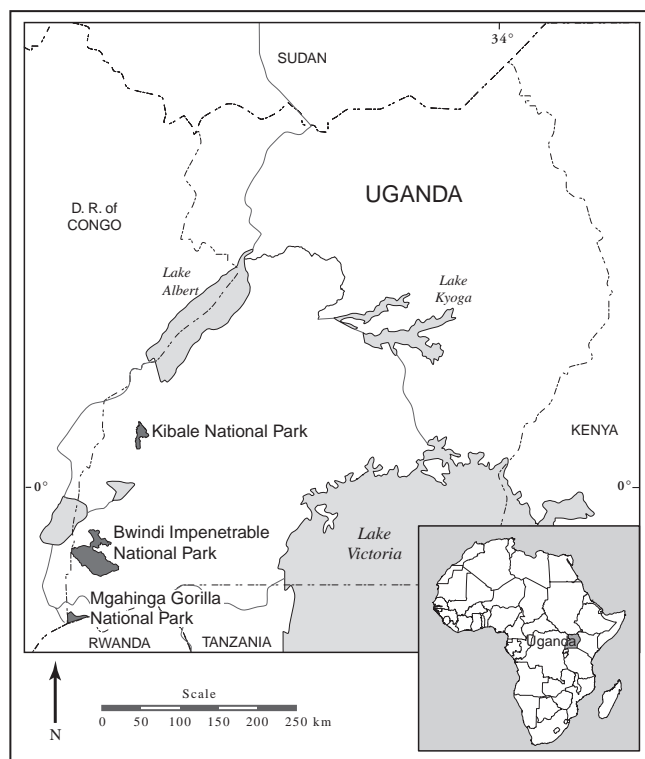


Figure 1 Location of Bwindi Impenetrable, Mgahinga Gorilla, and Kibale National Parks, Uganda.

three parks to evaluate the TRS programme and compare it to other outreach activities, particularly projects promoting the sustainable use of non-timber products within park boundaries. We do not offer data on tourism's impact on wildlife (see, e.g. Grieser-Johns 1996), nor are we able to test whether revenue-sharing has changed local people's resource use or attitudes toward wildlife (see, e.g. Weber 1995). Rather, the objective of this paper is to identify local conditions and national policies that shape the success of revenue-sharing programmes. Our insights are relevant to other parks inhabited by charismatic wildlife species that attract tourists but raid neighbouring farmers' crops, as in much of Africa and Asia. Table 1 provides a glossary of key terms, institutional names and acronyms used.

A brief history of revenue-sharing around Ugandan parks and reserves

The concept of wildlife revenue-sharing is not new in Uganda. By the 1950s, colonial officials of the Ugandan Game Department recognized that coercive and punitive measures were largely ineffective against local citizens hunting in parks and reserves (Ugandan Game Department Archives 1923–1994). In 1952, the Chief Game Warden declared: 'African Local Governments should receive a portion of the revenue accruing from game license fees to increase their interest in faunal matters, and thus encourage them to render greater assistance in the preservation of game

Table 1 Acronyms and abbreviations.

<i>Acronym/term</i>	<i>Explanation</i>
CARE	ICDP working around Bwindi and Mgahinga
Community warden	UWA senior staff in charge of all community conservation programmes
ICDP	Integrated conservation and development project
IGCP	International Gorilla Conservation Programme, an international NGO
IUCN	World Conservation Union
KWS	Kenya Wildlife Service
Local council	Elected council responsible for governing the parish
Local chairman	Chair of the local council
NGO	Non-governmental organization
NTFP	Non-timber forest product
Parish	An administrative unit below Districts, established early in the 20 th century
PMAC	Park Management Advisory Committee
PPC	Parish Park Committee
Project committee	Committee responsible for TRS project implementation
TANAPA	Tanzanian National Parks
TRS	Tourism revenue sharing
UWA	Uganda Wildlife Authority, has managed protected areas since 1996
UNP	Uganda National Parks, managed national parks until 1996
Warden in charge	Senior UWA manager at the park level

and the enforcing of game laws' (Uganda Game Department Archives 1923–1994: 1952, p.7).

Experiments in revenue-sharing began in 1952 and continued following Independence in 1962. Typically, a portion of revenue from tourism and/or game licence fees was given to Districts. No attempt was made to channel revenue directly to residents neighbouring reserves, however the Game Department shot wildlife caught raiding farms and offered local citizens the game meat (Naughton-Treves 1999). Game Department documents from this period (1952–1968) offer no evidence of formal rules linking revenue payments to local compliance with conservation policies. While there are reports of local chiefs apprehending poachers, other chiefs and kings continued to hunt wildlife illegally despite revenue-sharing programmes. One warden concluded that 'A far greater awareness of the value of game animals has been shown by the Kingdom Governments and District Administrations, but on the whole they have not made any significant effort to stamp out poaching' (Tennant 1963, p.33).

Revenue-sharing projects continued after Uganda's independence, but in 1971 the country plunged into a 15-year civil war and the government lost control of wildlife and parks entirely (Hamilton 1984). With peace in 1987, Ugandan civil society began to be rebuilt. Eventually the

national government endorsed biodiversity conservation and began shoring up the national park system and 'upgrading' several forest reserves to national parks (Sebukeera 1996). The new government's emphasis on grassroots governance and a growing interest in community-based approaches among international donors led to the development of a national tourism revenue-sharing policy for parks in 1994. To test the feasibility of this policy, a pilot project was established in Bwindi Impenetrable and Mgahinga Gorilla National Parks (hereafter Bwindi and Mgahinga), in which 20% of income from gorilla tracking permits was to be shared with local communities. Local communities positively received the pilot project, which ran smoothly. This led Uganda National Parks (UNP) to formally require that all ten parks in the country set aside 12% of their total income for revenue-sharing (Uganda National Parks 1994). Two-thirds of tourism revenue was to be shared with communities neighbouring the park, while the remaining third was to be split between the park's home district government and a central pool at national park headquarters designated for communities surrounding those parks that generated very little income.

The 1994 national mandate to share park revenue offered only a vague definition of the target beneficiaries as those people living adjoining the parks who are affected by, and affect the park (Uganda National Parks 1994). Park level managers at each of the three study sites defined the target community as all parishes neighbouring the park, a definition that emphasizes proximity to the park and pre-existing administrative units (CARE 1998). In Uganda, parishes are subdivisions of districts that are governed by an elected Local Chairman and Local Council and their average population is approximately 4400 people (Government of Uganda 1991). Parishes that border the three study parks extend up to 3 km from the park boundary in Mgahinga, 7 km in Bwindi, and 8 km in Kibale (UWA 1995a,b, 1996a).

