Ecotourism as Potential Conservation Incentive and its Impact on Community Development around Nyungwe National Park (NNP): Rwanda

Glorioso UMUZIRANENGE & Fabien MUHIRWA
Protestant Institute of Arts and Social Science (PIASS), Natural Resources and Environmental Management Department.

Abstract: This study investigated the potential of revenue sharing to act as an incentive to conserve biological diversity using Nyungwe National Park (NNP) and its neighboring communities, the extent of local community involvement in tourism development and conservation activities in western province of Rwanda. The study used a structured questionnaire to collect data from local residents, while face-to-face interviews were conducted with key informants from Rwanda National Tourism and Conservation Agency and local government officials as means to obtain deeper insights.

The findings established that there is little active involvement of local communities in NNP. There is lack of empowerment to participate in decision making especially of community conservation outreach and tourism revenue sharing projects. The researcher believes that in the light of the research results, the decision making system for Nyungwe National Park tourism and conservation development plans is still highly top-down approach. It has also established that higher losses result from wildlife crop raiding as compared to benefits derived from conservation. There are some problems that people cause to NNP, the main problem is tree cutting, burning forest and hunting wild animals. People around NNP use woods, medicines, and honey as resources. It has established that tourism revenue sharing and related benefits could serve as an incentive for conserving NNP and concluded that if tourism is well managed, it can act as an incentive for conservation through stopping illegal activities. The study recommends that local communities around Nyungwe National Park should be Consulted and involved in development programmes within their villages from the start and this will ensure their participation in conservation activities.

Key words: Eco-tourism; Economic incentives; Revenue sharing; Wildlife cost and benefits; Empowerment

1. Introduction

1.1. Tourism industry

Tourism industry represents one of the main sectors in the global economy, often referred to as the world’s largest single industry (UNEP, 2005). Tourism development and biodiversity are intrinsically linked (UNEP, 2005). Nature-based tourism, including ecotourism, adventure and wilderness travel is a large and growing global industry (Hiwasaki 2003).

The areas that are particularly appealing to eco-tourists are often places with high biodiversity (Honey, 1999). Tourism is also in a very special position to benefit local communities, economically and socially, and to raise awareness and support for conservation of the environment (UNEP, 2005). Tourism in Africa, has previously contributed greatly to national economies, but has provided limited benefits to the local populations, yet the locals have been and still the custodians of the natural resources that tourism depend on especially protected areas. Protected areas in developing countries are often viewed as a source of income from timber, oil, mineral exploitation, or tourism by the government (Putz, 1988). Rao and Geisler (1990), however, indicate that the high dependence of the population on natural resources for agricultural, energy, nutritional, medicinal, and other needs make protection and conservation of protected areas to be difficult in many places.

Conservation strategies in Africa have been characterized by exclusion of human use of resources in protected areas. In particular, this approaches, which is often described as “fortress conservation” or “the fines and fences” approach (Wells & Brandon, 1992:11)?

Ecotourism has been proposed as a viable economic activity that can minimize negative human impacts on wildlife habitats, yet provide an incentive to preserve natural area (Isaac, 2000). This approach also attempts to decrease local people’s dependence...
on natural resources by substituting alternative livelihood activities (Sayer, 1991). Where those mentioned natural resources are intrinsic to everyday livelihood and household budgets, even well funded coercive conservation generally fails (FAO, 2005).

In order to involve the communities in park protection and conservation and to let local community benefit from the park, the park authority, Rwanda Development Board (RDB) has introduced a revenue sharing program that consists of sharing a percentage of tourism income between the country and communities surrounding the park so that local communities who have to bear the cost of conservation also benefit from it and have a stake in its success. On the park side, this is one of the ways that can increase awareness amongst local people with the hope that they will support conservation and contribute to park protection. The revenue sharing program has been in existence for several years and ongoing sensitization and awareness raising campaigns are carried out by Park staff. However threats from the local communities towards the park and ongoing conflict still exist.

Therefore it is essential to have a better understanding of local community attitudes towards the park and conservation and to the revenue sharing program in particular (Adams and Hulme 2001 cited by Scholte, 2010). This would help improve revenue sharing to ensure that it meets community expectations but would also help community conservation teams better guide their work to have a bigger impact on improving community awareness and support and to understand the needs and expectations of the communities for this support (Adams and Hulme 2001 cited by Scholte, 2010).

