THE INCOME AND EMPLOYMENT MULTIPLIER EFFECTS OF TOURISM: THE CASE OF RWANDA.

By

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KEY WORDS

Direct effects

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Input- output model

Tourism sector

ABSTRACT

The income and employment multiplier effects of tourism- The case of Rwanda.

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The growing popularity of developing countries as tourist destinations in recent years has stimulated a considerable body of research on the developmental benefits inherent in tourism. Developing countries have been attracting tourists mainly due to their natural resource endowments, considered a vital determinant in this newly-found source of their comparative advantage. After accounting for all the explicit and hidden costs linked to this natural resource-based tourism, the sustainable expansion of the tourism sector is claimed to be contributing substantially to economic growth.

Studies to date have investigated the rising share of tourism in macroeconomic output, but have paid limited attention to the economic mechanisms through which tourism supposedly leads to broader development. This study seeks to contribute to filling this gap in our knowledge of the economic dynamics associated with tourism. More specifically, the goal is to shed light on the channels through which tourism contributes to economic growth and to derive tourism income and employment multipliers to estimate its developmental benefits for Rwanda.

Our refined multipliers to capture the total effects of tourism to the economy confirm that through its powerful inter-sectoral linkages, tourism improves the economic wealth of many developing countries including Rwanda. Deeper analysis of the macroeconomic consequences of the expansion of the service sector however suggests that, under some conditions, this could exhibit "Dutch Disease" effects. Tourism generates substantial foreign earnings and its development is strongly correlated with the shrinkage of the traditional primary

exports (agriculture in many developing economies), as it triggers exchange rate appreciation in line with the predictions of the conventional 'Dutch Disease' model.

As a case study, the analytical model developed in this thesis is tested using Rwandan data. The findings show that tourism contributes significantly to Rwandan economy through income and employment generation. With an elementary input-output framework to guide the empirical analysis, tourism multipliers in the order of 2.713 for income and 3.122 for employment are estimated for the year 2005. Furthermore, these income and employment multipliers obtained are used to simulate tourism growth under different scenarios and enable us to derive plausible and pertinent policy recommendations.

December 2008

DECLARATION

I declare that "***The income and employment multiplier effects of tourism. The case of Rwanda"*** is my own work, that it has not been submitted for any degree or examination in any other university, and that all the sources I have used or quoted have been indicated and acknowledged by complete references.

Agnes NTIBANYURWA December 2008

Signed:----------

DEDICATION

This thesis is dedicated to you, my sweetheart, loving husband, Bernard Narcisse Kayitankore, for your undying support and love during this challenging journey. You have sacrificed a lot to stay alone, far away from your wife, and doing the parenting work alone. I am really humbled by your undying support and honoured to have you as a husband.

To our lovely and beloved children, Perle Divine Isimbi and Honey Gift Ishimwe, I dedicate this thesis. Though small, you have consented without understanding to pay the sacrifice of growing outside of your mother's love and care.

I truly appreciate the price you have paid for my studies.

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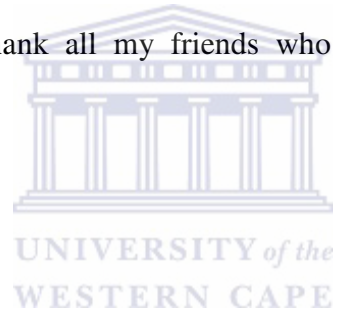

ABBREVIATIONS AND ACRONYMS

AIPA	: African Institute for Policy Analysis and Economic Integration
ANP	: Akagera National Park
BNR	: Banque Nationale du Rwanda
CGE	: Computable General Equilibrium
COMESA	: Common Market for Eastern and Southern Africa
EICV	: Enquête Intégrale sur les Conditions de Vie des ménages
ESCAP	: Economic and Social Commission for Asia and the Pacific
GDP	: Gross Domestic Product
HIPC	: Highly Indebted Poor Countries
ID	: Indifference Curve
ILO	: International Labour Organisation
I-O	: Input Output
LDCs	: Least-Developed Countries
MINECOFIN	: Ministry of Finance and Economic planning
NGO	: Non-Governmental Organisation
NISR	: National Institute of Statistics of Rwanda
NNP	: Nyungwe Natural Forest Park
ORTPN	: Office Rwandais de Tourisme et des Parcs Nationaux
PET	: Postgraduate Enrolment and Throughput
PPF	: Production Possibility Frontier
RIPA	: Rwanda Investment Promotion Agency
RPF	: Rwandan Patriotic Front
RRA	: Rwanda Revenue Authority
RWF	: Rwandan Francs
SAM	: Social Accounting Matrices
SARS	: Severe Acute Respiratory Syndrome
SD	: Standard deviation
SIDS	: Small Islands Developing States
SWOT	: Strengths, Weaknesses, Opportunities, Threats

TSA	: Tourism satellite account
UNCTAD	: United Nations Centre on Trade and Development
UNDP	: United Nations Development Programme
UNECA	: United Nations Economic Commission for Africa
UNEP	: United Nations Environment Programme
UNICEF	: United Nations Children's Emergency Fund
UNWTO	: United Nations World Tourism Organisation
US$	: United States dollars
UWC	: University of the Western Cape
VAT	: Value Added Tax
VNP	: Volcano National Park
WTO	: World Tourism Organisation
WTTC	: World Travel and Tourism Council

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CHAPTER ONE
INTRODUCTION

1.1. Introduction

Tourist arrivals in Least Developed Countries (LDCs) increased by 48% between 2000 and 2005, as against a growth rate of 34% in developed countries and a 17% global growth rate (WTO, 2006). Likewise, international tourism revenue (at current prices) grew by 76% in LDCs compared to 41% worldwide. According to the world tourism barometer, in the first four months of 2006, international tourism arrivals worldwide expanded by 4.5 %. Africa and the Middle East were the leading continents in terms of tourism growth, with the sector expanding by 11% in each region (WTO, 2006). Although a slowdown in growth has been forecasted for 2008, it is still projected to be in the order of 4%, which is consistent with the tourism 2020 vision of the WTO.

Tourism refers to a wide range of leisure activities, ranging from sight-seeing to the hunting of game. Tourism is defined as "the activities of persons travelling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business or other purposes" (Eagles *et al.,* 2000). It is a dynamic and competitive industry that requires the capacity to continuously adapt to customers' changing needs and desires, as the customer's contentment, safety and enjoyment are pivotal to the prosperity of tourism businesses. In economics, it is classified as part of the services sector, although some tourism-related activities have a strong manufacturing orientation, such as the craft industry for instance. Globally, tourism has been one of the fastest growing sub-sectors of the tertiary service industry as the compelling evidence above drawn from the World Tourism Organization reveals.

The contribution of tourism to economic wealth, in both developed and developing countries, is now widely recognized. However, partly due to the all-encompassing nature of leisure activities, virtually no accurate estimates exist that account for the full contribution of tourism to economic growth, income and jobs. Tourism has powerful sectoral linkages with potentially large spill-over effects on the rest of the economy. Through its backward and forward linkages, tourism contributes to economic development. It is linked to economic development by microeconomic and macroeconomic linkages. This study investigates the extent to which tourism contributes to economic development in a LDC context. The case study of Rwanda strives to add evidence on an under-researched tourist destination and thus to enrich comparative assessments of tourism across a larger pool of developing countries.

The rest of this chapter is organised into 8 sections. In section 2, a background to the study is provided with Rwanda as a case study. Section 3 presents the research problem while section 4 gives the research objectives. In section 5 the research methodology is briefly discussed while in section 6 the significance of the study is provided. Sections 7 and 8 briefly lay out several limitations and delimitations of the study and an overview of the remaining chapters, respectively.

1.2. Background to the study

The tourism sector in Rwanda is part of its economic system but is not clearly represented or defined in Rwanda national accounts. Before progressing with this study, it is important to give some background which will help explain the research problem. In this section, Rwanda's economic performance is briefly presented with emphasis on the tourism sector.

Rwanda is a landlocked and underdeveloped economy undergoing remarkable sectoral shifts. Official indicators show that agriculture contributes more to gross domestic product (GDP) and employment (mainly subsistence farming) than

industry. For example, in 2005, the contribution of agriculture was in the order of 39%, whereas for industry, it was only 14%. What a comparative assessment of the sectors also reveals is the astonishing rise in the service sector. Whereas its contribution stood at around 35% in 1990, by 2005, it grew to 41% of total economic output (Republic of Rwanda, 2006; NISR, 2007). This means that the service sector (including tourism) has grown faster than other sectors, but it has also overtaken them (displacing the traditional sector) to be the dominant sector.

However, in terms of employment, farming remains the main job provider for the majority of Rwandans despite the fact that it offers little income to farmers. Agriculture in Rwanda is a labour intensive and low-productivity sector. The survey of 2005-2006 on households' living conditions (EICV: enquête intégrale sur les conditions de vie des ménages, in French) indicates that many households in Rwanda cultivate very small plots of land- less than 0.2 hectares per family for about a quarter of the rural population. But this farming activity is marginal because at least 0.7 hectares is the minimum required size of land that can feed a typical Rwandese family (NISR, 2006). This has serious implications for people's living conditions. In addition, the fact that a sector that occupies above 80% of the active population contributes to less than 50% towards the country's GDP, can be seen as a threat to the country's economic development. Given the subsistence nature of agriculture in Rwanda, it follows that many people do not have extra income to pay for basic needs, such as the education of their children. This situation accounts for the depth of chronic poverty in Rwanda.

Rwanda is among the world's poorest countries. According to the publication of the 'Republic of Rwanda' (2003) based on estimates of the EICV survey (2000-2001), it was found that 60.3% of the Rwandan population are poor and 42% are extremely poor. According to the above-mentioned survey, the Rwanda national poverty line (cost of a basket of basic goods and services) was estimated at Rwandan Francs (RWF) 64,000[1] per adult per year. Likewise extreme poverty line (based on the cost of a basket of basic foods only) was estimated to be RWF

[1] The average exchange rate in 2000 was at RWF 390 per US$1

45,000 per adult per year. However, a subsequent survey that took place in 2005-2006 showed an improvement in living conditions and a drop in the proportion of people living in poverty. This proportion changed from 60% in 2000-2001 to 57% in 2005-2006. It is nevertheless important to mention that poverty in Rwanda is disproportionately a rural phenomenon since 92% of poor people live in rural areas and yet 83% of the overall Rwandan population are located in rural areas (NISR, 2006).

Rwanda has many fascinating tourist attractions with enormous economic potential, but which is not fully exploited. The following are some of the major attractions: The Volcano National Park (VNP) where mountain gorillas constitute a major tourist attraction; The Akagera National Park (ANP) where the big five and a full range of mammals associated with East and Southern African game parks are found; The Nyungwe Forest National Park (NNP), which is the largest single contiguous forest that remains in Central and East Africa. Rwanda is also blessed with many wonderful lakes and cultural and historical sites such as the Nyanza and Butare Museums (RIPA /AIPA, 2002, volume 2). These tourism attractions are located in different parts of the country.

The tourism sector in Rwanda is still in its early stages of development. The contribution of tourism to the Rwandan economy, although small (given the approach used which is believed underestimates its contribution), is not something to be ignored. Tourism is classified as a service sector. In Rwanda, the service sector has grown for the past five years (2001-2006). It thus has become the main contributor to GDP for the above period. Indicators show that the growth of the service sector is mainly attributable to the tourism, transport and communication sectors among others. Tourism in Rwanda has the potential for employing many people and for generating income for many households. It has the potential for stimulating economic growth through its powerful sectoral linkages and through its foreign earnings. However, failure to recognise the benefits attached to the tourism sector in an LDC context such as Rwanda, can lead to poor performance

of the economy. Despite the potential that the tourism sector in Rwanda offers, it is not yet promoted properly. Because tourism does not appear as a separate sector in the system of national accounts, insufficient data is available which would help develop sound research and provide sufficient information on the tourism sector.

As stated above, it is essential for Rwanda to consider how to expand the base of its economy in order to accelerate its growth, to enhance people's capacity to generate income and employment and to alleviate the extreme levels of poverty.

1.3. Research problem and questions

Positive impacts of tourism are being increasingly observed in many countries. However, its contribution to economic development in many developing countries, including Rwanda, is not fully appreciated. Its powerful multiplier effect is not well understood and yet the contribution of tourism to economic development owes its performance to its backward and forward linkages. Tourism's contribution towards a country's GDP, towards the creation of income and employment and the increase of foreign earnings, among others, is generally accepted. However, approaches used to assess the contribution of tourism to these macroeconomic indicators only give a partial picture of the sector's value addition to GDP. In many developing countries, only primary (direct) impacts are considered to be tourism's contribution, ignoring secondary (indirect and induced) effects which are equally important in assessing the impact of tourism. In the light of the above, what needs to be investigated is how to improve this estimation of the contribution of tourism to economic development.

In this context, the main problem investigated in this study is the following:
How to improve the estimation of the contribution of tourism to economic development?
Flowing from this problem, this study seeks to answer the following specific questions:

1. Through which channels does tourism contribute to economic growth?
2. To what extent does tourism create income and employment?
3. Which methodological approach gives a more appropriate estimation of how tourism impacts on the economy?

1.4. Research objectives

The overarching goal of this research is to investigate how much tourism adds to economic development based on Rwandan data. This goal can be subdivided into three-specific research objectives, namely:

1. To develop a coherent and robust theoretical and methodological framework to analyse the channels through which tourism contributes to economic development. To achieve this objective, we develop a model based on the multiplier and Dutch Disease approaches to sectoral expansion.

2. To improve the measurement of tourism income and employment multipliers for Rwanda, a landlocked country. To achieve this objective, which is crucial to showing the powerful linkage effects of tourism, we develop a refined formulation of income and employment multipliers.

3. To conduct a comparative assessment of the policy lessons Rwanda can learn from other developing countries and vice-versa. To achieve this objective we comprehensively review the relevant empirical studies based on a typology derived from our theoretical framework.

1.5. Research methodology

To gather information related to income and employment in the tourism sector in Rwanda, a purposive survey was conducted of tourism business establishments, specifically hotels with international standards that accommodate tourists. Both workers and owners in these tourism business establishments were considered for

the survey. A sample population was drawn and determined using purposive sampling and stratified random sampling. We elaborate on the design of the data gathering strategy and other methodological elements in chapter 5.

To estimate the impact of tourism income and employment on Rwandan economy, multipliers have been calculated and the effects were generated from input output (I-O) tables. These tables have been constructed for three tourism-related sectors, Tourism, Agriculture and Transport, and used to assess the direct, indirect and induced effects of tourism on income and employment in Rwanda. The I-O model used is developed in the methodology chapter mentioned above.

1.6. Significance of the study

This study is significant in that it investigates broad debate on tourism development and its macroeconomic contribution. The study also examines important issues in tourism and demonstrates that the sector possesses potential that can benefit many developing economies, including Rwanda. It also adds to the general knowledge of tourism multiplier effects and extends its analysis by looking at the possibility of the Dutch Disease effects in the case of the service sector over traditional export sector. Furthermore, the study estimates tourism income and employment multipliers to be able to capture the benefits of the tourism sector on the rest of Rwandan economy.

This research contributes to the little available research on tourism in Rwanda. By showing the potential for the tourism sector to boost Rwandan economy and by making recommendations that can help develop the sector, this research will benefit the country.

1.7. Limitation and delimitation of the study

Given the complexity of the tourism sector in Rwanda, it was not possible to tackle all the wide-ranging factors of tourism and all of its economic impacts. This study was limited to investigating the income and employment multiplier effects of tourism in Rwanda. The study was carried out on hotels of international standards in Rwanda. These hotels are major components of tourism business establishments. The rationale for this choice was twofold. Firstly, tourists spend a lot of their income on hotels (accommodation, food and beverages). Although tourists visit different tourist attractions such as national parks, it is suggested that a large proportion of tourists' expenditure goes towards expenses at hotels. It is important to mention that on-site accommodations at parks are very limited and that hotels with international standards are located outside the parks. Secondly, hotels with international standards have been considered because they are the ones that accommodate the majority of tourists from all over the world. Therefore, these hotels are expected to have a greater impact than other tourism businesses.

Furthermore, the income and employment multiplier effects of tourism in Rwanda have been estimated using data for the year 2005. The rationale to conduct the study based on this particular year is also twofold. Firstly, the I-O model used to estimate direct, indirect and induced effects of tourism income and employment require having data for one year (a reference year). This is because changes can occur from one year to another, and also tourism impacts are assessed with reference to a particular year. Secondly, the rationale for choosing a recent year such as 2005 is that information and data of a recent year are usually expected to be available given recent records.

Lastly, the limitation to this study is related to data. In Rwanda, as in many LDCs, statistics are highly inaccurate and in some extreme cases data may present discrepancies from one department to another and yet they are both dealing with the same issue. There are gaps in the statistics of Rwanda, particularly from the

early 1990s up to 1994 as a result of war and genocide. However, even out of this bleak period, statistics are generally poorly recorded for research purposes.

Despite this weakness concerning data, an attempt was made to overcome this problem by collecting additional data through a survey that was conducted to supplement information gathered elsewhere. Furthermore, the data reliability gap was filled by collecting data from different services in different departments dealing with the issue under investigation.

1.8. Organisation of the thesis

The present thesis is organised around 8 chapters. The first chapter introduces the whole thesis. A background to the study is provided, where different issues relating to the topic investigated are highlighted. From the background presented, the problem statement is given and the research questions are raised. Following this are the objectives of the study, the research methodology, the significance of the study, the limitation and delimitation of the thesis and the organisation of the thesis.

In chapter 2, I present an overview of relevant socio-economic information for Rwanda to contextualize my argument and analysis in subsequent chapters. This snapshot of the country's economic performance highlights patterns in labour force movements across economic sectors. To give a sense of how policies evolved over time, I summarize economic trends from independence to the present, with special emphasis on the tourism sector, its development and challenges.

The third, fourth and fifth chapters of this thesis deal with the conceptual framework on tourism economic impacts and multiplier effects. In the third chapter, the role of tourism to economic development is developed and analysed

in an LDC context. In chapter four, economic theories behind tourism boom are explored. In chapter five, tourism income and employment multiplier effects are discussed. Furthermore, in this chapter difficulties attached to the assessment of tourism income and employment multipliers are discussed.

Chapter six presents the methodology used to respond to the research questions. In this chapter different approaches used to conduct this study and to answer the research questions are presented and explained.

Chapter seven displays the results and discusses the findings of the research. Chapter eight summarises the findings, concludes the thesis and draws recommendations and discusses policy implications.

CHAPTER TWO
BRIEF ANALYSIS OF RWANDA, ITS ECONOMY AND TOURISM SECTOR

2.1. Introduction

This study investigates the actual and potential contribution of the tourism sector to the Rwandan economy. To contextualize this research, it is necessary to offer some background to the Rwandan economy. The presentation of the contextual information serves to better ground the theoretical model and methodological approach outlined in later chapters.

This chapter zooms in on an analysis of employment trends across major sectors of the economy as well as the income-generating strategies of households in Rwanda. This approach is helpful to understand the sectoral composition of this landlocked economy and the status of its tourism sector.

It is important to begin with a brief presentation of the geographic location of Rwanda for readers who are less familiar with the country. Rwanda is located in East- Central Africa. It is a small country, with a surface area of 26,338 square km. In 2005 its population was estimated at 9 million people with a population density of 343 per square km (WHO, 2006). Rwanda is among the highly populated countries in Africa (WHO, 2006). From North to South Rwanda is bordered by Uganda and Burundi respectively. From East to West Rwanda shares its borders with Tanzania and the Democratic Republic of Congo respectively. By virtue of its location Rwanda is often called the 'heart of Africa'. It is approximately 3650 km from Cairo (North); and approximately 3750 km from Cape Town (South). On the other hand, it is about 2200 km from Cabinda (West) and 1500 km from Dar es Salaam (East) (UNICEF, 1998).

The remainder of this chapter is organised as follows: in section two economic sectors and labour force are briefly discussed. In this section 2 income generation is also presented and analysed in the context of Rwandan economy. In section three, the tourism sector in Rwanda is discussed while the last section of the chapter draws the conclusion.

2.2. Economic Sectors and Labour Force

Until recently the Rwandan economy was based primarily on agriculture. This sector was of a subsistence nature and contributed moderately to the country's GDP. Its industrial sector is not developed while the service sector is growing steadily (MINECOFIN, 2005).

2.2.1. Economic background

According to the publication of the Republic of Rwanda (2006), during the pre-colonial history Rwanda was connected to its neighbouring countries where it exported different products such as cow gee and butter, hides and skins, household utensils and iron ore. Upon arrival, colonisers introduced cash crops in Rwanda. These crops were mainly tea and coffee whose prices have been and remain extremely volatile. Rwanda became thus over-dependent on these cash crops, and as a result, the local economy remained underdeveloped and vulnerable.

This dependence on agriculture has impacted negatively on the labour force use in Rwanda. Agriculture in Rwanda has been the main job creator since the colonial era to date. It was reported in a recent survey that in 2005, the majority of the population, i.e. 85.5% of women and 61.5% of men, were employed in agriculture (NISR, 2007). However, this percentage of people working in agriculture decreased as the level of education of the population increased and also as the general economic wellbeing of people improved. This implies that although agriculture appears to be the major job provider, it does not generate satisfactory

income to cover people's needs, and even their basic needs (Republic of Rwanda, 2006). Alongside this, many people in rural areas farm for household consumption, but the impact of subsistence farming on people's wellbeing was and remains limited (MINECOFIN, 2005). Therefore, those who can find opportunities elsewhere and who qualify for certain forms of employment do not hesitate to shift from agriculture to acquire new jobs in other economic sectors.

2.2.2. Macroeconomic structure

Rwandan economy is characterised by macroeconomic disequilibria both internally and externally. These disequilibria are translated into the deficit of the balance of payments and the budget. It induces low savings and investment patterns while increasing unemployment and underemployment rates (MINECOFIN, 2005). But the macroeconomic difficulties derive largely from the underlying weaknesses in the traditional core economic sectors. It is important to mention that a large number of economically active people involved in agriculture in Rwanda are subsistence farmers. However, the performance of this sector has weak linkage effects and is too underdeveloped to sustain the national economy and the livelihoods of the population. The growth rate of the sector is much slower than the growth rate of the population.

Rwanda's export earnings come mainly from coffee and tea. However, earnings from these cash crops do not cover the import needs because their prices on world markets remain downwardly volatile. Besides, the country's macroeconomic disequilibria are aggravated by its geographical landlocked nature which increases transport costs (MINECOFIN, 2003). Unlike neighbouring countries, Rwanda is poorly endowed with mineral resources, which is often a significant export revenue earner.

This poor performance of agriculture had impacted negatively on the workforce as well as on income generation. Findings from the 2000-2001 survey (Republic of

Rwanda, 2006) indicate that in 2000-2001, 85% of farmers were reported to be subsistence farmers. These were involved in agriculture either as independent farmers or unpaid family farmers. But subsistence farmers are poor because this activity generates no additional income. According to more recent data, the labour situation has altered, marked by a 14 % drop in the percentage of subsistence farmers to only 71% in 2005-2006 (NISR, 2007). This decrease was a result of an increasing number of people getting involved in either farming paid work or off-farming and non-rural employment, including the small business sector (NISR, 2007). This trend suggests that Rwanda is shifting from an economy based on traditional primary sectors to a modern service-oriented economy, albeit at a slow pace.

Recent evidence on the sectoral contribution to GDP seems to be consistent with this trend. In 2005 official indicators show that agriculture contributed to 39%, whereas for industry, the contribution was only 14%. However, the service sector (which includes tourism) contributed in the order of 41% to GDP in 2005, making it the dominant sector (Republic of Rwanda, 2006; NISR, 2007). What is observed is that as the service sector grows the traditional agriculture sector declines. In recent economics literature this diversification or structural shift in the economy is often referred to as 'deagrarianization'[2], 'deindustrialization'[3] and so forth. To account for this from a theoretical viewpoint and assess the impact of a booming economic sector on the traditional sectors, economists have referred to the so-called Dutch Disease phenomenon. This theoretical framework is elaborated and adapted in chapter 4 in the context of a 'service sector boom' instead of a rival primary sector booming.

[2] Deagrarianization is defined by Bryceson (2002: 726) as '…a long-term process of occupational adjustment, income earning reorientation, social identification and spatial relocation of rural dwellers away from strictly agricultural-based modes of livelihood'.

[3] De-industrialisation is a long-term process of structural change in an economy - leading to a change in the composition of national output, and important alterations to the structure of our labour market (Nkusu, 2004).

In 2005 the GDP growth rate was 7.2%, estimated at constant 2001 prices. But growth rates were very unequal across individual sectors. Agriculture, for instance, grew by 5%. By contrast, whilst the secondary industry expanded by 7% the service sector was growing at 9%. From 1999 to 2005 the average growth in GDP has been 6% per annum. During the same period agriculture, industry and services registered growth rates of 4%, 8% and 7% respectively (NISR, 2007). On average, these figures illustrate an irreversible trend: with the falling share of the traditional resource-based sectors in the economy, the service sector has moved into a pivotal growth engine.

A sub-sectoral examination of available data is also very revealing (detailed data appear in Appendix I). Within the agricultural sector food harvesting is the leading contributor to total farming output, which is in the order of 50%. Farming is mainly for domestic consumption as export crops represent a very meagre share in the sector's output (less than 5%). The secondary sector is dominated by manufacturing which accounts for 50% of the sector.

The service sector is dominated by 2 major components, namely the wholesale and retail trade, as well as real estate and business services. It is important to mention that among those business services, there are businesses that are linked to the tourism sector in a direct or indirect way but which account for wholesale and retail trade and business services rather than being classified under tourism as such. Transport and communication also play an important role in the service sector. Here again, tourism contributes indirectly to the revenue generated in transport and communication services. In fact, the revenue from transport is mainly from airline transport and connected services (visa and airport fees). Basically, these facilities are used by tourists coming to Rwanda for either leisure or business purposes (ORTPN, 2006).

2.2.3. Labour force and income

In the previous section the discussion reviewed the macroeconomic structure in terms of what each sector contributes to gross domestic output. But to gain a comprehensive understanding of the economic structure which is relevant for this thesis, it is crucial to survey employment trends by sector. Table 2.1 displays labour force data for 2004 according to the conventional broad sectoral classification.

Looking at the labour force situation in 2004, statistics from BNR indicate that 87.3% of economically active people were engaged in the primary sector (agriculture), while the tertiary sector (service sector) showed the second highest percentage, viz of only 11.4%. The secondary sector (industry) provided the lowest figures in employment in the Rwandan labour force, representing a small portion of 1.3% of all economically active people.

Table 2.1 also gives a breakdown of female and male workers in each sector. Overall, the majority of workers are females (55%). But female workers tend to work primarily in agriculture and other primary sectors, where they constitute nearly 60% of the workforce. Male workers, on the other hand, dominate the secondary and tertiary sectors. As alluded to earlier, despite the fact that agriculture occupies nearly 90% of the country's labour force, this high percentage is not reflected in the country's GDP figures. The reason for this is due to the subsistence nature of farming in Rwanda, characterised by labour intensity and low productivity, often under-recorded in official data.

Table 2.1. Economically active population, by gender (2004)

Sector	Total labour force	%	Male	%	Female	%
Primary	2,957,470	87.3	1,223,576	41.4	1,733,894	58.6
Secondary	43,062	1.3	32615	75.7	10447	24.3
Tertiary	387,858	11.4	256798	66.2	131060	33.8
	3,4 million	100	1,5 million	44.7	1,9 million	55.3

Source: adapted from BNR, 2004

The majority of Rwandese people live and work in rural areas. In 2005-2006, out of 3.7 million workers who lived in rural areas, 86% were engaged in agriculture. Next to agriculture, the trade and service sectors are the second largest sector in terms of employment and are growing at the fastest rate (NISR, 2007). According to a recent labour force survey (EICV2), the workforce in trade and service sectors comprises salespeople, cooks, cleaners, waiters, security and personal care personnel (NISR, 2007), work activities requiring minimal levels of skills and education. It is worth noting that these categories of the labour force are found extensively in the tourism sector, especially in hotels.

In terms of new entrants to the labour force, job opportunities continue to be concentrated in subsistence farming sector. Over a period of five years (2002-2006) findings from the national survey reveal that 1.45 million new jobs have been created (NISR, 2007). Even in agriculture, an increasing percentage of the rural population rely on subsistence farming. Of all the new jobs created for the period 2001 to 2005, 45% took up work on family farms while 12% started as wage workers on farms belonging to households other than their own. Off-farm activities absorb a quarter of those starting a new job (NISR, 2006; NISR, 2007).