The 1994 policy also stipulated that revenue-sharing funds for each park be administered by a Park Management Advisory Committee (PMAC). Although not stipulated in the national policy, in each of the three study sites the park management chose to elect parish-level committees called Parish Park Committees (PPC), to serve as the link between villagers and the PMAC. The role of these institutions in the revenue-sharing scheme is detailed in Figure 2. Finally, the 1994 policy requires that revenue be used to fund projects with a high number of beneficiaries.

The national policy changed when legislation merged Uganda National Parks and the Game Department into the Uganda Wildlife Authority (UWA) in 1996. The new legislation stipulated a change in revenue-sharing policy from the 1994 mandate, which included 12% of all park income, to 20% of gate fees only (UWA 1996b). Politicians hoped the increase in TRS funds would result in both personal financial gains and increased popularity with constituents (A. Mugisha, personal communication 2000). In some Ugandan parks where tourists pay a sizable gate fee and drive about

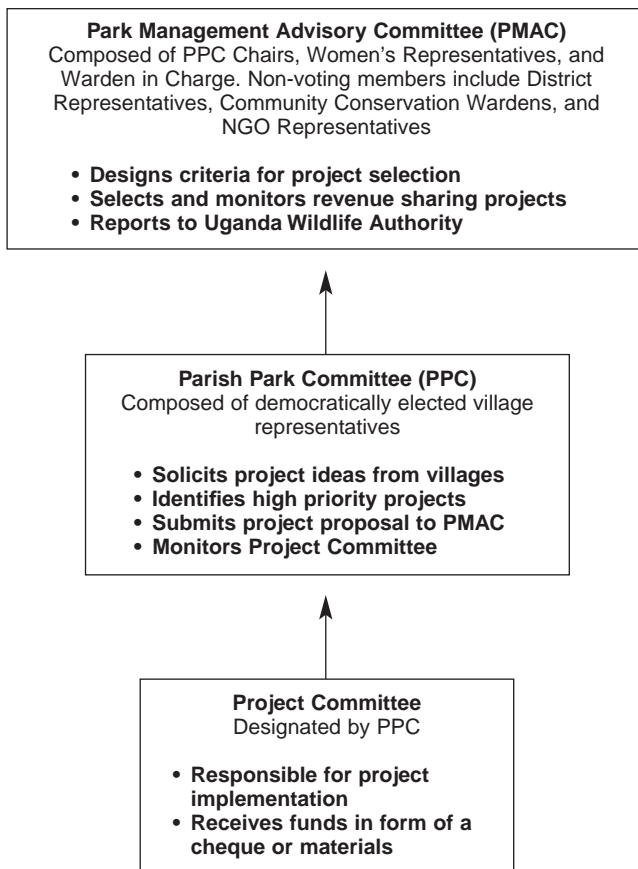


Figure 2 Institutions involved in the implementation of the TRS programme under the 1994 mandate. Arrows represent the flow of authority.

freely, the policy change theoretically increased the amount of tourism revenue accessible to local communities. But for the parks in this study, the change resulted in a decrease in funds because of the exclusion of gorilla and chimpanzee

viewing fees. In addition, the new legislation shifts responsibility for sharing revenue from PMACs and PPCs to a loosely defined 'local government'. Weak institutional support for TRS before the policy shift made the design and implementation of a new TRS policy that met the 1996 mandate a low priority. The process has taken approximately four years, and although revenue generated under the 1994 policy was shared through 1998, there has been a two-year lapse in funding for local communities. A revised TRS policy was passed by UWA in September 2000, and UWA is planning to begin implementation as soon as possible (A. Mugisha, UWA, personal communication 2000). This study focuses primarily on perceptions of the pilot programme and the 1994 policy, but the shifts in national policy provide insight into the broader challenges facing TRS today.

The study area

We surveyed three Ugandan parks where pilot tourism revenue-sharing schemes were launched under the 1994 mandate: Bwindi Impenetrable, Mgahinga Gorilla and Kibale National Parks (Fig. 1). Rapid population growth, high population density, and heavy reliance on subsistence agriculture for income characterize the regions surrounding these parks (Table 2). Local incomes fall below the national average of US \$220 per caput (Sebukeera 1996). Since 1900, violent conflicts in the region have driven people to settle in and around the three parks (Dak 1968; Ngolongoza 1969; Naughton-Treves 1999). Although some local institutions have proven resilient, rapid social change, war, and misguided national interventions have eroded traditional practices governing land and forest use (Edmunds 1997).

Bwindi, Mgahinga and Kibale all protect mid-high-elevation rain forest, an ecosystem that has been rapidly degraded and insularized throughout East Africa (Chapman & Chapman 1996). Bwindi and Mgahinga are particularly rich in

Table 2 Physical and socioeconomic characteristics of three national parks in western Uganda.

	<i>Bwindi Impenetrable</i>	<i>Mgahinga Gorilla</i>	<i>Kibale</i>
Size (km ²)	330.8	33.7	766
Altitude (m)	1160–2607	2227–4127	1110–1590
Protection history	1991 National Park; 1961–1991 Game and Forest Reserve; 1932–1961 Forest Reserve	1991 National Park; 1941–1991 Game and Forest Reserve; 1931–1941 Gorilla Sanctuary	1993 National Park; 1932–1993 Forest Reserve
Local threats to conservation	Human-wildlife conflict, snaring, pit-sawing	Encroachment, grazing, snaring	Human-wildlife conflict, snaring, pit-sawing, grazing
Distance of wildlife raids into farms from park boundary (m) (Naughton-Treves 1998, unpublished data)	220 (n = 62)	Not available	140 (n = 2010)
Average population density in bordering districts (Government of Uganda 1991)	246/km ²	301/km ²	92/km ²

endemic species, and all three parks shelter endangered wildlife, particularly primates (Howard 1991). Among the latter are highly endangered great apes, mountain gorillas (*Gorilla gorilla beringei*) at Bwindi and Mgahinga, and chimpanzees (*Pan troglodytes*) at Kibale, all of which attract tourists.

