

# SOCIO-ECONOMIC DEVELOPMENT AND BENEFIT SHARING PROJECT [SDBS]

FINAL REPORT 2008

## Policies to Reduce Social and Environmental Costs of Trade in Tourism Services in the Nile Basin Countries

### BURUNDI

PROJECT ID Number: P075952







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**PROJECT ID NUMBER: P075952**

**This report was prepared by**

Dr. Gilbert Niyongabo

Mr. Richard Ndererahaga

Mr. Willy Marcel Ndayitwayeko

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Centre Universitaire de Recherche pour le Développement Economique et Social

B.P.: 1049 Bujumbura/Burundi

Phone: +257-22 22 27 78

Fax: +257-22 22 37 21

Email: [curdes2008@yahoo.fr](mailto:curdes2008@yahoo.fr)

Plot 12 Mpigi Road  
P.O. Box 192, Entebbe, Uganda  
Tel: +256-414-321-424

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For further information contact: Project Management Unit

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PMU, Socio-economic Development & Benefit Sharing  
Nile Basin Initiative  
Plot 12 Mpigi Road  
P.O. Box 192, Entebbe, Uganda  
Tel: +256-414-321-424

Hellen Natu  
Tamene Tiruneh  
John Bosco Bampabwire  
Peter Nabende  
Edith Mbonye  
Callist Habaasa  
John Baptist Byaruhanga



<b>5</b>	<b>Tourism Impact linked to National Investment Costs: A Case of Study of Ruvubu National Park .....</b>	<b>49</b>
5.1.	Introduction .....	49
5.2.	Research Methodology .....	52
5.3.	Socio-Economic Profile of the Local Communities .....	53
<b>5.4.</b>	<b>Human-Wildlife Interactions .....</b>	<b>55</b>
5.5.	Local Communities and land issues .....	57
5.6.	Local Communities Perceptions on the Importance of RNP and Related Proposed Project .....	60
5.7.	Conclusions and Recommendations .....	61
<b>6</b>	<b>An Investment Programme of Reducing Water Pollution from Hotels in Bujumbura City .....</b>	<b>69</b>
6.1.	Overview of Environmental Pollution of Hotels in Bujumbura .....	69
6.2.	Main Findings From the Surveys .....	70
6.3.	Main Issues to be Addressed .....	70
6.4.	Project Components, General and Specific Objectives and Expected Impacts .....	71
6.5.	Estimated Costing of the Programme .....	72
6.6.	Conclusion and Recommendations .....	74
<b>7</b>	<b>An Investment Programme on Reducing Social, Environmental and Economic Costs of Tourism: Ruvubu National Park (RNP) .....</b>	<b>76</b>
7.1.	Overview on the Ruvubu National Park Environment Survey ..	76
7.2.	Highlights of the Findings in the Ruvubu National Park .....	77
<b>7.3.</b>	<b>Objective .....</b>	<b>77</b>
7.4.	Solutions, actions to be taken and implementation programme.	78
7.5.	Investment programme .....	79
7.6.	Conclusion and Recommendations .....	80
	Appendices .....	81

## **List of Tables**

Table 2.1:	Forests exploitation ratios in Burundi.....	10
Table 2.2:	Restricted Areas and National Parks .....	11
Table 2.3:	Types of gas pollution observed in Burundi (secretion in Gg)	12
Table 2.4:	Synthesis gas pollution .....	12
Table 3.1:	Main Types of Tourism.....	19
Table 3.2:	Specialized types of tourism with respect to destinations.....	20
Table 3.3:	Main factors affecting tourism decisions .....	21
Table 3.4:	Types and forms of tourism impacts.....	21
Table 3.5:	Trampling impacts on vegetation and soil.....	26
Table 3.6:	Potential matrix on social Impacts of tourism services.....	29
Table 3.7:	A Summary of possible host responses to tourism.....	30
Table 4.1:	Characteristics of the Hotels.....	38
Table 4.2:	Used Water Evacuated by the City Sewerage Connection.....	39
Table 4.3:	If yes, to which network are you connected ?.....	40
Table 4.4:	Who do you call in order to evacuate the used waters? .....	40
Table 4.5 :	Appreciation of the Evacuation Service .....	41
Table 4.6:	What Should be Done to Implement the Evacuation (Treatment) of used Waters? .....	41
Table 4.7:	Who Supports the Additional Fees from the Treatment and Evacuation of used Waters? .....	42
Table 4.8:	How to deal with the solid wastes? .....	43
Table 4.9.	Who should meet the costs due to pollution? .....	44
Table 4.10 a)	Solid wastes evacuation service (appreciation) by category of hotels. ....	45
Table 4.10 b)	Solid wastes evacuation service (appreciation) by hotels investments.....	46

Table 5.1:	Socio-Economic Characteristics .....	54
Table 5.2:	Main Activity.....	54
Table 5.3:	Cases of Park Destruction or Abuse Witnessed by Local Communities.....	57
Table 5.4:	Lack of Land for Agriculture: Determinant of RNP Resource Destruction .....	58

**List of Figures**

Figure 3.1:	The Impact of Tourism Expenditure .....	24
Figure 5:	Conceptual Framework .....	51



## Abbreviations and Acronyms



ABP	Agence Burundaise de Presse
AETS	Application Européenne de Technologies et de Services
BGC	Burundi Garbage Collection
CGE	Computable General Equilibrium
CRT	Campaign for Responsible Tourism
CURDES	Centre Universitaire de Recherche pour le Développement Economique et Social
DGFE	Direction Générale des Forêts et de l'Environnement
EU	European Union
FSEA	Faculté des Sciences Economiques et Administratives
GATS	General Agreement on Trade in Services
GDP	Gross National Product
IDEC	Institut de Développement Economique du Burundi
IGEBU	Institut Géographique du Burundi
IIED	International Institute of Environment and Development
IMF	International Monetary Fund
INECN	Institut National pour l'Environnement et la Conservation de la Nature
LDCs	Least Developed Countries
MDGs	Millennium Development Goals
NBI	Nile Basin Initiative
ODI	Overseas Development Institute
OECD	Organisation of Economic Cooperation and Development
OMT	Organisation Mondiale du Tourisme
PMU	Project Management Unit
PPT	Pro-Poor Tourism
RNP	Ruvubu National Park
SDBS	Socio-economic Development and Benefit Sharing
SETEMU	Services Techniques Municipaux
TIR	Tourism Intensity Rate

*Socio-economic Development and Benefit Sharing Project*

TSA	Tourism Satellite Accounts
UB	Université du Burundi
UNCTAD	United Nations Conference on Trade and Development
UNEP	United Nations Environment Programme
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UNWTO	United Nations World Tourism Organisation
US	United States
WTTC	World Travel and Tourism Council

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## Executive Summary

### 1.1. Effects of Tourism

Tourism has a very huge impact on social and economic variables; this is the reason why many people choose to invest in it. Tourism as a traded service is not neutral, it affects people because it brings them into contact with foreign cultures. Most tourism agencies which facilitate tourism all over the world act without taking care of the negative side effects such as pollution, which could be managed by coordinated efforts by the benefiting agencies in the concerned countries.

The implementation of sustainable policies with regard to the tourism sector requires an assessment of the linkages between tourism investments and their socio-economic and environmental impact. This study departs from the hypothesis which suggests that tourism as well as any trade activity generate more income than it impacts negatively on the environment (Sachs and Warner, 1995). We also examine the link between income and the state of the environment in keeping with the well-known environmental Kuznet's Curve (Grossman and Krueger, 1995). This therefore enabled us formulate an appropriate framework in which we have analysed the impact of tourism on the socio-economic and environmental variables, holding other things constant. As tourism increases and generates income, it exerts a negative impact on the environment. This study is based on the hypothesis that Tourism as a trade has a positive effect on income but a negative impact on the environment and society.

### 1.2. Geography and Climate of Burundi

Burundi is a small landlocked country (27,834 km<sup>2</sup>), located at about 1,200 km from the East African coast, at the Indian Ocean and at about 2,000 km from the Atlantic Ocean to the west of Africa. Its neighbours are the Democratic Republic of Congo in the west, Rwanda in the north and Tanzania in the east

and south. In terms of drainage it is located between the Nile and Congo river-basins. It lies at an altitude of between 774 m and 2,000 m above sea level. It has a diversified relief, including the Imbo plains and many hills. It has four climatic seasons, two of rainfall and two dry seasons. There is a high population growth and density. The 1979 census recorded a figure of 4,028,420 inhabitants; the 1990 census turned out a figure of 5,292,793 inhabitants. The population was estimated at 7.5 million inhabitants in 2008.

Burundi has a very low income per capita that oscillates around \$ 100 , which places the country among the poorest in the world. There is hope for better economic growth after the end of a little more than a decade of civil war and conflict (1993-2005) and the revival of the democratic process. Presidential and legislative elections were held in 2005. The financial year 2006-2007 showed improvement in economic growth reaching 5 per cent with inflation controlled at less than 10 per cent (BRB, Annual Report 2007). The economy is largely dependent on agriculture, which contributes an estimated 45 per cent of the GDP and provides more than 80 per cent of foreign earnings through coffee and tea exports. The industrial sector is less developed while the services sector has shown signs of quick development following political economic recovery as witnessed in the reconstruction of basic infrastructure such as roads, and housing).

The recovery and development of the economy have led to a number of socio-economic activities that can harm the environment. The government has put in place policies aimed at:

- Preserving the natural environment which includes forest cover part of which is wood, the principal source of energy; and
- Protect the natural resources, including water.

The government has decided that forest cover should be increased to 20 per cent of the land area by plantation forests way above the current level of about 11 per cent which is about 556,680 hectares Government is also committed to the protection of all wet forests and savannas. However, these objectives can only be achieved with difficulty given the context of the current demographic growth and the return of the refugees from exile with the end of the civil war.

## **1.3. The Environmental**

### **1.3.1. Forests**

There are both natural and plantation forests. Some of these are public while others are private forests. According to reports from the Department of Forests and the INECN (1989), the stock of trees on foot per hectare was estimated at 100 m<sup>3</sup> for the natural forests, 145 m<sup>3</sup> for plantation forests and 200 m<sup>3</sup> for agroforestry. These stocks were assumed to increase annually with a volume of 2 to 15 m<sup>3</sup> per hectare.. The principal threats to forests include bush fires started by farmers in order to regenerate grassy vegetation in the extensive cattle herding areas during dry seasons.

### **13.2. Water Resources**

The water resources in Burundi are in general sufficient for the needs of the country. This is mainly because of Lake Tanganyika. The lake contributes about 10 per cent of the total surface area of the country. There are other lakes in Burundi such as Rweru, Cohoha, Rwiwinda, Kanzigiri, Gacamirinda and Narungazi. Two of these, Rweru and Cohoha are relatively big and are shared with Rwanda. Lake Rweru is about 10,000 ha of which 8,000 ha are in the Burundi.

The Nile basin contains rivers originating from Burundi, the principal ones include Ruvubu, Ruvyironza, Kanyaru and Kagera. Ruvubu and Kagera flow to the north-east of the country before joining river Nile in Lake Victoria. On the other hand, the Congo basin includes Rusizi to the west of the country which drains into Lake Tanganyika and Malagarazi which is more to the south of the country. The average water flow from the national territory is estimated at 319 m<sup>3</sup>/s and feeding the Congo and Nile basins, while the flow from international waters is almost 336 m<sup>3</sup>/s.

Lake Tanganyika, the second deepest lake in the world after Lake Baikal, is the most important to Burundi with an overall surface area of 32,600 km<sup>2</sup> of which 2,634 km<sup>2</sup> is in Burundi. The remainder is shared by D. R. Congo in the west,

Tanzania in south-east and Zambia further south. It constitutes a great water reserve feeding the capital of the country. It also constitutes a rich bio-diversity.

Lastly, it should also be noted that there is an abundance of rainwater. Burundi has an average precipitation of 750 mm to 2,000 mm. It ranges between 750 and 1,274 mm in the north-east of the country and goes up to more than 2,000 mm in the north-west.

### **1.3.3. Legal Framework**

Environmental protection falls within the jurisdiction of the Ministry of Environment, Land Planning, and Public Works<sup>1</sup>. The ministry plans, manages and coordinates all policies in connection with the environment. It also supervises two autonomous institutions: The INECN (National Institute of the Environment and Nature Conservation) and IGEBU (Geographical Institute of Burundi). The ministry is also in charge of the Department of Public Works (since 2008), the departments of forests, land planning and registration, agricultural engineering, and environment. The department of public works management was brought under this ministry with the aim of controlling environmental resulting effects from all kinds of public works. The ministry is involved in the provision of two major services of primary importance; it manages management of the natural forests and protected areas through INECN, and takes care of public re-forestation and increased agro-forestry through the Department of Forests. .

### **1.3.4. Tourism and its Socio-economic Costs**

Tourism is involve the interaction of the following:

- The central and local governments: and
- The potential beneficiaries who operate in the rural (agricultural) sector.

Part of the methodology used in this study was a survey of the two categories to find out how they can be coordinated in order to reduce the costs that arise out of tourism.

<sup>1</sup> Ministère de l'environnement, de l'Aménagement du Territoire et des Travaux Publics.



In our discussions we met the legal managers of the environment and established that coordination is lacking. While the INECN and the department of environment work together, it is clear that tourism has nothing in common with those institutions, though, they are meant to manage it. Farmers and other employees in the agricultural sector do not benefit directly from environmental protection programmes and in the short run and are not linked to policy makers and environmental regulation.

### **1.3.5. Black Water and Pollution from Hotels**

As part of the study, for two weeks, from 5-19 September 2008, we investigated all hotels in Bujumbura, the capital city. . In this study, we investigated how hotels manage waste water and solid waste with a view to establish how this management affects the environment.

Solid waste from households and hotels can be easily handled by getting trucks to transport it to the disposal sites where they are sorted and treated. We established that hotels burn some of the solid waste without putting in place measures that would control pollution; hotels therefore end up contributing significantly to the pollution of the atmosphere.

When hotel managers were asked whether they could pack and transport their solid waste or could hire a service to remove it, the answer was to this was true to a very small extent. Results from the survey shows that only hotels with an investment of over Fbu 75 millions, that is more than US\$ 60,000 could afford.