Small enterprises, especially informal services, keep on expanding as a key economic activity to supplement and sustain household incomes. In 2005/06, for instance, the EICV2 survey has identified 665000 private non-agriculture businesses operating in the country (NISR, 2007). Of these businesses, 90% were classified as informal firms, providing mainly self-employment to 308,000 people.

Non-farming employment represents 27% and the majority of adult workers (4.1 million) are employed in the informal sector. It is important to mention that the informal sector is not reported in official data. The estimates indicated here result from the EICV2 survey.

Farming is a seasonal occupation, and as a consequence, farmers are engaged in secondary jobs in the off-season. Empirical evidence indicates that 40% of all workers have two jobs; a main and a second job (Republic of Rwanda, 2006; NISR, 2007). Although Rwandan households' incomes come from one dominant source of income, they are nevertheless still diversified. Results of the recent national survey indicate that those households deriving their income from non-agriculture activities are better off than their counterparts heavily dependent on wages from agriculture. Statistics show that 51% of households who derive their income from a variety of sources of income are in the richest quintile, while only 6% of these are in the poorest quintile. In addition, the survey indicates that 81 % of income for households in the higher quintile (richest) comes from businesses other than agriculture. The message is that those engaged in agriculture are among the poorest and tend to diversify their source of earnings to supplement the insufficient income derived from agricultural activities.

With regard to the new jobs that are undertaken by the labour force, indications from official statistics show that close to half of new jobs are created in the service sector while the other half are generated by the sales sector, with the informal sector dominating that sector. It is important to point out that the sales sector is interlinked with the tourism sector and that informal sector activities are particularly favoured by the expansion of the tourism sector. When tourism business develops in a given location, informal sector activities such as sales of crafts, snakes and drinks at the beach or park, airtime and many more services develop as well to satisfy the different needs of tourists. This is made possible by the presence of new potential consumers (tourists) who express the need for different services.

2.3. Tourism- a brief overview

The tourism sector in Rwanda is still in its early stages of development, having taken-off in the 1970s. There are many tourism attractions that have been identified in Rwanda but little has been done to develop this sector which has a great deal of potential towards improving Rwandan economy. The major attractions that have been identified are: the Volcano National Park, home of mountain gorilla, is a "major tourist attraction"; Akagera National Park with its 'Big Five' together with a full range of mammals commonly associated with East and Southern African game parks; Nyungwe Forest National Park, the largest single contiguous forest of its type remaining in East and Central Africa; Rwanda's many lakes and finally cultural and historical sites, such as Nyanza and its King Palace and the National Museum in Butare which in particular offers a comprehensive collection of exhibits on Rwandan history and culture (RIPA /AIPA, 2002, volume 2). In addition to this, the majority of people coming to Rwanda visit genocide memorial sites built in different parts of the country. These tourism attractions in Rwanda create jobs and generate income for numbers of Rwandans as will be seen in what follows.

2.3.1. Background to the sector

The tourism sector in Rwanda has for a long time been under the control of the Rwanda Office of Tourism and National Parks known as ORTPN (Office Rwandais de Tourisme et des Parcs Nationaux). The ORTPN was created in 1974 with a very broad mission of exploiting government-owned hotels, managing protected areas and promoting tourism. The office in charge of tourism has been successful in the gorilla campaign which helped place Rwanda on the tourist map. But there have been weaknesses as well, the most crucial being the lack of tourism promotion and strategic planning (ORTPN, 2006).

Tourism in Rwanda has the potential to develop and contribute to the country's economic development. Although not developed, the sector has proved its

capacity to increase foreign earnings and attract more tourists. With the necessary support the tourism sector will do even better. The performance of tourism in Rwanda is presented in what follows.

2.3.2. Ecotourism and tourist attractions

Rwanda ecotourism activities vary from golden monkey trekking in the Nyungwe forest, Gorilla tracking in Volcano National Park to bird species watching in Ruwenzori.

Given the different tourists attractions that Rwanda is endowed with, the office in charge of tourism in Rwanda (ORTPN) has developed a policy aiming at developing tourism in a sustainable manner. The target for Rwanda tourism development is to focus on high-end tourism as opposed to mass tourism. In this high-end tourism, a few tourists are targeted that will bring in more revenues than in mass tourism where it is the large number of tourists that matters. This is specially done to protect and manage environmentally sensitive areas (Musoni, 2006). For instance, visitors to Volcano national park are limited to visit five gorilla families per day and the number of visitors should not exceed 8 people. These visitors should also not visit those gorilla families for more than an hour per day. The visiting fee is charged at $ 375 per day for foreign visitors and $ 250 for local visitors but non national, and Rwf 10 000 for Rwandese people (ORTPN, 2006).

The Nyungwe forest presents attractive nature walks to the Kamiranzovu giant swamps and the eye-catching cascading water falls. To protect the park, tourists are requested to follow gazetted trails and be guided by forest guides to watch hundreds of the bird species and monkeys. These tourists are not allowed to take anything at all while visiting the forest.

Ecotourism activities in Rwanda have impacted positively on the lives of people living in the surroundings of the tourist sites. Various development projects have generated an amount of Rwf 42 million in 2006 (Musoni, 2006).

Other tourists' attractions in Rwanda include the King's palace in Nyabisindu town formerly known as Nyanza town. This particular attraction is culturally significant to Rwandan people since it is home to the traditional seat of Rwanda's feudal monarchy. This royal palace of 19th century is entirely made of traditional materials. Currently, it is maintained as a museum and attracts lots of tourists from within and outside the country. Addition to this is the National Museum located in the southern region in Butare town. Traditional artefacts ranging from ceramic curios to wooden carvings and colourful tradition basket known in Kinyarwanda as "Agaseke" and the traditional dances attract also many tourists, including Rwandans (ORTPN, 2006; Musoni, 2006).

Since 2005 to this day Rwanda has been successfully participating in the International Tourism Board (ITB) Exhibition held in Berlin in Germany. In this exhibition, Rwanda has beaten other African tourist destinations and ranked 4th of best African exhibitor. More to this, in subsequent years, Rwanda tourist exhibition ranked second, first and first respectively in 2006, 2007 and 2008 (Musoni, 2006; Rwanda news, 2008). Among the African countries that participated in these exhibitions are the well-known traditional tourist destinations such as South Africa, Egypt, Morocco, Tanzania, and Kenya. Other winners in the African exhibitions are Gambia, Morocco, Eritrea, Ethiopia, Mauritius, Kenya, Seychelles, Namibia, and Tunisia. Such exhibition provided Rwanda opportunity to know the expectations of tourists and their perception of Rwanda. It helps also in exchanging with other peers and participants the views on how to expand and develop the tourism sector. Rwandan policy with regard to tourism development is not to compete with others but to collaborate with other tourist destinations in the region so that Rwanda could be an added value on the menu of the tourist visiting the region. In this regard, Rwanda intends to collaborate with Kenya, Uganda and Tanzania for their long experience in tourism especially Kenya with

its Masai Mara attraction (ORTPN, 2007). Rwanda was exposed to 10,923 exhibiting companies from 184 countries and territories that showcase their tourism attractions. These companies are diversified and range from service providers such as hotels, airlines to tour operators.

2.3.3. Economic Performance of the sector

Tourism is classified as a service sector. In Rwanda, the service sector has seen the strongest real growth in 2004 of almost 8% (MINECOFIN, 2005). For the past five years (2001-2006) the service sector contributed towards the biggest share of GDP (NISR, 2007). Indicators show that this growth is mainly attributable to the tourism, transport and communication sectors. It is crucial to mention that the more the sector prospers and contributes to economic growth, the more impact it has on income and employment. Because of its poor performance, agriculture made little positive impact on the lives of Rwandan people, as discussed earlier. The result was that people moved from that sector to other more prosperous sectors such as the service sector.

The performance of tourism is not limited to income and employment but also to its capacity to contribute to government revenues. The turnover declared by Rwanda Revenue Authority (RRA) illustrates that all service sector groups increased their taxable income for the period of 2003-2004. This increase was a result of many factors, among others, increased businesses, higher inflation and the addition of new firms to the formal economy (tax payers).

The performance of the tourism sector in Rwanda is also judged in terms of tourist arrivals and receipts. As mentioned earlier, the Volcano National Park (VNP), the Akagera National Park (ANP) and the Nyungwe Natural Forest Park (NNP) constitute the main tourist attractions in Rwanda. These parks have attracted numbers of tourists and since 2000 the number has been increasing every year (see Appendix). Indeed, the number of tourist arrivals rose from 1,663 in 1995 to

3,799 in 2000 and to 5,965 in 2001. The number almost doubled in 2002 to reach 10,092 visitors, the majority of whom were foreigners (72%) (ORTPN, 2004). Clearly, it can be stated that these tourist visits to Rwandan national parks gave rise to income and employment opportunities, their presence requiring the service of many people to cater for tourist needs. In the figure below, the trend of tourists' arrivals since 1987 to 2004 is illustrated.

The figure 2.1 indicates a non-linear trend of the percentage of tourists who visited Rwanda National Parks for the past two decades. The decrease in tourist visits in particular years was mainly a result of insecurity that was prevailing in a given national park. With the exception of a few bleak periods, tourist arrivals to Rwanda increased and made a positive impact on income generation and job creation.

Rwanda attracts tourists from all over the world. The numbers of visitors are not evenly represented in Rwanda, visitors from Europe and Americas tending to exceed those from the African continent. There are many explanations for this such as a lack of tourism culture among African peoples as well as limited means to visit other countries. For the period of 1994 to 2005, Europeans visitors to Rwanda national parks were by far the most; domestic visitors numbering the second most in number while tourists from North America were the third highest in number. Other parts of the continent were poorly represented (ORTPN, 2005). As an illustration, in 2005, European tourists accounted for the majority of visitors (41%), followed by Rwandan citizens (36%) while the North Americans tourists represented 21%. Combined numbers of tourists from other African countries, Rwanda excluded, represented only 2%.

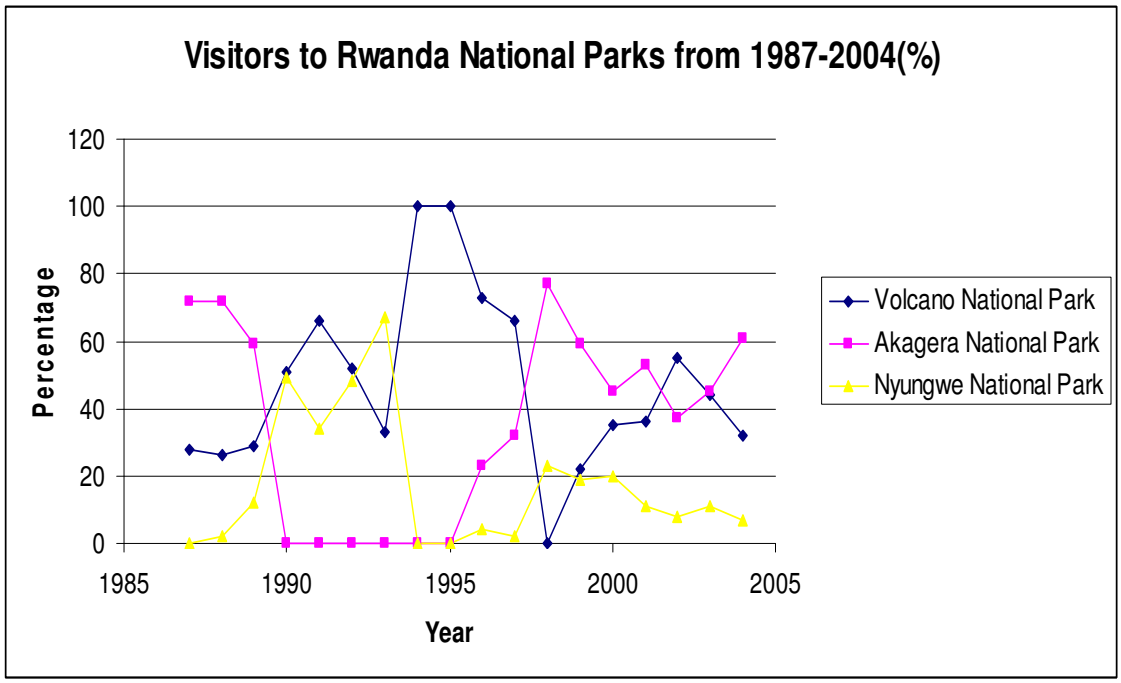

Figure 2.1. Visitors to Rwanda National Parks 1987-2004 (%)

Statistics from ORTPN (2006) show that the number of tourists visiting Rwanda increased from year to year, increasing from 64 in 1994 to 22,669 in 2005. The number of visitors declined in 1998 as a result of the internal insecurity that prevailed in 1997. However, from 2001 to 2004, there was a steady rise in annual tourists' arrivals that moved from 5,766 to 24,305 respectively but decreased slightly in 2005.

According to ORTPN (2005), the number of tourists visiting national parks increased by 63.2% in 2004, with Rwandan visitors moving from 5,880 to 12, 601 while the number of foreign visitors rose from 10,658 to 14,397. This increased the revenue from tourism. Tourism revenues grew from US$ 30.1 million in 2003 to 43.5 million in 2004, representing a 44.5% increase. These figures are encouraging and suggest that the Rwandan efforts at tourist promotion are bearing fruit. Tourism growth here is partly a result of the increase of business travellers and the use of Rwandair flights which is beneficial to Rwanda. Rwandair has increased the number of routes it serves, bringing about a 77% increase in passenger numbers using this airline. Rwandair is the leading form of transport in

the Rwandan transport sector and will have contributed significantly to the 13% increase in turnover declared at the RRA by that sector for 2004 (ORTPN, 2006).

In her study on domestic tourism, Mazimhaka (2007) stipulates that domestic tourism in Rwanda has potentials to boost the economy but that this sector is under-exploited given the focus on international tourism. She recognises however that there are challenges attached to the development of domestic tourism, the crucial one being the rampant poverty among Rwandese people. The recent survey has revealed that rural poverty in Rwanda recorded the highest level with 90% of people living in rural areas. Many of these are communities surrounding the tourism attraction areas (NISR, 2006; Mazimhaka, 2007).

Looking at tourism receipts, available statistics for the only VNP indicate a progressive movement from 1974 to 2005 despite some irregularities for some years because of the war and insecurity. The figure below displays a change in per capita tourism revenue and shows a general positive trend, notwithstanding some decline in revenue for certain years.

The per capita tourist revenue manifested a positive change over time and moved from as little as US$ 22 in 1974, then declined for subsequent years but quickly increased to reach US$ 282 in 2005 (ORTPN, 2006). The number of visitors to VNP rose from 449 in 1974 to 10,641 in 2005. Likewise, the revenue generated from tourists visiting that particular park increased from US$ 10,400 in 1974 to more than US$ 3 million in 2005. Although this had occurred over a reasonably long period (3 decades), the progress could still be regarded as impressive given that so little has been done to improve tourist services and to diversify products to attract more tourists. Furthermore it should be noted that the per capita revenue displayed above represents only revenue for this particular tourism park and does not include tourist expenditures within the host country. These expenditures include transport and accommodation as well as related services, and are expected to be much higher than the only revenue spent at the tourist sight. This increased revenue from tourism activity is important for the host country and plays a

significant role in boosting the local economy and also in terms of income and employment offered to local residents.

Comparing tourism receipts from all Rwanda national parks for the years 2003 and 2004, statistics from ORTPN (2005) indicate that the revenue from VNP moved from US$ 1,4 million in 2003 to 2,2 million in 2004, representing a change of 60.7%. The revenue generated from the ANP in 2004 was more than 5 times that of the previous year. The receipts grew from US$ 19,736 in 2003 to US$ 101,316 in 2004, which is more than 5 fold rise. The increase in revenue from the NNP was spectacular as it moved from US$ 1,844 in 2003 to US$ 40,909 in 2004. This represents an increase of 2,118.5%. The overall increase for all national parks was 68.3%. This impressive increase in revenue from Akagera and Nyungwe national parks is a result of new doors being opened to tourists by transforming and improving these two national parks. A great deal of transformation happened in recent years in those parks to attract more tourists, especially from the end of 2003 to the beginning of 2004 (ORTPN, 2005). This is evidence enough to prove that if tourism is well developed in Rwanda, it can help the country increase its economic base and reduce its level of poverty.

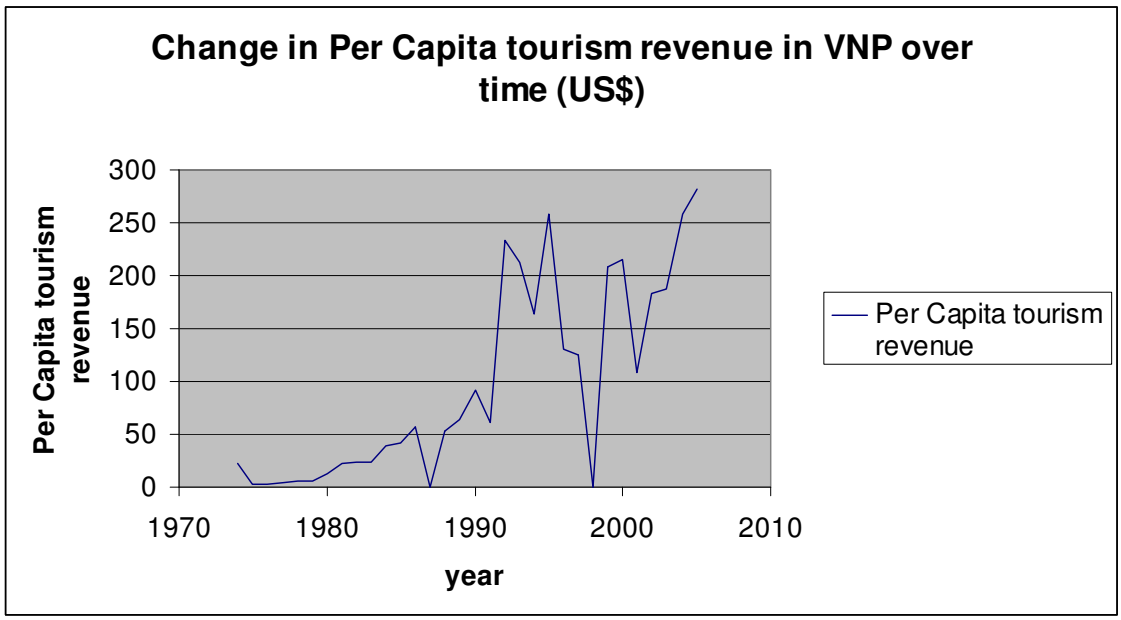

Figure 2.2. Change in per capita tourism revenue in VNP over time

In addition to revenues generated from the parks, the tourism sector also benefits from other sources of income. Examples of revenue generated are revenue collected from hotels and restaurants that serve tourists, from air and road transport, from airport taxes and visas and transaction fees for travel agencies and from purchases of tourists, to name a few. However, despite this increase in revenue, the tourism sector in Rwanda faces developmental challenges.
In the next section, constraints on tourism development in Rwanda are presented. Note that if these obstacles could be removed or reduced, tourism in Rwanda would develop.

2.3.4. Constraints on the Development of Tourism in Rwanda

In the previous sections the performance and achievement of tourism in recent years has been presented. However there are factors that hinder the development of the tourism sector in Rwanda. These factors are a threat not only to the development of tourism, but also to the Rwandan economy as a whole. If tourism does not perform well, this means that its contribution to GDP will be very limited, and so will be the contribution of tourism-related industries. This will have a negative impact on both income and employment within the country. The constraints that tourism development faces in Rwanda are different in nature. They range from bad perceptions of Rwanda as an unsafe tourist destination to poor development of the tourism industry (ORTPN, 2006).

The development of the tourism sector in Rwanda faces the perceptions of Rwanda as an unsafe destination. This is the most important issue. The tragedy of 1994 has left a negative imprint on Rwanda's image. People need to know that many things have changed since 1994 and that Rwanda is a safe place to recommend for investment and tourism. Furthermore, Rwanda has limited accommodations at key tourism sites. According to ORTPN (2006), Kigali, the capital city of Rwanda, provides the largest number of accommodation in Rwanda. More than 65% of all hotels in Rwanda are in Kigali and yet most tourism attractions are located outside Kigali. Additionally, the country has

limited aircraft for transport to main tourism markets. It has very few direct connections to other tourists' countries. Except for a direct connection to Brussels and Johannesburg, Rwanda has no direct flights that link it to its main tourism markets (ORTPN, 2006). Rwanda is over-dependent on its gorillas to attract tourists and yet it is blessed with many more tourist attractions which are not capitalised on. Rwanda offers limited quality services to tourists because of a lack of tourism culture among Rwandans. The tourism industry in Rwanda does not have a proper data collection and filing system for up-to-date statistics on tourism. This is a drawback for those doing research on tourism in Rwanda and increases the cost of gathering the necessary information. Given the political instability that prevails in the great lakes region, tour operators are reluctant to engage Rwanda and promote the country as a tourism destination (ORTPN, 2006).

From what has been presented above, it can be said that the tourism sector in Rwanda is developing steadily but needs a strong support from both private and public sectors for its sustainable development. It presents opportunities but these are not fully exploited as mentioned earlier. The product cannot sell itself, it needs to be marketed and advertised to attract potential consumers.

2.4. Conclusion

This chapter has painted a context to the research problem and the theoretical framework investigated in later chapters. We have briefly reviewed the evolution of the Rwandan economy since the colonial era to approximately 2005, with specific emphasis on income and employment activities in each sector. Agriculture in Rwanda uses almost 90% of the labour forces but only contributes to less than 50% of the GDP. Empirical evidence indicates that those households deriving income primarily from non-agriculture activities are better off than their counterparts relying only on farming, be it as subsistence producers or farm workers.

The secondary sector in Rwanda is at its developing stage because Rwanda is not endowed with minerals and other factors to develop the industrial sector. Its contribution to GDP is very limited compared to other sectors. However, it has to be noted that the fact that a country is not endowed with minerals is not a precondition for development. Other productive sectors can be developed and still improve the country's economy.

In the post-genocide decade, the service sector has moved into a major engine of economic growth. On average, it remains the fastest growing sector, contributing significantly to GDP, employment and income generation. Tourism falls within the services sector, but its unique backward and forward linkages are poorly captured. Moreover, there appears to be an underestimation of its performance and contribution to GDP. This study attempts to overcome this gap and develop a coherent conceptual explanation for a rising tourism sector in a situation in which the share of the traditional mainstay of the economy (agriculture) is declining.

In the next chapter literature on tourism and economic development in LDC is presented. The focus of the next chapter is to establish the importance of tourism sector in an LDC context.

CHAPTER THREE
TOURISM: AN ENGINE FOR ECONOMIC DEVELOPMENT

3.1. Introduction

In the previous chapter, we briefly reviewed the changing trends in income and employment generation in Rwanda. Its economy is clearly going through important structural changes, with tertiary services accounting for a larger share of economic wealth, jobs and income. Farming forms a shrinking share in a basket of multiple livelihoods activities common among rural households in underdeveloped countries. This chapter reviews evidence on the mechanisms through which tourism adds to economic development in least-developed countries.

The phenomenal expansion of the tourism sector in the global economy has been widely recognized in both developed and developing countries. Tourist arrivals in LDCs increased by 48% between 2000 and 2005, as against a growth rate of 34% in developed countries and 17% worldwide growth rate (WTO, 2006). Likewise international tourism revenue (at current prices) grew by 76% in LDCs against 41% worldwide. Looking at 2006, Africa and the Middle East were the leading continents in terms of tourism growth (WTO, 2006). In each region, tourism grew by an estimated 11%. Of particular interest was the performance of Sub-Saharan Africa region that grew at above 12%. Whilst slower growth has been projected for 2008, globally the sector remains on track to grow in line with the WTO 2020 forecast to expand at a rate of about 4 % (WTO, 2008).

In the light of this evidence and medium-term growth projections for the tourism sector, development scholars and practitioners see it as an engine to drive economic development. To date, most studies have emphasized the magnitude of the sector's contribution to economic wealth. However, the mechanism through which the sector adds to economic development has received less attention in the existing literature. Yet understanding the channels through which the sector

contributes to development will be critical if the goal is to tap the full potential of tourism for development. To gain a better understanding of this dimension of the issue at hand, this chapter specifically investigates the channels through which tourism contributes to economic development in LDCs with special emphasis on income and employment.

To contextualize the theoretical discussions in this chapter, the next section briefly reviews tourism development in LDCs. Sections three and four probe the microeconomic and macroeconomic linkages of tourism in LDCs, respectively. The concluding section is a synthesis of the main theoretical lessons gathered from our analysis of the literature in this chapter.

3.2. Brief overview of tourism development in LDCs

Many LDCs are increasingly acknowledging the role of tourism as a source of their economic development. Reasons for allocating such a special role to tourism turn on the expected economic benefits perceived to be inherent to tourism (Sinclair, 1998) and the 'shift away from traditional sources of development support'. Traditionally, less developed economies heavily depended on foreign aid (and external debt) to support their development plans and efforts. But foreign aid and debt usually came with stringent conditions that poorer countries found hard to comply with, but more importantly resulted in resource transfers from poor countries to foreign creditors and donors. These constraints coupled with and compounded by the limitations imposed through exclusively relying on primary sector exports, call for considering a range of alternative development strategies. As the global demand for tourism dramatically expands, tourism naturally deserves to be part of a reconfigured set of ingredients for development. It is observed that the share of tourism is growing in many economies especially developing economies as these economies become less reliant on aid.

There are a number of other reasons that make tourism a suitable economic development option for LDCs. The tourism opportunities offered in LDCs can help tackle poverty and increase government revenue but above all they can create

employment for both skilled and unskilled labour. These reasons are summarised as follows by the world tourism organisation (WTO, 2006):

A unique characteristic of tourism is that it is consumed at the point of production. As such, it stimulates local businesses that produce goods and services for tourists. And these businesses can range from formal to informal activities that generate income for local people. Many tourist attractions require low or minimal start-up costs, with a high degree of labour intensity and virtually zero barriers to entry which, together, allow many resource-poor people an opportunity to participate in the sector. Through its powerful inter-sectoral linkages, tourism offers LDCs an opportunity to develop other economic sectors (WTO, 2006).

De Villiers (2002), among others, noted that tourist arrivals in LDCs have registered over the last 10 years (1991-2001) an annual growth which is above the world average. Tourism since then has demonstrated a competitive advantage to those LDCs and has become one of the major contributors to GDP. Cross-country evidence shows that tourism as a labour intensive sector provides jobs to every category of workers including the poor, skilled and unskilled labour (De Villiers, 2002, WTO, 2006). In LDCs, tourism receipts are more important than the possible leakages (such as import related, use of Expatriate, etc) they often generate (Heath, 2002). Negative effects such as environment degradation are associated with the development of the tourism sector especially in the long term (Briedenhann and Wickens, 2004).

Throughout the world, developing countries endowed with pristine natural and cultural treasures possess a significant comparative advantage in terms of tourism attractions. However, this comparative advantage of pristine nature is under threat in developing countries of Sub Sahara Africa given the high level of poverty that forces people to overexploit nature without caring for conservation of the natural resources (Briedenhann and Wickens, 2004). As Redclift (1992:395) puts it, *"poor people often have no choice but to choose immediate economic benefits at the expense of the long-term sustainability of their livelihoods. There is no point*

in appealing, under these circumstances, to idealism or altruism to protect the environment when the individual and household are forced to behave 'selfishly' in their struggle to survive".

Although African countries possess the comparative advantage in attracting tourists, the tourism sector faces challenges related to the world perception of Africa. The African continent is known to be unstable, disease-infected and crime-ridden (Briedenhann and Wickens, 2004). Other challenges range from poor infrastructure, such as roads, water supply, electricity, insufficient accommodation, poor telecommunication facilities, poor public health services, to security problems (Gauci, Gerosa and Mwalwanda, 2001). Another major problem that developing countries in Africa face is related to the lack of business environment that can put in place a financial system to support small and medium businesses. The tourism service is known for its strong linkages with small and medium businesses. However, structural constraints, institutional weaknesses, including political and social turmoil, obstruct the development of the tourism sector and hinder its contribution to economic growth of many developing countries.

Competitive advantage can be enhanced by providing excellence in hospitality and offering quality services. According to Dwyer (2001), hospitality in a destination context refers to the friendliness and attitude of local residents towards tourists. This includes warmth of reception by local residents, easy communication, willingness of local population to provide needed information to tourists etc. The degree of hospitality is an added value to the inherited attractions of tourism. In the same line of argument, a destination image and branding identities are of equal importance to strategically compete with other tourist destinations (Heath, 2002).