1.2. Conservation in Rwanda

The natural resources such as forest, land, water, etc, remain central to rural people’s livelihoods (FAO, 2005). While biodiversity provides the basis for economic growth, the tendency has been towards over-exploitation and degradation (Rwanyiziri, 2011). As human population increased trough time without an increase of natural resources, the ecological footprint (the amount of nature needed to support a human being) increases also (Rwanyiziri, 2011).

Conservation approaches started with “fortress conservation” that excluded the local populations from the use of natural resources (Kusters, 2009). This approach considered local people as ignorant destructors against whom nature should be protected (Wells & Brandon, 1992:11). In the 1980’s, that old conservation approach was replaced by a new conservation approaches known as “community based conservation (CBC) that include local communities in the management of natural resources. In our country, community conservation face challenges related to the insufficient of natural resources base and rising population pressure. Rwanda can be described as a country with severe demographic stress relying for subsistence on a limited resource base. About 57% of Rwandans live in abject poverty and people occupying or living in the vicinity of the world’s areas richest in biodiversity are the poorest (Rwanyiziri, 2011). In Rwanda, the level of public involvement in decision making of natural resources management is still low. This low level of participation can be explained by available resources, schedules, budgets, and staffing (Rwanyiziri, 2011). The decentralization policy allowed establishes environmental committees from the village level to district level (REMA, 2010). However, these structures are not fully operating. Officially, districts are supposed to allocate sources to this program (fund, staff and other resources) but it is noted that some districts do not have sufficient resources to allocate all programs and environmental issues are not mainstreamed in their plan and budget (REMA, 2010). Community sensitization requires fund mobilization and resources (money, facilities, etc.). However, most of time there is lack of fund for that activity (REMA, 2010).

1.3. Ecotourism as an incentive to conservation

Ecotourism is defined by Honey (1999), as “travel to fragile, pristine and usually protected areas that strives to be low impact and (usually) small scale. Ecotourism occurs on a smaller scale than forms of mass tourism, and is based on the conservation of nature and gaining an understanding of local cultures (Hawkins and Khan, 1998:196).

Ecotourism has generated great interest from governments, tourism enterprises, tourists, conservation groups; and other stakeholders within the industry (Hvenegaard, 1994; Lindberg & Hawkins, 1993). It helps educate the traveler, provides funds for conservation; directly benefits the economic development and political empowerment of local communities; and fosters respect for different cultures and for human rights”. One of the principles in ecotourism equation is that; “it provides financial benefits and empowerment for local people.

Since 2005, ORTPN has initiated a revenue sharing scheme whereby 5 percent of tourism revenues from the park fees are utilized to support local community projects around national parks, aiming to sensitize local people to fill that parks are as one of their own. Some of the private tour operators also offer community-based tourism activities, such as stays with a local family, village walks, banana beer
production or even volunteering opportunities in local communities (ORTPN, 2004).

1.4. Objectives

This study aims to understand the impact of NNP revenue sharing scheme on community development around Nyungwe National Park. In other words, whether or not the sharing of tourism revenues and related benefits from tourism to NNP with local communities has served as an incentive towards conservation, and to determine the extent to which current tourism revenue sharing projects have addressed community-related problems, issues, concerns and whether communities link such benefits to conservation. The specific objectives were: (1) To determine the views of the local community towards the scheme administered by RDB to share tourism revenue and benefits with the local community; (2) To determine the views of both local community on whether economic benefits reach the local communities from tourism in NNP; (3) To determine the extent of community participation, and how RDB/ park management staff interface with local community around NNP; (4) To assess the attitudes and behavior of local population towards conservation within NNP; (5) To find out whether communities link tourism revenue sharing as an incentive for conservation; and (6) To determine if ecotourism can serve as a potential incentive for conservation in NNP.

2. MATERIALS AND METHODS

2.1. Data collection

This study used a combination of survey method and interview method to gather information. Surveys are the most common method of generating primary data as Zikmund (2000:66) explains, a survey is a research technique in which information is gathered from a sample of people by using a questionnaire. In addition, the study used an interview method to be able to obtain more insight into the research problem.