Results from the survey show that that used water is the main pollutant. Waste water from hotels threatens the surrounding rivers and Lake Tanganyika. The main problem is that hotel activities are not under strict control.

Many of the hotel owners and managers are aware of the pollution emanating from their hotels and a small number has tried to get private service providers to remove the waste waters that they generate while the majority of hotel owners assume that it the responsibility of the government.

### **1.3.6. Environment Degradation of Ruvubu National Park**

The role of policy on the reduction of social and environmental costs of trade in tourism has become a subject of debate in Burundi. The field work we conducted in the Ruvubu National Park (RNP) was intended to understand the possible effect of indirect social and environmental costs of the initial investment intended to promote tourism. It also intended to identify institutional remedies to mitigate those social and environmental costs.

Ruvubu National Park was gazetted in early 1983 after the dwellers were evicted and compensation to leave. It is now being rehabilitated in order to promote its conservation role and to change it into a major tourist destination. This study attempted to gauge the implications and impact of such public activities on the environment. And if the impact is negative, what should be the way forward for policy makers on environmental management? It goes further to show the antagonism that exists between the community and those charged with the management of the environment. This one of the elements that is likely catalyse future disagreements that could lead to the degradation of Ruvubu National Park.

Although relevant literature on the management and possible environmental degradation of Ruvubu National Park is limited, this study was done on the premise that the park is a great resource which, if managed properly, through a participatory approach can benefit all stakeholders. This study was conducted through conducting a cluster sampling survey procedure by use of random sampling in which individuals living in the environs of Ruvubu National Park (Karuzi and Muyinga provinces) were selected. Sixty individual members of the local community living around the Ruvubu National Park were selected for this study. Data collected included the member's socio-economic profile, cultural and ecological features of Ruvubu and how these relate to the individuals selected for the study. Frequencies were used to cleaning the data and validation procedure in order to correct errors in order to weed out illogical or missing responses before the analysis.

The socio-economic factors show that respondents came from communities with large family sizes, which indicates that there is big population exerting pressure

on the land. This has a negative impact on the park's environment. The majority (80%) of the respondents from Karuzi Province had little or no education, which meant that , the mode of communication and data collection was oral.

The findings of this study with regard to conservation and protection of Ruvubu National Park for sustainable development point to three major issues. These are the interaction between people and wildlife, the people and the national park land issues and the local perceptions on the importance of the park and the environmental programmes tied to it. The survey revealed that there is an interaction between human beings and the wildlife. A big number of respondents (65%) reported that their farms have been invaded by animals from the park. This prompted them to point out that it is the national government's responsibility to limit such interaction, by adopting appropriate ecological and physical measures. .This interaction however has an inverse relationship in that the residents also invade the park to kill animals for meat or some other traditional uses. In all these cases, fencing of the park was proposed as the ultimate solution to control this interaction.

In 1983 when the park was created, thousands of people were evicted from the area with a small monetary compensation. Some of the people migrated to other provinces, others crossed the border to Tanzania. Yet some other people camped in the neighbourhood of the new national park. The latter have caused threats to the park by either encroaching on some parcels of the park land or by abusing the park resources. More than 77 per cent of the respondents admitted having been party to deforestation of the park.

The conflict over Ruvubu National Park land varies. The people of Buhinyuza commune have been in conflict with the authorities because their land was taken in the without sufficient compensation. The scenarios however, were different in Mwakiro and Mutumba communes. The local communities in these areas had conservation associations or clubs aimed at mitigating problems linked to the exploitation of the park. These clubs are involved in commercial production of honey; an activity closely linked to the park since the bee hives are situated in the national park.

Though INECN created a no-man's-land portion of the park that separates the park from the inhabited areas, much is still needed to sort out land wrangles in all areas bordering the park. Lack of land for cultivation was moderately high, with 65 per cent of the respondents agreeing that it enhances destruction of the Ruvubu National Park. It is only through involvement of the locals that encroachment and attendant degradation can be curbed.

On perceptions about the importance of the national park, about 60 per cent of the respondents had a positive attitude towards reforestation and the creation of a buffer zone separating them from the park. Moreover, the residents (65%) are aware that the natural resource potential of the park has not been unexploited. An overwhelming majority (80%) said lack of initial capital and poor infrastructure hindered them from venturing into traditional arts business for tourists. These findings show that the government can through INECN bank on the positive attitude of the local people towards Ruvubu National Park in terms of conservation, and protection enhancement strategies for tourism activities. INECN management should see this as an opportunity to facilitate community participation in both park environment conservation and tourism development.

Sustainable and environment- friendly use of the Ruvubu National Park will require institutional framework changes (decentralisation or privatisation) and community involvement. Suggestions offered by this study include streamlining the legal framework meant to protect nature reserves and parks by punishing the culprits over natural resource encroachment, and to diversify agricultural activities (especially to those that do not require intensive use of land). Secondly there is need for a holistic approach to the management of the human-wildlife interrelationship which could be initiated by INECN in conjunction with the local communities. Lastly, the planners and managers should exploit the positive attitudes of the people towards the conservation and protection of the environment by getting them involved in decision-making regarding conservation and tourism development of Ruvubu National Park.

## Background to the Study



### 2.1. Context of the Study

Tourism has an overwhelming impact on the social and economic life of Burundi to the extent that many people would like to be associated with it by investing in its different aspects such as accommodation, transport or in providing handicrafts for sale. Tourism affects more the people who, basically, have a restricted lifestyle and who have not mixed very much with foreign cultures. As tourism activities contribute a lot of income all over the world. However it has negative effects such as pollution which need to be planned for and managed by coordinated efforts at country level.

In order to implement sustainable policies in the tourism sector, an assessment that links investment in tourism to its socio-economic and environmental impact is required. This study departs from the hypothesis which suggests that tourism as well as any other trade activity generates more income than it impacts negatively on the environment (Sachs and Warner, 1995). The study followed the link between income and quality of the environment as presented by the well-known environmental Kuznet's Curve (Grossman and Krueger, 1995). Then, we formulated an appropriate framework in which to analyse the impact of tourism on the socio-economic and environmental variables; holding other factors constant. This study was based on the hypothesis that tourism as a traded service has a positive effect on income but a negative impact on the environment and society.

### 2.2. Exploitation of Forests

According to statistical data regarding the general trend of the environment (estimates made in the year 2000), was as follows:

Natural forests:	10.930 m <sup>3</sup>
Reforestation into full:	14.126 m <sup>3</sup>
Agroforestry and rural forestry:	10 568 m <sup>3</sup>

The demand for forest products for various uses could rise as shown in Table 2.1 below:

**Table 2.1: Forests exploitation ratios in Burundi**

N°	Category	Ratios m <sup>3</sup> /inhabitant/ year	Ratio/ Inhabitant/kg/year
1	Firewood	0.68	164 kg
2	Charcoal	2.3	843 kg
3	Timber	0.075	
4	Other wood	0.04	

**Source:** - DGFE (2008)

- Department of Forests, 1991

Besides afforestation which is under the control of the Department of Forests, Burundi has also allowed some other forest and animal conservation areas. These areas are managed by the INECN and consist of national parks, forest reserves and other protected areas. They cover a land area estimated at 128,841 ha (INECN, 2005; DGFE, 2008) among which the most important are Ruvubu (50,900 ha or 509km<sup>2</sup>) and the Kibira (40,000ha) national parks.

**Table 2.2: Restricted Areas and National Parks**

N°	Name	Land Area (ha)	Status
1	Ruvubu	50,900	National Park
2	Kibira	40,000	National Park
3	Rusizi	8,000	National Park
4	Gisagara	6,216	Restricted area
5	Monge	5,000	Reserve (Forest)
6	Mukungu-Rukambasi	5,000	Restricted area
7	Vyanda	4,500	Reserve (Forest)
8	Mabanda/Nyanza-Lake	3,500	Restricted area
9	Bururi	3,000	Reserve (Forest)
10	Rumonge	600	Reserve (Forest)
11	Kigwena	500	Reserve (Forest)
12	Kinoso	480	Restricted area
13	Rwihinda Lake	425	Natural Reserve
14	Karera-Nyakazu	420	Eastern Monuments
	Total	128,841	

**Source:** *DGFE (2008)*

The rate at which the forests are exploited largely depends on the rate of population growth. Wood as a source of energy is especially used for cooking at household level and as a form of coal in the industrial and artisan sector. Wood is also used for construction in various forms. Destruction of the environment has also been due to pollution resulting from changes in land use allocation, and poor management of waste material from households and industrialies.

According to reports on the general condition of the environment, pollution resulting from greenhouse gases has been due to three categories of pollution sources (1998):

- Industrial processes;
- Changes in land use and deforestation; and
- Waste.

**Table 2.3: Types of gas pollution observed in Burundi (secretion in Gg)**

Component	CO <sub>2</sub>	CH <sub>4</sub>	CO	N <sub>2</sub> O	NOX	COVNM
Industrial Process	0,127	–	–	–	–	0,8742
Allocation change of lands and forests	-7 138	0,010	0,094	0	0,0026	–
Waste	–	0,2504	–	0,3184		
Total of Emissions	-7 137	0,2604	0,094	0,3184	0,0026	0,8742
Potential of Reheating	1	24,5	3	320	40	–
Equivalent in CO <sub>2</sub>	-7 137	6,372	0,282	102	0,104	–

Source: DGFE (2008)

**Table 2.4: Synthesis gas pollution**

Gas	Quantity in Gg CO2	Reheating Potential	Quantity in Gg ECO2
Co	2,1672	3	6,5016
CH4	2,4768	23	56,9664
N2O	0,0017	310	0,527
Nox	0,0615	40	2,46
Total			66,455

Source: DGFE (2008)

According to this data, the most important gases are the CH<sub>4</sub> (methane) and the CO (the Carbon Monoxide), which mainly come from forest exploitation and changes in lands use in order to produce more food crops.

### 2.3. Water Resources

Water resources are generally sufficient for the needs of the country mainly because of Lake Tanganyika which contributes 10 per cent of the total surface area of the country. Burundi has other lakes the most important being Lake Rweru and Lake Cohoha in the north an the border with Rwanda. Burundi also lies in between two large river basins, namely, the Nile and that of Congo river systems. Lastly, it should be noted that rainwater is abundant, with average precipitation standing between 750 mm to 2000 mm. It is therefore important to have a healthy co-ordinated mechanism to manage the shared water by countries by the respective countries.



**a) Rivers**

The Nile Basin contains many rivers of which the major ones are Ruvubu, Ruvyironza, Kanyaru and Kagera. Ruvubu and Kagera flow to the north-east and end up in Lake Victoria. On the other hand, the basin of Congo includes Rusizi towards the west of the country which pours its water into Lake Tanganyika and Malagarazi which is to the south of the country. These rivers have an average water flow from the national territory of 319 m<sup>3</sup>/s.

**b) Rainwater**

Annual average precipitations varies from 1,274 mm to 750 mm in the north-east of the country and can rise up to more than 2,000 mm in the north-west.

**c) Lakes**

Lake Tanganyika (the second deepest lake in the world after Lake Baïkal) is most important in Burundi with a total surface of 32,600 km<sup>2</sup>. Burundi's share is 2,634 km<sup>2</sup> only. The remaining part of the lake is shared by the DR Congo to the west, Tanzania in the south-east and Zambia further south. It constitutes a great water reserve feeding the capital of the country. It also constitutes rich bio-diversity in terms of animals and plants. Lake Tanganyika faces a great danger from pollution in various ways. There are industrial chemicals that are carried by rivers from neighbouring towns. Beside Lake Tanganyika, Burundi has some small lakes in the north, they include Rweru, Cohoha, Rwhinda, Kanzigiri, Gacimirinda and Narungazi. Two of them are wider and are on the frontier with Rwanda. Of the 10,000 ha of Lake Rweru Burundi owns 8,000 ha and on the other hand 6,000 ha of Lake Cohoha are in Burundi.

### **2.3.1. Environmental Management Framework**

The responsibility of environmental protection lies with the Ministry of Environment, Land Planning and Public Works<sup>2</sup>. The ministry manages, plans, and coordinates all the policies in connection with the environment. It also has under its supervision two autonomous institutions: The INECN (National

<sup>2</sup> Ministère de l'environnement, de l'Aménagement du Territoire et des Travaux Publics.

Institute of the Environment and the Nature Conservation) and the IGEBU (Geographical Institute of Burundi). The Ministry also has a department of public works (since 2008), and other departments relevant to its core responsibilities, they include forests, land use planning and registration, agricultural, and the environment. The public works management department was attached to this ministry with the aim of mitigating, managing and coordinating negative environmental effects from all kinds of public works. On the level of daily management, two services are of primary importance. It is about the INECN which manages the natural forests and the protected areas, and the Department of Forests which deals with plantation forests and agroforestry.

### **2.3.2. Tourism and the Socio-economic Environment**

The socio-economic cost of environmental degradation involves two parties and they are:

- The government at the national and local administration level, and
- The potential beneficiaries who operate in the rural agricultural sectors.

Our methodology involved a survey on whether the two coordinate in order to reduce the costs.

In our primary discussion with the managers of the environment, we discovered that there was lack of coordination. While the INECN and the department of environment work together, they do not take tourism services as part of their core responsibility. Moreover, farmers and other agricultural workers do not benefit directly from the environment protection in the short run and they are not involved with policy formulation. Meanwhile, some other activities such as traditional crafts and elements of culture like songs and dances benefit from tourism.

Results from our survey of Ruvubu National Park in which we investigated how people involved in the rural agricultural sector could derive some benefits from tourism and environment promotion. Our main focus was on benefit/cost analysis and the impact that tourism has on the socio-cultural and the economic lives of communities.

## Impact of Tourism on the Environment

### 3.1. Tourism, Sustainable Development, and Poverty Alleviation

Tourism is globally assumed to generate 10 per cent of GDP through activities directly related to tourism. Tourism is viewed as the main export sector for one third of all developing countries. According to Harold Goodwin (2000), tourism brings well-endowed and relatively powerful consumers from western countries to the developing world. Goodwin argues that tourism inflows and activities provide room for a potentially large market for local entrepreneurs and it could be an engine for sustainable local economic development.