Tourism destination branding is important to attract more customers. As Pike (2005) argues, a place name by itself is not sufficient differentiation. Just like other goods and services, tourism products and destination need to be differentiated in attractive ways that could sell the products more than other

destinations. This is important for it is increasingly observed that places are becoming substitutable and difficult to differentiate (Pike, 2005).

Although LDCs are endowed with many tourist attractions, these have as yet not been fully developed in many African countries. Africa has a variety of cultural, economic, geographic, political and social attractions. A study by Dieke (2003) describes these tourist attractions which cover aspects such as safari tourism and its wildlife and other environmental attractions, the attractions of Africa's beaches, its variety of cultural and archaeological heritage and the attractions of its marine life.

The performance of LDCs in terms of international tourism arrivals and receipts is promising. In 2000 the revenue from tourism per arrival in LDCs was estimated at US$ 609 compared to US$ 827 in developed countries. According to Benavides (2001), Tanzania was the main tourism destination of the LDCs, generating US$ 570 million in tourist revenue in 2000. Cambodia, Nepal and Uganda were next and generated more than US$ 100 million (Benavides, 2001; UN, 2001; Aguayo et al., 2003). More recently (2005), statistics from WTO (2006) indicate that LDCs benefited only 1.2% of the number of the total international tourist arrivals and only 0.8% of international tourism revenue. Nevertheless it was observed that the share of international tourism in LDCs is increasing at a fast rate. Tourist arrivals in LDCs increased by 48% between 2000 and 2005, as against a growth rate of 34% in developed countries and 17% worldwide growth rate (WTO, 2006).

Likewise international tourism revenue (at current prices) grew by 76% in LDCs against 41% worldwide. Tourism in Nepal has developed reasonably quite well and contributed to its economic growth despite the fact that the country is landlocked. According to Kharel (2006), tourism in Nepal accounted for over 808 million of international tourist arrivals in 2005 which represented 5.5% of worldwide growth. Tourism in Nepal was expected to generate US$ 6,5 billion in its overall economic activity for the year 2006. This would account for 10.3% of the world's total GDP and 8.7% of its total employment. The development of

tourism in Nepal is a result of its cultural diversity, its outstanding geographical features, and the presence of strong Hindu and Buddhist influences. The majority of Nepal's visitors are Hindu and Buddhist tourists.

Recently WTO (2005) published results on tourism performance in the world. It found the following of the different regions: The report reveals that in 2004, tourism in Europe accounted for US$ 327 million, followed by America with US$ 132 million, Asia and the Pacific with US$ 125 million and Africa with only US$ 18 million. All these regions have significantly increased their revenue compared to the previous year where the amounts were US$ 283 million; 114 million; 95 million and 15 million respectively. These increases in revenue represent a growth rate of 16%, 16%, 32% and 20% respectively for Europe, America, Asia and the Pacific and Africa.

These figures confirm how important tourism is with regard to world economy. The low figures observed for Africa in terms of tourism receipts (as seen above) can be attributed to poor development of its tourism sector and not to what Africa has to offer to its tourists. However, it should be noted that tourism receipts estimated here represents the amount of money tourists spent without considering leakages attached to it (such as import leakages). There is a weakness in these estimations regarding tourism since in some cases, such as in developing countries, tourism import leakages can be substantial and can affect the above figures negatively. Furthermore, it should be noted that tourism performance presented above is attached to what can be called 'purely tourism industry' without considering its forward and backward linkages. These linkages present a powerful tool to spread tourism benefits over other economic sectors and allowing them to perform well as regards contributing to economic development.

With regard to recent publications of the WTO, world tourism barometer indicates that in the first four months of the year 2006, tourism has recorded a 4.5% growth in international tourism arrivals worldwide. This growth is a result of all continents' performance in tourism. Data from WTO (2006) show that Africa and

Middle East, Asia and the Pacific grew faster than the rest of the world with an average growth of 11% and 8% respectively. Europe and the Americas showed moderate growth of less than 3% for the same period. Individual countries that outperformed include Maldives with 97% above the same period last year, Thailand with 29% and Sri Lanka with +25%.

Africa and the Middle East were the leading continents in terms of tourism growth in 2006, continuing the trend established in 2005 (WTO, 2006). In 2006, both regions registered a growth rate for tourism of 11%. Of particular interest was the performance of Sub-Saharan Africa region that grew at above 12%. Evidence for North African states showed great variation, but was in positive territory. Tunisia, for example, experienced a growth in tourism arrivals of 3% between January and April, whereas Morocco experienced a 17% surge over the same period (WTO, 2006).

In 2007, although world tourism growth rate was less than in the previous year, it exceeded the expectations of the UNWTO. This is a result of sustained overall economic growth and the flexibility of the tourism sector with regard to external factors. It was also a fruit of the world longest sustained economic growth (2 decades) (WTO, 2007). According to the WTO's Secretary-General, Francesco Frangialli: "*Economic and tourism growth are driven by emerging markets and developing economies. While mature markets remain the leading destinations in the world, the faster growth rate of new markets confirms UN WTO's main message of tourism's potential for the developing world*".

Indicators from the UNWTO barometer show that most of the regions have registered increased growth above their long-term expectations in 2007. Despite ongoing tensions and threats in the Middle East, the region continues to be one of the successful tourism destinations with countries such as Saudi Arabia and Egypt being top contributors to the growth of tourism in 2007 (WTO, 2007).

With figures around or above 5% since 2004, world GDP has known its longest period of sustained growth for 25 years. Developing economies and emerging markets are the driving force behind the GDP growth for the large part of the present decade. This is also linked to the emerging tourism destinations since it has doubled its growth in high-income countries (WTO, 2007).

The results for the first term of 2008 suggest a relative stability of international tourism. Between January and April 2008, international tourism grew at 5% from the previous year for the same period despite the uncertainties caused by the global economy. Although the overall economic climate has deteriorated since the last quarter of 2007, prospects for international tourism in 2008 remain positive. This economic deterioration can put a major pressure on consumer confidence and reduce households' spending on tourism (WTO, 2008). The UNWTO projections indicate a slow growth for the rest of the year 2008. It is anticipated that current economic imbalances, specially the high-price energy will negatively influence tourism spending. However, specific demand shifts will differ from country to country based on their local economies, labour markets and consumer confidence.

Despite a slow growth that tourism may register this year, international tourism is still believed to meet its mid-term goal and stay in line with the UNWTO's tourism 2020 vision that forecast the long-term growth rate at about 4 % (WTO, 2008).

Some conclusions can be drawn from this data. The statistics presented here indicate the nature and extent of international tourism in LDCs and its significance in a number of countries. Clearly, the demand for tourism is positively correlated with higher levels and growth rates in national income coupled with the extent of the development of the tourism sector in destination countries. Tourism in Africa is largely influenced by the nature of the economic development of its countries. Considerable variations are observed from tourism-developed countries to the least developed ones in Africa. Some countries have performed reasonable well as tourism destinations. For instance in the East Africa sub-region, countries such as Kenya, Mauritius and the Seychelles are well known

as tourism destinations. In the Northern part of Africa, Morocco and Tunisia and in the South, South Africa and Zimbabwe go into the lead. In the West, Côte d'Ivoire and Senegal perform reasonably well in tourism. Other African countries such as Nigeria, Angola and Zambia, to name a few, although they have not performed at the same level as the above for a variety of reasons, they have huge potential for tourism development.

What are some of the underlying reasons for this unequal spread in development in African countries? The development of tourism in the regions of North Africa can be attributed to the proximity to Europe where they benefit from major European markets and the long-lasting economic ties between the two regions. There has also been a suggestion dating back to 1970s that North Africa was considered as an extension of European resorts and that, tourists visited the region to enjoy the sun and relatively uncrowded beaches (Hutchinson 1972). Furthermore, Britton (1998) argues that tourism in LDCs would be more successful if foreign investors were involved in that sector. Evidence from Eastern and Southern Africa, such as Kenya, supports this observation. Dieke (1993) found that tourism in Kenya has developed because of a strong presence of expatriates involved in the sector. According to him these expatriate investors receive support from their home countries as regards strengthening and maintaining their foreign business interests. It is however unclear whether most of the benefits would be retained in the host LDC or transferred abroad. This is a key consideration to investigate when tracking the forecasted macroeconomic benefits that the sector is able to generate inside the country.

Structural imbalances in African economies also account for the weaknesses in tourism development. According to Dieke (2003), African countries have not been able to implement clear strategies for development in general and for tourism in particular. The tourism sector has not been integrated with other economic sectors. As a result, some countries, such as Cameroon, have a poorly-developed tourism sector whereas countries such as Kenya have an uncontrolled tourism development. The underdevelopment of this industry in parts of Africa is due to

inadequate organisation of the sector, which reduces profitability in many operations. The lack of adequate training programmes in tourism development is a major hindrance that leads to over-reliance on expatriate staff.

3.3. Microeconomic linkages of tourism in LDCs

In this section we review the internal or industry-specific characteristics of tourism. At the micro-level, the objective is to understand the nature of tourism activities (characteristics of tourism product or good), the sector's internal structure and organization (the degree of competition) and how it actually operates (internal efficiency). Enhancing the developmental impact of tourism critically rests on the degree of its micro-level competitiveness and efficiency.

From the construction to the operational phase of the tourism industry, there is a heterogeneous combination of many services from different providers. To get started the tourism industry will need engineering services for the construction of its infrastructure. At this beginning stage tourism employs both local and expatriate labour. The economic wellbeing of local labour will obviously improve from the income they receive from the tourism industry. At the operational phase tourism will need services from the agriculture sector, the transport sector and the financial sector to name a few. Wherever tourism business starts the burgeoning of related activities and their impacts on local economy follow. For instance, a holiday hotel construction is likely to stimulate other tourists' activities such as the sale of handicrafts. This tourist business calls upon taxi and bus owners to offer their transport services. Musicians and artists are employed to entertain hotel customers. Different entrepreneurs also seize their opportunities to expose and sell their products to tourists. Households supply labour to tourist and tourist-related activities (Ntibanyurwa, 2006). These activities are connected to many other economic sectors which involve monetary inflow.

3.3.1. Leisure activities and the tourism sector

What are the defining characteristics of tourism demand and supply? Tourism activity has a close correlation with culture and heritage. As mentioned earlier, culture and heritage attract tourists in addition to the nature which is embellished by people to increase the attractiveness. In that sense, the three elements mentioned above cannot be separated as far as tourism attraction is concerned. All tourism activities bear some cultural form to some extent. Tourists are mainly interested in travel, food, accommodation, sightseeing, shopping to name a few. All these commodities embody some cultural dimension (Cater and Gwen, 1994). Tourism goods and services which satisfy the cultural aspect are valuable to tourists for they respond to their needs for something different from their daily lifestyle in their residential areas (Nguyen, 2001).

According to Giannoni and Maupertuis (2005), countries valorise their natural and cultural endowments to develop a healthy and competitive tourism industry. To be competitive countries specialising in tourism, develop it in an environmentally friendly way in order to attract more tourists. The increased demand for tourism will increase the need and call for more investments. However, new investments, such as new constructions on a site, will often reduce the natural attraction of the area. In the short term these new investments and increased demand may generate more money in the area but at the same time may, in the long term, destroy the natural environment on which the activity was based (Giannoni and Maupertuis, 2005). Nevertheless, alternative measures could be taken to avoid damaging or over-exploiting natural resources.

An example could be the construction of hotel towers to respond to the additional demand for tourists' accommodation. Over-exploitation of natural resources has a twofold consequence. On the one hand, tourist interest in the long term will decrease as damaged areas will no longer be attractive. On the other hand the damaged area may be difficult, if not irreversibly so to fix, and therefore this would impact negatively on the local community and the country as a whole.

Assuming that most tourist attraction areas are environmentally sensitive does not necessarily mean that their exploitation will lead to their degradation. Instead it could lead to the improvement of the attractiveness of that site. However, one has to agree that over-exploitation always has downsides. This is not a particularity of tourism but of any other sector where over-exploitation of resources has taken place and where the performance of that sector has been negatively affected as a consequence. In LDCs where the tourism sector is still under-developed, tourism development should be done carefully so that its chief and major source of supply is not exhausted.

3.3.2. Transport

Transportation plays a vital role in attracting tourists. Moreover, it offers income and employment to many people involved in the running of the variety of transport vehicles such as drivers, pilots, airhostesses, security people, to name but a few. The development of transportation infrastructure and networks are critical determinants of the economic benefits to be had from tourism. An efficient modern transport system requires well-maintained infrastructures, frontier technology to easily communicate information and must prioritise the safety of its users (Guilherme, 2003; Lumsdon *et al*., 2006). These are serious challenges to LDCs because of the poor quality of their transport sectors, and particularly their road transport services.

Transport in tourism is conceptualised as a consumer-service (Derek, 2003). It can influence the tourism sector both positively and negatively. However, in most cases, transport serves for the betterment of tourist satisfaction, therefore reflecting a positive impact. On the other hand, some negative experiences of tourists are related to incidents and accidents connected to air, road and sea transport. The availability of transport, either for tourism purposes or for other needs, increases personal mobility. A tourist's choice of a specific means of transportation is positively correlated with the expected satisfaction. Transport

providers or suppliers, on the other hand, engage in this kind of business because of the financial benefits they expect.

In some cases, transport experience can be an exclusive tourism experience. For example, the use of steam railways (Halsall, 2001) and the world's last ocean-going paddle steamer Waverley (Longhurst, 2003; Waverley Excursions, 2003) are still making annual excursions in the Clyde Estuary. Such kinds of transport modes are used explicitly for recreational purposes rather than as a means of transporting tourists from one place to another.

Although transport contributes to the efficiency of the tourism industry, it could also generate negative externalities. Road transport creates management problems for road users when it comes to regulate the pricing mechanisms for the repayment and reduction of road transport externalities (Fietelson, 2002). Although there is a relationship between leisure and the motor car, this relationship can be both self-evident and problematic. While providing recreational satisfaction to tourists, the motor car can also cause a great deal of damage in the process.

Landlocked countries face serious problems and often lag behind their coastal neighbours with regard to tourism-related transportation. The need of depending on neighbours for access across borders can seriously affect not only the trade sector but also the tourism industry. Landlocked countries have to rely on the security and political stability of the neighbouring countries through which people and goods travel.

3.3.3. Accommodation

Alongside transportation, accommodation is another primary component of the tourism sector. It involves both income generation and employment opportunities for people offering services to accommodate tourists' demands. In a LDC context, foreign investors usually own hotels of good quality, which accommodate tourists

(Clegg and Essex, 2000). The accommodation sector can involve both private and public operators. Private investors can either be people from the local community or foreign investors. On the one hand, it is obviously more beneficial to the country as a whole if accommodation for tourism is owned by either the government or the local population. On the other hand, if foreign investors own the accommodation business, there is a strong likelihood of income leakage to the foreign country resulting from dividends and other interest repatriation paid to the business owners (Goodall, 1989). Benefits from these investments seldom reach the local population. The low standards of entrepreneurship and limited financial resources in most LDCs constitute a hindrance to the development of accommodation sector in particular, and to the expansion of the tourism sector in general.

The accommodation sector also involves the use of information technology which helps supply tourists with much-needed information during their visit (Clegg and Essex, 2000). They are informed about a variety of issues such as the different types of accommodation, transport and other services available, what there is to do and what to see in a country. Therefore, tourists have the opportunity to decide among the different choices what satisfy their consumer preferences.

3.3.4. Other microeconomic issues in tourism with regard to natural resources

Other microeconomic issues raised in literature and attached to tourism development are related to the nature of the demand and supply of tourism. Ennew (2003) contends that both unexpected increase and decrease in tourism demand may create market shock. He argues that an unexpected increase in tourism arrivals in a country may create problems. Large numbers of tourist arrivals are likely to overload the infrastructure and place pressure on water, electricity and transport links. Should this happen, a destination country will have to expand its tourism investments to respond to the increasing demand. However, this can be very costly for developing countries with limited resources.

Although many environmentalists think that tourism development is a threat to the environment because it exploits natural resources, Honey (1999) believes that tourism is less destructive than other industries such as oil extraction, agriculture, logging and cattle farming. These industries, because of the kind of work they perform, have more adverse effects on the environment than tourism. Honey (1999) observes that although tourism might have some negative impacts on nature, it can be developed in ways that prevent the over-exploitation of nature.

Bosetti, Cassinelli and Lanza (2006) support the idea of tourism development but suggest an effective management of natural resources on which tourism is based. They urge that tourism performance should be analysed using a long-term perspective which reflects sustainability. According to these authors, although natural and environmental endowments are key characteristics when comparing the attraction possibilities of tourism, what matters is the effective management of the visited area. They maintain that natural resources of tourism can only perform well if they are managed in a sustainable way, otherwise the result will be limited to short-term benefits.

Healy (1994) and Briassoulis (2002) point out that tourism resources are of the constructed or natural type; they are tangible or intangible, specific in kind and present a unique character. These resources, as mentioned earlier, can range from local cultures, norms, traditions, and attractive landscapes to name but a few. Individual human beings play an important role in maintaining or destroying the natural environment on which tourism is based. It is therefore necessary to include them in any programme of conserving nature in order to preserve the quality of tourist products. According to Bimonte (2006), host communities play an important role in utilising and "producing" nature. They are resources and partners in sustainable tourism. He suggests that the concept of "conservation" must go forward to identify the dynamic protection of biological, cultural, historical and other productive diversities and not only looking solely at biodiversity conservation.

In the above line of arguments, local people are considered as a means to an end to the sustainability of tourism. Uphoff and Langholz, (1998) and Liu, (2003) argue that any environment protection policy that does not include human participation in its broadest sense (possessions, decision-making, provision of information) is likely to fail. Therefore, for tourism to be sustainable it has to conserve the natural and socio-cultural capital of the host community. Moreover, this should be done without compromising the satisfaction of the subjective and economic needs of both tourists and residents (Hardy *et al*., 2002; Ko, 2001; Farrell, 1999).

Furthermore, resources on which tourism income is based are in many cases used concurrently by both tourists and local communities and very often for different purposes. Hardy *et al.,* (2002), Williams, (2001) and Bimonte, (2006) find that tourism is the encounter of two heterogeneous communities (local residents and tourists), each with different interests and expectations in relation to tourism resources. Given the above, Bimonte and Punzo (2006) argue that a shared vision or common management of tourism resources is needed to avoid unfruitful competition, which is likely to reduce the quality of tourists' experience and their willingness to pay. These issues are aggravated by the fact that most tourism resources share the features of "public goods" and/or "common pool resources" (Bimonte, 2006). Consequently, in both cases an externality problem may occur due to conflict or congestion, therefore inducing a management issue. The next section tackles macroeconomic linkages of tourism in LDCs.

3.4. Macroeconomic linkages of tourism in LDCs

Regardless of the growing importance of tourism as an engine for growth for many countries, little attention has been accorded to it in literature on economic development. Moreover, when the impact of tourism is studied, it raises controversy among those who are for and against its powerful link to economic development. Those supporting the idea of tourism contribution to economic development base their argument on the fact that tourism provides foreign earnings, creates jobs and income and increases government revenues. However,

it is argued that although tourism generates all those benefits, it is only powerful national and multinational groups that benefit from it (Aguayo *et al*., 2003). These multinational groups include hotel companies, travel operators and foreign investors. These groups benefit from tourism as owners of factors of production, and thus the large portion of income from tourism is used to pay for the factors of production. Furthermore, it is argued that tourism involves import-leakages out of the destination country but also repatriation profits for outside owners. In this sense the profits of tourism benefit foreign investors more than the home country that is developing its tourism industry. In the case of hotels and resorts owned by the host country, but developed by means of loans, benefits from the tourism business are diluted out of the host country to pay for the amortisation of the debt contracted for such investment.

As the backdrop to this debate, the World Tourism Organisation (WTO, 1999) estimated that 30% of international tourism expenditure takes place in developing countries. In addition, World Bank studies have confirmed that there is a direct correlation between poverty alleviation and economic growth (Easterly, 2002). In this light, some small economies have chosen tourism development as a deliberate economic growth strategy to accomplish improved economic and developmental performance.

Macroeconomic linkages of tourism in LDCs are expressed in different forms such as the contribution to GDP, increasing government revenues, improving the balance of payment and increasing foreign earnings while also causing the exchange rate to appreciate.

The theoretical rationale for tourism as a developmental strategy emanates from the relationship between exports and economic growth. Mihalic (2002) presents a number of advantages that tourism has in comparison to the typical export of goods and services:

(1) Tourism is based on natural, cultural and social attractions that cannot be substituted and that are valued at a premium through tourism. Many LDCs are blessed with these tourism attractions.
(2) Local products sold to tourists are more cost-effective to sellers than exporting the same products where extra transport and insurance costs will be involved;
(3) Certain perishable produce can only be sold to tourists in the domestic market because of lack of sufficient export capability and international marketing expertise in many LDCs (Mihalic, 2002).

The development of tourism cannot be discussed in LDCs without emphasising the important role the sector plays in small islands developing states (SIDS). A study by Juan *et al*. (2004) indicates that the tourism sector contributed significantly to the economic growth of SIDS. In 2003, tourism generated an income ranging between one to three quarters of the exports revenues of SIDS. Furthermore, Benavides (2004) argues that proper linkages of tourism and the rest of the economy have made countries such as Mauritius, Maldives, the Dominican Republic and Caribbean islands popular emerging tourism destinations.

Noelia (2003) and Aguayo *et al*. (2003) highlight the case of Latin American countries with regard to tourism development. According to Noelia (2003), the tourism sector in Peru generated a revenue that is above 12% of the exports revenue in 2000. In 2002, the sector contributed more than US$ 5 billion to the Brazilian economy while in 2003, tourism represented 65% of the services account in the Argentina's balance of payments (Aguayo *et al*., 2003).

Empirical evidence shows that tourism is performing reasonably well in some developing countries. Since the 1990s Southern Africa has become an important international tourist destination. Report from the WTO (1999) indicates that Southern Africa is the leading region among the fast-growing tourism destinations in the world. The tourism market in this region is specialising in nature-based tourism (Poonyth *et al*., 2001). This tourism attraction in Southern Africa is developed around cultural attractions, national parks, game reserves and other

protected areas containing world-renowned wildlife, biological diversity and other natural attributes (Poonyth *et al.*, 2001). Tourism in Southern and Eastern Africa and in the Caribbean relies on the exploitation of environmental resources as mentioned above. Kenya and Tanzania in Eastern Africa are visited by tourists for their abundant and diverse wildlife (Marekia, 1991). These resources contribute a lot to the economic development of these countries. However, Dixon *et al.* (2001) cautioned that natural resource-based tourism calls for sustainable environmental management to mitigate any adverse pressures on the fragile ecologies.

Using Botswana as an example of tourism development, Mbaiwa, (2002) shows that Botswana's tourism sector has developed considerably since its independence in 1966. During the independence period the performance of the tourism sector in Botswana was hardly observed. However, by 2002 tourism has performed so well that it has become the second largest economic sector after the mineral (diamond) sector. In the past few years tourism has contributed 4.5% of Botswana's GDP and has employed over 10,000 people representing 4.5% of the total formal employment. In the light of the above the Botswana Government has declared tourism as a new engine for growth that needs support to diversify its economy. The main tourism activity in this country is located in the Okavango Delta. Over 90% of the 122,000 people living around the Okavango Delta depend directly or indirectly on natural resources found in the delta (Mbaiwa, 2005).

Considering the macroeconomic impact of tourism in other LDCs, Crompton and Christie (2003), Turpie *et al*. (2004), WTO (2005) and Zucker (2006) attribute the role of tourism in economic growth to tourist spending in the local economy. In their study, Turpie *et al.* (2004) report that recent estimates for the Namibian economy confirm a total turnover of the equivalent to US $ 3.531 million and total value added of US $ 282.504 million in 2004, equivalent to about 4% of the GDP. This turnover makes possible the running of over 2200 tourism-related businesses dominated by the accommodation sector which represents two-thirds of such businesses. Crompton and Christie (2003) also believe in tourism as a contributor to the GDP. They report however that tourism contribution to GDP

might be underestimated depending on the method used to estimate this contribution. It is worth mentioning that some activities from other economic sectors which benefit from tourism linkages are often not taken into account when assessing tourism statistics. For instance, photo and telephone services that tourists use outside their hotel accommodations rarely appear in the tourism accounts. Crompton and Christie (2003) give an example of the Dominican Republic to illustrate this case. They report that tourism in the Dominican Republic accounted for 4% of GDP in 1998 while taking into account only the revenue from hotels and restaurants. Using Tourism Satellite Account (TSA) with the help of WTO and UNDP, tourism expenditures in the Dominican Republic amounted to 20.5% of GDP in 1998. A similar case of the underestimation of the contribution of tourism to the GDP was observed in Senegal for the year 2000.

While this is perceived as a positive impact, some authors consider the tourism sector as a threat to other economic sectors. Sahli and Nowak (2005) and Williams (2003), argue that the development of tourism is only achieved at the expense of other sectors such as agriculture. According to them, if resources are allocated to tourism, they cannot be available to other sectors as well. For instance, people working in tourism cannot work in agriculture at the same time; money invested in tourism cannot be used to develop other sectors such as health. This however does not apply to tourism only. In reality this applies to other sectors as well. It is worthwhile mentioning that in LDCs, the factors of production are rarely utilised to their full capacity for tourism development to be regarded as a threat to the development of other economic sectors. This issue is further investigated in the next chapter of this study dealing with 'The Dutch Disease' theory.

In line with literature supporting tourism positive impacts, the WTO (2005) indicates that international tourism growth rate exceeds the GDP growth rate. The WTO study finds that the growth of GDP was positively correlated with the growth of tourism. It is argued that in years when world economic growth exceeded 4%, this was a result of an increase in the growth rate of tourism above

the GDP growth rate (WTO, 2005). The same trend was observed when the GDP growth rate declined; the tourism growth rate was even lower. During the period of 1975-2000 when the world GDP grew at a rate of 3.5%, the growth rate of tourism was 1.3 times faster than that, representing an average of 4.6% per year (WTO, 2005). To support this, the case of Mauritius can be illustrated. Owing to the development of tourism, the Mauritius economy has improved moving from that of a poor country in 1968 to one of a middle income country in 1997. During this period of expansion the GDP per capita grew from US$ 219 to $ 3543 respectively in 1968 and 1997 (www.intnet.mu/iels/eco_mau.htm).

With regard to LDCs, UNEP (2002) disagrees that tourism contributes to economic growth. The argument is that tourism in LDCs involves many costs that have a negative impact on the economic growth of a host country. UNEP (2002) emphasises the fact that a "large-scale transfer of tourism revenue out of the host country faces LDCs". Import leakages can seriously affect tourism performance as regards economic development. According to Aguayo *et al*. (2003), Benavides, (2001) and WTO (2004), countries with limited factors' endowments and poor quality goods and services are exposed to import-related leakages. In their findings, Aguayo *et al*. (2003) reveal that for most developing countries, leakage in tourism is estimated on average to range between 40% and 50% of gross tourism revenue for small economies and between 10% and 20% for the more advanced developing nations. They mention, however, that import-leakages in developing countries are less in tourism than in other economic sectors. Therefore, despite these leakages, tourism in LDCs is better off than many export-oriented sectors, which suffer immensely from market distortion.

Looking at income and employment in the tourism sector as macroeconomic aggregates, literature on this subject suggests that tourism qualifies as a highly labour-intensive sector with spill-over effects into other economic sectors. Referring to data from the world tourism organisation, tourism has created around 214 million jobs in 2002 all over the world (Sahli and Nowak, 2005). In their study on tourism in Senegal Crompton and Christie (2003) find that in 2000,

hotels created 12,000 direct jobs. In addition to those direct jobs 18,000 indirect jobs were also generated. These estimates of 30,000 employments (direct and indirect) in Senegal represent 14% of the total remunerated employments in the whole country. The level of indirect employment as observed by Crompton and Christie (2003), Hardy *et al*., (2002) and Williams (2001) depends on the strength of linkages between tourism and other economic sectors. If there are strong linkages between tourism and other sectors, then the level of indirect employment generation will be big. Conversely, if there are weak linkages, the indirect effects will create few jobs. While authors such as Townsend (1997) accuse tourism for creating low level, part-time and unskilled labour, Crompton and Christie (2003) argue that tourism offers what they call 'good jobs'. They argue that physical working conditions in tourism are healthier, more pleasant and safer than in many other economic sectors such as mining, agriculture, fishing and manufacturing. The pay is also relatively good especially for jobs of waiters, drivers and tour guides where the pay is supplemented by tips. Using the same line of argument, Chao *et al*. (2005) valorise the contribution of tourism in reducing unemployment, especially for countries faced by repeated downturns in their traded-goods sector in times of recession. They illustrate this with an example of Hong Kong where tourism has played a significant role in reducing unemployment. The reform and transfer of manufacturing processes to China in the past two decades has engendered unemployment of unskilled workers in Hong Kong. In 1997 and in 2003 the Asian financial crisis and SARS (Severe Acute Respiratory Syndrome) outbreak respectively worsened the situation in Hong Kong and unemployment reached 7%. However, since April 2003, China has encouraged people from selected cities to visit Hong Kong and about 4 million Chinese responded. This visit has resulted in an increase in tourism income in Hong Kong. It has also created jobs and has considerably reduced the country's unemployment level.