The interviews were applied to key informants from ORTPN and government official who could provide helpful information that may not be obtainable from secondary data. Questionnaires were administered to respondents from local communities. After identifying 3 administrative sectors that were adjacent to NNP, a random selection method was used in order to select respondents. In this case, it should be explained that the random technique was used because all the population units under study were considered homogeneous and, therefore, any one of them had an equal chance of being included in the sample.

Respondent from local communities selected randomly from 3 districts (Nyangagabe, Nyamasheke, Nyaruguru; Fig. 1), from each district one sector was selected randomly from 3 sectors that bordered with NNP. From each sector, 1 village was randomly selected. From each village, 30 households were selected randomly, making 90 households in total.

Figure 1. Map of Nyungwe Forest showing three neighboring sectors that were used for the interview

2.2. Data analysis

The data was transcribed onto a standard form in the field, in such a way that the data could be coded and assigned numerical values for its subsequent analysis. For example for demographic data, a variable like female was coded (1) while male was coded (2).

Responses to categorical data was also assigned numerical values and entered. Statistics was run for all questions, in order to generate statistical information using independent or grouped variables. Frequencies of different responses were expressed in percentages and graphed where appropriate.

3. RESULTS

3.1. Demographic characteristics of the respondents

In total, 82.5% of responds were male and 17.5% female. Female were less dominant in the interviews because when they were found with their husband, they considered the answers of their husband to be sufficient. Most respondents were in the age group 25–35 in Nyaruguru and Nyamasheke, while it was 36–46 in Nyamagabe District (Fig. 2a). The results clearly indicate that respondents were matured (in age) and hence expected to have knowledge and awareness of what happens in and around their
communities. More respondents had received primary education. Very few respondents had received secondary education (Fig. 2c). The study area is rural and most of community members were farmers who had stayed working on their farms rather than going to school. Moreover, many of those community members who had obtained higher educational qualifications were working in town. As a primary occupation, almost all respondents were farmers; few exceptions were those respondents who were students, those who did business and Government employee (Fig. 2b). More respondents have between 3-5 children; others have between 1-3 children (Fig. 2d).

![Figure 2. Age distribution (a), Occupation (b), education background (c) and number of children.](image)

More respondents have houses with roofing by Iron sheet, very few exceptions of houses that are roofed by thatch (Fig. 3a), their houses are constructed by woods, the very few exception houses that are constructed by bricks (Fig. 3b). More respondents have health insurance and very few respondents don’t have any health insurance (Fig. 3c). Access to clean water is estimated to 95% (Fig. 3d). More respondents have access to Schools and very few respondents don’t have access to school in Nyaruguru and Nyamasheke district where schools are far from their home (Fig. 3e). Farming is the main economic activity with 91.7%, and very few respondents are looking after cattle and women are doing handcraft activities (Fig. 3f).
Figure 3. Roofing material (a) house construction material (b) access to health insurance (c), access to clean water (d), access to school (e) and main economic activity for the respondent (f).

3.2. Knowledge of NNP and its associated tourism activity.
In Nyaruguru District there are no tourism activities in the villages and all respondents in Nyamagabe and Nyaruguru Districts have tourism activities in their villages (Fig. 4a). 47.5% of the respondents benefit employment, 30.8% benefit the village development through road construction, electricity, and other good infrastructures like schools, health centers (Fig. 4b). There are positive changes that tourism can make to the village. Tourists are seen less frequently and some respondents in Nyaruguru district who have never seen any tourist (Fig. 4c).
3.3. Knowledge about Tourism Revenue Sharing Scheme

More respondents know about revenue sharing (Fig. 5a), more respondent have improved the livelihood through livestock, schools, and good roads programs (Fig. 5b). Almost all respondents from all districts noted that there was a complete lack of any community involvement in decision-making, comprising 95% of respondents in all districts. Respondents were not consulted over issues such as deciding on conservation priorities of NNP nor on revenue sharing projects that aimed at improving their livelihoods and they would like to be invited in decision making meetings (Fig. 5c). Although few of respondents expressed that they participated in meetings involving management and conservation of the park, one government official in the interview explained that the ORTPN, in collaboration with government, makes policies and decisions regarding the management and conservation of the park, and then communicate this to community residents through their administrative leaders (local government leaders). However, he indicated that the communities do not have the power to change any policy or any decision.