Caroline Ashley and Gareth Haysom (2005) have also argued that tourism is a major economic sector worldwide, with particularly rapid relative growth in poor countries. The same report says that some research shows that tourism may be developed in such ways that can increase net benefits for the poor. This is what is called pro-poor tourism. Pro-poor tourism is defined as tourism which generates net advantages that benefit the poor. It is aimed at unlocking economic and livelihood opportunities for the poor. In their analysis, they have also pointed out that there is evidence that suggests that doing business in pro-poor ways makes commercial sense.

Pro-poor tourism strategies may generate economic benefits, cashless livelihood benefits, and lead to the poor's participation in policy formulation.

- a) Pro-poor strategies intended to benefit them economically often comprise of the following components:
  - Expansion and development of collective community-based income. This strategy is intended to benefit the majority of the people but is often misused;
  - Expansion of business opportunities for the poor. This strategy often

- results in small earnings that may benefit fewer people but it helps those involved to make ends meet and it is not likely to be misused; and
- Expansion of employment and local wages: This strategy consists of staff wages that are massively boosted and benefits only a few of those who are employed in the sector.
- b) Pro-poor policies focused at improving and enhancing non-cash livelihoods are generally policies aimed at reducing and alleviating adverse impacts. It is assumed that consulting with the poor can lead to the development of appropriate strategies that can help reduce poverty. These strategies generally consist of:
- Capacity building, training and empowerment;
  - Mitigating negative environmental impact of tourism on the poor;
  - Managing competing demands for access to natural resources;
  - Addressing competing uses of natural resources
  - Improving socio-cultural tourism; and
  - Improving access to services and infrastructure.
- c) Pro-poor policies may be aimed at policy reforms, amplifying voices of the poor voices (establishing linkages between the poor and private tour operators, and involving the poor in local planning initiatives. Such strategies mainly consist of:
- Supportive participatory policy formulation involving the poor;
  - Participatory planning framework aimed, inter alia, at helping the poor;
  - Participatory decision-making framework taking into account the need of the poor;
  - Pro-poor partnerships with the private sector operators; and
  - Dialogue-based media and associative movement involving and promoting lifestyle improvement for the poor.

According to Dilys Roe et al. (2004: 5), tourism accounts for a higher share of world trade than cars or oil and it is the main export for many small developing countries. Thus, tourism is viewed as the major world industry. There are good reasons why it may be interesting and therefore crucial to focus on tourism

as a potential source of growth and a base for development, particularly in poor countries. Dilys Roe et al. (2004: 6) have argued that many of the countries in which tourism is important are amongst the poorest and least developed in the world.

Brau et al. (2003) have found that small countries, under 1 million people, receiving more than 10 per cent of their GDP from tourism ) have grown significantly better than other small countries with a similar amount of GDP generated from other sources.

Bichaka Fayissa et al. (2007) support the view that tourism can be a viable export-oriented economic growth strategy to bring about job creation and development. Dritsakis (2004) demonstrates that tourism has a long-term economic growth effect. Jacint Balaguer and Manuel Cantavella-Jorda (2000) have confirmed the validity of the tourism-growth hypothesis for long-term economic performance particularly in small economies. Hazari, B. R. and Sgro P. M. (1995) developed a dynamic model revealing a positive impact of a buoyant world demand for tourism in the long-term growth of small economies. Adam Blake et al. (2005) have also contributed the literature that advocates for tourism-led growth and its linkages with poverty alleviation. In their work, they argue that tourism is often seen as a means of reducing poverty. They also recall that international organizations such as UNWTO often make strong arguments linking tourism in developing countries and its potential to alleviate poverty. These considerations led to a joint declaration again confirming that tourism has a role to play in achieving the UN's MDGs by 2015. Adam Blake et al. (2005: 6) identified four channels through which the links between tourism and poverty reduction may be perceived.

- Prices by which tourism spending leads to changes in prices for goods that poor households purchase;
- Earnings by which tourism spending leads to changes in earnings for employed and self-employed labour and in returns on capital;
- Government by which tourism spending changes government revenues and therefore leads to changes in government spending, borrowing or tax rates; and

- Risk which traces the way that tourism spending increases or decreases the vulnerability of poor households to changes in markets conditions.

Harold Goodwin (2006: 1) states that the adoption of the MDGs by UN agencies has encouraged the world tourism organization and all other partners to adopt new approaches to tourism development, focusing on local economic impacts and, in particular, on poverty alleviation. In the context of the MDGs, the challenge was to demonstrate positive impacts on poverty, to demonstrate that tourism can contribute to the eight MDGs and that impacts can be scaled up to make a significant contribution to the eradication of poverty (Harold Goodwin, 2006).

Yunis (2004) has argued that the tourism sector very often plays a major part in the economies of poorer countries. It thus generates net advantages for the poor. It unlocks economic and livelihood opportunities for the poor.

The UNWTO (2004) identified seven different ways in which tourism spending may reach the poor namely:

- Employment of the poor in tourism enterprises;
- Supply of goods and services to tourism enterprises by the poor or by enterprises that employ the poor;
- Direct sales of goods and services to visitors by the poor through the informal economy;
- Establishment and running of tourism enterprises by the poor, commonly called community based enterprises;
- Taxes or levies on tourism revenues or profits with proceeds benefiting the poor.
- Voluntary contribution of resources (money, goods, time) by tourists and enterprises in ways which benefit the poor in the community; and
- And investment in infrastructure which provides livelihood benefits to the poor.

In short, whether from the UNWTO (2004) or from the Pro-Poor Tourism partnership (2005), it is clear that the impact tourism has on the poor may

be either positive or negative. This conclusion was also arrived at by Harold Goodwin (2006) in his synthetic analysis.

## 3.2. Types and Impact of Tourism

### 3.2.1. Tourism and tourists typology

There are as many types and/or forms of tourism as reasons that induce people to embark on it. Authors usually refer to one form or another of tourism. Valene L. Smith (1989) has summarized the main types and forms of tourism according to motives and attractiveness of destination.

**Table 3.1: Main Types of Tourism**

Type	Various forms of the type
Ethnic tourism	Quaintness of indigenous, often exotic peoples.
Cultural tourism	Vestige of a vanishing lifestyle, wine festival, etc.
Historical tourism	Museums, cathedrals, ruins, locals of key events, etc.
Environmental tourism	Geographic sights in remote areas.
Recreational tourism	Sun, sand, sea, sex.
Alternative tourism	Risk tourism, in dangerous areas of the world. Dangerous activities: bungee jumping, skydiving, sport racing, ice climbing, etc.
Adventure tourism	Whitewater rafting, sea kayaking, hiking the Grand Canyon, etc.
Niche tourism	Spa tourism, medical tourism, etc.

**Source:** *Valene L. Smith (1989)*

Some of these types of tourism are impact positive per se, others are dangerous and risky, while yet others may be extremely harmful to the community (sex-tourism, for instance).

Valene L. Smith (1989) has also distinguished the main specialized types of tourism according to destinations. This is another tourism typology that requires in-depth analysis and detailed information to be better categorised.

**Table 3.2: Specialized types of tourism with respect to destinations**

Destination	Specialized types of tourism
Ethnic	Niche tourism
Cultural	Medical
Historical	Nature
Environmental	Heritage
Recreational	Village
Business	Eco-tourism
Science	Social tourism
Combinations	Farm tourism

**Source:** *Valene L. Smith (1989)*

While assessing the impact – type of tourism on sectoral areas of a country, a thorough look at the figures of the main determinants of the decisions to have tourism may be very useful for planners and decisions-makers. It is on the basis of these factors that one will know, on the one hand, how to attract tourists and what to supply them and on the other hand, what to do to avoid adversities and negative impact resulting their activities. But it's very hard to get such detailed information ex-ante from potential tourists. Even in ex-post handling strategy, some tourists are very reluctant to reveal all relevant details needed for such planning. This implies that decisions-makers, planners and scientific researchers should combine their efforts in order to get high-quality statistics and information so as to develop strategic plans and policies with participatory community based recommendations. The table hereafter summarizes the main determinants that would require much attention from analysts when assessing tourism impacts on an economy. These are considered by the authors as the principal determinants of tourism decision; some of them are of voluntary management.



**Table 3.3: Main factors affecting tourism decisions**

<b>Income</b>
Age of the tourist (and/or family)
Stage of life in the family
Location of the destination (e.g. distance)
Occupation of the tourist

**Source:** Mathieson Alister and Geoffrey Wall (1982)

**Table 3.4: Types and forms of tourism impacts**

<b>Form Type</b>	<b>Positive</b>	<b>Negative</b>
Social impacts	<ul style="list-style-type: none"> <li>• Social mix.</li> <li>• Cultures mixture and improving.</li> <li>• Evidence of cultures.</li> <li>• Support of cultures and crafts.</li> </ul>	<ul style="list-style-type: none"> <li>• Visitors may outnumber residents.</li> <li>• Conflict relations and contacts.</li> <li>• Congestion.</li> <li>• Irresponsible behaviour.</li> <li>• Culture commercialisation.</li> <li>• Crime and prostitution rise.</li> </ul>
Economic impacts	<ul style="list-style-type: none"> <li>• Monetary revenues to local economy.</li> <li>• Job and wealth creation.</li> <li>• Multiplier impact.</li> <li>• Improved services.</li> <li>• New investments.</li> <li>• Levels, variety and scale.</li> </ul>	<ul style="list-style-type: none"> <li>• Poor job spectrum.</li> <li>• Seasonal unemployment.</li> <li>• Profits export from local area.</li> <li>• Increased demand for infrastructure.</li> <li>• Neglect of other economic opportunities.</li> </ul>
Environmental impacts	<ul style="list-style-type: none"> <li>• Environmental improvement schemes.</li> <li>• Management of natural areas.</li> <li>• Renovation and rehabilitation.</li> <li>• Built environment conservation.</li> <li>• Money for conservation.</li> </ul>	<ul style="list-style-type: none"> <li>• Congestion and visitors over-use.</li> <li>• Vandalism.</li> <li>• Threat to flora and fauna habitats.</li> <li>• Visual pollution.</li> <li>• Uncertainty.</li> </ul>

**Source:** UNESCAP (1996: 75)

In appraisal analysis one has to be aware of some fundamentals which include the determinant factors, the main limitations, and the main challenges.

The factors which can affect and influence the degree of tourism include the number of visitors, resilience of the eco-system, visitor responsibility, degree of transformation, development momentum, resilience of attractiveness, degree of competition, accessibility, management methods, policy framework,

regional policy, political will implication, and many others. Details on these factors are in UNESCAP (1996).

Some limitations should be taken into account to avoid problems that may frustrate the interpretation and usefulness of the tourism impact appraisal. UNESCAP (1996) gives an overview of these limitations which may be caused mainly by: assessment methodology, data availability and quality, theory framework, impact transferability, time impacts, impacts inter-connectedness and legislative guidelines,

According to UNESCAP (1996), the tourism impact appraisal should be aware of these challenges because assessments should not be considered in isolation and are not ends in themselves per se. They should instead, be considered as inputs to enable healthy processing of ongoing monitoring and management. Assessments should also be part of integrated planning and resources management.

Impact assessments are crucial for decision-makers especially when they want to establish a predictable future, outcomes and consequences that result from a proposal of development strategies and/or natural disasters. Indeed, impact assessment and appraisal analyses are unavoidable in order to have well-implemented policy-decisions in any area.

According to UNESCAP (1996) and various researchers who have studied the topic, most areas and directions of impact appraisal and assessment analyses are mainly economic , environmental , and socio-cultural appraisals.

The economic impact appraisal deals with determining what may be the effects of tourism trade on a country's economy in terms of employment, income and wealth. The outcome of the appraisal indicates that the benefit and cost or benefit-cost ratio of the tourism trade developments on the economic well-being of the country. Usually, this is done through thorough studies on employment, income, business, and government activity. Decision-makers get assistance and inputs in order to plan and implement the best policies taking into account the benefit-cost analyses.

The environmental impact assessment monitors how the tourism developments affect the environment and all the eco-systems. Such analyses reveal the nature, scale and consequences of any disturbance generated by tourism. The findings may propel the implementation of management policies that can minimize or alleviate the induced costs.

The socio-cultural impact appraisal assesses the changes which result from tourism activities in terms of individual behaviour, socio-cultural and political systems, value systems, family relationships, collective lifestyles, and moral conduct. It is useful to get an idea about what social, cultural and political structures are needed to protect the people against foreign invasion and what could be protected to stimulate growth home.

### **3.2.2. Economic Impact Appraisal of Tourism**

Assuming that an economy has the capacity to increase employment and output in response to demand from tourists, we focus on the channel of effects that result from continuing tourism expenditure. This hypothesis is important in that if the condition does not hold true, instead of provoking income and employment increases, tourism expenditure will result in no positive impact but increases in prices or inflationary pressure as observed by Sinclair and Stabler (1998).

There are three main channels by which tourism activities impact on the economy : Direct or primary effects and indirect or secondary effects and induced effects.

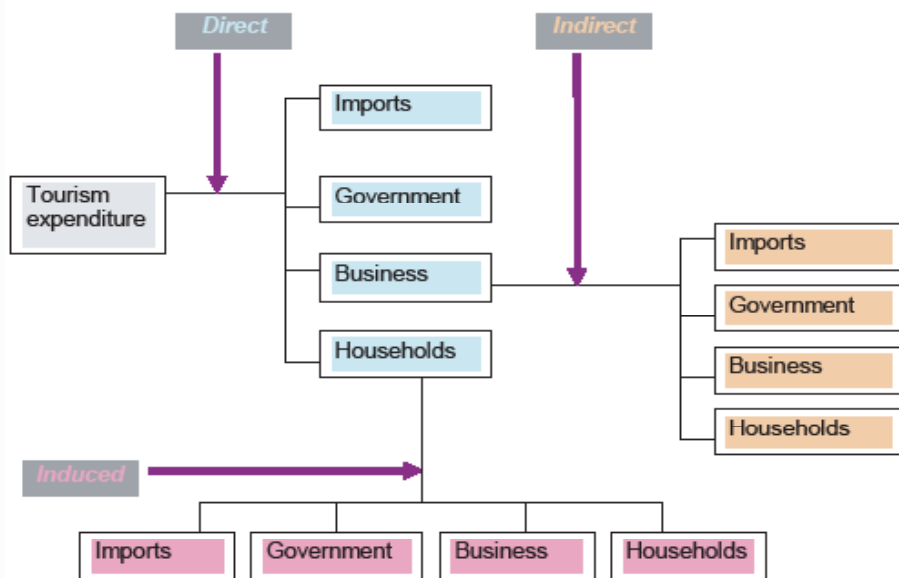
Primary or direct costs and benefits: Direct consequence of tourism activity in an area is seen generally by an increase in terms of employment and incomes. These effects are often viewed from expenditure by tourists which results in higher businesses and households revenues, in employment and fiscal revenue.