According to Juan *et al*. (2004), the fact that tourism creates both skilled and unskilled jobs is not necessarily a sign of prosperity. For these authors what is needed is for tourism to employ skilled labour in order for the sector to expand and develop. Without skills such as language communication, catering,

hospitality, transportation and management, it is difficult to expect the sector to yield tangible results. One can argue that although education is important in tourism as in any other sector, tourism is more open to semi-skilled people than in many other sectors. However, one must agree that a certain level of education is required for tourism to develop.

Peypoch, Robinot and Solonandrasana (2006) argue that tourism has a negative impact on employment. According to them, the kind of jobs generated in tourism is mostly part-time, seasonal and above all, low-skilled. Although this might sometimes be the case, we know that low skilled people need an income to survive. Besides, if tourism can accommodate this category of workers, it should be perceived to be having a positive impact on society. In developing countries where the majority of people live in poverty, these part-time, seasonal and low-skilled jobs in tourism are much sought after because they give hope to many households and are the main or second income generator. A research by Holecek (2005) finds that tourism employment is not given enough credit because of underestimating the effects of the employment generated in the sector. He argues that in Michigan, for example, tourism is regarded as a low-quality job or low-earning industry. This was a result of considering only low-skilled workers without taking into account people who ran the tourism business (in many cases qualified and earning a lot of money).

In a recent study, Chao *et al*. (2005) provide a comprehensive analysis of tourism and labour. Using a dynamic general-equilibrium framework, the authors have examined the short and long-term impacts of tourism on employment, capital accumulation and resident welfare for an open economy with unemployment via wage indexation. Their findings reveal that with tourism expansion, there is increase in labour employment and an improvement in terms of trade. However, their study also finds that this positive impact is accompanied by capital de-accumulation if the non-traded tourism sector is more labour-intensive than other traded sectors. Nevertheless, they indicate that the reduction in capital stock will depend on the degree of factor intensity. If, for instance, the traded sector is not

strongly capital-intensive, the decrease in capital would not significantly affect the economy and benefits from tourism will remain. On the contrary, if traded sectors are predominantly capital-intensive, the boom of tourism will lead to de-accumulation of capital and have negative impact on the economy and residents' wellbeing. This is also linked to the Dutch disease theory whereby a booming sector such as tourism can lead to the shrinkage of other export sectors.

Although tourism is considered to be an important income and employment generator, Garín-Muñoz (2004) finds that the impact of tourism on these two macroeconomic variables depends on the existence of the appropriate surplus resources within the economy. In the author's view, airport capacity, for example, must be sufficient enough to satisfy additional demand of incoming and departing tourists. He argues that for tourism to impact effectively on income and employment, hotels need necessarily not be fully occupied to allow for accommodating extra tourists. The same goes for available labour with appropriate skills that will be needed for increased demand of tourist services. His argument goes as far as stating that if there is no surplus capacity, should there be a high seasonal demand, the increased demand would only increase prices and wages instead of real income.

Another macroeconomic variable that influences tourism development is the exchange rate. International tourists are much concerned about the price of foreign currency. As far as tourist expectations are concerned, a relatively cheaper foreign currency, ceteris paribus, means more foreign services are affordable. Some researchers have revealed that many tourists base their decision on the exchange rate rather than looking at the relative inflation rates (Adenauer *et al*., 1998). The reason for this could be ignorance regarding the inflation rates.

3.5. Conclusion

The chapter has explored the mechanisms through which tourism contributes towards economic growth and the macro-level (development outcomes) consequences of expanding this sector. We have examined these dynamics in the context of underdeveloped economies. It was found that tourism contributes to economic development of LDCs with a positive impact on income and employment. Both microeconomic and macroeconomic linkages attached to tourism helped the sector to perform well. At micro level, tourism was seen to have contributed to the economic development of LDCs in different ways. It was observed that tourism influences people's wellbeing either directly or indirectly through its multiple sectoral linkages. It is linked to various firms which operate in sectoral organisations with a specific structure. Tourism in LDCs was found to be the consumer and the supplier of many services from and to individuals, firms and other organisations, either governmental or private. In that sense, individual human beings play an important role in maintaining or destroying the natural environment on which tourism is based. It is therefore necessary to include them in any programme of conserving the nature in order to preserve the quality of tourist products. Furthermore, with regard to environment conservation, tourism was found to be less destructive than other industries such as oil extraction, agriculture logging and cattle farming.

Moreover, this chapter has demonstrated that tourism is linked to macroeconomic aggregates by its contribution to GDP, foreign earnings, job creation and income generation. From this study, it was found that tourism is an option for improving LDCs economic growth. However, some studies have attributed some adverse effects to tourism development, the most crucial being the shrinkage of other economic sectors. In the next chapter, we explore the consequences of tourism development with regard to other primary sectors. The chapter analyses the case of Dutch disease and natural resource curse in tourism. These economic theories behind tourism development are explained and analysed in the context of LDCs.

CHAPTER FOUR
ECONOMICS OF TOURISM BOOM: THE DUTCH DISEASE AND NATURAL RESOURCE CURSE

4.1. Introduction

In the previous chapter, we surveyed an extensive body of international evidence on the economic development benefits and costs perceived to be attached to tourism. Many LDCs develop their natural, cultural and heritage attractions with the aim to improve economic growth and the wellbeing of its people. Tourism creates jobs and generates income for many households. It brings in foreign earnings to the host country and improves its balance of payment in the short run. Despite those benefits however, a sudden boom of the sector can negatively affect other sources of income that mainly deal with exports in the long run. It is through the exchange rate appreciation that tourism brings other sectors to shrink because they become less competitive on international scene.

Even though international tourism has played and continues to play an important role in many economies, its responsibility in the overall growth performance has been neglected in economic literature. Most of the literature on tourism economics (Sinclair, 1998; Sinclair and Stabler, 1997; Tisdell, 2000) has been focussing on the short run benefits of tourism ignoring the long-run growth consequences of specialising in tourism. Many governments are promoting tourism-related investments based on the evidence that tourism affects economic growth in a positive way and indeed, in short-run, these economic impacts are visible (Brown, 1998; Curry, 1990; Hampton, 1998; Martin de Holan & Phillips, 1997; Sharpley, 2003). Countries that have specialised in tourism have known faster growth than other economies (Brau *et al.,* 2003; Neves-Sequeira & Campos, 2005). This is in line with Ricardian theory that postulates the increase in efficiency and production through specialisation. In that sense, countries endowed with natural resources

such as beaches, cultural and heritage attractions, natural attractions, etc. have a comparative advantage to specialise in tourism. While it is relevant to discuss tourism positive impacts on economic development, it is not good enough if we cannot raise the side effects that may occur as tourism develops in the long run.

Tourism boom brings increased revenue to the country specialising in tourism just as a boom of raw material exports. Any favourable market that is emerging stimulates production, labour and capital. These production factors are used at the expense of the less performing sectors (such as agricultural and manufacturing sectors in most cases) to benefit the service sector, tourism in this case. The consequences are that less emerging sectors will decline and impact negatively on the economic growth. This phenomenon is known in economic literature as "Dutch Disease". Although specialising in tourism guarantees improved economic scenarios in the short-run, it bears risk of a sluggish development in the long-term. It is therefore important for countries to consider these case scenarios and plan accordingly if they target a long-term economic development. As Capó *et al.,* (2007) stipulate, most economists are not considering the diminishing importance of the tradable sector and see this phenomenon as a simple economic adjustment to an increase in wealth. Their behaviour is based on the international trade theory where a country must centre their efforts on commodities that have a high market demand but also a comparative advantage over its competitors (Capó *et al.,* 2007). However, to other authors, the diversion of resources away from the manufacturing sector raises a matter of concern because it negatively affects the growth potential by reducing sources of productivity growth (Torvik, 2001; Van Wijnbergen, 1984).

The rest of this chapter is organised as follows. Section two of this chapter presents a general overview of the Dutch Disease theory. In section three, the Dutch Disease in case of tourism boom is presented and illustrated. In section four, tourism and the Dutch Disease is discussed in the context of LDCs. In section five, natural resource curse theory is examined. The last section concludes the chapter.

4.2. Overview of the Dutch Disease theory

Dutch Disease is an economic theory that explains the relationship of two sectors: a booming sector and a lagging sector. The Dutch Disease theory was first used in 1977 to explain the decline in the manufacturing sector of the Netherlands, following the discovery of natural gas in 1960 (Wikipedia, n.d). The theory states that, following an increase in revenue from natural resources; the country's real exchange rate will appreciate therefore, causing the manufacturing sector to be less competitive. The Dutch Disease theory is not limited to only natural resource discovery but can also apply to any development that induces large inflow of foreign currency.

Since the use of the Dutch Disease theory to illustrate the case of the Netherlands, any country faced by adverse structural changes due to sectoral booms was referred to as experiencing a Dutch Disease. The theory illustrates real exchange rate appreciation but also the shrinkage of the tradable export sectors. In literature on the Dutch Disease theory, different results have been observed as regards countries experiencing sectoral booms. In the study on Botswana, Harvey (1992) found that the extra gains from the export of diamonds in Botswana were not associated to Dutch Disease. The simulation done by Benjamin *et al.* (1989), using the computable general equilibrium (CGE) model of Cameroon reveals that the agricultural sector was likely to suffer from the boom in the oil sector while some parts of the manufacturing sector would benefit from the boom. Briefly, in this case, the booming oil sector did not necessarily affect the non-oil tradable sectors. Using an econometric model of real exchange rate behaviour in Sri Lanka for the period 1974-1988, White and Wingaraja (1992) observe a direct link between total aid and remittances and real exchange rate appreciation. According to these authors, increased aid flows have caused the real exchange rate to appreciate in spite of the depreciations of the nominal rate. This appreciation of the real exchange rate was due to the performance of the manufacturing sector, confirming the Dutch Disease theory.

Applying this theory to the development of a service sector such as tourism, it can be argued that a premature expansion of the service sector can have Dutch Disease effects and lead to de- agrarianisation but also to de-industrialisation for countries depending on agriculture and industry for exports. Given that tourism involves a flow of foreign earnings coming into the host country, this study has internationalise the tourism and made it a service export sector. In this sense, it is observed that a large flow of foreign currency brought in a country can lead to the appreciation of its exchange rate and cause the traditional export sector to be less competitive on international markets.

Using the CGE model in the analysis of the impact of foreign capital on macroeconomic performance of Sri Lanka, Bandara and Jayatilleke (1995) found no support for the Dutch Disease theory. Their findings indicate that some tradable sectors might expand despite the appreciation of the real exchange rate. The conclusions from these findings were shared in the findings of Benjamin *et al.* (1989) mentioned above in the case of Cameroon. Considering the diversity of results on various countries' experiences with booms, it follows that country-specific circumstances and policies may influence the impact of the booming sector in one way or another.

4.3. Tourism and the Dutch Disease theory

The tourism sector is composed of goods and services consumed mostly by non-local residents. In some economies, tourism, as mentioned earlier, is regarded as a major source of economic growth. It involves the consumption of goods and services with unique characteristics. Hazari and Sgro (2004) attribute a special character to tourism of transforming non tradable goods and services into tradable goods and services through foreign tourists visiting the country and consuming those goods and services. The mobility of goods and factors does not apply to most of tourism goods and services since the latter are sold and consumed locally.

Although there is a growing interest of countries using tourism as an engine of economic growth for the long term and as a source of export earnings in the short term, tourism has received little attention in available literature on trade and development (Luzzi and Fluckiger, 2003). In the few studies on the effects of tourism, Copeland (1991) found that initially tourism goods are mostly non-traded goods. He indicates that tourists consume local amenities, heritage and culture, restaurant foods and nightlife experience and shopping opportunities, which constitute non-traded goods and services. The expansion of the tourism sector will tend to raise the demand for those goods and increase their prices. Under such circumstances, the production of such goods will increase at the expense of the traditional traded export goods especially in the manufacturing sector. Therefore the boom in the tourism sector is said to lead to the de-industrialisation of the traded sector (Copeland, 1991). Under perfect competition and full employment, sectoral losses and gains in output counterbalance each other, but tourism still benefits from the terms of trade improvements (Chao *et al.*, 2005). In the static model, Copeland (1991) argues that in the absence of market distortions, an increase in tourism may generate more benefits.

Using a one-good dynamic model, Hazari and Sgro (1995) found that an increase in tourism lessens domestic capital accumulation but at the same time increases domestic consumption and welfare. Nevertheless the resource reallocation of tourism effect was not examined by these authors due to the one-good economy model used. In another study by Nowak, Sahli and Sgro (2003), results show that using a three-sector general equilibrium framework, a boom in tourism can lead to a decrease in the manufacturing output and welfare. Using the same line of argument, Hazari *et al.* (2003) have considered a four-goods model and their results found that urban tourism always ameliorates urban welfare while the effect on rural welfare is not precise. Conversely, rural tourism was found to improve both rural and urban welfare.

A study by Chao *et al.* (2005) indicates that tourism expansion results in an increase in the price of non-traded goods, therefore inducing a gain in revenue.

Given that tourism turns non-traded goods into exportable goods, the rise in the price of the goods is regarded as an enhancement of trade conditions. However, the increase in the price of non-traded goods results in diverting resources from the manufacturing sector to the rest of the economy. As a result, there is a decrease in the demand for domestic capital and capital accumulation. This diminishing of capital negatively affects the manufacturing sector, therefore causing the Dutch Disease and de-industrialisation. The Dutch Disease, identified in the study of Chao *et al.* (2005), arises from a demand shock from a tourism boom, while in the case of discovery in natural resources, the Dutch Disease comes from the supply shocks. In many LDCs where agriculture is the main source of income, the development of tourism is likely to affect the performance of agriculture. In this case there would be de-agrarianisation resulting from a boom of the tourism industry.

4.3.1. Dutch Disease model: an illustration

In the Dutch Disease model, a resource boom will affect the economy in two ways (Nkusu, 2004). Firstly, in the case of resource movement, the resource boom will increase the demand for labour. This increase in labour demand will induce high production in the booming sector, leaving behind the lagging sector. This labour movement from the lagging sector to the booming sector is called direct de-industrialisation. Note however that this effect can be negligible in sectors employing few people such as in the mineral sector. Secondly, because of increased revenue generated by the booming sector, increased spending will occur in the non-tradable sector. This spending effect will call for an increase in labour in the non-tradable sector, causing a shift in labour away from the lagging sector. This shift from the lagging sector to the non-tradable sector is known as indirect de-industrialisation. The increased demand for non-traded goods will raise the price of these goods. Given that the price of traded goods is fixed internationally, the increase in the demand for traded goods will not affect their price but rather result in the appreciation of the real exchange rate (Nkusu, 2004).

A diagrammatic illustration of the Dutch Disease model

The following Dutch Disease diagrammatic illustration (see figure 4.1) is based on the assumptions of full and efficient employment of factors of production, a mobile factor of production that is transferable between sectors as well as a demand that is perfectly elastic. This illustration is presented assuming the case of a small country (Nkusu, 2004).

In the illustration below, we assume an economy endowed with labour forces employed to produce two kinds of goods referred to here as tradable and non-tradable goods. Any resource boom (assuming tourism in this case) resulting in a large inflow of foreign currency into the country will increase the expenditure on both tradable and non-tradable goods. It will influence the real exchange rate and cause it to appreciate in most cases. In the figure below, the country's economy produces at *E* on the production possibility frontier (*PPF*) and consumes at this point *E* where the indifference curve (*ID*) meets the *PPF* in the lower-right quadrant. In the two upper quadrants, the market for tradable and non-tradable goods is illustrated. In the hypothesis of a small country, the demand (*DT*) is perfectly elastic. At point *A,* where the supply of tradable goods (*ST*) and the demand for tradable goods (*DT*) are equal, the initial trade balance is zero. In the upper-right quadrant, the initial equilibrium in the market for non-tradable goods is at point *G*. An increase in the demand for non-tradable goods caused by financial inflows is reflected in an upward shift in the demand for non-tradable goods (*DNT*) and a rise in their price moving from point *G* to *G′* in the upper-right quadrant.

The fixed price of tradable goods, at *PT,* and the appreciation of the real exchange rate discourage the production of tradable goods, thereby resulting in the spending effects. The resource transfer effect and the expenditure-switching effect are the two other effects associated with the appreciation of the real exchange rate in the Dutch Disease theory. The resource transfer effect stipulates the movement of labour from the traditional tradable sector (agriculture in this case) to the booming

non-tradable sector (tourism) due to a rise in the marginal product of labour used in the non-tradable sector. In our diagram, the resource transfer and the spending effects are reflected by the move from point *E* to *E'* on the *PPF* in the lower-right quadrant. The same move is observed in the upper quadrants where there is a shift to the left from *ST* to *ST'* of the supply plan of tradable goods. Likewise there is a shift to the right of the supply of the non-tradable sector moving from *SNT* to *SNT'*.

The expenditure-switching effect is reflected in the discouragement to purchase non-tradable goods caused here by the real exchange rate appreciation. Assuming that both tradable and non-tradable goods are not inferior goods, the rise in the relative price of non-tradable goods together with the upward shift in real income from *Y* to *Y''* resulting from the financial inflows, lead to an increase in the demand for tradable goods from *OTQT* to *OTQDT*. This move is justified by the high level of consumption at *E''*, on the indifference curve *ID'*. The decrease in the production of tradable goods, coupled with an increase in consumption at the given world price causes a deterioration of the trade balance represented in our graphic by the portion *A'A''* in the upper-left quadrant.

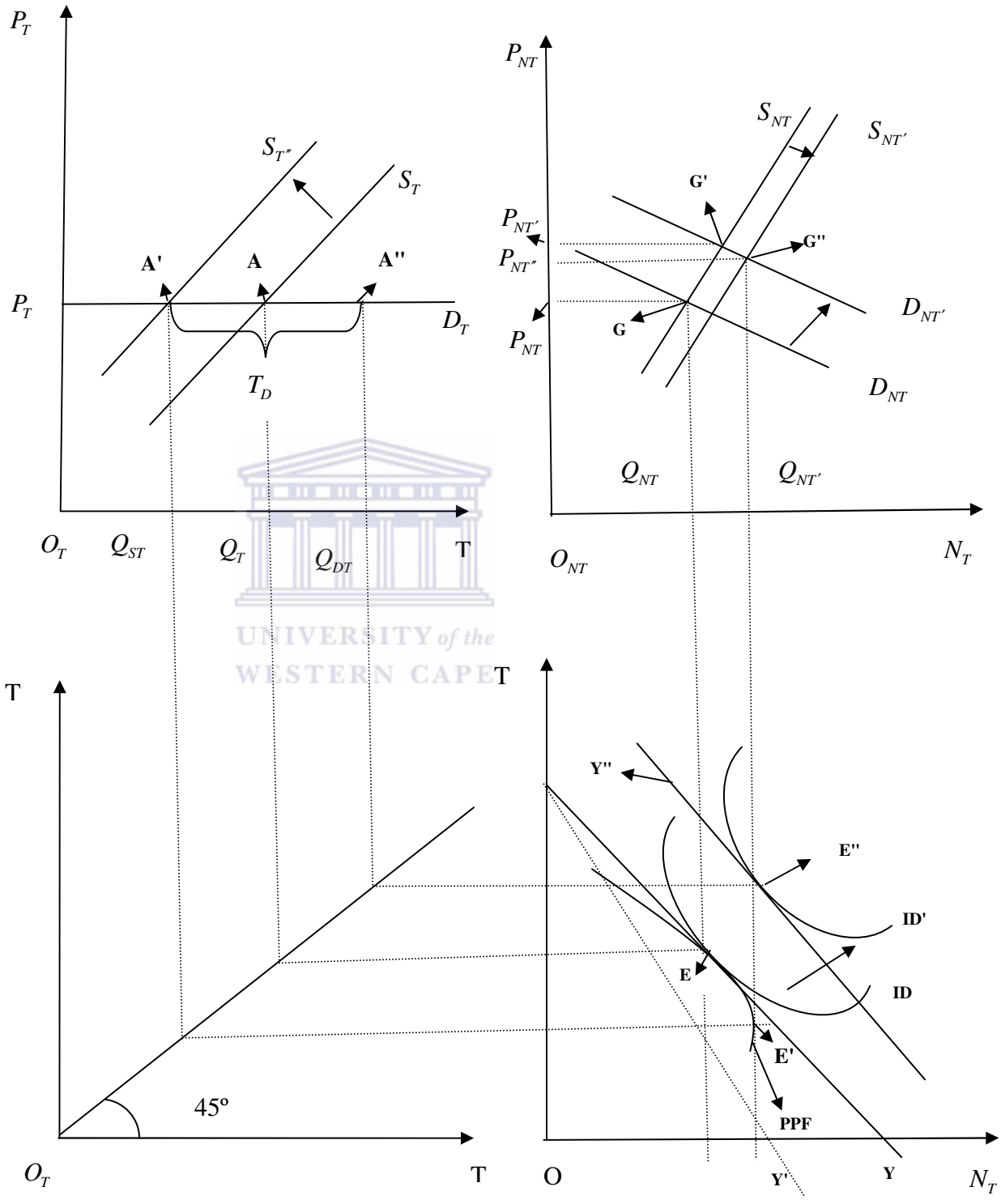

Figure 4.1. Diagrammatic illustration of the Dutch Disease model adapted from Nkusu (2004)

From the illustration above it is observed that the booming of the tourism sector is accompanied by the shrinkage of the primary sector. In the next section, the Dutch Disease theory is explored in the context of LDCs.

4.4. Dutch Disease theory in the context of LDCs

As regards the Dutch Disease theory, it is not all countries that have a booming sector that observe a simultaneous shrinkage of another primary sector. There are distinguishing features of many LDCs that differ from the assumptions of the Dutch Disease theory (Nkusu, 2004). As has previously been seen, it was assumed that economies produce on their *PPF,* which assumes the full and efficient use of factors of production including labour. However, many LDCs are known to suffer from high structural unemployment and inefficient use of present factors of production. The assumption of small countries producing domestically importable goods does not stand for LDCs. In line with this assumption, the Dutch Disease model states that given the exogenously fixed price, an increase in wages caused by a booming non-tradable sector will result in disincentives to produce tradable goods. Therefore this analysis in the Dutch Disease theory can arise from the disaggregation of the tradable items into importable and exportable goods. The extent to which the sub-sector of importable goods will include raw materials and import-competing manufactured goods will hinder this sub-sector and will result in the de-industrialisation. However, given the imperfect substitutability between the manufactured goods produced locally and imported goods in LDCs, the Dutch Disease theory would not apply for these countries. This imperfect substitutability in LDCs stimulates manufacturers to raise the prices and to increase supply to respond to the increased demand without considering if they use domestic or imported inputs. It follows that manufacturers using a large amount of imported inputs will benefit from the relative appreciation of domestic currency because part of their domestic costs of production will be subdued (Nkusu, 2004). The degree of complementarity between domestic and imported inputs will encourage suppliers of domestic inputs to produce more, responding to an increase in the demand of local inputs. Depending on the price elasticity of the supply of inputs and the demand for goods, firms using a sizeable amount of

domestic inputs can also benefit and expand by increasing the demand for inputs and supply of goods to respond to higher prices.

Considering the Dutch Disease theory and the intersectoral effects of resource booms, it is observed from literature on the subject that there are cases where resource booms retard growth and cases where resource booms are not a threat to development. In the first case, Sachs and Warner (1999b) explore the effect of a resource boom on the big push. Their findings reveal that resource booms increase returns to scale in one of the two sectors of the economy (tradable and non-tradable sectors). The increasing returns reflect the use of intermediate inputs in the production process. In the Grossman and Helpman (1991) model, under a monopolistic competition situation, a range of new products are either invented or imitated from abroad. This model investigates if resource boom can contribute to big push industrialisation. As mentioned earlier, a resource boom contributes to the expansion of the non-tradable sector while shrinking the tradable sector. However, the Grossman and Helpman model stipulates that if the non-tradable sector uses intermediate inputs, it can contribute successfully to the big push industrialisation. In addition, if it is the shrinking tradable sector that uses intermediate inputs, a successful big push is less likely to happen.

The theoretical implication of the Dutch Disease for this study is that a country depending on its primary sector for exports earnings is likely to face problems with a sudden boom of its service sector such as tourism. The service sector in this case will develop at the expense of the primary sector because the increased foreign earnings received from tourists will expand the sector but at the same time appreciate the real exchange rate. Because the prices of traditional export goods (such as agriculture tradables) are fixed internationally, the appreciation of the exchange rate will reduce the revenues from this traditional sector and make it less competitive on international markets. As a consequence, its contribution to GDP will be lessened while that of the service sector such as tourism will take over because it is not affected by international prices given the nature of tourism products.

4.5. Tourism and natural resource curse

Natural resources refer to country's endowment with resources that are not man-made such as oil reserve, natural forests, wildlife, gas, mine and many more. The natural resource curse study has stimulated many researchers in the 20th century such as Auty (1990); Gelb (1988); Sachs and Warner (1995, 1999); and Gylfason *et al.* (1999). In the study of the above authors, there has been a general tendency to find that countries rich in natural resources perform badly with regard to economic growth when compared to countries with limited natural resources. The natural resource curse emerged in the 20th century when resource-rich countries experienced a poor growth after the World War II. In the post war period, Latin American economies suffered from a global slump in the price of commodities, and this was a worrying situation where, despite natural resources owned by these economies, the forecasts showed a decline in the demand and prices. Despite controlling the trends in commodity prices, the post-war experience showed that the curse of natural resources was a fact, as it was observed that many poor countries were rich in natural resources but yet remained poor. It is therefore important to know the root causes of such a situation, since it is a contradictory situation where a country experiences poor growth while owning natural resources that are supposed to help the country develop.

Although there is no bullet proof as for the curse of natural resources, the empirical experience is quite confirming the situation of the curse of natural resource. Casual observation proposes that there is virtually no overlap in the set of countries endowed with large natural resources and the set of countries with high levels of GDP. It has been observed that there are many countries that possess natural resources for a long time but that have remained poor (Papyrakis and Gerlagh, 2003). The question that arises is whether natural resources contribute to economic development or not? Under normal circumstances, it should be expected that resource-rich countries would be economically better off than the less rich countries with limited or no resources at all. In reality, however, this correlation between natural resource and economic wealth is not always

positive. For instance, countries with extremely abundant natural resources such as the Oil States in the Gulf, Nigeria or Mexico and Venezuela have not experienced sustained rapid economic growth (Sachs and Warner, 2001; Papyrakis and Gerlagh, 2003). Empirical studies focussing on growth have confirmed the evidence of natural resources curse. Using growth data from post-war period, repeated regressions have concluded that resource intensity tends to correlate with slow growth (Papyrakis and Gerlagh, 2003). However, countries such as Malaysia, Mauritius and Iceland were exceptions to this general tendency of slow growth associated with natural resource abundance in the empirical studies of the above authors.

Some explanations have been given to explain the reasons of the curse of natural resources. According to Sachs and Warner (1995, 1999); Sachs (1996), the positive wealth shocks resulting from natural resource sector together with the consumer preferences increase excessively the demand for non-traded products. This excess demand of non-traded goods increases their price including the costs of inputs needed for non-traded products and wages. This, in turn, stimulates sectors, such as manufacturing, to turn their interest in producing traded-goods for international markets with relatively fixed prices. The decline in manufacturing of non-traded goods has a negative impact on the growth process.

Other explanations to the curse of resources are that export sectors in resource-abundant countries tend to be uncompetitive. Empirical evidence further suggests that export-led growth is rarely successfully observed in resource-rich countries (Sachs and Warner, 2001). Gylfason *et al.* (1999); Gylfason (2000) extend their explanation to other variables significant to growth. To them, if wages in the natural resource sector are high enough to attract potential entrepreneurs and innovators into the sector, there is a high risk of crowding out the entrepreneurship and innovation spirit in the economic system. Furthermore, it was observed that since natural resource rents are strong and effortlessly appropriable, government officials in resource-abundant countries are tempted into rent-seeking and a probable corruption rather than focussing on pro-growth

activities (Sachs and Warner, 2001; Torvik, 2002; Papyrakis and Gerlagh, 2003). Therefore, these countries would experience lower entrepreneurship, lower innovation, poorer government and lower economic growth.