All three sites were designated forest reserves by colonial authorities in 1931–1932, and were eventually surrounded by intensive agriculture, due partly to official resettlement schemes and refugees fleeing war in neighbouring countries (Purseglove 1950; Langlands 1971; Naughton-Treves 1999). Settlement within the boundaries of the three reserves accelerated during the 1970s after President Idi Amin announced that Ugandans were free to settle on any unoccupied public land (Hamilton 1984).

As peace returned to the country in the late 1980s, the government began to enforce existing regulations regarding natural resource use. Then, in the early 1990s, under pressure from national and international conservationists, the Ugandan government ‘upgraded’ these three forest reserves to national parks (Sebukeera 1996). Along with this upgrade came stricter enforcement of existing regulations, implementation of new regulations, and increased conflict between local residents and protected areas. People resented evictions from parks as well as the stricter enforcement of restrictions on resource use and prohibitions against the killing of crop-raiding wildlife (Naughton-Treves 1997). Conflict was manifested in tense relations between protected area staff and local communities, illegal use of forest products, and illegal snaring and poisoning of problem animals. In the following section, we describe historical and current forces shaping park-community relations and conflicts at each site.

Bwindi Impenetrable National Park

Residents neighbouring Bwindi traditionally depended on the forest for firewood, timber, meat, and medicinal herbs. After Bwindi was gazetted a national park in 1991, hostility towards the protected area was at an all time high due to the enforcement of stricter regulations restricting access to these forest resources (Marquardt *et al.* 1993). Enforcement of prohibitions on the killing of crop-raiding animals such as olive baboons (*Papio cynocephalus anubis*), gorillas, chimpanzees, cercopithecine monkeys, elephants (*Loxodonta africana*) and bushpigs (*Potamochoerus* sp.) without providing alternative problem animal control methods also increased conflict between local communities and the protected area (Madden 1999). Despite the increased protection associated with national park status, Bwindi’s neighbours continue to engage in pit-sawing and snaring activities to supplement their subsistence income (UWA 1995a).

To decrease conflict with neighbouring communities, UWA and two international NGOs (International Gorilla Conservation Programme (IGCP) and Cooperative for Assistance and Relief Everywhere (CARE)) began implementing a cadre of programmes including tourism revenue-sharing, sustainable use of non-timber forest prod-

Table 3 Tourism earnings, administrative costs, and revenue sharing programmes at three national parks in western Uganda. Source: Lily Ajarova, Tourism Marketing/Services Manager, Uganda Wildlife Authority Headquarters, personal communication 2000.

	<i>Bwindi Impenetrable</i>	<i>Mgahinga Gorilla</i>	<i>Kibale</i>
Annual income (1998/1999)	US\$ 167 738 (at Park) and US\$ 510 536 (permits at Headquarters)	US\$ 249 776	US\$ 70 238
Annual expenditure (1998/1999)	US\$ 177 026	US\$ 192 333	US\$ 78 166
Revenue shared with communities to date	US\$ 70 000	US\$ 10 000	US\$ 3000
Tourists per year (1999)	2100	1718	955
Number of parishes bordering park	21	3	27
Number of parishes that have received benefits from TRS	19	3	5

ucts (NTFPs), conservation education and problem-animal control. The mountain gorilla ecotourism programme in Bwindi began in 1993, and continues to grow (Table 3). There are currently two groups of gorillas visited daily by tourists, and a third group is ready for tourism, awaiting UWA approval. Prices for gorilla tracking have been rising steadily, and tourists now pay US\$ 250 to view the gorillas for one hour. Tourism revenue-sharing has funded community development projects in 19 of the 21 parishes bordering the Park since the programme began in 1995 (Table 3). Each parish received approximately US\$ 4000 and all either focused on building primary schools, health clinics, or improving roads. Both IGCP and CARE provided the UWA staff responsible for implementing the TRS programme with strategic planning assistance as well as technical, logistical, and monetary support for community training. TRS comprised only a portion of the overall IGCP budget, as IGCP was also involved in tourism development. Between February 1995 and July 1997 when the bulk of the development and implementation of the TRS programme took place, IGCP spent approximately US\$ 42 370 on in-country TRS costs for both Bwindi and Mgahinga out of a total in-country expenditure of US\$ 187 607 (local expenditure excludes expatriate salaries and overhead costs such as vehicle purchase). The overall budget for the programme for four years was US\$ 1 574 868. CARE provided monetary support for workshops, which totalled less than US\$ 2000 in addition to technical support from staff members. Although the TRS programme relied upon donor support in its initial stages, TRS was seen primarily as a UWA programme with the potential to offset these initial costs with long-term benefits.

In addition to receiving tourism revenue, local residents are allowed to extract certain resources from Bwindi. Beekeepers in five parishes have been allowed to harvest honey from beehives within the Park. Eight other parishes are participating in programmes that allow the utilization of NTFPs such as fibrous plants for basketry and medicinal herbs from the Park (B. Isabirye, personal communication 2000).

Mgahinga Gorilla National Park

Local residents historically used Mgahinga's forests extensively for bamboo, timber, firewood, grazing, and water during the dry season (UWA 1995b). When Mgahinga was designated a Park in 1991, access to forest resources was restricted, although local residents were allowed to continue collecting water from inside the Park. In 1993, 2420 farmers were evicted from land within the Park boundaries, compensated, and resettled elsewhere. These resource use prohibitions, and resettlement generated considerable local hostility (UWA 1995b). Cattle grazing inside the Park, as well as snaring of forest wildlife, are the primary threats to Mgahinga.

UWA has implemented a suite of programmes in Mgahinga similar to those at Bwindi. Gorilla tracking in Mgahinga began in 1994, and tourists now pay US\$175 to visit the one group of gorillas, which is habituated to tourists. Tourists also pay to climb the three volcanic peaks in the Park. The system for distributing TRS funds in Mgahinga is identical to the system in Bwindi, and to date has funded one project in each of the three parishes directly bordering the Park (Table 3). Each parish received approximately US\$4000 and chose to build a primary school.

Other community outreach activities at Mgahinga include the construction of a stone wall along the Park border to prevent crop-raiding by buffalo, beekeeping in two of the three parishes, and a pilot programme promoting the sustainable use of forest products including bamboo rhizomes, spear grass and medicinal plants. In addition, a gravity water scheme provides neighbouring communities access to water from the Park during the dry season.