Secondary or indirect costs and benefits: Expenditure by tourism entrepreneurs on new equipment, or additional services and goods to meet customer expectations. Once the initial revenue earnings from tourism (direct) are spent on production of goods and services which may be purchased by tourists, there are indirect effects generated at the secondary stage.

Induced costs and benefits: expenditure by government as a consequence of income generated by taxes and levies on tourism activity or expenditure of households, entrepreneurs or foreigners from earned income from tourism activities brings additional benefits. Part of the income earned by households, governments and businesses will be spent on own consumption. This additional consumption is induced by tourism through revenue generated from it. And then, this additional expenditure generates sources of income for businesses and governments. It is very clear that the initial expenditure by tourism can have significant additional effect throughout the rest of the economy, resulting in increased income and expenditure by a range of different groups, many of whom are not directly connected with tourism activities. This process of spending and re-spending is commonly described as the multiplier effect. Thus, the true and actual impact of tourism is not the actual expenditure by tourists; it is the final impact that this expenditure has on the economy. Adversely, these induced effects may result in leakages when there is a high propensity to consume foreign products (imported goods).

A simple scheme model of the direct, indirect and induced effects from initial tourism expenditure is summarized in the figure below:

**Figure 3.1: The Impact of Tourism Expenditure**



### **3.2.3. Environmental Impact Appraisal of Tourism**

Environmental degradation and loss of ecosystems have a negative effect on an economy's growth rate and this constrains pro-poor growth. Policy failures and corruption are amongst the factors which lead to unsustainable exploitation of environmental assets and to anarchic extraction of natural resources such as wildlife, forests, fish, and so on. The existence, quality and the physical quantity of the environment are, crucial for tourism development.

On the one hand, tourism has positive effects on the environment in the sense that it induces activities concerned with environmental protection and conservation. Regions with more developed tourism tend to have higher awareness of the value of the environment. Environmental conservation and natural areas protection are therefore financed in order to get benefits from them.

On the other hand the relationship between tourism and the environment is so complex that many related activities sometimes adversely affect the potential of an economy. These adverse impacts are generally linked to construction of general infrastructure such as roads and airports on the one hand and of tourism facilities which include resorts, hotels, restaurants, shops, golf courses and other sporting grounds. Such facilities can put enormous pressure on an area and lead to impacts such as soil erosion, increased pollution, discharges of refuse into a water bodies, loss natural habitat, increased pressure on endangered species and heightened vulnerability to forest fires.

## **3.3. Tourism and Environment: Adverse Impacts**

### **3.3.1. From Tourism to Environment**

We have already shown evidence that tourism may adversely affect the resources and assets found in the environment. But, there is evidence also to show that there are negative effects that environmental degradation may have on tourism, for instance from industries may discourage it.

Tourism development puts pressure on natural resources and may lead to the depletion of natural resources such as water, energy, food, and other raw materials that may already be in short supply. Tourism development may also result in land degradation and pollution, noisy environment, sewage spillage, damaged flora and fauna, aesthetic pollution, erosion, deforestation and intensified or unsustainable land use, etc. Furthermore, extraction of building materials exerts physical pressure on the natural environment affecting both vegetation and soil which may lead degradation and loss of biodiversity. Intensive tourism development may result in losses in the ecosystem. However, there is a limitation to this view in that it is a known fact that intensified use does not always lead to destruction (see Boserup theory).

**Table 3.5: Trampling impacts on vegetation and soil**

Trampling impacts on vegetation	Trampling impacts on soil
Breakage and bruising of stems	Loss of organic matter
Reduced plant vigour	Reduction in soil macro porosity
Reduced regeneration	Decrease in air and water permeability
Loss of ground cover	Increase in run off
Change in species composition	Accelerated erosion

**Source:** *Website University of Idabo*

Tourism, more specifically nature tourism, is closely related to biodiversity and the attractions created by a rich and varied environment. It can also cause loss of biodiversity when land and resources are strained by excessive use, and when impacts on vegetation, wildlife, mountain, marine and coastal environments and water resources exceed the carrying capacity. This loss of biodiversity in fact leads to loss of tourism potential.

### 3.3.2. From Environment to Tourism

The tourism intensity in a region is highly correlated with the quality and conservation of natural and environmental assets. Poor quality environment areas are less likely to attract tourists, whereas well managed natural environment areas attract thousands of tourists. It is obvious that the quality

and state of both the state of the environment and physical infrastructure are key to tourism development and sustainability.

Tourism is also affected by climate change. The latter is likely to increase the severity and frequency of storms and severe weather events, which can have disastrous effects on tourism in the affected regions. Some of the other impacts that the world risks as a result of global warming are drought, diseases and heat waves. All these factors will have a major negative impact on tourism development.

### ***3.3.3. Some Positive Impacts***

Tourism development may contribute to environmental protection if planners view it as major component of the economy. In fact, policy-makers will finance activities to support and motivate tourism improvement in order to attract more tourists. Environmental protection and conservation will therefore be financed indirectly for the aim of collecting revenues from tourism flows. Tourism can contribute directly to the conservation of sensitive areas and habitat when revenues from park-entrance fees and similar sources are allocated specifically to the protection and management of the environment. Special fees for park operations or conservation activities can be collected from tourists or tour operators. User fees, income taxes, taxes on sales or rental of recreation equipment, and license fees for activities such as hunting and fishing can provide governments with the funds needed to manage natural resources. Such funds can be used for overall conservation programmes and activities, such as park ranger salaries and park maintenance.

In other cases, sound environmental management of tourism facilities and especially hotels can increase the benefits to natural areas. By planning early for tourism development, damaging and expensive mistakes can be prevented, avoiding the gradual deterioration of environmental assets significant to tourism.

Tourism has also the potential to increase public appreciation of the value of the environment and to spread awareness of environmental problems when it brings people into closer contact with nature. Attractive and pristine sights of the natural environment are identified as valuable; the need to keep the attraction

alive frequently leads to the creation of national and wildlife reserves and parks. These are some of the positive contributions of tourism to the environment.

#### **3.3.4. Socio-Cultural Impact of Tourism**

Tourist relationships are assumed to be only transitory, temporal, not spontaneous, unequal and unbalanced. Usually, tourism is accompanied by some standard effects and these include increase in crime rates, tension with local population, resentment over outside control, disruption of traditional kinship and community bonds, changes in the roles of women, disruption of age grades, and men's responsibilities, community cohesion may weaken though in some cases it will strengthen, changes in demographic structure, language change, prostitution, moral decadence, gambling, health changes, and commoditization of local culture, sex and romance.

Briefly, a socio-cultural impact appraisal of tourism development is unavoidable when one wants to carry out an in-depth assessment on how development tourism impacts on a country's condition. The potential social impacts of tourism on a society are summarized in the next table.



**Table 3.6: Potential matrix on social Impacts of tourism services**

Impact	Positive	Negative
<b>Socio-economic</b> <ul style="list-style-type: none"> <li>• Individual economic independence</li> <li>• Labour force displacement</li> <li>• Changes in employment</li> <li>• Changes in land value</li> <li>• Improved living standards</li> <li>• Changes in political &amp; economic system</li> </ul>	<ul style="list-style-type: none"> <li>• Wages</li> <li>• Migration to tourism region for employment</li> <li>• Employment in tourism sector</li> <li>• Increased value of land</li> <li>• Improved services, facilities, and infrastructure</li> <li>• Growth of new elite; growth of depressed regions</li> </ul>	<ul style="list-style-type: none"> <li>• Conflict in traditional societies</li> <li>• Forced migration of residents from region</li> <li>• Seasonal unemployment; abandonment of traditional forms of employment</li> <li>• Higher land prices; conflict over land use changes in ownership</li> <li>• Inflation generated by tourism</li> <li>• Splits in national unity</li> </ul>
<b>Socio-cultural</b> <ul style="list-style-type: none"> <li>• Growth in undesirable or prohibited activities</li> <li>• Social dualism</li> <li>• Demonstration effect</li> <li>• Culture as a commercial commodity</li> <li>• Growth of resentful attitudes</li> </ul>	<ul style="list-style-type: none"> <li>• Cross-cultural exchange widened dimensions</li> <li>• Stimulation to improve living standards</li> <li>• Preservation of cultural heritage growth of pride</li> </ul>	<ul style="list-style-type: none"> <li>• Growth in crime and prostitution</li> <li>• Conflict in values</li> <li>• Frustration; increased spending; growth in import bills</li> <li>• Culture loses meaning as it is commercialized for tourists</li> <li>• Growth of resentment and hostility due to servile attitude on the part of residents</li> </ul>

**Source:** *UNESCAP (1996: 100)*

Following Boyd and Singh (2003), Pranill Ramchander (2004: 69) has put forward four main relationship scenarios that may develop in the socio-cultural impact of tourism. These scenarios are: win-win, win-lose, lose-win and lose-lose. Analysts confirm that the key to the socio-cultural impacts of tourism appears to be the relationship between hosts and guests (Pranill Ramchander, 2004: 60).

Theoretical foundations of socio-cultural impacts of tourism industry

distinguish mainly six characteristics which make tourist-host interactions a special type of human relationship:

- asymmetrical relationships;
- ephemeral relationships;
- interactions are segmented and instrumental (limited to purpose);
- faulty communication and misunderstandings;
- crude stereotypes pre-existing in the interactions; and
- relationships are beneficial in part because they are profitable, enjoyable and mutual expectations are low and carefully bracketed in time and space.

The flow of a large number of tourists from various cultures unavoidably impacts on the local societies. The host societies are in turn, likely to influence the guests. The table below presents possible responses from host communities.

**Table 3.7: A Summary of possible host responses to tourism**

Resistance ( especially in former colonies)	Strong feelings of resentment may arise and develop; expressed in aggressive behaviour against tourism facilities or against tourists per se.
Retreatism (when not approved by the whole community)	Reaction may take the form of closing into oneself, avoiding contact with foreigners, revival of old traditions, and increasing cultural and ethnic awareness instead of an active resistance.
Boundary Maintenance (tourism accepted and benefits positive)	A well defined boundary between the foreigners and the local culture and presents the local tradition to foreigners in different context so that foreigner's cultural effects are minimized.
Revitalization (tourism helps to revitalize community's culture)	Arises out of tourism need to preserve, display, adorn and boast of cultural resources.
Adoption (demolish old values)	Contributes to the disintegration of traditional culture and efforts toward the adoption of Western culture.

To really quantify and assess the socio-cultural impacts of tourism development, various authors have identified the channels through which these influences may arise.

### **3.4. Tourism Impacts Measurement: Methodology Review**

One problem most frequently encountered once we want to conduct analyses on the economic impact of tourism to other sector is that tourism simply is not registered as a distinct sector in national accounts systems and structures. This limitation may be addressed through building tourism satellite accounts even though this solution is costly. These STAs would provide an important foundation for more sophisticated analyses of the impact of tourism on other sectors and thus allowing assessment of different policy regimes and frameworks through computable general equilibrium modelling. The CGEs models are increasingly being used in impact appraisal and assessment of tourism impact on various other sectors.

The problem with measuring the impact of tourism spending is that tourism does not exist as a distinct sector in any system of national accounts. There is a risk of underestimating the overall impacts and contribution of tourism to economic growth. Amongst others, input-output analysis and Tourism Satellite Accounts have been the most widely used techniques in estimating and assessing tourism impacts on the economy. Thus, Tourism Satellite Accounts can provide a comprehensive database which identifies tourism's role in an economy and provides a rigorous and reliable basis for drawing comparisons between tourism and other sectors in terms of their contribution to the economy. The TSAs typically concentrate on measuring the direct impact of tourism expenditure, and often do not directly address the issues of the indirect and induced effects discussed earlier. To gain comprehensive insight into the indirect and induced effects of tourism requires a further level of analysis- this is usually described as tourism impact analysis.

However, simple Keynesian multipliers only give a rather limited and partial perspective on the impact of tourism, not least because they focus on simple aggregates and are unable to address the nature of linkages between sectors. Although input-output analysis can provide a much greater understanding of the linkages across and the relationships between different sectors as well as the overall contribution of tourism, the technique does have its limitations.

The development of Computable General Equilibrium (CGE) modelling has provided economists with an alternative approach to analyzing the impact of tourism and one which has the same ability as input-output analysis to highlight inter-sectoral linkages without being restricted to fixed prices and wages. Moreover, CGE modelling has the additional advantage of being able to simulate the impacts on tourism of different policy changes and scenarios.

### **3.5. Tourism Impacts Control: Strategies, Policies and Planning**

Batir Mirbabayev and Malika Shagzatova (2006) insist on the fact that tourism provides about 10 per cent of the world's income and employs almost one tenth of the world's workforce. If this statement holds for the world economy, it implies that the tourism sector should be well analyzed and managed in order to get the best benefits from it and of course, to minimize its induced costs. Tourism impacts, whether economic, socio-cultural or environmental (physical) are controllable on a single-sector basis or in an integrated framework and mainly through: finance, management strategies policy, information about carrying capacity guidelines, engineering controls, and so on.

Giulia Carbone (2004) has listed some principles to implement a sustainable tourism agenda aimed at maximizing the benefits and minimizing all identified costs in a multidisciplinary framework. It's often recommended to take a holistic approach and to promote long term planning, which addresses global and local impacts. Sustainability strategies should also be equated with quality and address full life cycle impacts. The implementing policy tools should include economic instruments (particularly in terms of financial incentives, taxes and admissions management and administration), capacity building strategies, monitoring and benchmarking identified destinations indicators, setting standards and certification. Giulia Carbone (2004) recommends furthermore the development of infrastructure and integrated area management. In addition, impact appraisal studies should be conducted thoroughly so that they help in implementing sustainable tourism strategies.