Furthermore, savings and investment habits were less observed in rich-natural resources countries because of the "instant" wealth provided by those natural resources. The decrease in the need to save and invest impact negatively on other sectors that contribute also to economic growth. It is observed that world prices for primary goods tend to be more unstable than prices for other commodities. The consequence of this is that countries whose economies rely on export of primary commodities would easily shift from boom to recessions. This creates uncertainty for investors in natural resource countries (Sachs and Warner, 1999, Papyrakis and Gerlagh, 2003). Likewise, natural resources were found to obstruct a country's openness with regard to economy and trade. The fact that natural resources reduce the performance of the manufacturing sector leads policy makers to impose tariffs and quotas on imports to protect the domestic producers. Although such measures may be beneficial in the short-run, in the long run it harms the openness of the economy and hinders its integration in the global economy (Auty, 1994; Sachs and Warner, 1995).

Natural resource boom is also linked to the Dutch Disease discussed earlier in that it increases domestic income and generates inflation and overvaluation of domestic currency. Natural resources induce the increase in the relative price of non-traded goods, the deterioration and decline of terms of trade (Sachs and Warner, 1995; Torvik, 2001; Gylfason, 2000; 2001a; 2001b; Rodriguez and Sachs, 1999).

Finally, natural resource booms reduce the necessity for investment in education since the primary sector can expand without a high-quality education. As Gylfason (2001a) contends, if there is a decline in the need for a high-quality education, it follows that returns to education will also decline. This decreases the performance of sectors for which human capital is a vital production factor. Of all the explanations given to the curse of natural resources, corruption, lack of

competitiveness and disincentive to investment were found to be more responsible for the poor performance of economies endowed with natural resources (Papyrakis and Gerlagh, 2003).

It is therefore important for policy makers and development planners to know the consequences attached to the boom of natural resources sector such as tourism and think of measures that could be taken to fully benefit from the sector. This would help economies that are endowed with natural resources to see these as a blessing rather than a curse.

4.6. Conclusion

The chapter has explored the mechanisms through which tourism development can be a curse on development. We have examined these dynamics in the context of underdeveloped economies such as that of Rwanda. Traditionally, these are economies heavily dependent on their abundant natural resources. But natural resource abundance can delay development, retarding income and employment growth.

Furthermore, the chapter has established that a premature expansion of the service sector can have Dutch Disease effects on the traditional export sector. It was found that tourism contributes to economic development of LDCs with a positive impact on income and employment. Both microeconomic and macroeconomic linkages attached to tourism helped the sector to perform well. Nevertheless, it was also found that the development of the tourism sector could lead to the shrinkage of the primary export sector such as agriculture. However, this was likely to happen only in cases where factors of production are fully and efficiently utilised, where there is mobility of factors and where the demand for tradable and non- tradable goods is perfectly elastic. However, the magnitude of tourism must be big to induce the Dutch Disease. It is therefore possible for developing economies such as that of Rwanda to expand their economic growth through tourism development in the short-run. A long-term development will necessitate

measures to control the Dutch Disease in order to benefit not only from the tourism sector but also from other economic sectors. It was also observed that the expansion of the service sector can overtake the traditional export sector with regard to GDP contribution as observed in Rwanda.

The paradox of the curse of natural resource abundance has been widely observed during the past decade. Many countries endowed with natural resources such as oil reserve, gas, or tropical forest, have disappointingly observed a slow economic growth while resource-poor countries were evolving. In the eighteenth and nineteenth centuries, steel and coal reserves helped to achieve the industrial revolution and growth. Even in the twentieth century, some resource-abundant countries such as Norway and Iceland have observed a remarkable and sustained growth. Nevertheless, it was pointed out that natural resources induce growth only under certain conditions. Essentially, countries that are corrupt, with low investments, that are less competitive and apply protectionism measures, and have low standards of education, though rich in natural resources, will not benefit much from their natural wealth.

In the next chapter, instruments that can measure the rising importance of the tourism sector to economic performance of LDCs are developed. In addition, different approaches conventionally used to capture tourism impacts are discussed and their pitfalls highlighted. Specifically, however, the next chapter develops income and employment multipliers to measure the extent to which tourism contributes to economic wealth.

CHAPTER FIVE
INCOME AND EMPLOYMENT MULTIPLIERS IN TOURISM

5.1. Introduction

The previous chapter offered a potential theoretical rationale for the emergence and expansion of tourism and how this process on the broader economic development of LDCs. It was demonstrated that the expansion of tourism was accompanied by the shrinkage of a primary export sector, but that this was not always the case in LDCs given that factors of production in these countries are rarely fully and efficiently utilised. It was found that tourism development in some LDCs was not a threat to the expansion of other sectors unlike what is suggested by the Dutch Disease theory.

In this chapter instruments are developed through which the rising importance of tourism to the economic performance of LDCs can be measured. Because it is through the powerful linkages that tourism impacts on countries' economic system, this chapter discusses the tourism multiplier effects. Specifically income and employment multipliers are developed to measure the extent to which tourism contributes to economic wealth. Conventional models used to estimate tourism multipliers present certain limitations that could be misleading in assessing the results on tourism impacts. Therefore, different approaches and their weaknesses are discussed and an approach that could lead to accurate estimation of tourism income and employment multipliers in LDC context is suggested.

The rest of this chapter is organised as follows: section 2 provides an understanding of the multiplier effects in tourism. In this section, income and employment multipliers are explained and discussed as well as their importance in an LDC context. Factors that influence the size of these multipliers are also discussed. In section 3, instruments for estimating tourism multipliers are developed. In this section different economic models are presented and discussed

together with their pitfalls. In addition, an approach to measure tourism income and employment multipliers in LDCs is suggested. The last section concludes the chapter.

5.2. Understanding the multiplier effects in tourism

Conceptually, the term multiplier effect refers to a change in an economic activity as a result of a change in action in some other sectors (Pao, 2005; Akundi, 2003, Stynes and Sun, 2003). Specifically in tourism, the multiplier effects reflect the final change in output in an economy resulting from the initial change in tourist spending (Ennew, 2003). It is a phenomenon where the effects of tourist expenditure are not limited to companies where the money is directly spent. This multiplier effect is the chain of effects resulting from a change in tourist expenditure (Baaijens, Nijkamp and Van Montfort, n.d). This means that every spending a tourist undertakes in a visited area has an impact (big or small) not only on the final output in the rest of the economy, but also all the way through on the process of spending. Tourism multipliers are central to any measurement of tourism economic impact and are very useful in LDCs.

Literature on the subject distinguishes five different types of tourism multipliers frequently used (Pro-Poor Tourism partnership, 2004; Ennew, 2003). These are: income multiplier, employment multiplier, sales multiplier also known as transaction multiplier, government revenue multiplier and output multiplier. Sales multiplier reflects additional business revenue generated in the economy following a change in tourism expenditure. Government revenue multiplier informs on the impact on government revenue resulting from all sources connected with an increase in tourism expenditure. Output multiplier in tourism reflects an additional output produced in the economy as a result of tourism spending. All these tourism multipliers are important, but in the context of developing countries, income and employment multipliers are of particular interest. This is because the development of tourism in LDCs through income and employment multipliers provides opportunities to these countries to reduce

widespread unemployment and to improve their people's wellbeing. In this study the focus is particularly on tourism income and employment multipliers because of their important role in a LDC context. More details on these two multipliers are presented in what follows.

5.2.1. Income and employment multipliers in Tourism

The tourism income multiplier is referred to as an additional income injected into the economy as a result of an increase in tourism spending (Cooper *et al*., 1998; Song, 2000). The income generated as a result of tourism can take the form of wages and salaries, rent, interest and profits depending on the status of the beneficiary. Likewise, tourism employment multiplier serves to inform on the total number of jobs created by an additional unit of tourist expenditure.

Tourism income and employment multipliers are useful information tools in this study, not only because they provide details of tourism impacts (direct, indirect and induced), but also because these two aggregates are important in a developing country such as Rwanda. Many LDCs are characterised by a high rate of unemployment and many people living in poverty. It follows that investing in a sector such as tourism, which is highly labour intensive, will help the developing country to reduce the level of unemployment. Also the extent to which tourism creates income is of great importance in a LDC context because it reveals the degree of wellbeing of local residents brought by tourism development in the area.

The effect of tourism on income and employment generation is observed at three different levels (Carstensen, 2003; Burress, 2003; Pao, 2005). Tourism creates income and employment directly into sectors that are connected to it in order to supply tourist goods and services. These effects are referred to as direct effects. They are also known as primary effects. Recent literature suggests that direct effect multipliers in tourism translate direct sales (spending) to the income, value added and employment linked with visitor spending in tourism sectors (Ennew, 2003; Sugiyarto *et al*., 2003). According to these authors, direct effects represent

changes in the economic activity resulting from the first round of spending in the tourism industry. In addition to these direct effects, sectors that supply directly to the tourism industry use the income they have received from tourism to buy their inputs from other industries in order to produce and satisfy the demand from the tourism industry. This effect is known as the indirect effect of tourism. It is called indirect because industries in this category do not deal directly with the tourism sector or the tourist consumer itself. A third level of effects are induced effects. Note that the income generated in tourism-related industries is not all used for purchasing inputs to produce goods and services for tourist. A portion of it is consumed by households for their own different needs. In that sense the income from the tourism sector used to purchase other than tourist-related goods and services create induced effects. Both indirect and induced effects are also known as secondary effects of tourism. The same logic is applicable to employment in tourism. This spending affects positively many economic sectors which involve, for example, housing, food and beverages, transport, education and many more goods and services that consumers require. This process of spending and respending generates more sales, income and employment throughout the country's economy (Sugiyarto *et al*., 2003).

In the next paragraph, the multiplier effects in tourism are illustrated graphically, showing the extent to which tourism creates income and employment. The importance of tourism income and employment multipliers in LDCs is also raised.

5.2.2. Illustration of tourism multiplier effects and their importance in LDCs

It is important to illustrate the tourism multiplier effects using the figure below (see fig. 5.1) to better understand how the multiplier mechanism works. The importance of tourism multiplier is also explained in the context of LDCs. Reading from left to right, the figure 5.1 can be explained as follows: tourism is linked to other economic aggregates and creates income and employment at each level. At the direct level, as shown in the figure 5.1, the tourism industry distributes income to businesses in exchange for goods and services bought to

satisfy tourist demands. These businesses employ different people including local residents to produce and supply goods and services to the tourism industry. Likewise the tourism industry itself employs a labour force from households to respond to its clients' needs. In this regard, tourism distributes wages to households in response to the labour offered. Tourism is also linked to government in a direct way. It increases government revenues by paying for tourism-related taxes and fees. These include, among others, airport fees (entry visas), taxes related to tourist consumption of goods and services at their hotel place, on the site, etc. The direct effects reflect the value added or the contribution to GDP resulting from the spending of local and foreign tourists in the local economy (South Africa Foundation, 1999). However, it has to be noted that in addition to tourism products that tourists consume, they also use imported goods such as drinks. Unfortunately, most developing countries are not capable of satisfying all tourists' needs using their local production because of their limited production capacity.

Furthermore, the tourism industry may also import furnishings for the hotels. The money used to import goods and furniture to satisfy the needs of tourism, constitutes a leakage out of the host country. This leakage in most cases comes from capital import or investment spending to satisfy tourists' needs. *"Leakage is the process whereby part of the foreign exchange earnings generated by tourism, rather than being retained by tourist-receiving countries, is either retained by tourist-generating countries or repatriated to them"* in various forms (Diaz, 2001: 168). These leakages could come from different sources (UNCTAD, 2001): imported skills (expatriate labour), import of goods and services, import of technology and capital goods, import of oil, advertising and marketing efforts abroad and the transporting of tourists to their destination country. These leakages constitute foreign earnings that benefit countries other than the tourist host country. At the direct level leakages are represented by the red arrow at the left hand side of the diagram.

In order to supply tourism-related goods and services, government, households and, more importantly, businesses need to purchase their inputs from other sectors, public and/or private. This reflects an indirect effect of tourism expenditure as displayed on the right hand side of the diagram. At this level income is distributed to other businesses, households and governments. Here again some income leaks out of the system for imported inputs. The leakages at indirect level are represented also by a red arrow at the right hand side of the diagram. Households, government and businesses will in turn re-spend the income received indirectly from tourism to buy needed inputs from other suppliers (businesses, government and households). Consequently, the initial impact of tourist expenditure is multiplied throughout the economy.

It is equally important to mention that households, government and businesses are also involved in activities other than tourist-related ones. They use the money received directly or indirectly from the tourism industry to purchase goods and services for their own consumption. This consumption spending gives rise to additional income and employment opportunities in the economy through households, government and businesses. This is an induced effect of tourism represented in the lower part of the diagram. In addition, at this induced level, as for direct and indirect levels, there is a portion of income leaking out of the system as a result of imports.

Undoubtedly then the initial tourist spending can have significant additional effects throughout the rest of the economy. These effects result from increased income and expenditure by a range of different economic agents, many of whom are not directly associated with tourism. The real impact of tourism therefore goes far beyond initial tourist expenditure and reaches the final impact that this expenditure has on the economy.

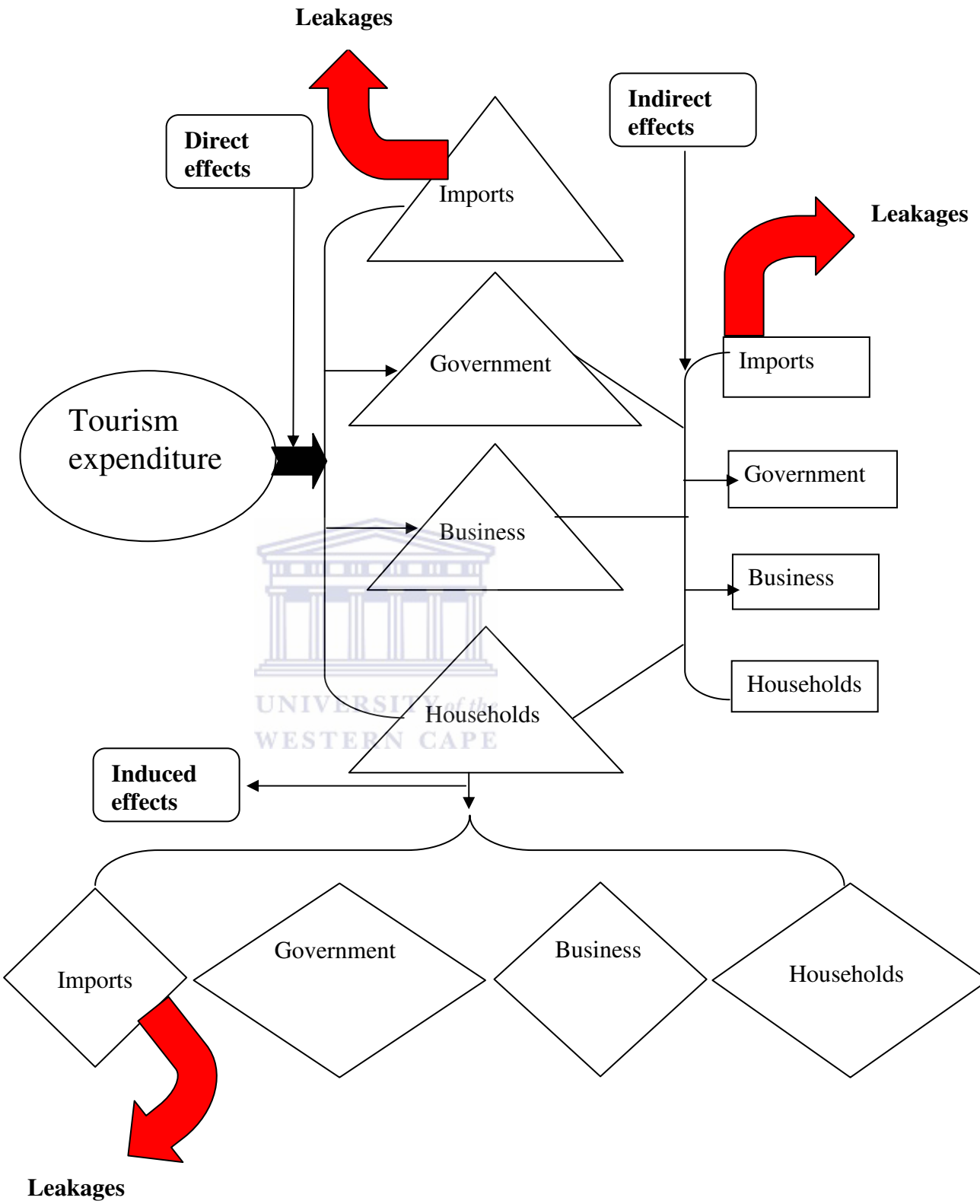

Figure 5.1. Illustration of tourism multiplier effects

In their study, Kweka *et al*. (2003) find that tourism is among the most interlinked sectors in and with the rest of the economy. They indicate that every activity in the tourism sector is connected to other activities in other sectors by forward and backward linkages. For instance, to satisfy tourist demand, the tourism sector will not only need tourism products such as natural attraction and tourism resorts, but will also depend on the transport, agricultural, financial, construction sectors and many others. This brings one to the fact that the tourism sector is an important catalyst sector and that the more developed the sector becomes, the more impacts it will have on other economic sectors as a result of multiplier effects across sectors. Tourism in LDCs gives opportunities to small-scale businesses to develop, including those operating in the informal sector. These opportunities are very important in areas such as agriculture, food processing, transport, distribution etc. Tourism is strongly linked with the informal sector where a large number of less fortunate people get involved. For instance, the presence of street vendors selling handicraft are an example all over the world which can illustrate this case.

Because tourism is a labour-intensive sector, its development can take advantage of using cheap and available local labour in LDCs instead of employing expatriates who, in most cases, are expensive. Tourism can be one of the main sources of income for the majority of African countries. It can support the majority of its population living in poverty by offering them opportunity to employment and to income generation. Tourism can also serve in some cases as a secondary job to supplement income earned in the primary job. The development indicators establish that close to 50% of Sub-Saharan African population depend on less than US$ 1 per day (World Development indicators, 2001). It is important to note that tourism in Africa, more than anywhere else, is based on natural and cultural resources. These assets are among the few that are owned by the poor. So it can be seen that by developing tourism, this not only gives hope to the poor in LDCs, but is also a source of diversification in economic activities of these economies (UNECA, 2003).

However, as observed earlier, tourism is also associated with import-leakages and this has a negative impact on countries' benefits from tourism. In order for LDCs to extract as much benefit as possible from tourism, they need to promote their local production and satisfy as well as they can tourists' demands with locally produced goods and services. Local linkage effects of tourism sector are needed to fully benefit from the sector. But it is important that LDCs tackle a number of constraints that hinder the expansion of their tourism industries such as poor infrastructures, unskilled human capital, leakages and poor linkages. As regard leakages, it was found that the average leakage for developing countries varies from 10%-20% in diversified economies, to 40%-50% in smaller economies (UNECA, 2003). However, it is important to mention that leakage is inevitable. There are inputs that are important in the production of tourist products. For instance, a non-oil country will need to import petrol for its diverse uses. Marketing and advertisement overseas are very important in tourism development and should not be regarded as leakages per se because they help attract tourists and benefit the host country. What is important is for LDCs to define a 'leakage break-even point' depending on their development level, economic structure and type of tourism development envisaged.

5.2.3. Factors influencing the size of tourism multipliers

In the previous section the tourism multiplier effects and their importance in a LDC context was discussed. Emphasis was put on tourism income and employment multipliers. So far the multiplier effects of tourism were discussed theoretically. Empirically therefore it is important to know approaches used to determine the size of income and employment multipliers. It is the size of income and employment multipliers that gives information on the number of jobs created and income generated (potential or actual) by tourism in the rest of the economy. Before discussing models used to estimate income and employment multipliers, this section is reserved to discussing factors that can influence the size of the multipliers.

Although tourism multipliers reflect the level of tourism impact on other economic sectors, the size of these is highly contested among scholars. Theoretically, a big size of tourism multipliers would imply more benefits to the area, and conversely small-size tourism multipliers would reflect fewer benefits to the area. Empirically, however, it is observed that a big or a small size of tourism multipliers can give a wrong interpretation depending on how the multipliers have been determined. According to Stynes (2002) and Burress (2003), big size tourism multipliers are often misused and quoted for political and economic reasons (Burress, 2003) and are a result of inappropriate assessment (Stynes, 2002). Note that an inappropriate estimation of tourism multipliers, whether income or employment, can lead to an overestimation or an underestimation of tourism impact.

In recent studies, Erkkila (2002), Dietzenbacher (2005) and WTO (2005) argue that the size of tourism multipliers can be big depending on the following factors:

Firstly, *big size tourism multipliers depend on the diversity of the region's economy*. On the one hand, they argue that regions with large and diversified economy generate high multipliers because they are able to satisfy most of tourists' demands of goods or services. On the other hand, regions with small and less diversified economies have small multipliers because they are not capable of satisfying tourists' needs given their limited factors of production. It follows in this case that income from tourism activity will leak out of the economy instead of benefiting the host country.

Secondly, a *multiplier size depends on the geographical extent of the region and its role within the broader region*. In this case, all other things remaining constant, larger regions have produced higher multipliers than smaller and isolated ones. Likewise, regions serving as central places for neighbouring areas have more economic activities leading to higher multipliers than remote areas.

Thirdly, *the nature of the economic sectors under consideration determines the size of the multiplier.* Generally, multipliers change across sectors of the economy depending on the use of factors of production such as labour and capital. According to Dietzenbacher (2005), labour-intensive sectors such as tourism tend to have relatively larger induced effects than indirect effects as a result of using more labour than capital inputs. This is understandable since more employed people are likely to increase income in local areas if local businesses are capable of satisfying their demands.

Fourthly, *the year of reference or time period can influence the multiplier size.* Note that a multiplier represents the characteristics of the economy at a single point in time, meaning that multipliers for a region can change over time as a result in change of economic structure and price. For Nelson (2002) and WTO (2005), employment multipliers are more likely to change over time than sales or income multipliers as they are more sensitive to general price inflation.

In addition to the above, other factors influencing the size of tourism income multipliers are discussed (Baaijens, Nijkamp and Van Montfort, 1997).

1. The economic model used: The economic model used to determine the size of the tourism income multiplier could influence it because of the variables defined and used. For instance, models that take into consideration the induced effects give higher estimates of income and employment multipliers than those limiting their assessment to direct and indirect effects. In this regard, income and employment multipliers obtained by the use of I-O model are higher than those obtained using other models such as Keynesian. This is because I-O model includes direct, indirect and induced effects to determine the size of income and employment multipliers. More on the economic models is developed in the next section.

2. The behaviour of tourists: Tourists visiting a country can also influence the size of income and employment multiplier. Their spending behaviour is very important. If tourists spend more money in a host country with strong sectoral linkages, it follows that the impact on income and employment will be high, resulting in a big size of their multipliers. Likewise, if tourists' expenditures in a host country are limited, fewer benefits will be derived and therefore a small size in tourism multipliers will be observed. In this case, it is important to investigate the underlying factor that drives this spending behaviour of tourists. If the host country can satisfy tourists' needs, it is obvious that tourists spending will impact positively on income and employment. Nevertheless, if the host country relies heavily on imports to satisfy tourists' needs, then limited income and employment will be observed and this will be reflected in a small size of income and employment multipliers.

3. The behaviour of firms in the region: This is related to the regional economic activity explained earlier. What could be added is that firms owned by local residents that are interlinked with local firms are expected to generate more income and create more jobs in the area, especially at indirect and induced levels. Furthermore, the profit distribution also influences the size of the multiplier. In the case of profit going to foreigners who own the tourism business, the result is that the multiplier size will be small due to the smallness of direct effects and therefore represents a leakage.

4. The behaviour of households: Households as seen in the diagram illustrating the multiplier effects were beneficiaries of tourism expenditures at direct, indirect and induced levels. In this regard, households' consumption behaviour will influence the size of tourism income and employment multipliers. If households' savings are modelled as leakages, it follows that a high rate of households' consumption will

result in larger induced effects, thereby reflecting big size of income multipliers.

In the above, tourism income and employment multipliers have been discussed. However the size of these multipliers has provoked controversial debates depending on how they are determined. In what follows, different approaches used to determine the size of tourism income and employment multipliers are discussed. As will be seen these models are not uniformly agreed on as each has its advantages and pitfalls.

5.3. Economic models for measuring tourism multipliers

Measuring tourism multipliers has been a challenging task for many researchers, as it has been and still is difficult to isolate the tourism sector from other interconnected economic sectors. Although tourism multipliers are difficult to measure, it is only when there is a right picture of what the sector contributes to the economy that it can be valued. Different models have been developed and used to measure tourism multipliers. Depending on the purpose of the researcher and the availability of data, one model could be preferable to others. However, findings from recent studies point out that there is no single model that could be called perfect to accurately measure tourism impacts (Pao, 2005; Carstensen, 2003; Stynes *et al*. 2000).

The fundamental problem in measuring tourism impacts comes from the fact that tourism does not exist as a distinct sector in any system of national accounts as confirmed by Pao (2005). Although many activities that a tourist is involved in can be identifiable as a tourism product (transport, hotels, recreation, etc), others such as clothing, phone calls, gifts, and others are not counted as tourism products, yet they are consumed by tourists on the ground. Backwards and forwards linkages of tourism are not taken into consideration when estimating tourism benefit, and yet they are generated indirectly by the tourism sector. In measuring tourism impacts taking into consideration what is purely called tourism product, there is a high risk of underestimating the contribution of the sector to the

economy. It is therefore important to consider which methodological approach could provide a real picture of the tourism sector.

5.3.1. Instruments for measuring tourism multipliers

There are quite a number of economic models used to estimate tourism economic impacts, but for the scope of this study, analysis is limited to models that measure tourism multipliers. Five models are considered here for review and discussion: these are mainly Keynesian, Input Output (I-O), Social Accounting Matrices (SAM), and to a lesser extent, Tourism Satellite Account (TSA) and Computable General Equilibrium (CGE) models.

1. Keynesian multipliers model

The concept of Keynesian multiplier communicates an exogenous injection of spending to the total effects it creates on various macroeconomic aggregates. It rests on a theoretical base found in the Keynesian model of aggregate demand within an open economy (Hernández, 2001).

The Keynesian multiplier model is based on identifying flows of income and employment that are generated in rounds. According to WTO (2001), these flows diminish in geometric progression as a result of leakages at each round. Although there is leakage at each round of spending, it is important to understand that it is not only direct effects that matter in tourism multipliers, but also indirect and induced effects which are equally important especially for LDCs. The first direct impact tourism creates in an economy is just a starting point for circulating income in the visited country if the level of leakage is insignificantly low. The income generated at the third, fourth, fifth, etc, levels might not be enough, but the fact that it can still create a job and generate income is meaningful in the developing world. It is possible that a created job at third or fifth level only generates very little pay. In that case the income will not suffice to support the

individual worker. However, even that small income will be of some benefit, albeit seemingly insignificant to the very poor.

The Keynesian model used to estimate tourism multipliers is formulated by Archer (1982) as follows:

$$\text{Multiplier}=\frac{1}{1-c-m}$$

Where *c* stands for the propensity to consume, and *m* for the propensity to import. Basically this model determines the multiplier by dividing a unit of tourist spending by the proportion of the spending that leaks out of the economy as a result of savings and imports. In this model savings are considered as leakages because they limit income circulation in the short run, therefore reducing the size of income multiplier.

This Keynesian model for tourism multipliers involves two important things: the propensity of different visitors to consume and the share of tourists spending that goes to other industries. If tourist propensity to consume local products is high, it follows that benefits to local people selling those products will be important as mentioned earlier. The propensity to import goods and services is also important to know. The higher the propensity to import will be, the lower the resultant value of the multiplier, and hence the lower the benefit to the economy.

Keynesian multipliers are calculated based on leakages in the economic system (Cooper *et al*. 1998). The model seeks to present a single figure that represents output, income, employment, sales or any other multiplier of interest. These multipliers are simple to determine since they do not require more detailed data. However, Keynesian multipliers are less informative because of the restrictions used in the model. More criticism of the Keynesian model is made in the next section.