Kibale National Park

Residents neighbouring Kibale National Park (KNP) do not face the acute land and fuelwood shortage of those at Bwindi and Mgahinga. Kibale's population density is lower, although it reaches 272/km² on the Park's eastern face (Naughton-Treves 1998). However, as the forest patches outside the Park boundaries have diminished, many citizens have become more reliant on the Park for fuelwood, construction materials and medicinal herbs (L. Naughton-Treves, unpublished observations). Kibale also stands apart from Mgahinga and Bwindi for its more severe problems with crop-raiding wildlife, including elephants. Most farmers on Kibale's edge lose less than 5% of planted fields each season, but individuals residing at chronic elephant raiding sites may lose over half their crop in a night (Naughton-

Treves 1998). Park-community relations are worst to the south near the Kibale Game Corridor. Here, thousands of individuals were forcibly evicted and resettled elsewhere when Kibale was 'upgraded' from a Forest Reserve to a National Park in 1993. An official source reports 30 000 households were evicted (NEMA 1997) but other estimates range from 8800 to over 170 000 individuals (Chapman & Lambert 1999; Aluma *et al.* 1989).

At roughly the same time as the eviction, tourism activities were initiated formally at Kibale. Tourists now pay US\$10 each for a guided forest walk that offers an opportunity, but no guarantee, to see chimpanzees (UWA 1996a). Because chimpanzees are more difficult to view and track, Kibale cannot levy the high fees that Mgahinga and Bwindi charge for mountain gorillas. As a result, the revenue-sharing programme around Kibale is more modest. UWA has shared an average of US\$800 in materials towards constructing schools in five parishes around KNP (Table 3). The World Conservation Union (IUCN) provided monetary assistance for meetings and workshops as well as some technical assistance for the TRS programme; however, TRS played only a minor role in the project. For example, in 1995 IUCN spent approximately US\$17 500 of its annual budget of US\$728 965 on TRS support. Beyond revenue-sharing, IUCN has initiated projects allowing communities in nine parishes to use non-timber forest products in the Park, including wild coffee, medicinal plants, fish, beekeeping sites, poles and elephant grass.

In sum, residents at all three sites complain of losing access to park resources. For both Mgahinga and Kibale, large-scale evictions carried out during the early 1990s

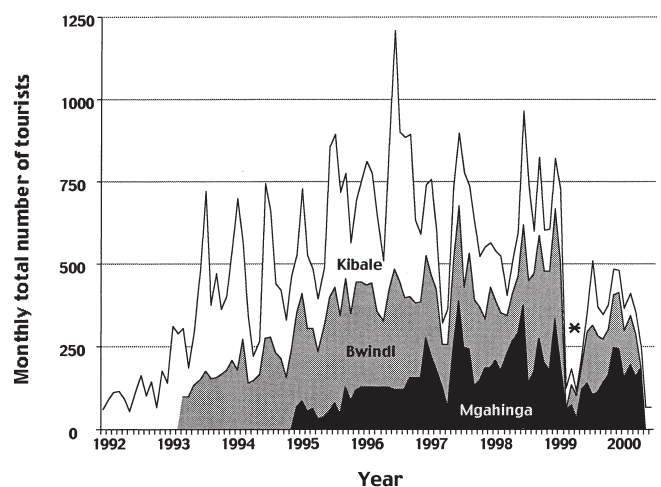


Figure 3 The total number of tourists visiting three Ugandan national parks: Kibale (white), Bwindi (grey), and Mgahinga (black). Data collection began for Mgahinga in 1995 and for Bwindi late in 1993. After 1997, the data from Bwindi reflect only the numbers of tourists paying for gorilla tracking permits. The asterisk (*) indicates the period following the tourist kidnapping at Bwindi.

heightened local resentment of the park authorities. A similar suite of wildlife species causes crop losses, although farmers at Kibale generally face the greatest risk. Roughly equivalent numbers of tourists visit the three sites (Fig. 3), however, Mgahinga and Bwindi collect more revenue (Table 2). In all three sites, fuelwood, construction materials and timber are becoming scarce outside park boundaries.

Methods

Data collection and sources

Karen Archabald (KA) helped design and implement the community revenue-sharing programme at Bwindi (Peace Corps Volunteer, 1994–1996), and Mgahinga (consultant to IGCP, 1997). Lisa Naughton-Treves (LNT) conducted research on park-community relations at Kibale during 1991–1994, 1996 and 1998, and collected field data on crop-raiding wildlife around Bwindi in 1994. We both joined and conducted several community meetings in languages commonly spoken in south-western Uganda, namely Rukiga (KA) and Rutoro (LNT).

In 1998, KA interviewed 44 key respondents from Bwindi, Mgahinga, and Kibale. In these semi-structured interviews, respondents were asked to:

- (1) list and rank advantages and disadvantages of living near the park,
- (2) judge if revenue-sharing had improved local attitudes to the park,
- (3) compare revenue-sharing to projects focusing on sustainable forest use,
- (4) comment on the selection of beneficiaries and the problems they encountered in the revenue-sharing programme, and
- (5) identify the greatest problems for promoting tourism revenue-sharing.

Interviews typically lasted 30 minutes, and led to free-flowing conversations. At each park, respondents were chosen to represent both implementers and beneficiaries of revenue-sharing projects. Among those implementing revenue-sharing projects were UWA staff ($n = 15$) working at local, district or national levels, and staff of non-governmental organizations supporting UWA programmes ($n = 4$). Those chosen to represent beneficiary communities included chairs of Local Councils ($n = 10$), Parish Park Committees ($n = 9$) and District Administrators ($n = 6$). Both Local Council Chairs and District Administrators are elected locally in a process entirely independent of park management. Only individuals with over one year of experience in revenue-sharing projects were interviewed. This resulted in a small sample size of respondents ($n = 44$), but guaranteed that respondents spoke from considerable experience and direct involvement. Despite the small sample size, certain results were strong. Moreover, the respondents' long-term

personal relationship with KA allowed respondents to speak frankly about volatile issues, such as corruption. By triangulating insights from qualitative informal discussions, direct personal experience, and the quantitative analysis of our questionnaire, we were able to develop a more contextualized and accurate understanding of the study area than would have been possible with qualitative or quantitative methods alone (Jick 1979; Rocheleau 1995).