There are six important problems identified as preventing people and nations from benefiting from tourism as a sustainable solution for economic development, i.e. in terms of lack of

- (i) knowledge (ignorance) of the dimensions, nature, power of tourism,
- (ii) ability to determine the level of sustainable development ( i.e. capacity),
- (iii) ability to manage tourism and control the development,
- (iv) appreciation that tourism does cause impacts which cannot easily be reversed,
- (v) appreciation that tourism is dynamic, and causes change et respective responding,
- (vi) and agreement over levels of development, over control, over directions of tourism.

Using the story of the four R's, Persa Fokiali (1996) addressed the concept of sustainable development in four strategies:

**Restrict:** that is controlling consumption of natural resources so as to avoid over-exploitation, managing tourism flows according to destinations' carrying capacity.

**Restore:** by upgrading, wherever it's needed and advisable, the fragile cultural inheritance.

**Rehabilitate:** that is undertaking deeply founded actions in saturated areas where signals of tiredness from mass tourism are manifested.

**Reorganize:** the product differentiating in the tourist services. Designing and promoting new kinds of tourist supply.

Following all these authors here above summarized, we may say that a well-planned and participatory strategy and framework should be implemented for sustainable tourism strategies and policies. It should take into account all the needed actions in order to restrict costs, restore and rehabilitate the lost or ruined infrastructure (economic, environmental or cultural).

### **3.6. Next Steps and Tasks Scheduling**

According to Christine Ennew (2003), the dominant motive for the development of tourism is economic (improvements in employment, incomes and exports), but the very process of developing tourism will impose costs elsewhere. If governmental and non-governmental organisations are to make sensible and rational decisions with respect to the current and future development of tourism, they must have reliable information on its costs and benefits. It is only then that the implementation of good policies and strategies is likely to manifest its predicted positive effects. Therefore, we decided to conduct two case studies: one on the case for black water relating to environment pollution from hotels in Bujumbura, and the other one on tourism impact linked to national investment costs (Ruvubu National Park Case). The first study enabled us to get the point on the relationship existing between water pollution and hotel sewage systems in Bujumbura whereas the second one enlightened us on the connections from RNP protection and the perception of people living around the park. Policy implications were drawn from these two case studies and related investment programmes were developed in the end.

## Environment Pollution from Hotels in Bujumbura: Black Water

### 4.1. Pollution Issues in Bujumbura City Linked to Tourism Activities: Case of Solid Waste and Worn (used) Waters (Sewage)

Burundi has endorsed the Climatic Changes treaty initiated by the United Nations in 1996. It must carry out a report/ratio of inventory of greenhouse gases. Even if the reports/ratios showed that the principal emissions came from the exploitation of forests for various reasons, pollution of the environment by waste and worn water started becoming a serious issue because of the increased population, especially in Bujumbura, the capital city of Burundi. However, compared with other cities in the world, this progression is relatively low with an urban population estimated at more than 400,000, whose majority lives in Bujumbura.

The last survey of the QUIBB 2006 – a quantitative and qualitative household survey- (made in collaboration with the CURDES) showed that only 11.4 per cent of Burundian households live in urban environment, but 8.7 per cent of them dwell in the Burundian capital. Therefore, although reports/ratios estimated the level of pollution according to the demographic growth, it is of paramount importance to attenuate it by the weak urban population rather than to balance it by the high level of the purchasing power in the urban area. In regard to the solid and liquid waste of the households and trade, it should be noted that their evacuation falls within the competence of SETEMU, a public service of the town of Bujumbura. Nevertheless, due to lack of financial means, the collection of garbage (done once a week) was more and more irregular. Certain companies in search of cleanliness and better service delivery had to resort to a profit-oriented private company, The BGC which

dumps in places indicated by SETEMU (which deals with their treatment). As for industrial solid waste, the companies themselves deal with their treatment or must evacuate them up to the places of discharge.

This method of waste processing shows that the city hall of Bujumbura is not equipped to handle it. Concerning the drainage system used does not seem to be effective either. Even if it is made up of trenches to evacuate the sewage, which link up at the end to the station of purification at Buterere (under supervision of SETEMU). There exist also other methods of evacuation of sewage for instance, the system of septic tank or absorbing wells. It is not rare to find leakage discharges into rivers (like Muha or Ntahangwa) which link with Lake Tanganyika. According to the last estimates (DGFE, 2008), the quantity of solid waste evacuated towards the refuse tip is of 6,19 Gg in 2000 (either close to 17.487m<sup>3</sup>) and of 12,2 Gg in 2007, whereas the produced total quantity of waste in 2000 was estimated at 40,5 Gg (or 0,36kg per capita of the town hall of Bujumbura). The emissions of gases for purpose of greenhouse are estimated then at (in 2000): 0,2504 Gg for the CH<sub>4</sub> and 0,3138 Gg for the N<sub>2</sub>O. The estimates of 2005 show that the figures were 0,45 Gg for the CH<sub>4</sub>. For used water, the same report/ratio (DGFE, 2008) shows that the worn water purified by SETEMU was 383.928 m<sup>3</sup> in 2007, whereas the quantities of the industrial worn water treated by the companies were not known. The emitted quantities of methane were 0,05 Gg (in 2005) coming from domestic and commercial worn water then of 0,02 of CH<sub>4</sub> for industrial worn water while the sewages contained 0,61 Gg of N<sub>2</sub>O thus constituting the first source of emission of gases for purpose of greenhouse.

## **4.2. Black Water and Pollution linked to Hotel Activity: Evidence from Survey**

During the 80's, Burundi, as most developing countries, implemented trade policies to solve the problems of budget deficit and international debt. As trade and income increases, as an outcome of good policies, some bad consequences arise and have to be managed, such as inequalities (Milanovic,



2002) and/or pollution (Grossman and Kruger, 1995). This study deals with the problem of pollution as a cost of trade in the Tourism Service.

As methodology, we investigated all the hotels established in the capital city of Burundi, Bujumbura for 2 weeks, from September 5<sup>th</sup> to 19<sup>th</sup>. In this study, we investigate how hotels affect the atmosphere (burning solid wastes) and the Lake Tanganyika water pollution turning the water *black*.

#### **4.2.1. Identification and Classification of the Hotels**

The entire sample was composed of 60 hotels classified by the legal authority but as we investigated, around 10 of them were not available. The following table shows that most of the Hotels located in Bujumbura were of high class according to the standards; the price allowed for a single room was estimated at 60US\$.

Table 4.1: Characteristics of the Hotels

Q102 Category of Hotel	Q103a Dispose of Beds		Q103b Bath rooms		Q103c Dispose of working toilets		Q103e Restaurant		Q103f Room for conference		Q103h Parking		Q105a Price for single room(Fbu)		Q105b Double Room		Q105c Suite junior and more	
	Mean		Mean		Mean		Mean		Mean		Mean		Mean		Mean		Mean	
High Class Hotel	42		32		35		2		1		2		78750		93125		153250	
Middle Class	14		12		13		1		0		1		23095		31095		11524	
Low Class	14		9		9		1		0		1		15450		18550		45500	

Where 1US\$ is 1200Fbu (2008), but was around 720Fbu in 2000.

#### 4.2.2. Hotels Connected (or not) to the Wastes Evacuation Network

As described above, the sewerage system is managed by a public firm named SETEMU which handles, treats and evacuates all the wastes from households (and hotels) to the discharge centre outside the city of Bujumbura. Some hotels are connected to this system. Others may treat their wastes using the absorbing tank or wells before sending the used waters to rivers and to the Lake Tanganyika or to other connections. If the SETEMU is unable to evacuate these wastes of used waters, the hotels have an intermediate solution, the BGC which is a private firm specialized in that area; but this has an additional cost to the hotels.

From the results described below, we can conclude that many hotels, are not connected to the existing sewerage system handled buy SETEMU which leads to the Station of purifying waters outside the city (Table 4.2) even though they pretend to be connected to it (Table 4.3). The other remaining (51per cent) means that the hotels are really polluting the environment since they fail to provide precisely which network they are using. Moreover, for those who intend to evacuate their used waters, they call either the SETEMU which doesn't operate all the time, or the BGC which operates all time but has an additional cost to the hotels. Table 4.4 shows that even, among hotels of high class, only 50 per cent confirm to call the BGC in case of evacuating the used waters; 37,5per cent of them pretend to deal it by themselves while more than 48per cent among hotels middle class choose to handle and treat used waters by themselves or another service.

**Table 4.2: Used Water Evacuated by the City Sewerage Connection**

		Frequency	Percent		
Valid	Yes	34	69.4		
	No	15	30.6		
	Total	49	100.0		

**Table 4.3: If yes, to which network are you connected ?**

		Frequency	Percent		
Valid	To Buterere Station (SETEMU)	7	14.3		
	Filter System	1	2.0		
	Our own system	1	2.0		
	Other	25	51.0		
	Total	34	69.4		
Missing	System	15	30.6		
Total		49	100.0		

**Table 4.4: Who do you call in order to evacuate the used waters?**

		SETEMU (Public firm, free)	BGC (private firm, charge)	None, ourselves	
Investment at start	Less than 1 million (Fbu)	9.1%		45.5%	18.2%
	10 - 25 millions	33.3%		11.1%	22.2%
	25- 50 millions		75.0%	25.0%	
	50 -t 75 millions		25.0%	25.0%	50.0%
	More than 75 millions	9.5%	47.6%	28.6%	9.5%
Category of Hotel	High Class Hotel	12.5%	50.0%	37.5%	
	Middle Class Hotel	9.5%	33.3%	19.0%	28.6%
	Low Class Hotel	15.0%	15.0%	35.0%	10.0%

### 4.2.3. Quality and Costs of the Evacuation Services

Finally, we investigated whether the evacuation service was good or not, and what could be done to improve that service (to cleanse water biologically

or using some chemical products). According to table 8, more than 53 per cent of hotels agreed that evacuation of used waters is either not sufficient or was of bad quality, which means that they are polluting the neighbouring areas including rivers located nearby. Table 4.4 confirms that connection to the sewerage system is the solution, but the problem is: who should pay? Table 4.5 shows that most of hotels (more than 50per cent) would prefer the government or the local authority to pay for their pollution (treating, handling and evacuating the used waters), which would bring the community to support hotel pollution.

**Table 4.5 : Appreciation of the Evacuation Service**

		Percentage		
	Sufficient and good quality	46.9		
	Sufficient but of bad quality	20.4		
	Insufficient but good quality	10.2		
	Insufficient and bas quality	22.4		
	Total	100.0		

**Table 4.6: What Should be Done to Implement the Evacuation (Treatment) of used Waters?**

	Q106 Investment at start of activity					Total
	Less than 1 million (Fbu)	10 - 25 millions	25 - 50 millions	50 - 75 millions	More than 75 millions	
Q209a: Build other sewerage system	30.3%	18.2%	9.1%	6.1%	36.4%	100.0%
Q209b Connect more to the existing system	15.6%	21.9%	6.3%	6.3%	50.0%	100.0%
Q209c Control the septic tank (within hotels)	21.4%	21.4%	7.1%	14.3%	35.7%	100.0%

**Table 4.7: Who Supports the Additional Fees from the Treatment and Evacuation of used Waters?**

		Q102 Category of Hotel			Total
		High Class	Middle Class	Low Class	
Q207a Costs supported by Hotel (ourselves)		33.3%	44.4%	22.2%	100.0%
Q207b Costs supported by the government		10.0%	45.0%	45.0%	100.0%
Q207c Subsidies from government		13.6%	50.0%	36.4%	100.0%

#### 4.2.4. Other Types of Pollution: Solid Wastes from Hotels

While used water is a serious threat; solid wastes from households and hotels can be more easily handled using trucks and cars to transport them up to the discharge areas where a public service (the SETEMU) sorts and treats. But if the hotels burn the solid wastes (what happens in case the wastes are not evacuated), that means that hotels are polluting the atmosphere.

We also asked hotel owners and managers whether they could pack and transport solid wastes. Table 4.8 shows that only big hotels (with an investment of over 75 millions Fbu = more than 60,000US\$) pack and paid for a service to evacuate the solid wastes; for small hotels (less than 1 million), they acted as every household: put in a recipient and transport in a centre for evacuation.

**Table 4.8: How to deal with the solid wastes?**

		<b>(Question) Q106 The Capital invested (in Burundian Franc) at the start of activity (year 0)</b>					<b>Total</b>
		Less than 1 million	Between 10 - 25 millions	25 - 50 millions	50- 75 millions	More than 75 millions	
Q301How to deal with solid wastes	Packed in appropriate sacks and evacuated by a service	18.2%	21.2%	12.1%	6.1%	42.4%	100.0%
	Packed in sacks but not evacuated		16.7%		16.7%	66.7%	100.0%
	Put in recipients and transported	37.5%	12.5%		12.5%	37.5%	100.0%
							100.0%

Where 1\$US is now = 1200 Fbu (2008) but was estimated at 720Fbu in 2000.

On the question (Q306) to know who should pay for that pollution, only 20.4 per cent of the hotel managers think that they should support the costs due to their pollution while 46.9 per cent assume that it's up to the government to pay for that pollution and 32.7 per cent think that they share the cost (subsidies) with the government (Table 4.9).

**Table 4.9. Who should meet the costs due to pollution?**

		Q306			Total
		The Hotel	The Government	Subsidies from the government	
Q106	Less than 1 million Fbu	1	8	2	11
		9.1%	72.7%	18.2%	100.0%
	10 - 25 millions	4	3	2	9
		44.4%	33.3%	22.2%	100.0%
	25 - 50 millions	0	2	2	4
		.0%	50.0%	50.0%	100.0%
	50 - 75 millions	1	2	1	4
		25.0%	50.0%	25.0%	100.0%
	More than 75 millions	4	8	9	21
		19.0%	38.1%	42.9%	100.0%
Total		10	23	16	49
		20.4%	46.9%	32.7%	100.0%

Finally we asked the hotel managers how they rated the service of evacuation of wastes (using a public service or a private one). According to the Table 21(a), small hotels (40 per cent of them) did not appreciate the services of evacuation, knowing that this category of hotels depends on public service. For hotels of high class (50 per cent), the service was good but not sufficient (not regular as they would like), while for the hotels of middle class, 38 per cent appreciate; while other 38 per cent don't appreciate. As this appreciation seemed to be unclear, we selected the hotels according to the value of their investments when they started and not according to their classes. Table 21 (b) confirms that 45.5 per cent of the small hotels (lesser than 1 million Fbu) did not appreciate the service of evacuation (in terms of quality or quantity) while for the 66 per cent of big hotels, the service is of good quality even though 38 per cent among would prefer it to be more sufficient (in terms of regularity).