2. Input-Output model

The input-output model is used to translate the different linkages that exist between economic sectors. These relationships are presented in the form of a

matrix (O'Connor and Henry, 1975). I-O model originates in the research done by Wassily Leontief in the 1930s (Akundi, 2003). It is a method of tabulating the whole economic system in the form of a matrix known as I-O tables, for which rows represent the sales by each economic sector to each of the others and the columns represent the purchases each sector does from each of the other economic sectors. In the case of the tourism sector, the I-O model informs on how much the tourism sector sells to other economic sectors and how much it purchases from each of them. I-O model analyses the effect of tourism multipliers by tracking the movement of tourism initial spending through different economic sectors.

A simplified I-O model is given in the following formula (Jensen and West, 1985; Pao, 2005):

$K_t = (I - A)^{-1}$

Where

K_t= multiplier

I= identity matrix (initial dollar spent by a tourist)

A= technical coefficients

Given its ability to provide accurate and detailed information, I-O analysis has been increasingly used to estimate tourism economic impact. Fletcher (1997) and Akundi, (2003) point out that the key strength of I-O analysis comes from the fact that it details information regarding direct, indirect and induced effects of tourism on the local economy. It is appropriate for determining the multiplier sizes in tourism. The use of I-O model to determine tourism multipliers in a LDC context is very useful because of the detailed information it provides. Tourism has been identified as a sector with large induced effects with strong sectoral linkages than other economic sectors. For that reason tourism calls for meticulous estimation of all its effects (direct, indirect and induced). The I-O model helps to answer the question of how much income and employment tourism generates at direct, indirect and induced levels. The model also helps to determine the degree of

tourism linkages with other economic sectors which is very important to LDCs that foresee tourism development as an alternative strategy for their economic development. Roberts (2000) contends that unlike the Keynesian multiplier model, I-O provides detailed information on individual sectors as regard to tourism impact. In that sense it demonstrates the share of tourism effects between different economic sectors. Furthermore, with appropriate disaggregation, I-O model can show the category of households and kind of their employees who are most affected by a change in the tourism activity.

Nevertheless, it is worth mentioning that the use of I-O model for tourism multiplier assessment does not limit to using I-O tables only. Detailed data on tourist expenditures and intersectoral transactions are also needed. This causes the model to be very costly but also, and more importantly, very useful in obtaining an accurate measure of tourism economic impacts in general and multipliers in particular.

3. Computable General Equilibrium model

Historically, CGE models have their origin in I-O model and have been developed to overcome gaps in the I-O model. Unlike I-O model, CGE models are more concerned with detailed behaviour of economic agents rather than sectors transactions (Pao, 2005). Treating an economy as a whole, CGE model allows for reaction from one sector to another. It takes into consideration the price fluctuation while making a detailed inter-industry analysis. The construction of the model involves the process of setting up a series of markets (for goods, services and factors of production), a production sector and a household demand sector (Blake *et al*. 2006; Sugiyarto *et al*. 2003; Sinclair *et al*., 2002). CGE models are uniquely appropriate for analysing a range of development planning and policy issues (Roberts, 2000).

A CGE model consists of a set of equations describing the structure of an economy in a way that factor and commodity prices are endogenously fixed to

respond to particular market-clearing conditions. In addition to that, demand and supply in each market are obtained from an optimum choice driven by the behaviour of the economic agent who reacts to relative prices. The model also includes basic macroeconomic constraints. Practically, each market, sector or household is characterised by its own economic rules that allow it to react to external changes. The CGE model in this regard can represent different scenarios where economic conditions for each sector have been put in place to allow for reactions in economic changes. It is this flexibility that gives CGE model advantage over other forms of modelling (Blake *et al*. 2003).

Schematically, CGE Model can be written as follows (Pao, 2005):

$F[X(t),Y(t),Z(0)] = 0$

X - Vector of endogenous variables

Y - Vector of exogenous variables

Z - Vector of initial conditions

CGE models have been used more often in fields such as international trade, agricultural economics, environmental economics and economic development. It is only in past few years that such models have been introduced into the field of tourism (Dietzenbacher, 2005; Pao, 2005).

4. Tourism Satellite Account

Tourism satellite account is another approach used to measure tourism economic impacts. It is an extension of the I-O model of the system of national accounts, which is the reason why the word 'satellite' is used in its description (Smith, 1997). Developed in the 1990s by the World Travel and Tourism Council (WTTC), TSA is a useful system for estimating the overall economic impact of the tourism sector at the national level. However, this system does not allow for tourism economic impacts assessment at local levels (WTTC, 1996). Given that national accounts are organised around a set of industries or commodities, it is not easy for the system to distinguish what belongs to tourism and what is not from tourism. For example, given a restaurant serving both tourists and local residents,

it will be very difficult for the TSA to distinguish one from the other; hence computing only the sector "restaurant" without making any distinction. Consequently, estimating tourism effects will result either in overestimation or underestimation of its impacts given the kind of information used. Unlike other models presented above, TSA is a model that concentrates solely on measuring direct and indirect effects of tourist spending, leaving out the induced effect which is of great importance in tourism multipliers.

5. Social Accounting Matrices

The social accounting matrices are designed to characterise the structure of an economy. The model reflects the transactions that take place between economic sectors, generally for a period of a year. The SAM is presented in a form of a square matrix where columns represent expenditures and rows receipts of the accounts that correspond to different institutions, activities, factors and products taken into consideration (Taffesse and Ferede, 2004). Because SAM is an accounting framework, its corresponding column and row must equalise. The SAM covers all the activities of an economic system from production, consumption, accumulation to distribution.

According to Sadoulet and De Janvry (1995), SAM is an extension of the I-O model which divides the accounts into endogenous and exogenous accounts. It assumes that the column coefficients of endogenous accounts are all constant. The important thing for SAM is to determine which accounts to consider as exogenous and which should be set as endogenous. Endogenous accounts assume that changes in income will be followed directly by changes in expenditure, while expenditures for exogenous accounts are set independently of the income. Common practice, however, shows that one or more accounts from government, capital and the rest of the world are chosen to be set as exogenous accounts, depending on the objectives of the study.

SAM model can be illustrated as follows (Sadoulet and De Janvry, 1995):

	Endogenous accounts (n)	Sum of exogenous accounts (1)	Total
Endogenous accounts (n)	AX	F	X
Exogenous accounts (m)	BX		L
Total	X'		

Where

X is the vector of total income or expenditure of the endogenous accounts;

F the vector sum of the expenditure of the exogenous accounts;

L the column vector of the income of the exogenous accounts;

A the square matrix (n x n) of coefficients with endogenous accounts,

B the rectangular matrix (m x n) of the coefficients with exogenous accounts as rows and endogenous accounts as columns.

If we represent the operator 'change' by Δ, then the following may be defined:

The matrix of multipliers $M = (I - A)^{-1}$

The vector of shocks ΔF

The vector of impacts $\Delta X = (I - A)^{-1} \Delta F$

The leakages $\Delta L = B \Delta X$

In the above model, a shock is a result in change of elements of the exogenous accounts. It is important to note that SAM multipliers are completely demand-driven. Leakages are provided by the coefficients in the rows of the exogenous accounts. SAM multipliers inform on the impact of a given sector, such as tourism on the economic system, such as the structure of production, labour income, households wages, government revenues, imports and savings. Multipliers obtained using SAM model are higher than the ones from I-O model. This is explained by the fact that value added in I-O model is treated as a leakage and only intermediate demand is considered for multipliers. However, the SAM model treats the value added and income as demand linkages (Sadoulet and De Janvry, 1995).

As seen above, different options exist for tourism multipliers measurement. However, depending on the availability of data and its accuracy in responding to the objective of the research, one model can be preferred to others. In the next section, the shortcomings of the economic models used to estimate tourism multipliers are discussed and an alternative approach suggested.

5.3.2. Shortcomings of models

Although I-O model is appropriate for estimating tourism multipliers because it gives a much greater understanding of sectoral linkages, it also presents some shortcomings. The model is criticised for being data-intensive and as such, makes its use very expensive both in time and price. The use of secondary data in the I-O model is unsuitable because this secondary data can be misleading, since it is not always accurate at the level of detail required by the model (McCatty and Serju, 2006). Furthermore, intersectoral transactions needed in the I-O model are rarely available in most LDCs. This means that much of the data has to be obtained by conducting surveys. The use of I-O model requires the existence of a complete, balanced and up-to-date I-O tables that provide values of sectoral transactions from which a multiplier matrix is derived. The I-O approach is also classified as an inflexible model, since it does not allow for factor substitution between sectors and considers prices as given (Zhou *et al*., 1997). The model assumes that when tourism spending changes, wages and prices remain unchanged. However, as argued by the above authors, a change in tourism spending is accompanied by a change in both output and prices. Should the change in tourism expenditure be significant, this will call for businesses to expand to respond to the increased demand. As a result, prices and wages in these businesses might be expected to rise. The nature of changes in prices and wages will be different from changes in markets but what is important is to emphasise that a change in tourism expenditure will impact on the quantity supplied and the change in prices. Therefore it is ideal that any attempt to measure tourism multipliers should take these effects into consideration.

As regards CGE model, Nelson (2003) and Song (2002) criticise it for having too restrictive and unnecessary assumptions. According to these authors, CGE model does not allow for structural change and experiences data limitation as for I-O model. In the use of CGE model, inflation would not affect the results unless the model assumes the money illusion and models it (McDonald, Reynolds and Van Schoor, 2006). The model is very costly to construct and requires significant investments to generate accurate data needed for tourism impacts analysis.

Patterson *et al.* (2004) and Yusaku (2002) accuse the Keynesian models of being unable to address the nature of economic linkages among sectors and suggest that the inter-sectoral relationship cannot be examined with this model. The model focuses only on an aggregates (non-sectoral) picture of tourism spending impacts which are unable to address the nature of sectoral linkages. This is due to the fact that Keynesian model uses data obtained from other studies on the behaviour of households and firms without considering detailed information on individual sectors. The model is less rigorous than other models such as input- output model. Given the above, Cooper *et al.* (1998) find that Keynesian multipliers give a limited and partial picture of tourism multipliers.

Another shortcoming of the Keynesian model is its way of estimating the initial injection of tourism expenditure into the economy. Keynesian model does not consider leakages at the initial level, yet it is important to adjust the injections downwards in order to allow leakages before estimating the multiplier effects (Roberts, 2000). It is argued that some of the gross injection may leak out of the system even before producing any multiplier effects. Furthermore, the size of direct leakages from an economy is related to the type of expenditure. For instance, there is a high likelihood that tourist spending on travel to and from the host country will have higher leakages than tourist spending on food and drinks on the site. According to Stynes (2002) and Burress (2003), many studies do not take into consideration the fact that goods and services purchased by tourists are not necessarily produced locally. They do not include the import-leakages

attached to tourism products. This results in inflated tourism multipliers, which give a wrong image of the real effect of the tourism industry in the region.

Carstensen (2003) and Dietzenbacher (2005) criticise TSA model for having difficulties in identifying and defining tourism products and does not take into account tourism costs. The model, in this case, can lead to erroneous results that under or over estimate the tourism economic impacts. Moreover, the model is not applicable to local levels to assess tourism impacts.

Regarding the SAM model, the critique is that the model presents difficulties in identifying activities. It presents confusion related to commodity disaggregation. Each of the activities in the SAM model is intended to represent a productive agent. In that sense firms aggregated under each heading must have the same production function, using unique technology and presenting similar distribution of factor income (Sadoulet and De Janvry, 1995).

To summarise, most models in tourism multiplier assessment present the following common weaknesses (Josepha and WTO, 2001; Patterson *et al.,* 2004; Yusaku, 2002):

1. Data deficiency: tourism multiplier measurement requires detailed data which is not available all the time and this obliges researchers to generate their own data. This is mainly due to the fact that tourism is a multi-product industry that covers a broad range of economic sectors. In most circumstances, available data does not usually have sufficient detail needed in tourism multiplier analysis. The empirical implication for this is that data deficiency limits the accuracy of economic benefits derived from tourism sector and impacts negatively on the findings.

2. Restrictive assumptions and limitations: In constructing tourism multipliers, many models such as Keynesian, build their model based on restrictive assumptions. For example, a unit of tourism expenditure on hotel accommodation is treated in the same way as a consumable item

purchased from a supermarket by a tourist. Models can present a static form assuming that production and consumption functions are directly proportional. This means that any additional production undertaken by each economic sector will buy inputs in the same proportions as before. These assumptions have the following limitations: they discount the probability of economies or diseconomies of scale. They consider average rather than marginal relationships between production and consumption. With no accounting of supply constraints, the models assume that trading patterns are constant, i.e. a given sector will always continue to import and buy the same quantity as previously from other sectors.

3. Supply constraints: In most models dealing with tourism multipliers, they assume that the supply is 'elastic' in all the sectors of the economy. This means that, in order to meet the increased demand in tourism, firms will increase their output by purchasing from the same sectors as before. This however, may not be possible because of technical problems that might occur. Supply constraints may result from insufficient production resources (capital, land and labour) in the local economy. They may result also from insufficient foreign exchange to purchase capital goods and from an inability of local sectors to respond to the increased demand in tourism for their products (e.g. agriculture produce).

4. Use of homogeneous consumption functions: It has been observed that most multiplier models assume that the increased income of households will be spent on buying additional same products as what they bought in the past. The reality however shows that an increase in income does not always lead to increased demand of the same products, but rather results in changes in the type of commodities purchased.

5. Speed of transactions within the economy: In most multiplier models, the length of the time the multiplier effect takes to impact on the economy is not considered and little is known about it. However, it was suggested

that direct tourism expenditure is likely to "turnover" five to six times in a 12 month period (Josepha and WTO, 2001).

From the above, it is obvious that a tourism multiplier assessment needs special attention as regards the choice of models to use in order to capture its multiplier effects.

5.3.3. Suggested approach to measure tourism income and employment multipliers

In the light of the preceding discussions, it is clear that there is no perfect model that can be taken 'off-the-shelf' to measure tourism multipliers. The models that are likely to be accurate such as I-O and CGE, are faced with data limitations, among other things. Moreover, as seen above, there are also many restrictions and assumptions in the formulation of these models. However, for the case of developing countries, I-O model remains the most suitable of the types of tourism multiplier assessment, given its capacity to provide as much information as is needed regarding income and employment multipliers. However, LDCs should invest in constructing I-O tables for their economies and keep them updated. To overcome many of its shortcomings raised previously, the I-O model should be flexible and should consider factor substitution between sectors and should also consider the price elasticity.

For the sake of accuracy and in order to investigate the extent to which tourism contributes to economic growth in general and to income and employment in particular, I-O model should be supplemented by regular surveys that provide additional information. Although difficult, given the nature of the tourism sector, it is crucial for countries to separate the tourism sector in their national accounts system and to present it with all its due credits. As Ennew (2003) suggests, if governments are to make sound decisions regarding the development of the tourism sector, they should invest in gathering consistent and appropriate data regarding the sector and its intersectoral linkages. A good idea is to implement a

system whereby each economic sector, directly or indirectly related to tourism, tracks separately what belongs to the tourism industry and keeps records on a regular basis. This should also include anything that a tourist buys in a remote shop (non-tourism sector) far from the visited site but inside the host country. Firms should also be able to provide information on labour used to provide produce for tourism. The recorded data from these different sectors could afterwards be centralised at the national level to allow the national accounts system to include tourism in their database as a separate and complete sector.

5.4. Conclusion

The purpose of this chapter was to discuss tourism multipliers with special emphasis on income and employment multipliers. The aim was to assess the current state of knowledge of tourism multipliers and their economic impact. It was found that tourism impacts on economic wealth of many developing countries through its powerful linkages with the rest of the economic sectors. Specifically, tourism income and employment multipliers were found useful in LDCs because they reduce the prevailing unemployment and improve living conditions of the population.

The size of tourism multipliers is important to appreciate and to determine because it helps to know exactly how much tourism contributes to income and employment. In this regard, instruments through which the rising importance of tourism in LDCs could be measured were developed. Different models were discussed and they presented advantages and pitfalls. Although suitable for tourism multiplier assessment, I-O model was criticised for being data-intensive but also expensive in terms of time and cost. The Keynesian model was found unable to address the economic intersectoral linkages and was therefore not suitable to analyse tourism intersectoral relationships. The SAM model has difficulties in identifying and defining tourism activities, and presented confusion as regards commodity disaggregation. CGE model was seen as not allowing for structural changes and faced data limitations and was also very costly. Like SAM,

the TSA has problems in identifying and defining tourism products. The TSA model does not take into consideration tourism costs.

However, in the case of LDCs, I-O model is the benchmark model used and is appropriate in that it gives detailed information needed for tourism multiplier assessment. Nevertheless, it was suggested that the model should be supplemented by a survey to overcome data deficiency observed in the model and should be more flexible to allow for price elasticity.

In the next chapter, the methodological approach used in this study to determine income and employment multiplier effects of the tourism in Rwanda is presented.

CHAPTER SIX
RESEARCH METHODOLOGY

6.1. Introduction

In the previous chapter, the income and employment multipliers effects in tourism were explored. Different approaches used to measure the size of tourism income and employment multipliers were discussed and the difficulties attached to this assessment explained. In the present chapter, the methodology used for this study is developed.

Essentially this research is about assessing the income and employment multiplier effects of the tourism sector in Rwanda. From existing studies, difficulties related to assessing tourism economic impacts have been raised (McCatty and Serju, 2006, McDonald, Reynolds and Van Schoor, 2006; Stynes, 2002; Burress, 2003). The main challenge in determining tourism economic impacts was due to the nature of tourism activities itself where it was difficult to distinguish what belongs to tourism and what does not. Even in many national accounts, tourism does not exist as a separate sector and what precisely constitutes the tourism sector is poorly understood. In many cases tourism is just regarded as a service sector while some of its constituents may be found in other sectors (Akundi, 2003, Stynes and Sun, 2003). In the discussions in the previous chapters it was demonstrated that due to its powerful linkages, tourism was connected to other sectors in a direct or indirect way. Despite the difficulties related to tourism data in LDCs, it is relevant to undertake a tourism economic impacts study to inform on the usefulness of the tourism sector for developing economies and to contribute to the few studies available on tourism in LDCs.

Given the complexity of the tourism sector, especially regarding the data gap in Rwanda, it was important to find an approach that could provide as much information as necessary to measure tourism income and employment accurately

in Rwanda. It is for this that mixed methods, involving both qualitative and quantitative approaches, were used. The use of mixed methods is relevant to this study because it helps overcome difficulties related to tourism economic assessment in a LDC context. As Ritchie (2003:38) explains, "*Each of the two research approaches provides a distinctive kind of evidence, and used together, they can offer a powerful resource to inform and illuminate policy or practice*." In this regard, information collected using a qualitative approach served to supplement information gathered by applying quantitative methods. This was done mainly by consulting official documents and reports on Rwandan tourism and economy in general to better understand and appreciate the place given to tourism in Rwandan economy. The quantitative method involves a survey approach and the use of an economic model to estimate income and employment multipliers in tourism. This quantitative approach helped to quantify the usefulness of tourism in Rwanda in terms of income generated and employment created.

The rest of this chapter is organised as follows. Section 2 discusses the survey approach and techniques attached to it. In this section, research design, population study, sampling techniques, methods of data collection and data analysis as well as the description of the pilot study are presented. Section 3 deals with the input-output model used to estimate tourism income and employment multipliers. In this section, difficulties related to the construction of I-O tables for Rwandan economy are presented. Section 4 concludes the chapter.

6.2. Survey approach

6.2.1. Study design

The study design used in this research was a retrospective quantitative survey design (Meyers *et al.,* 2004). The reason for this was that the nature of information needed from tourism workers and business establishments was related to a past year 2005 that could provide reliable data (given a recent year) and coincides as well with the I-O table constructed. In other tourism economic

impact assessment studies; data is normally obtainable from national accounts and only models could be applied to estimate the tourism impacts for a chosen year. However, in this case, given the non-existence of such data, a retrospective approach (Meyers *et al.,* 2004) was used to obtain information related to a past year. Therefore, data was collected over a period of less than one-year (the second half of 2005) for workers in tourism business establishments, and for one year (2005) for owners of tourism business establishments.

The purpose of the survey in this study is important and will allow for the generalisation from a sample to a population. The survey design presents advantages such as economy of the design and the rapid turn around in data collection (Creswell, 2003). Self-administered questionnaires were used in this study. The questionnaires for workers instructed them to only report on income related to the second half of the year 2005. On the other side, owners of tourism business establishments were asked to provide income related to the second half of 2005 as well as for the whole of 2005. In order to obtain consistent information, all respondents were given time to think about and remember information related to income for the previous year. The survey instrument used in this study is attached in Appendix.

6.2.2. Study population

During the investigation period there were 32 tourism business establishments located in Kigali city. These tourism business establishments were registered in the office in charge of tourism and national parks in Rwanda (ORTPN) for the year 2005. Of the 32 tourism business establishments, 22 were composed of hotels and guest houses while 10 were constituted by tour operators. Of the 22 hotels and guest houses, only 6 were purposively considered in this study because they mainly served tourists and conformed to international standards. The quality of a hotel is based on the five levels of rating known as “stars”, ranging from one to five Stars. In this sense, a high-quality rating star will go with a higher quality of services and physical facilities offered. According to Karen (2006), a number of criteria are taken into account to assess the quality of a hotel. These include

among others, intrinsic quality, condition, physical and personal comfort, attention to detail, guests' choice and ease, and presentation.

In assessing the quality of hotels, a certain score in terms of quality is required and the following scores represent the different star levels (Karen, 2006):

One star: 30 – 46 %

Two stars: 47 – 54%

Three stars: 55 – 69%

Four stars: 70 – 84%

Five stars: 85 – 100%.

All the hotels considered in this study rated three stars and above.

Furthermore, and most importantly, the choice was driven by the kind of information expected from these tourism establishments (income and employment patterns). Each of these hotels has at least 100 workers, which gave a total parent population of 600 workers in all 6 hotels from which to draw the sample study. The choice of hotels was motivated by the fact that a large portion of tourist expenditure takes place in hotels (accommodation, transport, food and beverages), and, therefore, more impacts were expected from these hotels than elsewhere. Hotels constitute a major proxy for tourism industry impact in this case. This is also in line with studies from literature discussed in previous chapters (Aguayo *et al*., 2003; Turpie *et al*., 2004).

6.2.3. Sampling techniques

The sampling technique used in this study was a single-stage sampling. According to Creswell, (2003), a single-stage sampling procedure is where the researcher has the name of people in the population from which to draw the sample and directly proceeds with sampling. This procedure is opposed to the multi-stage sampling also known as clustering. This procedure is best in cases where it is impossible or impractical to bring together a list of all elements that compose the population (Babbie, 2001).

To know the extent to which tourism contributes to people's wealth and its impact on Rwandan economy, a research survey was conducted among workers of hotels in Rwanda and tourism business owners. Given the limited time for the research and financial constraints, all the 600 workers in the tourism hotels could not be surveyed. Another reason for this was that with a well-designed sample that ensure representativity, results are expected to be reliable and could therefore be generalised to the parent population. The sampling was carried out in 2-step sampling procedure. For this, a population sample was chosen and the following sampling techniques were used.

6.2.3.1. Purposeful sampling

Purposeful sampling is a technique whereby a researcher deliberately chooses settings, persons or events in order to provide information that cannot be obtained using other approaches (Patton, 1990). In this regard, three different levels of workers in hotels (high, middle and low-ranking staffs) have been purposively chosen. These three levels have been chosen because of the similarities that they presented, and the fact that individuals within each group were considered that would give representativeness in the sample study and allow for comparison between the three different levels. Furthermore, hotels that mainly serve tourists have been given special attention and consideration in this study.

6.2.3.2. Stratified random sampling

In probability sampling, Welman and Krugger (1999) assert that random sampling is the most attractive and most used technique. There are two different random sampling techniques, namely simple random sampling and stratified random sampling. In the present study a stratified random sampling was used because of the richness of the approach. The sample has been divided into strata so that the variables, such as income utilisation among the different groups, could be compared. This comparison could not be possible in using a simple random sampling approach where there is a possibility of choosing individuals from one

stratum. According to Strydom and Venter (2002: 205), *"stratification consists of the universe being divided into a number of strata that are mutually exclusive and the members of which are homogeneous with regard to some characteristics, such as professions, origins, places of residence"*. Depending on the objectives of the study, the division into groups may be based on a single variable such as position (Cochran, 1977; Strydom and Venter, 2002). It may also engage a combination of more variables such as age and position, age and sex and position, etc. Each group constitutes a stratum. In this study workers in hotels were grouped into three exclusive categories based on their position in the workplace. The three strata are low, middle and high level positions of hotel workers. It follows that members of each stratum will present similarities based on the variable considered rather than the population at large.

The use of stratified random sampling presents 2 advantages (Strydom and Venter, 2002):

> Firstly, in a random sample that is stratified based on a particular variable such as position, the probability of having a sample of members of one position only is zero. Secondly, in the stratified random sampling technique, a smaller sample which requires less money and time is used. This is unlikely to happen in simple random sampling technique where large samples are required to ensure representativeness.

Welman and Kruger (1999) find out that representativeness in stratified random sampling is ensured irrespective of the sample size. This is because the sample has been constituted in a way that assures the representativeness right from the start.

In this study, from 600 workers in the 6 hotels under study, a randomly selected sample of 180 workers occurred within the selected strata. The constitution of the strata was based on the position occupied at work because of the similarities the strata presented as regards variables, such as income. Therefore, a random order determined using the random number generator was used to select 30 workers in each hotel composed of 3 strata: 5 workers in high position, 10 workers in middle

position and 15 workers in low position. The number of workers in a particular position in each stratum was in proportion to the number of workers for that position in the total number of workers (parent population). For instance, if low level workers represented 50% of total workers, then 50% of low-level workers would be considered in each stratum. However, the sample would be randomly selected. Therefore, a total number of 180 workers were expected to participate in this study with 90 workers in low position, 60 and 30 workers in middle and high position respectively. However, only a total number of 167 workers from the 6 hotels responded in the present study, which represents a response rate of 92.7%.

For this sampling technique, a list of fulltime contracts per hotel for the last season of 2005 was provided by the director of human resources in each hotel. The number generated for each hotel (with n=30) corresponded with the number of the workers from each hotel to be considered in this study. If a selected worker was not available for the period of survey, the next candidate was selected until 30 workers were reached in each hotel in a proportion of 5, 10, and 15, respectively for high, middle, and low positions. This allowed for a sample of approximately 180 workers. This technique ensured an optimal chance of drawing a sample that was representative of the population from which it was drawn (De Vos, 2001). In addition to the above sample, tourism business owners or top managers of all the 6 hotels were included in the sample study. The rationale for including tourism business owners was to supplement and verify the information collected from workers as well as to gather information related to tourism business. It also served as a crude check on the quality of information gathered from workers.

6.2.4. Preliminary testing of questionnaire through a pilot study

A standard procedure in sampling surveys is to conduct a preliminary test of the survey instruments for quality and clarity (Creswell, 2003).To assess whether participants in the study were able to understand the questions asked with ease, two pilot studies were carried out. These pilot studies also helped to estimate how much time was needed to complete the questionnaires.

The first pilot study was conducted on six workers conveniently selected from different hotels and the second pilot study was carried out on two tourism business representatives. A few participants from hotel workers were considered for pilot studies due to time constraints and a few tourism business representatives due to the low number of top managers available during the pilot study. The subjects considered in the pilot study were automatically excluded from the main survey in order to avoid biased responses.

In conducting the pilot study, some difficulties were encountered by respondents. These were related to the way questions were asked. For instance, the sub question 3.5 addressed to tourism business owners (see Appendix A) was formulated in a different way from others. While all the questions were related to tourism business establishments, question 3.5 was formulated in a way that deals directly with the respondent and could create confusion between the tourism business and its owner. To address the issue the question was removed for subsequent respondents to avoid confusion between the business establishment and the individual owner. During the pilot study it was also realised that sub-question 2.1, addressed to tourism business owners (Appendix A), was formulated in such a way that it could provide biased information. This was due to the fact that the amount of income sale proposed to each business establishment was far too little that it could be realised at any quarter time of the year. This was revised and adjusted to get more accurate information. The same goes for the questionnaire addressed to workers, particularly the sub-question 3.1 (Appendix B) related to the monthly salary earned. This sub- question was revised according to the reality on the ground. The time it took for a respondent to complete the questionnaire was about 20 minutes.

6.2.5. Questionnaire administration and enumerators

The data collection was done from June to August 2006 while the pilot study was conducted in the second half of May 2006.

6.2.5.1. Tools

To collect data for this study, self-administered questionnaires were used. The close-ended questionnaires were the main tool used to collect data from both workers and tourism business owners. Furthermore, secondary data were collected from different ministries and departments in Rwanda to supplement the information gathered via the questionnaire route.