Statistical analyses

We analysed the responses of respondents to determine if characteristics of the respondents had a significant effect on their perceptions of revenue-sharing. To do this, we ran a series of factorial design ANOVAs. In each ANOVA, three factors were included. First, respondents were categorized according to the park with which they had experience (site = Bwindi, Kibale, Mgahinga or multiple), the latter category referring to respondents who had experience with revenue-sharing schemes in multiple national parks. The second factor (level) coded whether the respondent worked at the local (parish or below) or regional level (district or above). The last factor (park employee) coded whether or not the respondent was employed by the Uganda Wildlife Authority. We then tested if site, level and park employee had significant effects on the mean number of advantages of national parks cited, the mean number of disadvantages cited, the mean ranking given to revenue-sharing as an advantage, and the mean ranking given to crop-raiding as a disadvantage. Interaction effects were examined but none were significant ($p > 0.05$), hence we present main effects only.

Results

Ranking advantages and disadvantages of living near national parks

Forty-four people were interviewed, of whom 31 provided quantitative assessments of the advantages and disadvantages of living near national parks. Ten of these were from Bwindi, nine from Kibale, eight from Mgahinga and four had experience with two or more of the national parks (multiple). Of the 31, nine were employed by UWA and 22 were local-level representatives. These 31 respondents cited a median of four advantages (range 2–6, mode 3) and two disadvantages (range 0–3, mode 2). Among the advantages, the most important (lowest average rank) was revenue-sharing with an average score of 3.8 ± 3.4 ($n = 31$), while the most important disadvantage (lowest average rank) was crop-raiding with a score of 2.7 ± 2.0 ($n = 31$) (Table 4).

At Bwindi, respondents thought the three primary disadvantages of living next to the Park were crop-raiding (70%), wildlife attacks (20%), and lost access to resources in the Park (10%) (Table 5). At Mgahinga, the three primary disadvantages were loss of land (62.5%), lost access to resources in the Park (25%), and conflict with Park management (12.5%)

Table 4 Perceptions of tourism revenue-sharing programmes in Uganda. Factors influencing responses to the question ‘What are the advantages and disadvantages of living near a national park?’: site = Bwindi, Kibale, Mgahinga or multiple (df = 3,25), level = ‘below the district’ or ‘district and above’ (df = 1,25), and park employee = paid by UWA or not (df = 1,25).

Factors	Results of Anova	
	F	p
<i>Number of advantages listed by respondents</i>		
Site	1.05	0.39
Level	1.43	0.24
Park employee	0.69	0.41
<i>Number of disadvantages listed by respondents</i>		
Site	0.36	0.78
Level	0.19	0.66
Park employee	4.56	0.043
<i>The relative ranking of revenue-sharing among advantages</i>		
Site	3.12	0.044
Level	8.41	0.0077
Park employee	0.20	0.66
<i>The relative ranking of crop-raiding among disadvantages</i>		
Site	8.07	0.0006
Level	1.42	0.24
Park employee	0.87	0.36

Table 5 Ranked advantages and disadvantages of living next to national park in the three park areas.

	<i>Bwindi Impenetrable (n = 10)</i>	<i>Mgahinga Gorilla (n = 8)</i>	<i>Kibale (n = 9)</i>
<i>Advantages</i>			
Tourism revenue sharing	40%	62.5%	33.3%
Sustainable use of NTFPs	10%		11.1%
Employment	30%		11.1%
Environmental benefits	20%	12.5%	22.2%
Improved market for goods			11.1%
Problem animal control		12.5%	
Improved transportation		12.5%	
Assistance from NGOs			11.1%
<i>Disadvantages</i>			
Crop-raiding	70%		88.9%
Wildlife attacks	20%		
Lost access to resources	10%	25%	
Loss of land and income		62.5%	
Problems with park management		12.5%	
None			11.1%

(Table 5). In Kibale the primary disadvantage was crop-raiding (88.9%), with the remaining respondents listing no disadvantages (11.1%) (Table 5). Respondents around Mgahinga listed assistance with problem animals signifi-

cantly higher among advantages of living near a park than did respondents from Bwindi and Kibale (Kruskal-Wallis, $H = 12.8$, $p = 0.005$). Only district level authorities and/or government agents worried that tourism had a deleterious impact on local culture.

Next, we used an ANOVA including all three contextual factors that might account for survey responses. None of the factors (site, level, park employee) showed a significant effect on the number of advantages listed by respondents. By contrast, park employees cited slightly more disadvantages (average of 2.1) than other respondents did (average of 1.3, $p = 0.043$).

Then we analysed the relative rankings of revenue-sharing and of crop-raiding to infer how attitudes are determined. This is an unorthodox application of ANOVA because the mean and variance of a ranked variable were analysed, but it is still preferable to employing three separate univariate non-parametric tests. In short, the ANOVA allows us to simultaneously include site, level and park employee as factors to understand respondents’ attitudes. Inter-correlations between factors that would otherwise confound our interpretations of the data are thus avoided. From this analysis, we found that revenue-sharing was slightly less important to respondents from Kibale than to those from Bwindi or Mgahinga (post hoc Fisher’s protected least squares difference, $p = 0.037$, $p = 0.015$ respectively). The level of the respondent proved strongly significant as local respondents ranked revenue-sharing twice as important as did district-level respondents (Table 4: $p = 0.0077$). Finally, mean rankings of crop-raiding revealed a strong effect of site, with respondents from Kibale and Bwindi ranking crop-raiding significantly more important than those from Mgahinga or multiple national parks did (Table 4).

Evaluating revenue-sharing

The majority of the respondents thought both revenue-sharing (72%, $n = 43$) and programmes promoting the sustainable use of NTFPs (59%, $n = 32$) had improved attitudes of community members. Respondents characterized ‘improved attitudes’ by friendlier relations between local people and park employees, decreased illegal activity, and greater participation by community members in park meetings and projects. However, UWA staff and local beneficiaries at both Bwindi and Kibale suggested that attitudes at the household level ultimately depend on a resident’s distance from the Park boundary and thus his or her exposure to crop-raiding by wildlife. As one local council Chairman from Kibale said, ‘People can’t possibly benefit from a school funded by revenue-sharing if their children are home protecting the crops’.

When respondents were asked ‘Which is a better way for the Park to help communities: distribute money to local people or let people use forest resources’, 20 (53%) thought revenue-sharing was better, six (15.8%) felt that sustainable use of NTFPs was more important, and 12 (32%) thought

both were equally important ($n = 38$). This bore no relationship to the factors of site, level, or park employee.