**Table 4.10 a) Solid wastes evacuation service (appreciation) by category of hotels.**

		Q307 Appreciation				Total
		Sufficient and good quality	Un sufficient but of good quality	Sufficient but of bad quality	Un sufficient and of bad quality	
Q102 Category of Hotel	High Class	2	4	1	1	8
		25.0%	50.0%	12.5%	12.5%	100.0%
	Middle Class	8	2	3	8	21
		38.1%	9.5%	14.3%	38.1%	100.0%
	Low Class	4	5	3	8	20
		20.0%	25.0%	15.0%	40.0%	100.0%
Total		14	11	7	17	49
		28.6%	22.4	14.3%	34.7%	100.0%

**Table 4.10 b) Solid wastes evacuation service (appreciation) by hotels investments.**

		Q307				Total
		Sufficient and good quality	Un sufficient but of good quality	Sufficient but of bad quality	Un sufficient and of bad quality	
Q106	Less than 1 million	3	1	2	5	11
		27.3%	9.1%	18.2%	45.5%	100.0%
	10 -25 millions	1	2	1	5	9
		11.1%	22.2%	11.1%	55.6%	100.0%
	25 - 50 millions	1	1	0	2	4
		25.0%	25.0%	.0%	50.0%	100.0%
	50 - 75 millions	1	1	1	1	4
		25.0%	25.0%	25.0%	25.0%	100.0%
	More than 75 millions	8	6	3	4	21
		38.1%	28.6%	14.3%	19.0%	100.0%
Total		14	11	7	17	49
			22.4%	14.3%	34.7%	100%

### 4.3. Conclusion

According to this survey, the main threat in terms of pollution comes from the used waters since it can easily affect Lake Tanganyika and may be a cause of Black water. Even though hotels respect some rules (in terms of standards of building even taxation aspects), their activity is not always under control. The pollution that comes from them is a threat to rivers surrounding them and Lake Tanganyika (since all these rivers carry them into the Lake).

Many of these hotel owners or managers are aware of the pollution phenomenon and try to pay a private service to evacuate their worn waters while others, not

forced to, assume that it is up to the government to deal with it.

This means that, if all agree to let the government pay for that kind of pollution, mitigation, they would agree also to pay additional fees in terms of taxation of any kind for that duty. Otherwise, it would be the whole community including all the countries surrounding Lake Tanganyika to pay (or to be affected) for that pollution.

#### **4.4. Recommendation for an Environmental Taxation.**

We refer to our conclusions on Lake Tanganyika pollution, to discuss arguments in favour of taxation and economics mechanisms as regulatory instruments.

Nowadays, more people are aware of climate change and governments are therefore eager to implement some sustainable policies. Burundi, as like most countries, has ratified the Kyoto Protocol, which is an amendment to the UNFCCC adopted at the Earth Summit (1992).<sup>3</sup> Following those international legal commitments which may lead to a pollution reduction, many countries have introduced some specific taxes on carbon, industry energy use or motor fuels. Somewhere, this may be interpreted as a need for an environmental control. In 2005, the European Union came up with a Scheme on Emissions Trading by putting the United States under to reduce pollution pressure for a pollution reduction.

Even though there are many arguments favourable to a use of taxation as an environmental policy, others will debate on the efficiency of using such instruments. As an example, the Kyoto Protocol compels countries (most of them are the developed ones) to reduce 5.2 per cent their emissions below their 1990 baseline for the next 2008-2012 period. Some analysts criticized the protocol as an instrument which may lead to a growth reduction following the adjustment costs which might be either inequitable or inefficient (Mendelsohn, 2006)<sup>4</sup>.

Following that debate on international conventions and protocols, it would be

<sup>3</sup> The United Nations Framework Convention on Climate Change is an international treaty which aims to stabilize the greenhouse concentrations in the atmosphere and to avoid a climate change.

<sup>4</sup> Mendelsohn (2006), "An Economist's View of the Kyoto Climate Change Treaty" available on: [www.npr.org](http://www.npr.org). He estimated that an abatement of a ton may cost 5\$ in Europe while it would be 100\$ in Usa.

interesting to discuss the effectiveness of taxes use as an instrument to reduce pollution. For Fullerton, Leicester and Smith (2008), environmental taxes have advantages and disadvantages besides other considerations like costs and perceptions. Among advantages were: efficiency gains costs reduce, dynamic incentives negotiations, additional revenue (payments). Some disadvantages include incompatibility of firm structures, burning wastes in instead of a costly evacuation or treatment and distribution costs production costs increase.

In many developing countries, such as Burundi or other Basin countries, this taxation may be interpreted as an additional administration intervention or an over taxation. Therefore more details should be required on the taxation: number of tons or kg for a specific tax. Moreover, this taxation requires also a conventional regulation to avoid firms to hide their pollution, so that, tax may be fair but also negotiated.

Finally, this environmental taxation may rely on or collective perception. Even though environmental taxation may translate into clean (green) behaviour, this should not be a license to pollute; a collective or a social view is necessary. In Africa, this may lead to a partnership between firms, administration and social leaders and youth play a key role.

In conclusion, in order to avoid pollution of Lake Tanganyika or elsewhere from firms (hotels, industries etc.) an environmental tax is needed as a signal to say that a polluter is also a taxpayer. But taxation in itself may not be sufficient it should be added to the social convention on pollution reduction from society.

# Tourism Impact Linked to National Investment Costs: A Case Study of Ruvubu National Park

## 5.1. Introduction

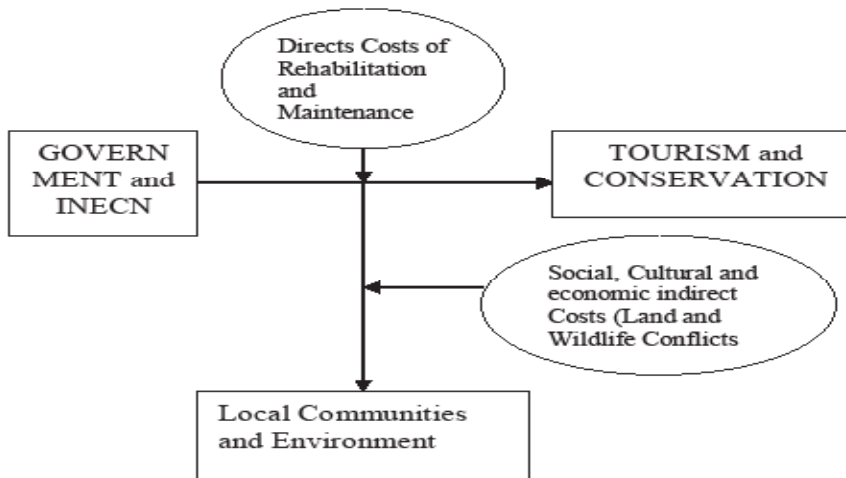
Burundi is endowed with 14 protected natural areas, grouped in 4 categories: 2 national parks, national reserves, historical and art heritage and, scenic beauty and a geographical diverse landscape (MINATET, 2007). With an area of 50,900 hectares, the Ruvubu National Park (RNP) is the largest park, followed by the Kibira national park and Rusizi national park respectively. It represents more than 2 per cent of the total area of Burundi and crosses through four provinces of Burundi, namely, Cankuzo, Ruyigi, Muyinga and Karuzi provinces (Rwubatsbabiri, 1994, GoB, 2008). It is limited by high rise mountains and extends south-westwards from the border with Tanzania along a 65 km stretch of the valley of the Ruvubu River. The latter is approximately 480km and may be considered the Nile's remotest source (Britannica, 2008).

The park was gazetted by the Burundi in 1980 with three objectives in mind, watershed management, protection and conservation of fauna and flora of RNP; a scientific research field and sustainable use of park resources in such a way that it could be the most competitive tourism destination in the world. In 1983, the government, at a cost of about US\$ 500 000, evicted more than a thousand encroachers who resettled in the park while another great number of them migrated to the regions as far as Tanzania to look for fertile piece of land (Birdlife International, 2008). This natural gift was considered as an unexploited gold mine, with wonderful unique flora and fauna for wildlife viewing, bird watching, nature walks and a rich cultural heritage. Because of a decade of a civil war in Burundi, tourism became impossible and any initiative going towards revamping that sector was annihilated by the severe insecurity that prevailed in the urban and rural areas.

However, since 2003, Burundi has enjoyed; buttressed by the Arusha Peace Accord . The first assignment of the democratically elected government was to build the infrastructure. Hence, there has been hope in the last few years to revive the tourism sector in all parts of Burundi. Much investment has been done in the areas of allocating many forest policemen and keepers to support the park managers, replenishing the forest through tree plantings, protecting the borders of the forest through the creation of the no-man-land territories, etc. All these activities have been achieved with the only aim of protecting and preserving the environment and subsequently turning the national parks into tourism attraction. In doing so, these natural endowments become the foreign exchange earners, rural income generation and job creation for the Burundian economy and also a way of financing preservation of unique ecosystems. Indeed, tourist activities have grown into one of the world's largest. They are a part of people's lifestyles and a factor in establishing social status (Vanasselt, 2000, Tubucanon, 2005).

RNP has entered a phase of revitalization and the government is making its effort to make it known through the media. During the survey, a crew of film-makers was taking photos and films to make a RNP documentary which will show the untold natural wealth of the park to the world. In this study, such efforts and much investment made by government in RNP in order to revive the tourism industry were considered as initial costs or costs of ex-ante tourism project. To revamp the RNP by incurring costs so that it may be a wonderful tourist attraction have a huge repercussion on the park, local people and wildlife population. This study argued that these indirect costs from the rehabilitation of RNP without local communities' participation may be the sources of nature abuses and misuses (Figure 5).

Figure 5: Conceptual Framework



Source: *Author's conception (2008)*

The literature on the impact of tourism on the environment in Burundi is scanty. Nevertheless, an attempt to evaluate the socio-economic aspect of the national park has been done in the past by Rwubatsebabiri (1994). This study based on 'with and without' RNP project concept stresses the economic importance of the park and how it impacts on the local people who felt that the government encroached on their right of access to the natural resource such as the RNP. In the contrary, the current research attempts to shade light on the impact of the development of RNP on the environment of the park and uses qualitative analysis as a tool of assessment. There is lack of substantive empirical evidence that explains the impact of the social costs linked to the evictions of the RNP settlers in 1983. Hence, the main objective of this study was to assess the impact of RNP activities on the environment, that is, park, wildlife and local communities which were the custodians of the natural resources as well as the cultural aspect of tourism industry.

The present study was organized as follows. Section 2 presents methodology used in this study. Section 3 gives the socio-economic features of the respondents. Section 4 explores the issues related to the conflict between local communities and wildlife, considered here as social costs of the RNP project.

Section 5 highlights the major points regarding the land issue and the local people's perception of the illegal use of RNP resources. Lastly, the study gives information about the cultural and ecological aspects linked to the presence of the park in the northern regions of Burundi. In addition, conclusions and recommendations fall in this last section.

## **5.2. Research Methodology**

This study used a cluster sampling procedure with random sampling in which individuals living in the environs of the RNP were selected in the survey. Four provinces namely Cankuzo, Ruyigi, Muyinga and Karuzi through which the park crosses were considered. Two of them were purposely selected, i.e., Karuzi and Muyinga. However, four communes or four cluster units (equivalent to Divisions in EAC) were randomly selected using balloting/shuffle methods and these are Rebero and Mwakiro (Karuzi) and Buhinyuza (Muyinga).

The sample frame consisted of the list of households of evicted park residents in 1983, made in conjunction with the local authorities, INECN officials and village leaders. The targeted respondents or households for the survey were randomly selected from these communes, resulting into a sample size of 40, which is above the minimum required sample size of 30 necessary for making statistical inferences on population characteristics from the sample (Gomez and Gomez, 1984). This study relies on both secondary and primary data. Secondary data was obtained from published and unpublished literature, official statistical publications such as INECN, Welfare Monitoring Survey or QUIBB 2006, UNDP, World Bank, and UNFPA, Burundi Government reports; while the primary data was obtained from the survey done in September/October 2008.

The collection of data involved the use of pre-test and revised set of structured questionnaire and focus group discussion. The structured questionnaire comprised of four main parts namely social, economic, cultural and ecological park activities (in terms costs) on the environment. This survey was undertaken using a single-one visit survey approach.



Data collected included socio-economic profile, cultural and ecological features that have marked the surveyed dwellers of the suburb of the park of Ruvubu. Frequencies were used for data cleaning and validation procedure in order to correct data errors and illogical or missing responses before analysis process. The main tools of analysis employed in the study included descriptive statistics, cross tabulation, analysis of variance (Anova), correlation analysis.

### **5.3. Socio-Economic Profile of the Local Communities**

This study was conducted in September-October (year) with the aim of searching the impact of the park activities in order to make it a tourism destination for local communities. Social factors of the surveyed respondents such as age, sex, education, family size and main activities were determined as follows.

#### **5.3.1. Respondents by sex, age and family size**

Out of 40 households interviewed, 68 percent were male-headed households. Five age categories were considered and these were 15-29, 30-39, 40-50, 51-69 and 70-Above. A majority of the respondents belonged to the age categories cutting across 30 to 69 years. However, the average mean age in the study area was 40.5 years. The mean family size of the sampled households in both Muyinga and Karuzi was 6 (Table 5.1). This is much higher than the Karuzi average of persons of 4.5 but agrees with the mean family size of Muyinga (GoB, 2006). Only 12 percent of household heads reported the existence of aborigines (Batwa tribe) whose main livelihood activities are hunting and pottery. They are mainly in Mwakiro and Rebero Communes, with little interest in the activities of conservation of the park.