3.4. Tourism benefits as an incentive for conservation

All respondents thought that tourism revenue sharing and related benefits could serve as an incentive for conserving NNP. All respondents in districts revealed that, if tourism is well managed, it can act as an incentive for conservation through stopping illegal activities (Fig. 6).
Among the Challenges faced by NNP as ORTPN’s staff indicated that poverty is a great challenge to the existence of the ANP. He mentioned that because the community does not have enough food, they tend to seek food from hunting in the park and practice other illegal activities like seeking firewood to prepare their food.

![Graph showing the comparison between stop illegal activities and will not stop illegal activities.]

**Figure 6.** Tourism benefit as incentive for conservation

4. DISCUSSION

Nature-based tourism is seen by many as one savior of wildlife conservation, capable of generating a flow of revenue to pay the costs of conservation and to meet the needs of local communities (Adams, 2004). Local communities living around NNP have appreciated the ecological services provided to them by NNP. This appears to be a strong basis on which to improve the relationship between NNP and the local community. Furthermore, local community respondents in three districts appreciated the importance of protecting and conserving NNP.

However, this support for NNP was based largely on their appreciation of the ecological services that NNP provides. Therefore, it appears fundamental to correct the imbalance in the flow of revenue and benefits from tourism to three districts, as a way of improving community-park relations. As human populations in Rwanda have increased, and as natural habitats face increasing threats from neighboring communities, people and animals are increasingly coming into conflict over space for farmland and food. Communities living around NNP have suffered reduced crop yields, are susceptible to injury and death, as a result of which wildlife may attacked as a means both of self-defense and of gaining some compensation for the damage suffered, and this represents an increasing threat to the survival of wildlife and of conservation efforts in NNP.

Crop raiding is a critical issue for communities living around NNP and is a cause of much of the conflict between community members and NNP. Most respondents in three districts reported that crop raiding was a major threat to their economic survival. In Rwanda and around NNP in particular, communities depend on farming for their survival, so crop raiding can lead to misery and friction between local communities and wildlife. To-date, there has been little interest from managers to investigate the patterns of raiding activity by wildlife and its potential impact on farmers’ food and household economic security (Hill, et al., 2002). To understand exactly how particular types of human-wildlife conflict impact on people’s lives, we need to understand something of what that situation means to those individuals (Hill, et al., 2002). As one community member put it, “when our animals by mistake go to the park, they are impounded and we are either charged a fine or imprisoned, but when their wildlife comes to our fields, they don’t care and expect us not to care either. Therefore, ORTPN has to accept the responsibility.

This feeling responds to Scheyvens’ (1999) eco-tourism framework, which spells out signs of community disempowerment when agencies initiate or implement ecotourism ventures and treat communities as passive beneficiaries by failing to involve them in decision-making, hence a majority of community members feel that they have little or no say over whether or not tourism initiatives operate or the way in which they operate. In due course, a compensation program should be implemented to ensure that local people are part of the overall management of the problem, and can participate in determining what they consider to be an appropriate compensation package. Otherwise, conflict between communities and wildlife around NNP will remain a threat to conservation and survival of many species. The issue of loss of life and livelihood requires landmark, realistic and cost effective solutions that will shift the economic burdens away from local communities to institutions charged with managing wildlife for the national benefit. In turn, this will ultimately encourage a constructive engagement between local communities and the task of conserving wildlife in their neighborhood. A new concept to share 5% of revenue deriving from tourism was proposed for implementation. Projects were identified and money has been set aside since 2002.