Those who thought TRS was more effective described how TRS creates an immediate visible benefit from the Park, benefits everyone living in the parish, and has a direct economic effect on local people. A warden at Bwindi noted, 'People are not as interested in NTFPs. What they really want is timber and meat. Only a handful of older people benefits from medicinal herbs and basket making materials. On the other hand, if the Park helps the community build a school or a clinic, people understand the benefit.' Furthermore, several local respondents from both Kibale and Mgahinga mentioned that the valuable NTFPs included in the formal programme were sometimes available outside of the national park, while in other areas of the forest there was nothing valuable to the local people. For example, in Kahangi, a parish bordering Kibale, people suffered from elephant crop-raiding, but complained that there was no elephant grass (*Pennisatum purpureum*), papyrus (*Cyperus papyrus*) or vines in that part of the forest.

Respondents who rated NTFPs more important than revenue-sharing argued that sustainable use directly helped individuals who relied on, and therefore affected, the forest. Sustainable use assigned responsibility for park resources to community members and gave them a stake in maintaining the forest for the long term, argued a UWA extension agent from Kibale. He said, 'When they brought the cement for the school, people were still destroying the Park. With sustainable use they know the Park is theirs and it is their responsibility to protect it.' Furthermore, the warden at Kibale noted that sustainable use was a potential means to compensate people directly, especially those who were suffering from crop-raiding but could not afford to go to the schools provided by revenue-sharing.

Finally, another group of respondents including UWA staff at local, park and national level, as well as non-park local representatives, insisted that TRS and sustainable use of NTFPs were complementary and equally significant because each programme addressed people with different economic, social, and political standing within the participant community. Programmes promoting the sustainable use of NTFPs targeted lower-level income groups who had a greater need for the forest and accessed it more frequently and directly. By contrast, revenue-sharing targeted the upper class that did not rely on the forest for subsistence, but may have had a significant impact due to their connections to regional markets, and ability to hire others to pit-saw or manufacture charcoal.

Challenges and problems with tourism revenue-sharing projects

Despite these promising pilot projects, by the time of the interviews (1998), the flow of revenue to local communities at all three parks had been suspended due to a shift in UWA revenue-sharing policy. Respondents were optimistic that

TRS would resume, but highlighted the vulnerability of local programmes to national policy shifts. Nearly all respondents, including government officials, acknowledged poorly defined policies and unsteady institutions as the central obstacle to success, and went on to identify three additional problems.

Poorly defined national policies and unsteady institutions

A cross section of respondents complained that the revenue-sharing policy needed to be defined more clearly at the national level. The poorly defined TRS policies that resulted from the shift in institutional responsibility from UNP to UWA have left revenue-sharing programmes dependent on the commitment of individual wardens. While some wardens may be supportive of TRS, the lack of clear policy and institutional support means that wardens who prefer the fences and fines methodology have little incentive to implement TRS policies. This problem is exacerbated by the high turnover rate in park administrators. For example, there have been six Wardens in Charge at Kibale between 1995 and 2000. To offset individual influence on TRS programmes the UWA director of field operations noted that UWA headquarters must provide better institutional support and guidelines that are more systematic for tourism revenue-sharing. UWA staff, NGO staff, and local representatives corroborated these feelings.

Corruption

There are potential problems with corruption at both the local and national levels. Several local respondents mentioned their distrust of park administrators and stressed the need for transparency and accountability. Current UWA staff in Bwindi reported that thousands of US dollars worth of TRS funds were used for other park management purposes in 1998 resulting in the withdrawal of TRS funding for approved projects in two parishes. During this period, several staff members were sanctioned for mismanaging funds. UWA and community representatives also suspected that individual wardens used part of this money for personal gain, which increased distrust between the local people and park management and made the work of committed wardens even more difficult.

Several community representatives also mentioned the need for transparency and accountability at the local level. In one parish bordering Bwindi, the community discovered that a local council chairman was embezzling TRS funds, and immediately removed him from office. In Mgahinga, one community refused to contribute to their project because they thought the PPC was embezzling funds. Only by openly discussing the budget and financial records was the PPC able to convince the community to make their contribution.

Inadequate funds

Local, park level, and national level UWA staff all expressed concern that funds for revenue-sharing were inadequate. Nationally, TRS programmes depend on political stability to

sustain profitable levels of tourism. In the late 1990s, citizens in western Uganda suffered violence from various rebel movements. In March 1999, rebels from the neighbouring Democratic Republic of Congo killed eight tourists at Bwindi. Tourist numbers plunged not only in Bwindi, but also in Mgahinga and Kibale (Fig. 3).

Senior-level park staff in each of the three Parks expressed concern that even during peaceful periods the amount of income generated in each park was inadequate to cover basic costs (Table 3). Wardens in Charge at all three sites complained that park staff had frequently gone without pay for weeks, or even months and that under these circumstances they could not justify sharing money with local communities.

Numerous stakeholders with differing priorities

Around all three parks, park managers and the PMAC agreed that because the amount of money available for TRS was limited, TRS should fund community level projects with a large number of beneficiaries. When respondents were asked 'Who should be first to receive park revenue or other benefits from the Park?' all respondents ($n = 44$) agreed that those living near the park should benefit first, but respondents disagreed whether the target community should be the parish (the current target community; 35%), the village (approximately 10 villages in one parish; 15%), or individual households that suffered disproportionately from the designation of the national park (24%). The remaining respondents believed benefits should go to the community bordering the park, but did not specify a particular level (26%). Those who supported the parish considered it an ideal administrative and political unit more likely to be able to identify appropriate projects and manage funds than a smaller unit. In addition, several local respondents mentioned that parish-level projects reached a wide range of people and thus decreased tension between different factions of the community.

Proponents of smaller-scale revenue disbursement argued that benefits should be channelled to villages directly affected by the park. They argued that at the parish level, TRS could benefit community members who have little to do with the park and miss members that affect and are affected by the Park. For example, in a parish neighbouring Bwindi, a school was funded 5 km from the forest edge. Those living closest to the Park suffering higher costs of crop-raiding were unable to send their children to this new school due to the long walking distance.

A cross section of respondents, including implementers and beneficiaries at all levels argued that individuals who suffered direct costs from conservation, such as eviction from park land or high levels of crop-raiding, should receive a larger share of revenue-sharing benefits. One local chairman from a parish near Kibale said, 'Revenue-sharing isn't addressing the real problem...those who are suffering aren't getting anything.'