With regard to the close-ended questionnaire, questions were pre-established and response categories predetermined in the form of spreadsheets on which data had to be recorded. The questionnaire addressed to hotel workers comprised 3 parts. Part 1 was constructed with the intent to receive demographic information for the identification of the worker such as age, gender, marital status, education level and nationality. Part 2 was constructed to gather information regarding employment while part 3 was reserved to income information. In a similar manner the questionnaire addressed to tourism business owners comprised three parts. The first part deals with identification of the business, including the main activity, tourism business certificate or registration, the period of business commencement and the nationality of the owner. Parts 2 and 3 gather information on income sales and employment respectively.

6.2.5.2. Translation

Prior to the fieldwork the questionnaires used for this study had to be translated into French and into Kinyarwanda (language spoken by most workers). The questionnaires for workers initially constructed in English were translated into French (Appendix F) and into Kinyarwanda (Appendix G) to allow for full understanding for all respondents. These three languages are the officially-spoken languages in Rwanda. To make sure that the translation was correctly done, two translators were asked to do the translations from English into the above-mentioned languages and two other different translators translated them back into English. Two translators for English and French languages were used. One translated the questionnaire from English into French, and another from French into English. Similarly, two translators were used for English and Kinyarwanda languages. One translated from English into Kinyarwanda and another from Kinyarwanda into English. The same translators that translated the workers' questionnaire translated the questionnaire addressed to tourism business owners. However, this was only translated from English into French (Appendix E) and back into English. The rationale was that all business owners were supposed to have an understanding of either language (English or French) as the main academic languages in Rwanda but also as a mode of communication used with tourists and other business partners.

6.2.5.3. Procedure

To begin with, respondents' appointments had to be obtained either by telephone or through physical contact, and only then questionnaires could be distributed. The pilot study showed an approximate time of 20 minutes to complete the questionnaire, although more time was given to respondents when needed. For the sake of reliability questionnaires were delivered to respondents and collected a few days afterwards to allow them to recall information related to the previous year. Although this approach does not provide 100% guarantee in some cases in the understanding and the responding to the questionnaire since respondents are

left by their own, the pilot study was conducted to ensure a clear understanding of the questionnaire. The pilot study was intended to test the clarity of the questionnaire, and adjustments were made where necessary to make the questionnaire self-explanatory. Tourism business owners took some time to return the questionnaires addressed to them because of their multiple responsibilities. However, questionnaires distributed to workers did not cause any problem except for a few respondents who did not return them.

6.2.5.4. Data analysis

The data from workers and that from tourism business establishments were analysed separately. A statistical analysis was used where necessary for both questionnaires. Descriptive statistics, frequencies, means, standard deviation, maximum, and minimum of the variables measured in the questionnaire to workers in hotels, are displayed. The results obtained are displayed by means of tables, histograms and line charts.

In addition to the survey approach, this study has relied on the use of input-output model to estimate the income and employment multipliers in tourism. In the next section the I-O approach is presented.

6.3. Input output approach

To determine the size of tourism income and employment multipliers, the study applied I-O model. The model has been used to assess the direct, indirect and induced effects of tourism on income and employment in Rwanda. In the previous chapter on tourism income and employment multipliers, different approaches used to determine the above variables were discussed. Each method presented strengths and weaknesses. However, given the appropriateness of the I-O model for this study, the model was preferred to others. In the present study the choice was to use an adapted I-O model for different reasons. These are presented later in this section.

The rest of this section is organised as follows: the first subsection presents the I-O model used for the Rwandan economy; the second subsection gives reasons for the choice of the I-O model and the last subsection highlights difficulties encountered in constructing I-O tables.

6.3.1. Input-Output model for Rwanda

Input-output analysis is a "Matrix algebraic technique" designed to study the interdependence of the production and consumption sectors in a modern economy. It shows interlinkages that exist within sectors by displaying sectors that purchase goods and services from other sectors and which in turn produce goods and services which are sold to other sectors (O'Connor and Henry, 1975). To conduct such a study, an input-output table is needed where various economic flows are set to provide information on all economic activities within a state or region. In many developing countries I-O tables do not exist because of the high cost involved in constructing them. It is also the case for the Rwandan economy.

In the absence of I-O tables for the Rwandan economy and given the importance of this study, it was necessary to construct an adapted I-O table (as used by Yusaku, 2002) that could provide information regarding tourism income and employment multiplier effects. However, given the limited time for this research and the cost for obtaining data to construct a complete I-O table which could be ideal, only 3 major sectors in close relationship with the tourism industry were taken into consideration. These sectors are: tourism (hotels, crafts, tourism resorts and any other activities attached directly to tourism), agriculture, forestry and fishing and transport (including fuel and other related services).

To construct I-O tables for these three particular sectors, data was obtained from different departments and ministries in Rwanda. The main information providers were the department of statistics in the Ministry of Finance and Economic

Planning, the Rwanda Revenue Authority, the Rwanda Office of Tourism and National Parks and the National Bank of Rwanda. The data collected was related to the year 2005 because in I-O analysis, results obtained reflect the situation at a particular time, usually one year. The rationale for choosing the year 2005 is that it matches with the methodological approach used in conducting the survey for the reasons mentioned previously in this chapter. Furthermore, information is expected to be consistent given that records for this recent year are still obtainable.

The I-O table for the above chosen sectors for Rwanda in the year 2005 are schematically presented as follows: 1 = Tourism; 2 = Agriculture, Forestry and Fishing; 3 = Transport; This table draws from the work of Wassily Leontief.

Table 6.1. Input Output Table for 3 sectors in Rwanda in 2005

Outputs → / Inputs ↓	1	2	3	Final Demand	Total Outputs
1	Z_{11}	Z_{12}	Z_{13}	f_1	q_1
2	Z_{21}	Z_{22}	Z_{23}	f_2	q_2
3	Z_{31}	Z_{32}	Z_{33}	f_3	q_3
Total Inputs	$\sum_{ij=1}^{3} Z_{ij}$	$\sum_{ij=1}^{3} Z_{ij}$	$\sum_{ij=1}^{3} Z_{ij}$	$\sum_{i=1}^{3} f_i$	$\sum_{i=1}^{3} q_i$

We denote total output of each sector i by q_i, which is the quantity of output sold to the other sector j, called inter-industry transactions (represented as Z_{ij}), and to final demand sector denoted as f.

With $i, j = 1,...,3,$

The above I-O table can be translated into equations to measure the size of income and employment multipliers. The composition (in income) of q_i can simply be expressed in the following format:

$$q_i = Z_{i1} + Z_{i2} + Z_{i3} + f_i \qquad [1]$$

By extending equation (1) to 3 sector economy for the case of this study, we obtain:

$$q_1 = Z_{11} + Z_{12} + Z_{13} + f_1$$

$$q_2 = Z_{21} + Z_{22} + Z_{23} + f_2 \qquad [2]$$

$$q_3 = Z_{31} + Z_{32} + Z_{33} + f_3$$

By assumption, Z_{ij} is a unique linear function of q_j:

$$a_{ij} = \frac{Z_{ij}}{q_j} \qquad [3]$$

The rational number a_{ij} is called the technical or input-output coefficient. When computed for all sectors in the inter-industry transactions, a 3 by 3 matrix of technical coefficients is obtained and can be schematically presented as:

$$A = \begin{bmatrix} a_{11} & \cdots & a_{13} \\ \vdots & & \vdots \\ a_{31} & \cdots & a_{33} \end{bmatrix}$$

Each element of A (a_{ij}) stands for the direct input required for sector i per unit of final demand for the output of sector j .

By reformulating (A) in equation (3), we obtain in matrix form:

$$q = Aq + f \qquad [4]$$

Where q and f are (3 by 1) vectors of total output and final demands respectively.

By rearranging equation (4), we obtain:

$$f = [I - A]q \qquad [5]$$

With I being the identity matrix

If we assume that an inverse of $[I - A]$ exists, then equation (5) can be rewritten as:

$$[I - A]^{-1}[I - A]q = [I - A]^{-1} f \qquad [6]$$

Thus

$$q = [I - A]^{-1} f \qquad [7]$$

Equation (7) is the standard I-O model used for multiplier analysis, where $[I - A]^{-1}$ is the familiar Leontief inverse. It represents the mechanism through which f is transformed to q (assuming the existence of at least one non-zero element in f). This mechanism underlies the multiplier theory as Akundi (2003) confirms.

6.3.2. Rationale for the choice of input-output model

The rationale for using the I-O model in this study is driven by the fact that the model details the direct, indirect and induced effects of tourism on income and employment. One of the objectives of this study was to determine the size of income and employment multipliers but also to determine the total effects (direct, indirect and induced).

Moreover, I-O analysis is used in this study because it gives a picture of Rwandan economy (represented here by a three sector model) by describing flows to and from industries taken into consideration. Another objective of this study was to show to what extent tourism contributes to Rwandan economy. This could only be achieved if an estimation of the tourism impact could be provided. Additionally, the study attempts to determine how much income and employment would be generated as a result of initial injection of income in tourism. The I-O approach is the only method for this case that could help to answer these research questions and objectives.

The use of I-O model was also motivated by the fact that it could be used to predict changes in overall economic activity as a result of some change (endogenous and/or exogenous) in the tourism sector. This will call for policy consideration as it gives an image of how the sector can perform, and therefore allows policymakers to take actions accordingly.

6.3.3. Difficulties encountered in constructing input-output tables

During the data collection period many difficulties were encountered in the field. The most crucial problem was to obtain data on tourism. In Rwandan national accounts tourism does not exist as a separate sector. It is placed under the service sector but at the same time, other tourism-related activities could be found in sectors such as wholesale trade, and retail and these did not account for tourism. It follows that using data from the service sector could only give a partial

representation of the tourism sector in Rwanda, given that the decomposition of tourism sector is difficult.

Another equally important problem in this study was the lack of I-O tables for Rwandan economy. To overcome this gap an adapted I-O table was constructed to serve for this research (Yusaku, 2002). Data were obtained from different departments in various places. This was time and energy consuming but also costly. Because the information needed was related to a particular year (2005), it took time to scrutinise the information and to record what belonged to that year.

Given the above, information used in this study as regards I-O analysis, results obtained should serve only as an indication of tourism performance in Rwanda.

6.4. Conclusion

This chapter has set out to present and explain the methodology used for this study of tourism income and employment multiplier effects in Rwanda. Given the complexity of the study, a mixed methodological approach was necessary to undertake the research. In this regard, both qualitative and quantitative methods were used to answer the research questions. A survey was conducted on hotel workers and owners. A sample study was determined using both purposive and stratified random sampling techniques. This helped to ensure representativeness and comparison, too. The purpose of this survey was to obtain information regarding income and employment patterns in tourism business establishments. The survey approach helped in this study by providing needed information to respond to the research questions. It also showed the importance of the tourism sector in the sample considered in this study. The qualitative approach also helped to supplement and verify information gathered using the survey and was useful to provide uncovered answers in the questionnaires.

The use of I-O model was helpful to assess direct, indirect and induced effects of tourism in Rwanda. This model has helped for a better understanding of how to

proceed in measuring the size of tourism income and employment multipliers. The methodological approach used provided details that were needed to apprehend tourism income and employment multipliers.

Although there were many challenges in conducting this study, ways to overcome encountered obstacles were found and answers to the research questions and objectives were obtained.

In the next chapter, results are presented and findings discussed.

CHAPTER SEVEN
PRESENTATION OF RESULTS AND INTERPRETATION OF THE FINDINGS

7.1. Introduction

In earlier chapters of this study we have established the actual and potential contribution of tourism to economic growth and development in developing countries. Evidence cited from a number of least-developed countries, especially small island-developing states, show that the tourism sector adds significantly to GDP and employment growth. Most studies further predict that the contribution of this sector is set to expand in future. To keep track of this, especially the would-be employment and income benefits of this sector, it is necessary to investigate the mechanisms through which it contributes towards economic development. For this reason we have argued that employment and income multipliers derived specifically for tourism will enable policy makers and other role players to realize the full potential of the sector.

But we have also pointed out that employment and income multipliers for this sector must be approached with caution. This is so because in developing country contexts it may not be easy to account for all the direct, indirect and induced effects. Moreover, in the case of tourism linked to natural resources, there may be negative externalities like pollution that traditional estimates of aggregate output usually exclude. In fact, rushing into tourism may have negative consequences for the traditional exports, usually some primary sector tradables, through the terms of trade and the exchange rate.

This chapter applies the conceptual framework and propositions derived in the previous chapters to the Rwandan data. A descriptive overview of the brief

purposive survey data is presented first. The data from the survey supplemented with additional data collected on Rwandan economy allow us to simulate the income and employment effects of the sector, using a rough input-output framework for Rwanda. Employment and income multipliers derived in this chapter help us to estimate the increases in employment and income under different tourism growth scenarios.

The remainder of this chapter is organised as follows: In section 2 primary results from workers are presented and the findings interpreted. In section 3 findings from tourism business establishments are presented and discussed. In section 4 the income and employment multipliers of tourism in Rwanda are estimated. The last section concludes the chapter.

7.2. Data presentation and interpretation: findings about the labour force in tourism

7.2.1. Response rate

To gather information related to tourism income and employment effects in Rwanda, a purposive survey was conducted and a sample size was determined to help us draw conclusions concerning the population considered for this study. In that sense, a sample size of 180 out of a total population of 600 workers was considered. A total of 180 questionnaires (Appendix D) were distributed to hotel workers occupying different positions. Of these 180 questionnaires, 167 were completed and returned, reflecting a response rate of 92.7%. The results obtained in this survey are displayed and discussed in subsequent parts of this chapter. Note that these results confirm that tourism contributes to income and employment generation through its direct, indirect and induced effects.

7.2.2. Demographic characteristics and employment patterns of the labour force

Demographic data regarding the labour force considered in this study is presented in the table below (7.1). Three main variables, namely age, gender and working experience, are interlinked and discussed as these indicate demographic characteristics of the labour force.

The findings in table 7.1 below indicate that the labour force involved in this study was aged between 16 and 50 years old. A large number of respondents (90) were between 26 and 35 years old. The economic significance of this variable age is that the large number of respondents is in accordance with the working age, defined by the International Labour Organisation (ILO) of between 15 to 65 years. Employing people who are economically active is expected to lead to the productivity of the tourism sector. This is reflected in the performance of hotels (our sample study) as displayed further on in this chapter. Considering that the tourism industry is essentially a service sector, the more dynamic the workers are, the more demand there will be for tourism service.

Linking the variable age to gender, findings reveal that male workers dominated the labour force in the case study. The majority of the male labour force (71) was also aged between 26 and 35 years, while on average the majority of female workers were much younger than their male counterparts. It was reported that 26 out the 50 female respondents were aged between 16 and 25 years old, while 19 were between 26 and 35 and only five between 36 and 50 years. Considering the overall respondents, findings reveal that female respondents represented only 30% of the labour force considered for this study. This gender imbalance is not peculiar to this case study; it is also the case in many work places given the low number of educated women in Rwanda as seen in chapter two of this thesis. The low education of Rwandan girls is partly due to past cultural perceptions of a girl's place being at home. This is a hindrance for the development of any economic sector, especially in Rwanda where the female population outnumbers the male population (52.3% against 47.7% as per the 2003 Rwanda general census of

population and habitat) (MINECOFIN, 2003). Although female workers are still underrepresented in the work place, efforts are being made by the government to eradicate this gender imbalance and to promote female education and employment.

The working experience of the respondents varied between 1 and 20 years. The majority of workers had between 6 to 10 years of experience with a frequency of 140 respondents representing 84%. The long working experience in the same industry can be seen either as a sign of work satisfaction or a lack of choice where an employee has to remain in her or his work place. However, regarding the case of the tourism industry represented here by hotels, it was revealed that the income earned in this industry is satisfying. This was reported by some of our respondents during the survey. It is also confirmed by the responses gathered as reflected in Table 7.2 on income patterns.

Linking the work experience to the variable age, findings reveal that younger workers have less experience than older people. However, the proportion of long-working experienced workers decreases as mature workers get older and retire, and increases as younger workers mature. 3% of respondents reported a working experience of between 1 and 5 and were aged between 16 and 25 years old. The long-working experienced people had between 11 and 20 years and were aged 36 to 50 years. They represented 13% of the overall working forces considered in this study.

Table 7.1: Employment patterns: Age, Gender and Work experience

Age	Number of respondents	Gender		Work Experience (in years)	Number of respondents	%
		Male	Female			
16 – 25	40	14	26	1 – 5	5	3
26 – 35	90	71	19	6 – 10	140	84
36 – 50[4]	37	32	5	11 - 20[5]	22	13
Total	167	117	50		167	100

[4] In this study, no respondent has reported age over 50 years.
[5] No respondent has reported a working experience exceeding 20 years.

In addition to the three main variables discussed above, this study also investigated the marital status and number of dependents in a household to explore the impact of income and employment on the labour force. As regards the marital status of the respondents, the majority (61%) revealed that they were married while 27 % were single and 12% widowed. This informs on the stability of workers in a work place as personal observation has proved that married people are more stable than single ones. If this is in fact the case, workers are expected to be more productive as a result of long working experience.

This study reveals that the average number of people dependant on the income of one person, or the breadwinner, was 9 (with a mean of 8.66 and a standard deviation of 2.74). In Rwanda the 1994 genocide had many socioeconomic consequences such as the many orphans, widows and other vulnerable family members who were left without income. Consequently, it is difficult to find a nuclear family without extended family members or orphans who depend on the household's income. The results of this research have confirmed that more than 50% of the respondents had at least 7 dependants at the time of the survey. They show that 39% of respondents had between 7 and 9 dependants, 28% between 10 and 12 dependants while 9% had more than 12 dependants. The fact of having many dependants also influences the wage earner to remain in a particular job for a long time in order to secure the job and to sustain the household's livelihood. The presence of this tourism business to employees means a lot to them as it helps them support their families.

In this study income and employment are used to illustrate the extent to which tourism contributes to the economic wealth of people. In the next section, therefore, income patterns for workers considered for this case are discussed.

7.2.3. Income patterns for workers in the tourism sector

This study has set out to investigate the extent to which tourism contributes to income and employment. In the above section, employment patterns have been explored. In this section and in Table 7.2 below, income patterns are discussed. They inform about the education level of the labour force in the tourism-related industry, the position of status occupied as well as the income earned in these tourism business establishments.

In analysing the education levels of people, the position occupied by the labour force and the income earned, it has been found that there is a positive correlation between the three variables. The more educated people occupy high positions and earn more income than the rest. This is consistent with human capital theory. Results from the above table indicate that the majority of workers (86%) have at least a secondary school level or tertiary level of education. Those with secondary school level represent 44% of the labour force while 42% reported having a tertiary level and only 14% have a primary school level. This is in line with the Rwandan government agenda of promoting education at all levels.

Considering the variable position, results in Table 7.2 reveal that 49% occupied low positions while 36% and 15% occupied middle and high positions respectively. What is important to note here is that tourism accommodates all categories of labour forces, including those with a low level of education such as primary school level. It is an advantage for LDCs, and that of Rwanda, to benefit from such a sector that can absorb even a low skilled labour force which forms the majority of workers in most developing countries.

As regards the incomes earned by workers in general, they varied from less than RWF 150,000 up to RWF 900,000 (US$ 272 to US$ 1637). The majority of workers (45%) earned an income between RWF 151,000 to 300,000 (US$ 272 to 545). This range coincides with the medium income level in Rwanda and corresponds with the medium level of education (secondary school level) which

accounts for the majority of respondents as well. If seen against the poverty index in Rwanda, it is clear that workers in tourism business establishments fit into a level that is far above the poverty line, fixed in 2006 at RWF 90 000 per annum and per adult equivalent (Republic of Rwanda, 2006). This is a positive impact on Rwandan poverty reduction policy since it reduces the number of vulnerable and poor people. The income earned by these workers allows them to fulfil their various responsibilities such as their households' consumptions, taxes and other households' needs such as education for their children.

Table 7.2. Income patterns: Education level, position occupied and income earned by workers

Education level	%	Position[6]	%	Income in thousand of RWF[7]	%
Primary	14	Low	49	1 – 150	32
Secondary	44	Middle	36	151 – 300	45
Tertiary	42	High	15	301 – 900	23

The impact of tourism on Rwandan economy also needs to be assessed against beneficiaries of income and employment. In this regard the nationality of the respondents was taken into consideration and the vast majority of them (94%) reported being Rwandese. The significance of this with regard to income and employment effects is that if 94% of Rwandese are employed and earn an income, there is a high likelihood that they will spend their income on local markets, impacting positively on the local economy and paying for taxes which increase the government's revenues. On the contrary, as suggested in literature on income and employment effects discussed in previous chapters, if the tourism sector employs more foreigners, income generated will go out to their countries of origin, leaving little impact on the local economy. This was referred to as tourism leakages.

[6] Low position = cleaners, catering, waiters, room service providers, receptionists and secretaries.
Middle position = tour guides, professional singers to entertain tourists and heads of different services.
High position = comprises workers in the decision making rank. These are mainly heads of different departments such as Human Resource, Finance and Administration, Production, Marketing, etc.

[7] Exchange rate on 9/10/2006 at Rwanda National Bank (BNR) is US$ 1= Frw 549.75308

Furthermore, it is important to investigate how the income earned from the tourism-related services is used. This information is important in this study because it will allow us to understand the backward and forward linkages attached to the tourism-related sector. In the next table, income utilisation is presented for analysis.

The findings in Table 7.3 below on income utilisation reveal that three main items made up the income earned by surveyed workers, namely, household consumption, taxes and savings. The share in these variables differs significantly depending on the size of the household and the level of income. Findings in Table 7.3 indicate that the majority of workers (61%) spent between 26 and 50 % of their income on household consumption. 36% of respondents reported spending between 51 and 75%. The remaining workers, i.e. 2% and 1%, revealed spending respectively between 1 – 25 % and 76 – 100% of their income on their household consumption. The households' capacity to purchase goods and services for consumption can be regarded as a stimulus to economic activities, especially those sectors dealing with the demands of households. Household consumption allows for money circulation, and thus creating a multiplier effect over the whole economy provided that goods and services consumed are produced locally. This is associated with the powerful intersectoral linkages that characterise the tourism sector as explained in the literature in previous chapters.

Considering aggregate taxes, the table below shows that of all the respondents, the vast majority (79%) reported spending from 1 to 25% of their income on taxes, while 21% only spent 26 to 50% of their income on taxes. Comparing this aggregate to the previous one (household consumption), it can be stated that this small percentage spent on taxes is understandable given the large portion of income spent on household consumption. Although small, the portion spent on taxes represents only direct taxes paid by workers from their income. It is important to mention that as people spend on household consumption, they indirectly pay taxes as final consumers. But this was not reported in the survey because it is an indirect tax where a taxpayer, especially the final consumer, has

little knowledge of the tax involved. And as far as the multiplier effect is concerned, those who benefit from the income of households consumption pay taxes indirectly to the Rwanda Revenue Authority (RRA). The income received by RRA helps the government achieve its many goals, amongst others, its development objectives.

This sample study reflects the fact that indicates that only a small portion of workers' income was allocated to savings. According to findings, 85% of workers revealed that only 1 to 25% of their income was directed towards savings. Again, this is understandable in the sense that many workers are unable to save because of the many dependants who they have to provide for. However, one must add that saving is rarely observed among Rwandese, especially after the tragedy of the 1994 genocide. This is a personal observation. It seems that many Rwandese lost hope in saving and investment projects after the genocide because many of their projects were ruined as a result of war. However, government policy of restoring peace and stability has started to change people's minds and cause them to think positively about investing for their future.

Table 7.3. Workers' income utilisation (%)

Variables	**1 - 25**	**26 - 50**	**51 - 75**	**76 - 100**	**Total**
Proportion of household income spent on consumption	2	61	36	1	**100**
Proportion of household income spent on taxes	79	21	0	0	**100**
Proportion of household income spent on savings	85	14	1	0	**100**

It was seen in this section that hotels in Rwanda employed many people of different ages and different levels of education. The kinds of jobs performed by the labour force differed from one worker to another depending on their education level. Likewise, the income distributed to a worker was positively related to the

worker's level of education and the position occupied. The benefits of tourism are not limited to the labour force employed in the tourism business establishment but are also spread to other economic sectors, including the service provider. In the next section results from tourism related business establishments are shown and the discussion of the findings presented.

7.3. Presentation and discussion of the findings from tourism-related business establishments

7.3.1. Response rate

Until now, we have focused on a descriptive analysis of the purposive survey data. We have discussed income and employment patterns of the labour force in the tourism-related businesses. In addition to income and employment generated by tourism to individual workers in hotels, owners of tourism business establishments were also beneficiaries of the sector. In that sense, therefore, we have addressed a questionnaire to the tourism-related business owners to gather information on their businesses. All hotels involved in this study responded to the questionnaire regarding tourism business establishments, (Appendix C), representing a 100% response rate.

7.3.2. Identification of business establishments: demographic data

In addition to secondary data analysed to discuss the tourism sector in Rwanda, a survey was conducted exclusively on hotels as tourism business establishments and their impact on the rest of the local economy. In this regard only hotels with an international standard were considered. The reason for this, as explained in the methodology chapter, is that tourists spend a large amount of their money in hotels (board and lodging). Therefore hotels were expected to have more impact on other economic sectors than other tourism business establishments.

All hotels considered in this study were officially registered as tourism business establishments. Of these tourism establishments, 67% started their business after the 1994 genocide while 33% of them were operational before the war and genocide (Table 7.4). This shows that Rwanda has become a safer place to invest after the devastating disaster of 1994. As the country stabilised more people were encouraged to invest in Rwanda and this is expected to benefit, not only investors, but also the country in general given, the multiplier effects of tourism.

Looking at the ownership of these surveyed tourism establishments, the vast majority (67%) were owned by Rwandese while 33% of them belonged to foreign investors. The fact that the majority of these tourism business establishments were owned by Rwandese ought to have had a positive impact on local economy in that the profits made from the business were likely to be spent locally rather than being sent out as dividends or profits to the owner and spent overseas. However, one has to state that this data concerns the surveyed tourism businesses and cannot be generalised to the whole tourism sector in Rwanda in terms of the benefit of ownership to the country.

Table 7.4. Identification of tourism business establishments

Tourism business registration	**%**	**Commencement of activity**	**%**	**Nationality of owner**	**%**
Yes	100	Before 1994	33	Rwandese	67
No	0	After 1994	67	Other	33
Total	100		100		100

In the next section employment patterns for these tourism related business establishments are presented and discussed.

7.3.3. Employment patterns for tourism business establishments

Table 7.5 below illustrates employment patterns, displaying the number of workers employed in tourism businesses, the proportion of Rwandans and their status positions at the workplace.

Results show that 83% of tourism business establishments considered in the study employed between 101 and 200 workers. This is a large number which can be explained by the fact that the tourism sector is essentially a labour-intensive sector. Note that the labour forces reported here are only fulltime workers while occasional workers were out of the scope of this study to avoid bias. However, these part-time workers were also employed on an irregular basis depending on the tourism industry's needs. This has a positive impact on Rwandan economy, because if more people are employed in a flourishing industry, they in turn inject money from received income into other businesses and produce induced effects in other sectors.

The nationality of workers as displayed in Table 7.5 below indicates that 67% of the labour force are Rwandese while only 33% represented other people of non-Rwandan nationality.

Concerning working positions, three different levels were considered in this study: these were low position, middle position and high position as mentioned earlier. Considering the positions occupied by Rwandese workers, results in Table 7.5 indicate that 100% of workers in both low and middle positions were Rwandese, while in managerial positions only 67% of Rwandese were represented. This is explained by the fact that non-Rwandan experts work mainly at the managerial level, given their professionalism and experience regarding the tourism business.

Table 7.5. Employment patterns: number of workers, proportion of Rwandese, and their position

Nationality of workers	Number	%	Position (%)		
			Low	Middle	High
Rwandans	134	67	100	100	67
Other	66	33	0	0	100

In the next section, income patterns in these tourism business establishments are presented and discussed.

7.3.4. Income generated by tourism business establishments and its utilisation

7.3.4.1. Income generated

Income and employment multiplier effects of tourism would not exist if there was no income and employment generated by tourism business establishments. For the purpose of this study the investigation was based on the year 2005 as to enable tourism establishments to remember the income generated. This would mean more accurate data on this economic variable. Four quarters in the year were considered and as seen in Table 7.6 below, the income generated fluctuated across all the quarters of the year 2005.