**Table 5.1: Socio-Economic Characteristics**

		Province				
		Muyinga			Karuzi	
		Commune		Total	Commune	Total
		Buhinyuza	Mwakiro		Mutumba	
Age	Mean	47	42	44	37	37
Sex	Men	33.3%	18.5%	51.9%	48.1%	48.1%
	Women	7.7%	38.5%	46.2%	53.8%	53.8%
Education Level	Primary	26.3%	36.8%	63.2%	36.8%	36.8%
	Semi-Formal Education	25.0%	18.8%	43.8%	56.3%	56.3%
	None	20.0%		20.0%	80.0%	80.0%
Family Size	Mean	6	6	6	6	6

### 5.3.2. Education and Primary Occupation

The respondents (36 per cent) had partly or fully acquired primary education while the others had attended semi-formal education provided by the catholic churches; know how to read and partially to write. This result reveals that with such low levels of education, the interviewees must be in the primary sector and mostly depend on farming as the mainstay occupation. Precisely, more than 90 per cent of suburb park residents have agriculture as the primary occupation.

**Table 5.2: Main Activity**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agriculture/ Livestock	39	97,5	97,5	97,5
	Commerce	1	2,5	2,5	100,0
	Total	40	100,0	100,0	

Living near the national park and having agriculture as a major occupation, pre-supposes great pressure on the land resource by the high population around the RNP. Most of them being families evicted from the park in 1980's.

#### **5.4. Human — Wildlife Interactions**

According to Nagothu (2003), establishment of protected areas (PA) has been mostly considered a means of biodiversity conservation so far supported by national and international agencies. The main goal of gazetting RNP was for environment conservation purposes and as a tourist attraction so that Burundi get revenue from this untapped natural endowment through ecotourism (MINATET, 2007). But the efforts of developing the park have been thwarted by the 15 years of civil war. However, Burundi was gradually moving out from socio-political crisis; developing and protecting the RNP is once again on the agenda of the government of Burundi. The wildlife of RNP ranges from leopards, hippopotamus, crocodiles, buffalo, and monkeys to more than 425 species of birds. As the park was some metres away from human residences and not fenced, interaction with humans occurred because humans and wildlife competed for natural resources mainly land, forest and water. Obunde *et al.* (2005) informed that cases of human wildlife conflicts were, *inter alia*, such as wildlife invasion of crop farms, encroachment on wildlife areas blocking wildlife migration route and poaching wildlife for food or its body parts for business purpose. In the area surveyed, more than 65 percent of respondents reported that wildlife of the park frequently invaded their crop farms. In the Buhinyuza commune (equivalent to district), boars and buffalo were mostly the invaders while the monkeys were the culprits; invading farms of the residents of Mwakiro and Rebero. In addition, no compensations for the losses had been given to them; this is a serious threat to the conservation of the park.

In this conflict, between wildlife and humans, Obunde *et al.* (2005) et Muruthi (2005) two major interest groups that had to come together to solve such a threat was identified.. First, the local people who viewed wildlife as a liability

should not continue occupying parcels of land. On the other hand, the conservationists highly valued wildlife due to their contribution to tourist attraction, job creation and revenue.

Though none of the respondents had attempted to kill wildlife for meat or other purposes, except for self-defence, there was still a vacuum of a legal framework to protect wildlife like the one in Kenya or Tanzania. According to 93 percent of respondents, there was no case of poaching in the RNP. However the park manager revealed that there was an organised group of locals who hunt wildlife for meat. This group was responsible for park burnings in a bid to clear their way during hunting.

The conflict between man and wildlife in the RNP was caused, in some areas like Bugenyuzi district, by the lack of involvement of the locals in the parks conservation. Since local communities were vulnerable to establishment of protected areas and their livelihoods are dependent on them (Mishra *et al*, 1992), the Burundi government should adopt economically and socially sound measures that provide incentives to local people through participation in park conservation. In Kenya, wildlife policy and legislation tend to favour wildlife over the local community. Lack of incentives and anticipated benefits from wildlife has contributed to inability and de-motivation of local community to support conservation initiatives (IPAR, 2005). However, approaches to minimize human-wildlife adopted by Kenya since independence were, among other things, fencing off wildlife, conservation through protection, shooting problem animals, re-locating animals or wildlife translocation, participatory wildlife management and monetary compensation scheme Obunde *et al*. (2005) summarized into two strategies by Distefano (2006). Among these solution adopted by Kenya in dealing with human-wildlife, fencing off wildlife and participatory wildlife management have been reported by 96 percent of respondents. These appeared to meet the consensus of both the conservationists and the local communities.

## 5.5. Local Communities and land issues

As it has been said earlier, RNP was freed from human inhabitants and returned to wildlife Game Park or Protected Area (PA). By definition, designation of a PA implies some restricted use of its resources (Hales, 1989). Nagothu (2003) argued that local communities pay indirectly not only by loss of access to resources such as fuel wood, fodder and non-timber forest products, but also direct losses from crops and livestock raiding by wild animals. Over 77 per cent of respondents agreed to have seen some cases of park deforestation (Table 24).

**Table 5.3: Cases of Park Destruction or Abuse Witnessed by Local Communities**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes, frequently	31	77,5	93,9	93,9
	Yes, just occasionally	2	5,0	6,1	100,0
	Total	33	82,5	100,0	
Missing	System	7	17,5		
Total		40	100,0		

This was justified by the fact that 75 per cent of respondents live close to the RNP and 55 per cent of them have agriculture as the link activity with the RNP, which means farmers illegally used some forest resources to promote their way of farming such as tree branches for hoe or axe handles, grass for land covering and so on.

The conflict over land of RNP varied from one place to another. The people of Buhinyuza commune were bitter over their eviction with hardly any compensation. However, the scenarios was different in Mwakiro and Mutumba commune. In fact, the local communities of these communities had the conservation association or clubs aiming to mitigate problems linked to the exploitation of the RNP and its conservation. These clubs reared bees

for commercial purpose; an activity closely linked to the RNP since the bee hives were inside the park.

Though INECN initiated projects in many villages surrounding the RNP and even created the no-man-land portion of the park separated the park and residential areas of people, much is still needed to solve the problem of land issues in the areas close to the park. Lack of land for cultivation was moderately high, with 65 per cent of respondents attributing resource destruction of the RNP.

**Table 5.4: Lack of Land for Agriculture: Determinant of RNP Resource Destruction**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	26	65,0	86,7	86,7
	no	4	10,0	13,3	100,0
	Total	30	75,0	100,0	
Missing	System	10	25,0		
Total		40	100,0		

The majority of respondents (90 per cent) suggested that the government should end its plans of expanding the park and pushing them away. Local communities and government should jointly find solutions to the problems of RNP conservation. Funding ways to improve and strengthen the relationships between local residents and PA was critical to the long-term successful conservation (Furze *et al.*, 1996) and a positive attitude is a key indicator of PA success (Struhsaker *et al.*, 2005). However, the relationship between local communities like the ones in the surveyed area and PAs was often contentious, as PA establishment often entails resettling or depriving people of resources upon which they have depended for generations (West & Brechin, 1991). Therefore, this called for a total understanding of residents' attitude which can be a key to improving the PA-people relationship because it can provide guidance for policy and management of PA, in this case the RNP (Hill, 1998 and Waladji *et al.*, 2003).

In Kenya, the Shamba system, a form of Taungya where agricultural crops are grown together with forest trees species is widespread in the high potential areas of Kenya since in 1900's (Oduol, 1986). It is a form of agro forestry where farmers are encouraged to cultivate the primary crops (maize, banana, cassava) on previously cut clear public forest land on a condition that they replant trees, mostly exotic trees. This system was seen as a breakthrough in mitigating the deforestation of the protected area and ending the land issues. On one hand of the debate were those who rightly contend that the system is responsible for serious loss of indigenous forest while failing to fulfil its purpose - that of raising plantations for timber. On the other hand were those who say that the failure was not of the system, but the people who were practicing it and those meant to keep it regulated.

Again, the proponents of this system said that forests were lost because they were cut off from the people. One way of ensuring that people benefited from forests is to allow systems such as this, which benefit both the government and farmers. On the other hand, evidence that the system took a heavy toll on forests cannot be ignored. As a result of corruption and mismanagement, the system did not establish plantations with many areas having planting backlogs. It instead contributed to the destruction of neighbouring natural forests. WRM (2004) reported that the system failed because of poor supervision and law enforcement. It was banned in 2003 but remains in practice illegally in some isolated areas of Kenya.

In RNP, it would be too early and irrelevant to introduce this system because the persons interviewed wanted to encroach on the park land not because of a serious lack of piece of land, but because they believed that the soil of the RNP was very fertile. Even though the people close to the park were moved to other parts of Karuzi province where the density is the lowest in Burundi (QUIDD, 2006), they would still be unsatisfied. It is true that the Shamba system seeks to resolve the problem of the landless communities and improve food security of poor people (WRM, 2004). Instead of pushing the local communities in the dark when decisions regarding land resources are

taken, the government of Burundi and INECN should engage people living around the park in developing comprehensive plans for RNB ecosystem and numerous community projects that integrate sustainable forest management and community participation.

## **5.6. Local Communities Perceptions on the Importance of RNP and Related Proposed Project**

This section aims at highlighting the perceptions of residents on the benefits drawn from the RNP. About 60 percent of respondents conveyed that they had a positive attitude on what was carried out in the park such as forestation and creation of a buffer zone separating them from the park. Moreover, the residents (65 per cent) were aware that the potentials of the park are unexploited but an overwhelming majority (80 per cent) said lack of initial capitals and poor infrastructure hindered from venturing into the traditional arts business for tourists. As Williams (1992) reported that nature and cultural heritage represent a competitive advantage for many areas, for example Nature Reserves, Natural Parks, etc. In this context, the government should help the locals to put in place a kind of associations or clubs whose aims will be to display traditional crafts and folks to the visitors of RNP. Such profitable activities could improve their livelihood and alleviate poverty in the surveyed areas as it has been shown by Muhenyé people involved in Zimbabwe Campfire Project (Cavendish, 2000). In return for their support towards conservation, Nagothu (2003) urged the government to adopt economically and socially sound measures, in the form of pro-poor ecotourism projects linked to nature conservation, that provide incentives to local people. In this way, the local people will view the park or national reserves as their own asset; needed to be protected and cared for.



## **5.7. Conclusions and Recommendations**

### **5.7.1. Conclusions**

The Ruvubu National Park is endowed with animal and vegetation resources. This current study has revealed political will of protecting and conserving these much desired resources in the park. However, the findings have showed mixed patterns in local attitudes and participation in the national programmes linked to the RNP, which appears similar to the findings from earlier studies made in the parks of other countries. The main socio-economic factors found to have a great impact on the RNP were the population density (on the Muyinga area) and the agricultural activity, which is the sole activity by the majority of dwellers in the suburbs of the RNP. Both these factors had negative implications such as illegal traditional hunting –Though with little serious impact-, encroachment and park burnings of the RNP.

Lack of land for agricultural activities, coupled with problems of rural resettlement after the 1980's eviction from the park and the traditional belief, perhaps true, that the soil of the park was very fertile, had led to excessive encroachment on the RNP. Though the INECN had tried to solve this upsurge land conflict by creating the no-man-land zone separating the RNP from the rural residences, a long term plan based on the participatory approach was needed to curb this land issue.

The survey also found the existence of conflict between the rural people and wildlife. This was due to the illegal traditional hunting for wildlife meat or for other traditional uses. Some wild animals mentioned in the text were increasingly coming in contact with people, and this, according to this paper, has resulted in a great impact on subsistence farmers. These included economic destruction of crops, living in a state of fear, inconvenience and danger for life. As the study demonstrated, it has been a game of hide and seek in the search for a solution to mitigate both the human-wildlife conflict in the RNP. This is as a result of a lack of a clear policy to manage this conflict issues.

Overall, the survey showed that the RNP managers can bank on positive attitudes of the locals towards RNP conservation, protection enhancement strategies and also the prospective of tourism activities in the park. The management should see this as an opportunity to facilitate community participation in both park environment conservation and tourism development.

### **5.7.2. Recommendations for Planners and Managers**

This study has showed the patterns in socio-economic factors, human-wildlife-land issues and the perception of the locals towards the park conservations and protection programmes. These inform a debate over the resource conservation and suggest avenues for the improvement and further research. Although the findings should be considered only within the RNP context, some recommendations can be made that may be broadly applicable to other similar scenarios.

- 1) Land policy should be clear in order to reduce the encroachment of the RNP and the government of Burundi should initiate projects that seek to diversify agricultural activities so that people venture into other activities other than land cultivation alone. Beehive activity should be encouraged in the RNP since it enhances conservation and protection of the RNP and hence the local's perception towards the conservation of the RNP.
- 2) Elaboration of holistic approaches to managing the human-wildlife conflict which could be launched by INECN under the umbrella of the ministry of territory, environment and tourism. The approaches can involve both a mixture of preventive and mitigating approaches. In addition, the managers should also embrace the approach of changing the attitude of affected local communities through education, consolation payments and broader sharing of the benefits from the presence of wildlife. Planners and managers must ensure a fair and equitable distribution of the dividends.
- 3) A need for policy harmonisation between Tanzanian and Burundi governments is highly recommended; if the wildlife crosses the border of Tanzania-Burundi, the animals are hunted down by the Tanzania while they are protected on the side of Burundi.

- 4) The planners and managers of the RNP should exploit and sustain this positive attitude of locals towards the conservation and protection of the environment by getting them involved in the decision-taking regarding the conservation and tourism development of the RNP.

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## An Investment Programme of Reducing Water Pollution from Hotels in Bujumbura City



### 6.1. Overview of Environmental Pollution by Hotels in Bujumbura

Although the industrialisation level is still low in Burundi, environmental pollution is not as low as expected. Untreated industrial waste may cause environmental damage.

It is a given that wind and water don't frequently respect national boundaries; one country's pollution sometimes becomes another country's environmental and even economic crisis. That's why cross-border pollution has to be addressed seriously while economies are more or less expanding. This is likely to be a case for diplomatic or international relations issue when it is not properly managed.

In case of Burundi, hotels are built in cities and near water bodies. Treatment of used water and solid wastes needs to be of particular interest in the sense that they may pollute the water bodies. This would be of environmental concern at national and transboundary levels.

More specifically, the hotel and restaurants sector may appear dangerous to environmental biodiversity. In the case of Bujumbura, untreated waste water emissions from hotels and restaurants into water bodies or in the rivers in Bujumbura, which in turn go through the lake, lead to serious deterioration of the aquatic environment and this may impact negatively on the health of the people bordering the lake.