Respondents also mentioned that prioritizing and

choosing community-level projects with a diverse group of stakeholders were difficult. Together with park management, the PMAC was responsible for deciding on the submission process for community-level project proposals, as well as criteria for project selection. In all three parks, each PPC submitted one proposal to the PMAC during each round of funding. CARE and UWA trained each PPC in project planning and budgeting. Proposals included a project description and timeline for completion, budget, and endorsement from the local and district government. The PMAC evaluated proposals based on several mandatory criteria, namely the project had to be under the designated budget cap (US\$ 4000 for Bwindi and Mgahinga, US\$ 800 for Kibale), consistent with park conservation objectives, sustainable, feasible, and endorsed by the appropriate government officials. In Bwindi, the PMAC rejected several projects because the appropriate district officials did not endorse them. District support was mandatory to ensure there would be teachers and medicine available for the schools and clinics built with tourism revenue. In another case, a project to construct a road near Bwindi's boundary was rejected on environmental grounds. Several projects were rejected due to inappropriate budgeting.

PMAC members planned to prioritize qualifying projects based on the park's impact on each community, the community's behaviour towards the park, and the level of community contribution to the TRS project. However, the PMAC had trouble interpreting the first two of these criteria. In the absence of systematic criteria, every parish representative was able to argue convincingly that the park had significantly impacted their parish. Prioritizing projects based on a community's behaviour towards the park also proved difficult. For example, in one parish bordering Bwindi there were several illegal fires set during 1995. However, when the parish was considered for TRS benefits, the PMAC did not want to punish an entire community for the illegal actions of a few individuals, so the project was funded. In practice, the PMAC prioritized proposals mainly based on the level of community contribution to projects. Difficulty prioritizing projects led respondents to call for clearly-defined methodology for project evaluation and selection.

Discussion

Several conservationists doubt that revenue-sharing can significantly improve conservation outcomes given the heterogeneous qualities of local communities and the uneven distribution of wildlife assets and costs (Wells & Brandon 1992; Gibson & Marks 1995; Brandon 1997; Ferraro & Kramer 1997; Hackel 1999). Yet, several studies have shown that residents who feel they are benefiting from wildlife have attitudes towards conservation that are more positive (Infield 1988; Fiallo & Jacobson 1995; Gillingham & Lee 1999). Our survey of three parks in western Uganda suggests that sharing even modest sums of tourism revenue can reduce

conflict between park management institutions and local communities and increase local participation in park management. Respondents from all three sites, representing local communities as well as government agencies, emphasized the significant role of revenue-sharing in improving attitudes towards the park and its management institutions. Even representatives from communities at Kibale who had received only US\$ 800 ranked TRS as a more important or equal advantage of living next to a national park than the sustainable use of NTFPs. Between the three parks, TRS has built 21 schools, four clinics, one bridge and one road. Although there is no systematic data on the impact of revenue-sharing on illicit resource use, the improvement in attendance at park-community meetings is an important step. Particularly encouraging was the cooperation of a participating parish in identifying and arresting gorilla poachers at Bwindi in 1995.

Although respondents unanimously endorsed TRS initiatives, both implementers and beneficiaries identified significant problems that must be addressed in Uganda and considered in revenue-sharing programmes elsewhere. We suggest four key components of successful revenue-sharing programmes, based on our survey and literature from experiences in other African countries.

Long-term institutional support

Successful revenue-sharing programmes depend on well defined, realistic national policies, and committed implementing agencies. The Ugandan experience demonstrates that without a clearly defined and enforced national policy, revenue-sharing programmes are contingent on the motivation of individual wardens. The Ugandan experience also reveals that local achievements in revenue-sharing can be entirely derailed by shifts in national policies. Schools, roads and clinics stand testimony to earlier years of hard work at these parks, but the more important, less tangible products of TRS, namely grassroots management institutions and collaboration between park staff and local communities, are at risk because disbursements have been stalled. Experience elsewhere shows that once communities are informed of TRS opportunities and expect benefits, failure to produce funding will worsen park-community relations. When the Kenya Wildlife Service (KWS) attempted to share 25% of park income with neighbouring communities in the early 1990s, the combination of inadequate funds and weak guidelines led to crumbling institutional support for revenue-sharing, and ultimately a reduction in the scope of the programme (Honey 1999). In response, residents at Tsavo National Park threatened violence and mobilized to degazette part of the Park (Sindiga 1999). Long-term institutional support for TRS is critical. In order to maintain community support, NGOs may have to assume responsibility for guaranteeing the disbursement of funds when state agencies are unstable or bankrupt.

Appropriate identification of target communities and project type

In most ICDPs, the target community is defined as a spatial unit where the population bears the greatest costs of conservation and/or has the highest impact on natural resources (Wells & Brandon 1992). For the sake of efficiency, and to stretch scarce funds as far as possible, TRS programmes administered by Tanzanian National Parks (TANAPA), KWS, and UWA have chosen to provide funding to communities bordering protected areas that are defined by pre-existing administrative boundaries (Honey 1999). The disadvantage of this approach is that villagers do not receive proportionate benefits from these projects, as the poorest community members may be unable to afford services from clinics and schools (Ferraro & Kramer 1997; Lewis & Phiri 1998; Mehta & Kellert 1998). Furthermore, community-level benefits do not offset individual costs associated with conservation and rarely provide sufficient incentive to decrease illicit resource use by individuals (Parry & Campbell 1992; Gibson & Marks 1995; Lewis & Phiri 1998).

On the other hand, trying to match directly tourism revenue payments to individuals suffering from wildlife crop losses or other direct costs of conservation is an administratively difficult and politically-charged endeavour. Across the globe, farmers often exaggerate claims of crop or livestock losses to wildlife (e.g. Siex & Struhsaker 1999; Kaczynsky 2001). In cases where local residents perceive that tourism revenue will be disbursed according to crop damage, complaints logically become more vehement (Murphree 1991).

Combining community-level projects, individual-level compensation, and sustainable use of NTFPs to provide a more integrated approach that addresses both individual and community-level conflict may be the ideal way to offset both individual and community level costs of conservation and improve attitudes. This type of approach has been successfully implemented around the Jozani Chwaka Bay Conservation Area in Zanzibar, Tanzania (Archabald 2000).