As contended by Tosun (2000), community involvement in tourism can be considered from at
least two viewpoints: in the decision-making process and in the benefits of tourism development. This is not the same in case of NNP. Although ORPTN had already initiated projects from revenues generated in 2003, communities at large were not involved in making decisions about which projects to implement. Districts took the lead in identifying projects for ORPTN to fund. Their participation and involvement are considered when they are having economic benefits via revenue sharing and encouraging them to operate small scale businesses such as animal husbandry, beekeeping and other small businesses. However, while much of this could help in influencing political support at the district level, there is a need to make a clear distinction between district and community needs and priorities. Otherwise, sharing of revenue from tourism will remain a weak link in the equation and will have a little impact on the major target group among local communities, who bear most of the costs of living next to NNP, and who have the greatest impact on the conservation of the park as (Tosun, 2000) have already revealed in his several studies.

Most respondents in three districts knew of the scheme to share tourism revenue. Respondents were clear that decisions made at district levels do not reach them. Respondents from three districts indicated that sharing of tourism revenues with local communities around NNP could reduce the conflict between park management and local communities and increase their participation in park management. Furthermore, respondents from three districts emphasized the significant role that sharing tourism revenue could play in improving attitudes towards NNP and in reducing illegal activities. For the conservationist, the real question is whether nature-based tourism can provide an effective incentive for communities to take conservation action (Kiss, 2004). Such incentives can take several forms. The ideal is a direct linkage, in which tourism earnings are so high that people deliberately protect biodiversity to protect that income (Kiss, 2004). For ecotourism to promote conservation, local people must clearly benefit and understand that the benefits they receive are linked to the PA (Brandon, 1996). If benefits do not stay in local areas or are narrowly distributed, they may not provide sufficient economic incentives to reduce livelihood dependence on resources inside PAs. So far, the evidence indicates that when changes have taken place, ecotourism has been but one component of change (Brandon, 1996). For communities to benefit from tourism in NNP, considerable attention needs to be given towards their perceptions, views and understanding of tourism and conservation, and to increasing their involvement in decision-making about projects aimed at improving their livelihood.

5. CONCLUSIONS AND RECOMMENDATIONS

A. Conclusion

The major objective of ecotourism is to provide benefits to local communities. Therefore, the key objective of sharing revenue from tourism is to promote community conservation outreach through projects that in line with ecotourism principles, thereby to promote and enhance conservation relations and minimize negative impacts from both wildlife and local communities around NNP. For ecotourism to follow its principles, community conservation outreach projects and revenue sharing projects need to be successful in changing community attitudes and behavior towards NNP. Consequently, there is need to re-evaluate and emphasize on the following: Local community participation, community empowerment, linking benefit to conservation. The local participation has been described as “giving people more opportunities to participate effectively in development activities. It means empowering people to mobilize their own capacities, be social actors rather than passive subjects, manage their resources, make decisions and control the activities that affect their lives. Local community participation viewed as a process includes, but goes beyond, sharing social and economic benefits, and differs from beneficially approach, in which people receive benefits but are not empowered. To empower and involve local communities is to give them a degree of control. Once there has been some discussion and resolution about the benefits, how they will be distributed and for how long they will be received, then communities will know what to expect and what conditions are attached, and will directly link that to conservation. It should not just be about sharing benefits, because communities should also expect to share costs, which in turn facilitates a collective understanding and agreement on cost sharing and its enforcement. Therefore, benefits should be in line with the energy invested throughout the development phase of the project and communities should be able to see where benefits are coming from. The view is that rural populations have few alternatives to economic activities that degrade or destroy the resources. Ecotourism is seen as representing a source of income, which should in turn act as an incentive to halt destructive practices or continuing sound resource management practices.

Monitoring and evaluation should be given attention and made part of an ongoing process. It allows adjustments and changes to be made as projects unfold, developing key objectives and indicators to measure impacts of their social and economic
development so as to provide useful input for future planning. Monitoring results must be carefully analyzed to determine appropriate management options that lead to specific management and awareness building.

B. RECOMMENDATIONS

Tourism activities in Nyungwe National Park should be appropriately planned, monitored and managed to ensure that they do not conflict with conservation and sustainable use of resources, as well as compromise the livelihood of local residents.

Local communities in NNP area should be engaged and should be involved in development programmes in their villages right from the start.

REFERENCES

John, Terborgh and all. Making Parks work, Strategies for preserving tropical nature, pp. 365, 26
REMA (2009). Rwanda State of Environment and outlook report-REMA (online)