These impacts may be on the economy, biodiversity, culture or even environment. On the one hand, governments have to implement strategies

and policies that can lead to shared benefits between tourists, the investors and the local communities. For the policies to be internalized and largely accepted there is a need for nearby communities to be consulted on the main policies.

Knowing that environmental sustainability is one of the Millennium Development Goals, each government has to deal with environmental policies, either directly or indirectly, in order to keep its environment safe from pollution.

In this regard, the survey conducted by CURDES on Bujumbura hotels gives some interesting insights into environmental costs from hotels and the way these costs are or should be addressed.

## **6.2. Main Findings from the Surveys**

Hotels in Bujumbura seem to charge more money per room, per night according to their initial investment. This suggests that the more the hotel managers invest initially, the more they charge customers. Depending on their initial investment, hotels pay more taxes to the government. Those who start with a relatively large initial investment are more likely to pay more taxes.

## **6.3. Main Issues to be Addressed**

Like most countries in the world, Burundi has been grappling with adverse impacts of urbanization on water quality. This calls for plans to protect water and therefore humans. The paradigm of “black water” generated by pollution from the waste waters of hotels or households in Bujumbura must be seriously addressed such that measures are taken to reverse the phenomenon.

The other issue to be addressed is the revival of SETEMU and to make it a real public service firm for waste management and healthy environment care.

The hotels and restaurants in the town and elsewhere need to have a legal framework concerning the environment. There should also be transboundary analysis to prevent and reduce water pollution from hotels and cities bordering water bodies.

There is also a need for a transboundary fund to help fundraise and fight pollution and as urbanization is growing fast. This bankable investment programme is to be seen as a scenario which may be applied in any other area.

#### **6.4. Project Components, General and Specific Objectives and Expected Impacts**

The project should comprise four main components

- Establishment and Elaboration of a legal framework and all hotels and restaurants are controlled as regularly as possible (once a month at least);
- Creating a recycling and treatment centre for liquid and solid wastes from hotels and households;
- Preventing and reducing waste pollution;
- Initiating a research and development strategy to improve water quality and prevent pollution.

The general objective of this investment programme is

“Reducing and preventing the water bodies from pollution by liquid and solid wastes derived from hotels”

The following specific objectives should be attained

- Compel the Environment and Tourism Ministerial Departments to cooperate in order to set up a common legal framework and a strategy of tourism promotion with environmental preservation.
- Identifying the best location for public evacuation of liquid and solid wastes.
- Project feasibility analysis (comprising economists, socio-environmentalists, experts in transport and urbanization, communicators).
- Sensitization campaigns.
- Installation of a treatment centre for solid and liquid waste for all urban cities bordering water bodies.
- Reducing the quantity of wastes from the use until the treatment centre.
- Providing technical assistance to policymakers dealing with pollution prevention and waste reduction.

- Training School on hotel sector and friendly environmental management in the tourism sector.

A planned management and coordination of all these specific objectives might allow the success of this project. The following outputs were expected to be achieved accordingly:

- A legal framework is produced and all hotels and restaurants get controlled as regularly as possible (once a month at least).
- A Management Plan of the environment and tourism sector is elaborated at national level.
- Some areas in the town and/or near the town are declared public and made ready for liquid and solid wastes treatment.
- A feasibility report is produced and publicly adopted by the Ministries of Environment and Tourism and Urbanization.
- At least 10 seminars are organized and largely published in media.
- All hotels and restaurants (and also households) are connected to the wastes treatment and recycling centre built within the project.
- The toxicity of used water and solid wastes is prevented before and after it is generated.
- Follow-up, monitoring and mentoring regularly take place to ensure effectiveness of the project impacts.
- Get at least 100 skilled people trained in hotel servicing and management and in some environment friendly practices in tourism sector.

## **6.5. Estimated Costing of the Programme**

The investment programme costing is based on estimation of financial means needed as expressed in the environment sector policy of Burundi dated April 2006. The main criterion is cost effectiveness in order to be sure that the investment programme is bankable.

**Investment Programme: Preventing water Pollution from Hotels along Water Bodies**

Component	Specific Objective	Expected Outputs	Actors/ Partners	Estimated cost (\$)
1. Institutional capacity building	1.1. Bring the Environment and Tourism Ministerial Departments to cooperate in order to set up a common legal framework and a strategy of tourism promotion with environmental preservation	1.A legal framework is produced and all hotels and restaurants are controlled as regularly as possible (once a month at least) 2.A Management Plan of the environment and tourism sector is elaborated at national level	Government, Civil society, private investors in hotel sector	30,050
	1.2. Identifying the best location for public evacuation and canalisation for used water and public solid wastes	3.Some areas in the town and/or near the town are declared public and are made ready for water and solid wastes treatment	Government, Urbanization Services, Municipality (SETEMU),	10,600
	1.3. Project feasibility analysis (comprising economists, socio-environmentalists, experts in transport and urbanization, communicators)	4.A feasibility report is produced and publicly adopted by the Ministries of Environment and Tourism and Urbanization	Government, Research centres	50,850
	1.4. Sensitization campaigns	5.At least 10 seminars are organized and largely published in media	Government, Communicators (mass media), Research Centres, Civil society	60,080

## Socio-economic Development and Benefit Sharing Project

2. Recycling and treatment centre for water and solid wastes from hotels and households	2. Installation of a treatment centre for solid and water waste for all cities bordering Lake Tanganyika	6.All hotels and restaurants (and also households) are connected to the wastes treatment and recycling centre built within this project	Government, Hotels Investors, Population, Local Administration, Civil Society	148,220
3. Pollution prevention and waste reduction	3. Reducing the quantity of wastes from the use until the treatment centre	7.The toxicity of used water and solid wastes is prevented before and after it is generated	Government, Hotel sector investors, SETEMU	50,025
4. Research and Development	4.1. Providing technical assistance to policymakers dealing with pollution prevention and waste reduction	8.Follow-up, Monitoring and mentoring regularly take place to ensure effectiveness of the project impacts	Government, Funding Organizations, Research Centres (local and international)	49,060
	4.2. Training School on hotel sector and friendly environmental management in tourism sector	9.Get at least 100 skilled people trained in hotel servicing and management and in some environment friendly practices in tourism sector	Government, Donors, Research Centres, Universities	150,100

The total estimated cost of this investment programme is: Five Hundred and Forty Eight Thousand Nine Hundred and Eighty Five Dollars (USD 548,985).

## 6.6. Conclusion and Recommendations

In addition to the investment programme, the studies, surveys and observations indicate that the following actions should be taken in order to make the investment effective:

- improving tourist facilities.
- setting new rules and regulations for tourism in general and the hotel sector in particular.
- waste infrastructure be an obligation for each hotel before getting the licence.
- establishing a monitoring unit with a follow-up, monitoring and mentoring strategy.
- protection of water bodies should be a priority of the Ministry of Environment and Territory Management.

Hotels and restaurants are generally assumed to be labour-intensive and are thus seen as significantly contributing to employment creation and poverty reduction in countries facing growing unemployment. Therefore, the hotel sector should be given more attention by local administration and ministerial authorities in order to ensure that it generates sustainable benefits.

# An Investment Programme on Reducing Social, Environmental and Economic Costs of Tourism: Ruvubu National Park (RNP)

## 7.1. Overview on the Ruvubu National Park Environment Survey

The Ruvubu National Park (RNP) with its diversified fauna and flora is the largest park in Burundi. Being gazetted in early 1980 and followed by the eviction of the illegal dwellers in the park, the park has been protected and expanded by the government through the organ called INECN. The park, crossed by the Ruvubu River, is located in four provinces namely Muyinga, Karuzi, Ruyigi and Cankuzo. These provinces could have benefited from the presence for the park if it were exploited in sustainable manner. In the study carried out, it was revealed that the RNP has great potential for tourism attraction. Besides, the RNP is regarded as the only park deserving much attention and protection since it is the only existing sample of ecosystem of savannas that indeed looks like the other savannas found in East Africa. In the long term, one will be able to find the only place of the country which is endowed with large and natural forestry reserve of the middle altitude (between 1350m and 1700 m) and the swamp full of the papyrus vegetations. It is worthy noting that the RNP is the only place in Burundi where some wildlife like buffalo, code defassa and antelopes 'rouanne' are found.

However, the civil war that ravaged the country for a decade has contributed to the escalation of illegal hunting, tree loggings, park burnings and other types of environment degradation of the Ruvubu national park as well as other natural parks and reserves in Burundi. These activities have led to



either wildlife to flee to the neighbouring countries (e.g. Tanzania) or wildlife massive destruction or to the abuse and misuse of the fauna, unique heritage of Burundi.

Against the mentioned natural and human-made degradation, the government and several NGOs have attempted to involve in environment conservation and protection programmes. But from the findings of the study carried out by CURDES, many issues were raised by both the INECN officials and the local people in the study area, and a lot needs to be done.

## **7.2. Highlights of the Findings in the Ruvubu National Park**

The Following are Highlights of the Findings:

1. The surveyed respondents (40) have agriculture as the main activity in the regions and have a serious land scarcity problem. This pushes them to encroach on the national park.
2. Though the residents know about some of the practices of conserving the environment from radio and the local administration, lack of infrastructures, insufficient ranger and park guards and political will to enhance the tourism sector in the Ruvubu Park has been observed.
3. Poor wildlife management has led to the destruction of local crops and prevalence of traditional hunting in the park.
4. Lack of local people involvement in the development and conservation of the RNP and especially in the decision-taking process
5. Residents are lacking the motivation to organise clubs, movements and associations aiming to protecting and conserving the RNP.
6. Lack of capital to venture into the business that attract tourists and hence diversification of income.

## **7.3. Objective**

Improving environment awareness of locals and making RNP an impressive tourist attraction destination

## **7.4. Solutions, actions to be taken and implementation programme**

The Following are the Suggestions for Remedy:

1. Fencing the Ruvubu National Park
2. Increase the number of well trained rangers
3. Support local people initiative in the environment conservation project
4. Involve the local people in the matters regarding RNP management and probable expansion of the buffer zone that separate the local residences and the park
5. Build infrastructures (hotels, roads, bridges, park walks) in order to attract tourists

## 7.5. Investment programme

Items of the Investment Programme	Expected impacts	Actors/Partners	Estimated costs (USD)
1. Fencing	-Reduced crops destruction -Reduced hunting practices -No more land encroachment	-Local people -Government	149,890
2. Education and sensitization	-Increased number of investment-based association and clubs -Reducing park encroachment cases -Increased project linked to environment conservation and protection	-Government -NGOs	601,80
4. Buffer zone	-park encroachment cases reduced -crops destruction by wildlife reduced-	-Government -Local people for forestation of buffer zone	503,25
5. Infrastructures (roads, hotels, bridges)	-Number of park visiting tourists increased -Increased of traditional arts shops -Local administration revenue increased-	-Government -Local people -NGOs	201,030
6. Locals' involvement in decision-taking process in the management of Ruvubu national park	-Profit from park shared -Increased project of promoting the conservation of Ruvubu park	-INECN -NGOs	38,640
TOTAL			500,065

The total estimated cost of this investment programme is: Five Hundred Thousand and Sixty Five American Dollars (USD 500,065).

## **7.6. Conclusion and Recommendations**

The Following are the Conclusions and Recommendations:

- Land policy should be clear in order to reduce the encroachment of the RNP. The government of Burundi should initiate projects that seek to diversify the agricultural activities so that people should venture into other activities rather than land cultivation alone.
- Beehive activity should be encouraged in the RNP since it enhances the conservation and protection of the RNP and hence the local's perception towards the conservation of the RNP.
- Elaboration of holistic approaches to managing the human-wildlife conflict which could be launched by INECN under the umbrella of the ministry of territory, environment and tourism.
- The approach can involve both a mixture of preventive and mitigating activities.
- In addition, the board of managers should also embrace the approach of changing the attitude of affected local communities through education, and sharing the benefits from the presence of wildlife.
- Planners and managers must ensure a fair and equitable distribution of the dividends.
- A need for the policy harmonisation between Tanzanian and Burundian governments is highly recommended since the wildlife RNP cross the border of Tanzania-Burundi.
- The planners and managers of the RNP should encourage the sustainable management and use of the park by involving the local communities in decision making with regard to the conservation and tourism development of the RNP.

## Appendices

### Appendix 1: Burundi's Natural and Environmental Sights



### Appendix 2: Stakeholders' Meeting Participants List (8<sup>th</sup> of August, 2008)

1. Lévis NTABIRIHO : FCBN

2. Rama Jean Lionel : FSEA
3. CIMPAYE Joachim : DGPE
4. NDAYITWAYEKO Willy Marcel : FSEA
5. Callist Haabasa: PMU, Finance Manager
6. TAMENE Tiruneh :PMU, SDBS
7. NDIMANYA Patrice : FSEA
8. NIYONGABO Gilbert :FSEA -CURDES
9. NSHIMIRIMANA Emmanuel : ASBL BIRATURABA
10. Alfred NIMBONA : Renouveau (NewsPaper)
11. Déo NDUWIMANA : Renouveau (NewsPaper)
12. MUVYUKO Innocent : ABO
13. NIJIMBERE Dénise : Office National du Tourisme
14. Dr. NZIRORERA Cyriaque : FSEA
15. Dr. Ferdinand BARARUZUNZA : IDEC
16. GATABAZI Jean Claude : Office National du Tourism
17. Victor MUBWIGIRI: ABP (Journal Reporter)
18. Désiré NKURUNZIZA: FSEA (Assistant Professor)
19. Bélyse MUPFASONI: FSEA (Assistant professor)
20. Marie Goreth NDUWAYO: FSEA (Deputy – Dean of Faculty)
21. Dieudonné GAHUNGU: CURDES (Researcher)
22. Alain Didier NDARUSANZE: FSEA
23. Salomon NSABIMANA : FSEA
24. Alfred Prosper NKURUNZIZA : FSEA
25. Odette KAYITESI: TAC-Member
- 26: KAZUNGU Alexandre: Cameraman
27. NIYONGABO Nicodème : UB (lecturer)
28. NTAHOMVUKIYE Virginie : CURDES (Administrative Assistant)
29. Richard NDEREYAHAGA : Head of CURDES