The selection of target communities coincides with the selection of project type. Placing control over project identification and selection in the hands of the community fosters feelings of participant ownership and responsibility, while preventing communities from choosing projects leads to resentment. For example, according to Honey (1999), disagreement over project priorities between TANAPA's Community Conservation Service and the Masai in Liliondo District compromised the impact of the TRS programme. While the Masai listed water, health and education as their most pressing needs, TANAPA officials thought the Masai needed protection from cattle rustling. As a compromise, the two parties decided to build a ranger outpost that would include a clinic. Later, TANAPA decided the outpost was too far from villages to be a logical site for a clinic. Although they provided a dispensary and classrooms elsewhere, the Masai felt cheated (Honey 1999). In contrast, CAMPFIRE

(Communal Areas Management Programme for Indigenous Resources) administrators in Zimbabwe came under fire for complying with local demands to use wildlife revenue to build a beer hall (Zimbabwe Trust 1990). In Uganda, ultimate authority for project identification and selection rested with the PPCs and PMACs, and conflict of the sort that TANAPA has experienced has been avoided. As an NGO representative from Bwindi suggested, 'It is the participatory process of revenue-sharing that matters more than the benefits.'

Although it is appropriate to tailor criteria for TRS projects to the social and ecological context of each park, basic criteria should be defined at a national level. As in the UWA policy, TRS projects should require contributions from the local community and local government officials should endorse them. More basically, they should link economic development with conservation (Brandon 1996). In practice, this type of link is difficult to forge. For example, Kenya's 'COBRA (Conservation of Biodiverse Resources Areas)' project channelled funds into economic development around protected areas according to local communities' priorities, but donor agencies reviewed it poorly on environmental criteria (Honey 1999). Other projects have met environmental objectives, but offered negligible economic benefits to local residents (Ferraro & Kramer 1997). Given that countless scholars and practitioners are struggling to conceptualize the link between economic development and biodiversity conservation, it is no surprise that the PMACs at the three Ugandan parks resorted to other criteria for project funding. Linking community level projects to individual behaviour towards a park will always be problematic. Where communities are especially hostile to parks, conservationists do best to support projects of greatest local interest, and use education programmes to establish the link between TRS and conservation.

Transparency and accountability

The actual or perceived misuse of tourism revenue by the implementing agency can increase instead of resolve tension between communities and protected areas. Unfortunately, TRS and other kinds of conservation compensation programmes are vulnerable to corruption, whether in Uganda or the USA (R. Jurewicz, personal communication 2000). As several local and UWA respondents mentioned, the use of TRS funds at Bwindi for other park management costs and for personal gains led community members to mistrust Park officials. In Zimbabwe, revenue-sharing projects have enjoyed better results when funds were very publicly counted and distributed (Child 1995). Checks for accountability and transparency at both park and community levels should be in place to guarantee that when tourism revenue is available, the portion allotted to local communities is protected from being used for other purposes.

The public must also be informed about TRS achievements. Lack of awareness about TRS-funded projects

undermines one of the strongpoints of TRS, namely obvious and tangible benefits. In Uganda, outreach meetings were carried out in each parish to explain the TRS programme with further sensitization carried out by the PPC. However, some villagers were still unaware of TRS funding for village projects. For example, residents in Mukono Parish, home to Bwindi's tourism headquarters, were unaware that money from TRS was funding bridge construction. Although they were aware of the project, residents thought funding was coming from general government coffers. Without thorough education programmes that reach the majority of villagers benefiting from TRS projects, the value of TRS programmes is severely diminished.

Adequate funding

Tourism revenue-sharing programmes are vulnerable to budget shortfalls. Tourism in developing countries is an unpredictable industry (Brandon 1996). As this paper has shown, a single brutal act at one park can compromise tourism revenue-sharing programmes nationally. In Uganda tourism numbers rebounded at all three parks in a manner of months after the attack (Fig. 3), however all countries are not as lucky. Furthermore, most African conservation agencies are chronically underfunded (Naughton & Weber 2001). Not surprisingly, revenue-sharing schemes throughout East Africa have fallen short of their goals. In the early 1990s, KWS first attempted to share 25% of gate fees with communities around parks, but later reduced this to 10% (Honey 1999). To date, KWS has been unable to meet even this more modest goal (Honey 1999). TANAPA is also falling short of meeting its goal of sharing 10% of gate fees (Honey 1999), and Uganda is still struggling to implement the 1996 policy that stipulates the sharing of 20% of gate fees. Communities participating in revenue-sharing schemes must be informed that tourism is not a guaranteed source of income.

Some critics advocate commercial hunting schemes as a more lucrative source of income for local communities, and point to the success of Zimbabwe's CAMPFIRE programme (Zimbabwe Trust 1990). In some cases, CAMPFIRE has quadrupled revenue flow to district councils and increased household income by Z\$450 (Z\$1 = US\$0.5, 1991; Murphree 1991; Sugg 1996). By contrast, the ecotourism revenue-sharing schemes in Uganda provide only token funding to local communities. The conditions at these three Ugandan parks preclude a CAMPFIRE approach primarily because human population densities are more than ten times higher than in rural Zimbabwe (Naughton-Treves 1999). In addition, the great apes and other species inhabiting these parks are highly endangered, and even if a lucrative market existed, safari hunting would not be politically or ethically viable. However, although the financial benefit per household in the TRS projects at these parks is negligible, they do have a regional conservation impact. In 1995, a proposal to construct a road through Bwindi to improve the transport of

tea to market was rejected because tourism earnings were judged more significant (A. Mugisha, personal communication 1998).

Conclusions

Despite several problems, the early experience of TRS in western Uganda reveals the potential positive influence of TRS on local attitudes towards parks and park management agencies. Respondents reported that increased participation in park meetings and projects and improved relations with rangers resulted primarily from TRS benefits. Community level benefits may also promote collective action against both local and regional threats to protected areas. At Bwindi, leaders of a community participating in TRS helped park authorities apprehend gorilla poachers. A proposal to construct a road bisecting Bwindi was rejected to safeguard tourism revenue. These are tangible examples of the promise of TRS programmes.

Although TRS has apparently improved local attitudes, our study suggests that providing community-wide benefits such as schools or clinics is inadequate to compensate farmers losing crops to wildlife. Results of our study suggest that if funds allow, TRS programmes may be more effective when a multi-layered approach that includes both individuals suffering disproportionate costs of conservation and the general community in the definition of the target community is used. Our study also suggests that TRS may be more effective in combination with complementary projects including sustainable use of NTFPs, conservation education, and problem animal control. However, further investigation into the role of each of these programs in improving conservation outcomes is necessary. The work of designating beneficiaries, designing education programmes, and choosing criteria for project selection is all dependent on strong institutional support, adequate funds for the TRS programme, transparency and sustainability. With institutionally supported and realistic expectations, TRS can play an important role in improving local attitudes towards conservation.

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