In the first quarter of the year 2005 (Table 7.6), 33% of tourism business establishments indicated that they had realised a quarterly income ranging from 1000,001 to 2,000,000 RWF[8] (US$ 2000 to 4000), 17% reported an income ranging from RwF 2,000,001 to 3,000,000 (US$ 4000 to 6000), 33% realised an income varying from RwF 3,000,001 to 4,000,000 (US$ 6000 to 8000) and 17% indicated that their income ranged between RwF 4,000,001 and 5,000,000 (US$ 8,000 to 1,000,000). In the second quarter these proportions changed, moving from 33% in the first quarter to 17% for the range of income between RwF 1,000,001 to 2,000,000; from 17% to 0% for the range of income between RwF 2,000,001 to 3,000,000; and increased up to 50% for the higher range of income

[8] US$ 1= Frw 549.75308

between RwF 3,000,001 to 4,000,000. This proportion dropped to 33% for the range of income of RwF 4,000,001 to 5,000,000 but still remained high when compared to that of the first quarter. The third and fourth quarters of the year 2005 saw an increase in the proportion of establishments with a high-income range. 66 % of tourism business establishments reported an income range of RwF 3,000,001 to 4,000,000 for both quarters while 17% of them reported even a higher range of income between RwF 4,000,001 to 5,000,000 in the last quarter of the year. In the table below, it can be observed that the income realised by tourism establishments fluctuates over the different periods of the year. The income realised in the first quarter was moderate and increased in the following quarter reaching the high-income level towards the end of the year. The fact of realising a high income towards the end of the year is partly explained by the tendency of people to spend more money during that period as a result of their vacation period where they have more time to relax and enjoy the fruits of their hard work.

Table 7.6. Quarterly income generated in 2005 (in Thousands of RWF)

Gross income	1st Quarter (%)	2nd Quarter (%)	3rd Quarter (%)	4th Quarter (%)
< 1000	0	0	0	0
1001 – 2000	33	17	17	0
2001 – 3 000	17	0	17	17
3001 – 4000	33	50	66	66
4001 – 5000	17	33	0	17
> 5000	0	0	0	0

In line with the objectives of this study which focuses on income and employment multipliers, it can be confirmed that these ranges of income realised in 2005, have in one way or another impacted on Rwandan economy as will be seen in subsequent sections. In what follows, income utilisation by the different tourism business establishments considered in this study is presented and discussed.

7.3.4.2. Income utilisation

As mentioned earlier, it is through the multiplier effect that tourism benefits are spread into other economic sectors. In that sense we argue that the way tourism-related businesses utilise their income determines the impacts they have on other sectors. The table below displays the different categories on which the income generated in tourism-related sectors is spent.

With regard to the income utilisation, 67% of tourism business establishments reported spending between 1 to 25% of their income on imports of inputs. For this same variable 23% and 10% of tourism business establishments reported using between 26 and 50% and 51 and 75% respectively of their income to import inputs for their production. As it is illustrated in the table below, the majority of respondents (67%) used less than 25% to import inputs. This is beneficial for a country where the business is located. If progressively fewer inputs are imported, this means that the propensity to utilise local inputs is high. This is confirmed by the figures given for the income spent on purchasing inputs from local markets. It is revealed by 67% of respondents that 51 to 75% of their income was used towards acquiring inputs from local markets. 23% of respondents revealed that they used 26 to 50% of their income to buy local inputs while only 10% allocated 1 to 25% of their income for the same purpose. If tourism business establishments are able to use local inputs which satisfy tourist demands, this means that the local market is capable of offering quality products. As far as multiplier effects are concerned, the income spent on local products helps boosting local producers businesses and stimulates them to increase their production. The more these local tourism business people benefit, the more income will be spread throughout the Rwandan economy as induced effects. However, it is important to mention that in this study only the operational phase was considered, while the construction phase was not. The latter was not in the scope of this study since we looked at the performance of these businesses in a particular year when they were functioning. More import-leakages are observed at the construction phase than during the operational phase. This is mainly a result of importing necessary raw materials

and other industrial inputs necessary to put in place infrastructure for tourism businesses such as hotels.

Looking at savings patterns, findings presented in Table 7.7 illustrate that 83% of tourism business establishments allocated 1 to 25% of their income to savings, while 17% of those establishments indicated that they had saved between 26 and 50% of their income. The savings reflected in these establishments are not impressive but, although small, these savings contribute to replenishing investments stock of those tourism business establishments.

Income was also utilised towards the payment of taxes and wages. As regards tax payment, 63% of the sample study indicated that an income ranging from 1 to 25% was allocated to taxes, while 37% of respondents revealed that 26 to 50% of their income was devoted to paying taxes. Note that taxes reported here are in direct connection with the tourism business establishments' turnover and do not include taxes related to workers' wages and salaries.

Considering aggregate wages findings reveal that the majority of the respondents (50%) used between 51 and 75 % of their income to paying salaries of their workers. 33% and 17% of respondents in the sample study reported spending respectively between 26 and 50% and between 1 and 25% of their overall income for wages. As explained earlier, an income injected into a society has multiple effects on the local economy. This is because workers earning that income use it in different ways and spend it mainly within local boundaries, therefore contributing to local economy.

Table 7.7. Gross income utilisation in tourism business establishments

Variable measured (%) → / Percentage range ↓	Import of inputs	Inputs from local market	Savings	Taxes	Wages
1 - 25	67	10	83	63	17
26 – 50	23	23	17	37	33
51 – 75	10	67	0	0	50
76 – 100	0	0	0	0	0

The survey used in this study dealt with the impact of tourism-related businesses on income and employment. It presented the benefits to both workers and owners of those businesses. However, to determine the total impact of tourism on Rwandan economy we have supplemented the above information with data on Rwandan economy for the year 2005 to estimate the multipliers. In the next section the size of tourism income and employment multipliers is estimated and interpreted.

7.4. The size of tourism income and employment multipliers in Rwanda and their interpretation

In the previous sections the findings from the survey were presented. It was found that tourism hotels in Rwanda employed many Rwandese and generated incomes which have a positive impact on Rwandan economy. In this section the size of tourism income and employment multipliers in Rwanda is determined using I-O model. One of the objectives of this study was to raise awareness of the extent to which tourism contributes to economic development. Income and employment were given special attention, given the important role they play in a country such as Rwanda.

In the absence of I-O tables for Rwandan economy, an adapted I-O table was constructed for use in this study. It consists of three sectors that are closely interlinked with tourism in Rwanda. These are tourism, agriculture and transport. It is important to bear in mind that the agriculture and transport sectors used in this model are exclusively tourism-related and do not include the transactions with other economic sectors. Although the findings reflected here are tourism-related activities, they have a significant impact on the rest of the Rwandan economy. These sectors will help us to assess the importance of tourism via its multiplier effects into the Rwandan economy. In what follows, the tourism income effects are estimated first, while the employment effects estimation follows.

7.4.1. Tourism Income multiplier effects in Rwanda in 2005

Input output analysis underlies general equilibrium phenomena. It takes into consideration production plans and activities of many industries that compose an economy. According to Taylor (2004), each entry along a row in the table is valued at the same price and the sums of rows should be equal to the sums of columns. The equality of sums in I-O analysis is driven by macroeconomic theories (O'Connor and Henry, 1975). The interdependence of sectors comes from the fact that each industry uses outputs of other industries as raw material to produce its own outputs. Similarly, its output is used in other industries as a factor of production or raw material.

In the I-O table each row shows in detail the amount of money spent in, and received from, other sectors of the economy. The table is called a 'transactions table' referring to monetary transactions of double-entry accounting. It shows the monetary flow of goods and services in a local economy for a particular year. In the present case the transactions are related to the year 2005. The following table represents income transactions table for the three selected sectors in Rwanda for the year 2005.

Table 7. 8. Income Transactions table for selected sectors (in billion of RWF)

Purchasing sectors → / Selling sectors ↓	Tourism	Agriculture	Transport	Final Demands	Total Output
Tourism	4	2	7	19	**32**
Agriculture	6	8	3	22	**39**
Transport	5	3	8	36	**52**
Final Payments	17	26	34	0	**77**
Total Input	**32**	**39**	**52**	**77**	**200**

Reading down the table the entries typically show the purchases from other sectors of goods and services required by an industry to carry on its activities. For

instance, the tourism sector in Rwanda spent RWF 32 billion overall in 2005 for purchasing inputs from other sectors in order to produce its output. Specifically, the tourism industry in Rwanda spent respectively in 2005 an amount of RWF 4 billion, 6 billion and 5 billion to acquire goods and services from Tourism, Agriculture and Transport sectors. Likewise, the agriculture sector spent an income of RWF 39 billion buying inputs from other sectors while transport service used RWF 52 billion for the same reason in the same year. As the sectors spend income to purchase inputs, they also receive income from other sectors for selling their outputs which constitute the inputs for the purchasing sectors. In that sense the tourism sector received RWF 4 billion from tourism, 2 billion from Agriculture and 7 billion from the transport sectors.

These results give us methods to translate money values into technical coefficients needed to produce a unit of final output for each industry.

The direct requirements table known as technical coefficients is obtained using the following formula:

$$a_{ij} = \frac{Z_{ij}}{q_j}$$

Where a_{ij} symbolises the technical coefficient or input-output coefficient as presented in the table below of direct requirements table.

Zij stands for inter-industry transactions represented in the transactions table above;

And qj is the total output of each industry. The technical coefficients (a_{ij}) for our three sectors model are presented in the matrix A below:

$$A = \begin{bmatrix} 0.125 & 0.051 & 0.135 \\ 0.188 & 0.205 & 0.057 \\ 0.156 & 0.077 & 0.154 \end{bmatrix}$$

Note that, rather than displaying actual money transactions, the direct requirements table below shows what fraction of total income was spent by a

named sector at the top to purchase required inputs from the sector named at the left, to produce one unit of total output.

Table 7.9. Income direct requirements table

Selling sectors\Purchasing sectors	Tourism	Agriculture	Transport
Tourism	0.125	0.051	0.135
Agriculture	0.188	0.205	0.057
Transport	0.156	0.077	0.154
Final Payments	0.531	0.667	0.654
Total	1	1	1

For this case study the table can be interpreted as follows: for tourism to produce one unit of its output it needs to spend a proportion of income of 0.125 purchasing inputs from the tourism sector, 0.188 from Agriculture and 0.156 from Transport. On the other hand, the tourism sector has to sell its output to other sectors in the following proportions: 0.125 to tourism, 0.051 to agriculture and 0.135 to transport. The same logic can be used to interpret agriculture and transport technical coefficients.

This direct requirements table or technical coefficients table is at the centre of input-output analysis. The intention of this table is to create the equilibrium conditions under which sectors in a given economy have just enough output to satisfy each other's demands in addition to final outside demands (O'Connor and Henry, 1975).

From the table of direct requirements the size of the multipliers for the three sectors model can be determined. The following formula is used:

$$q = [I - A]^{-1} f$$

Presented in matrix form, q and f are vectors of total output and final demands respectively, while A is the matrix of technical coefficients (above presented) and I the identity matrix.

The above equation is the standard input-output model used for multiplier analyses, where $[I-A]^{-1}$ is the familiar Leontief inverse. It represents the mechanism through which f is transformed to q (assuming the existence of at least one non-zero element in f).

The results obtained, using the above formula, are displayed in the following matrix, ($[I-A]^{-1}$ also known as Leontief inverse):

$$[I-A]^{-1}=\begin{bmatrix}1.199 & 0.096 & 0.198\\ 0.301 & 1.290 & 0.135\\ 0.249 & 0.135 & 1.231\end{bmatrix}$$

The table below gives the total direct and indirect effects of the three sectors considered in this study. These results are type I income multipliers. Type I multipliers include direct and indirect spending, therefore giving direct and indirect effects of the studied sectors to the local economy.

Table 7.10. Income total requirements table

Selling sectors\Purchasing sectors	Tourism	Agriculture	Transport
Tourism	1.199	0.096	0.198
Agriculture	0.301	1.290	0.135
Transport	0.249	0.135	1.231
Total	**1.749**	**1.521**	**1.564**

The income multipliers obtained after calculations are: 1.749 for tourism, 1.521 for Agriculture and 1.564 for the Transport sector. Economic interpretation used here is based on the theory that for every RWF 1 income change in the tourism sector, there is a total income of RWF 1.749 generated in the study area as a result of direct and indirect linkages. When the Agriculture sector realises a RWF 1 change in income, total income in the study area changes by RWF 1.521 from direct and indirect linkages. And for every RWF 1 income change in the transport

sector, there is a total income of RWF 1.564 generated in the study area. Comparing these multipliers for this case, it follows that the tourism income multiplier is bigger than the two interlinked sectors; this means that the effect of tourism on the rest of the economy is the biggest if these three sectors are only considered at direct and indirect impacts level.

The purpose of this study was to show to what extent the tourism sector is important as regards its impact on Rwandan economy. The above results present only direct and indirect effects of the sectors studied. It must be realised that the type I multiplier underestimates the total effects by ignoring 'wage-earners' (households) increased spending. Type II multipliers, on the other hand, also include induced effects. These are obtained by including in the original table households spending based on the income earned from direct and indirect effects. To get a full range of tourism impacts, both type I and II multipliers are used in conjunction. The following table gives the transactions between the three sectors with households.

Table 7.11. Income transactions table with households (in billion of RWF)

Purchasing sectors → / Selling sectors ↓	Tourism	Agriculture	Transport	Households	Final Demands	Total Output
Tourism	4	2	7	5	14	**32**
Agriculture	6	8	3	10	12	**39**
Transport	5	3	8	9	27	**52**
Households	4	6	14	0	0	**24**
Final Payments	13	20	20	0	0	**53**
Total Input	**32**	**39**	**52**	**24**	**53**	**200**

Households, in this case, received RWF 4 billion, 6 billion and 14 billion respectively from tourism, agriculture and transport industries in 2005. Likewise, households spent RWF 5 billion, 10 billion and 9 billion on tourism, agriculture and transport respectively. Based on the above table, and using the formula below:

$$a_{ij} = \frac{Z_{ij}}{q_j}$$

the technical coefficient a_{ij} is obtained and presented in Matrix A below:

$$A = \begin{bmatrix} 0.125 & 0.051 & 0.135 & 0.208 \\ 0.188 & 0.205 & 0.057 & 0.417 \\ 0.156 & 0.077 & 0.154 & 0.375 \\ 0.125 & 0.154 & 0.269 & 0.000 \end{bmatrix}$$

To obtain required values from each sector in order to produce a unit of output, the direct requirements table below provides details:

Table 7.12. Income Direct requirements table with households

Purchasing sectors → / Selling sectors ↓	Tourism	Agriculture	Transport	Households
Tourism	0.125	0.051	0.135	0.208
Agriculture	0.188	0.205	0.057	0.417
Transport	0.156	0.077	0.154	0.375
Households	0.125	0.154	0.269	0
Final Payments	0.406	0.513	0.385	0
Total	1	1	1	1

As mentioned earlier, this table displays the portion of total income required from each sector for a unit of output. From this direct requirements table with households, and applying the earlier used formula, the Leontief inverse obtained represents the income multipliers type II.

$$[I - A]^{-1} = \begin{bmatrix} 1.335 & 0.224 & 0.393 & 0.519 \\ 0.546 & 1.520 & 0.485 & 0.929 \\ 0.462 & 0.336 & 1.537 & 0.813 \\ 0.375 & 0.352 & 0.537 & 1.427 \end{bmatrix}$$

These multipliers are presented in the table below called 'total requirements table' with households. In addition to direct and indirect effects obtained in type I multipliers, type II multipliers also include induced effects and the following table is the combination of the three effects: direct, indirect and induced.

Table 7.13. Income Total requirements table with Households

Purchasing sectors → / Selling sectors ↓	Tourism	Agriculture	Transport	Households
Tourism	1.335	0.224	0.393	0.519
Agriculture	0.546	1.520	0.485	0.929
Transport	0.462	0.336	1.537	0.813
Households	0.375	0.352	0.537	1.427
Total	**2.713**	**2.432**	**2.952**	**3.688**

The size of income multipliers for the three sectors under consideration are as follows: 2.713; 2.432 and 2.952 respectively for tourism, agriculture and transport. These values indicate the total income multiplier effects over the local economy. For a change of income of RWF 1 in the tourism sector, there is a total income of RWF 2.713 generated in the local economy. These income figures emerge from direct, indirect and induced tourism effects. They represent the total economic effects of the tourism sector over Rwandan economy. With income multipliers type II, transport is the leading sector, followed by tourism and agriculture.

Breaking down the total effects for the three sectors model, the following effects are obtained:

Table 7.14. Total income multiplier effects of tourism, agriculture and transport in Rwanda, in 2005

Effects	**Tourism**	**Agriculture**	**Transport**
Direct	1	1	1
Indirect	0.749	0.521	0.564
Induced	0.964	0.911	1.388
Total	**2.713**	**2.432**	**2.952**

For the three sectors induced effects appear to be bigger than indirect effects.
From what has been developed in an early chapter it can be observed that agriculture in Rwanda absorbed a large amount of the labour force. However, agriculture was not improving people's lives for those relying on it as a source of income. Its value added to GDP was also decreasing as the service sector was developing. The results presented in this study prove that investment in other sectors such as tourism can yield greater total profits for the Rwandan economy than agriculture.

In what follows tourism employment multiplier effects on Rwandan economy are presented and analysed.

7.4.2. Tourism employment multiplier effects in Rwanda in 2005

To determine the size of employment multipliers in the tourism sector, the same procedure as for the income multiplier is followed. Below, an employment transactions table is presented where the quantity of labour needed in each sector to satisfy the demand of other sectors is given.

Table 7.15. Employment transactions table (in thousands of workers per RWF billion of output)

Purchasing sectors → / Selling sectors ↓	Tourism	Agriculture	Transport	Final labour demand	Total Output
Tourism	5	4	6	19	**34**
Agriculture	2	6	5	27	**40**
Transport	3	4	4	37	**48**
Final labour supply	24	26	33	0	**83**
Total Employment	**34**	**40**	**48**	**83**	**171**

In order to satisfy the demands of tourism, agriculture, transport and other sectors, the tourism sector employed 34 000 workers in 2005. The agriculture sector, on the other hand, employed up to 40 000 workers to produce outputs needed in other economic sectors; while the transport service engaged 48 000 people to satisfy the total demand of other sectors. The amount of labour used in agriculture is based on estimations of required labour instead of available labour to satisfy tourism and transport sectors. Given that the labour force in agriculture in Rwanda is underemployed, estimating employment multiplier effects based on available labour rather than required labour would overestimate the employment potential in the agriculture sector. It is in that sense that required labour rather than available labour was used.

The employment transactions table presented above allows for the determining of the technical coefficients presented in matrix *A* below.

$$A = \begin{bmatrix} 0.147 & 0.10 & 0.125 \\ 0.059 & 0.15 & 0.104 \\ 0.088 & 0.10 & 0.083 \end{bmatrix}$$

The direct requirements table displays the proportion of labour force needed from each sector to produce a unit of output in every single sector.

Table 7.16. Employment Direct requirements table

Purchasing sectors → / Selling sectors ↓	Tourism	Agriculture	Transport
Tourism	0.147	0.1	0.125
Agriculture	0.059	0.15	0.104
Transport	0.088	0.1	0.083
Final labour supply	0.706	0.65	0.688
Total	1	1	1

In order to produce a unit of output the tourism sector needed 0.147; 0.059; 0.088 and 0.706 proportions of workers respectively from tourism, agriculture, transport and other sectors. The agriculture sector used 0.1 from tourism, 0.15 from agriculture, 0.1 from transport and 0.65 from other sectors to produce a unit of total output. Likewise the transport sector required 0.125 workers from tourism, 0.104 from agriculture and 0.083 from the transport service.

Applying the Leontief inverse formula to the above matrix we obtain the following:

$$[I-A]^{-1}=\begin{bmatrix}1.202 & 0.163 & 0.182\\ 0.099 & 1.206 & 0.150\\ 0.126 & 0.147 & 1.124\end{bmatrix}$$

Because direct and indirect effects need to be captured first, households have been omitted in the model and will only come in at a later stage. Total direct and indirect employment multipliers are displayed in the total requirements table below.

Table 7.17. Employment Total requirements table

Purchasing sectors → / Selling sectors ↓	Tourism	Agriculture	Transport
Tourism	1.202	0.163	0.182
Agriculture	0.099	1.206	0.150
Transport	0.126	0.147	1.124
Total	**1.427**	**1.516**	**1.456**

The employment type I multipliers estimated for the three-sector model are 1.427 for tourism, 1.516 for agriculture and 1.456 for transport. When comparing these three sectors with their direct and indirect effects we note that employment multiplier in tourism is slightly smaller than in other sectors with agriculture as a leading sector. Remember that both transport and agriculture sectors used here are tourism related, i.e. agriculture and transport sectors have these impacts because of the tourism sector they are linked to.

In interpreting tourism employment multiplier it can be said that a 1 employee change in tourism gives rise to a total employment change of 1.427 jobs in the study area from direct and indirect linkages. As mentioned earlier, type I multipliers give only a partial view of economic impacts and there is a need to include households in the original model to get a holistic impact from the sectors under study.

Table 7.18. Employment transactions table with households (in thousand of workers per RWF billion of output)

Purchasing sectors → / Selling sectors ↓	Tourism	Agriculture	Transport	Households	Final labour demand	Total Output
Tourism	5	4	6	9	10	**34**
Agriculture	2	6	5	11	16	**40**
Transport	3	4	4	13	24	**48**
Household	10	11	12	0	0	**33**
Final labour supply	14	15	21	0	0	**50**
Total Employment	**34**	**40**	**48**	**33**	**50**	**171**

This transactions table provides the inter-sectoral linkages between the three sectors but also with households. It informs on the number of workers needed by each sector and allows for the determining of the proportion of workers required for each sector to produce a unit of output.

Based on the above table, and applying the formula below:

$$a_{ij} = \frac{Z_{ij}}{q_j}$$

the following matrix A of technical coefficients is obtained:

$$A = \begin{bmatrix} 0.147 & 0.100 & 0.125 & 0.273 \\ 0.059 & 0.150 & 0.104 & 0.333 \\ 0.088 & 0.100 & 0.083 & 0.394 \\ 0.294 & 0.275 & 0.250 & 0.000 \end{bmatrix}$$

In order to obtain a unit of output in each sector the following proportions in the direct requirements table below are needed from every sector concerned.

Table 7.19. Employment Direct requirements table with households

Purchasing sectors → / Selling sectors ↓	Tourism	Agriculture	Transport	Households
Tourism	0.147	0.1	0.125	0.273
Agriculture	0.059	0.15	0.104	0.333
Transport	0.088	0.1	0.083	0.394
Households	0.294	0.275	0.25	0
Final labour supply	0.412	0.375	0.438	0
Total	1	1	1	1

This table displays the fraction of total labour required from each sector to produce a unit of output. From the matrix A above, and applying the earlier used formula, the Leontief inverse obtained is:

$$[I-A]^{-1}=\begin{bmatrix}1.514 & 0.478 & 0.467 & 0.756\\ 0.434 & 1.544 & 0.456 & 0.812\\ 0.488 & 0.512 & 1.454 & 0.876\\ 0.686 & 0.693 & 0.626 & 1.665\end{bmatrix}$$

The total employment multipliers type II are displayed in the total requirements table below with households. This gives the total effects of employment for the three-sector model which is the sum of direct, indirect and induced effects.

Table 7.20. Employment Total requirements table with Households

Purchasing sectors → / Selling sectors ↓	Tourism	Agriculture	Transport	Households
Tourism	1.514	0.478	0.467	0.756
Agriculture	0.434	1.544	0.456	0.812
Transport	0.488	0.512	1.454	0.876
Households	0.686	0.693	0.626	1.665
Total	**3.122**	**3.227**	**3.003**	**4.109**

The sizes of employment multipliers obtained are as follows: 3.122 for tourism; 3.227 for agriculture and 3.003 for transport. These multipliers reflect the total effects of the three sectors.

The economic interpretation of these multipliers is that for every additional job created in the tourism sector, there is a generation of 3.122 total jobs in the economy resulting from direct, indirect and induced effects. This total impact is more than double of the original impact which is the direct effect.

The following table presents the breakdown of total employment effects with details on direct, indirect and induced effects for the three sectors.

Table 7.21. Total employment multiplier effects of tourism, agriculture and transport in Rwanda, in 2005

Effects	**Tourism**	**Agriculture**	**Transport**
Direct	1	1	1
Indirect	0.427	0.516	0.456
Induced	1.695	1.711	1.547
Total	**3.122**	**3.227**	**3.003**

From the above chart it can be observed that agriculture presents the biggest employment multiplier, followed by tourism and transport for 2005. However, the difference between the three sectors is not big. This can be explained by the fact that agriculture in Rwanda more than any other sector uses more labour force than capital. We have seen in chapter two of this thesis that the large majority of labour forces in Rwanda are engaged in agriculture. Furthermore, it was observed that the economic structure of agriculture in Rwanda is that the sector is labour-intensive with low added-value. It follows that employment multiplier in agriculture is bigger than in other sectors taken into account in this study, but with a lowest income multiplier.

At the induced level employment multiplier effects are larger than indirect effects for all sectors considered and even bigger than the employment direct effects. It is believed that an investment in tourism not only will create good[9] jobs for people, but also will increase job generation in other sectors as a result of its multiplier effects. Therefore, we argue that increased employment which is associated with salaries paid to workers contributes to the GDP.

To sum up, both tourism income and employment multipliers obtained for Rwanda for the year 2005 are put together for comparison.

Table 7.22. Tourism income and employment multipliers total effects

Effects	Income multiplier	Employment multiplier
Direct	1	1
Indirect	0.749	0.427
Induced	0.964	1.695
Total	**2.713**	**3.122**

When comparing income and employment multipliers in the tourism sector in Rwanda, results show that the total employment multiplier effect is bigger than the total income multiplier. The explanation to this is that tourism like agriculture is a labour-intensive sector. When it comes to income and employment multipliers, labour-intensive sectors present larger total employment multipliers than total income multipliers (Stynes, 2002).

However, if we look at the breakdown of these two variables, the indirect impact of tourism income appears to be bigger than the indirect effect of tourism employment. At the induced level the opposite is observed and tourism employment multiplier is bigger than income, but also bigger than direct and indirect employment multipliers. This is partly explained by the nature of tourism as a labour-intensive sector, and it is also in line with the theories discussed in earlier chapters (Dietzenbacher, 2005). According to Dietzenbacher (2005),

[9] Good jobs in this context mean jobs which are associated with satisfying salaries.

labour-intensive sectors such as tourism, tend to have relatively larger induced effects than indirect effects, as a result of using more labour than capital inputs.

In real values the contribution of tourism sector to income generation and job creation in Rwanda in 2005 is estimated as follows:

Income generated:

Direct income = RWF 32 billion

Indirect income = RWF 32 billion × 0.713 = RWF 23.968 billion

Induced income = RWF 32 billion × 0.964 = RWF 30.848 billion

Total income created as a result of tourism in Rwanda in 2005 = RWF 32 billion+ RWF 23.968 billion+ RWF 30.848 billion = RWF 32 billion×2.713 = RWF 86.816 billion

Jobs created:

Direct jobs = 34 000 jobs

Indirect jobs = 34 000 × 0.427 = 14,518 Jobs

Induced jobs = 34,000 × 1.695 = 57,630 Jobs

Total jobs created as a result of tourism in Rwanda in 2005 = 34,000 + 14,518 + 57,630 = 34,000 × 3.122 = 106,148 Jobs

In addition to the direct effects that concern only the studied sector, tourism in this case, the remaining income/employment impacts (indirect and induced) are generated in other economic sectors as a result of initial injection of income and employment in tourism. This means that the sector, for instance tourism, does not only contribute to economic growth of Rwanda, but also stimulates other sectors to do so. Failure to recognise the value of the tourism sector will limit the country's economic performance.

Using the income and employment multipliers estimated above, we can simulate tourism growth scenarios and predict the outcome for policy strategies. Three cases are considered for this prediction:

(a) We assume an increase of 10% for the tourism income multiplier holding constant the initial income injected in tourism.

(b) We assume an increase of 10% for the tourism income multiplier and an increase of 7% for the income injected in tourism. Here we assume that tourism grows at the same pace as the GDP (7% in 2005).

(c) We assume an increase of 10% in both cases.

A policy aiming at promoting tourism growth under the above scenarios will expect the following results displayed in the table below.

Table 7.23. Good case scenario with tourism income growth

Scenario	Income multiplier	Initial income (in RWF billion)	Total income (in FRW billion)	Policy simulation - *change in growth (7%)* - *change in multiplier (10%)*
Initial situation	2.713	32	86.816	
(a) (10% and 0%)	2.9843	32	95.4976	10%
(b) (10% and 7%)	2.9843	34.24	102.1824	17.7%
(c) (10% and 10%)	2.9843	35.2	105.04736	21%

Three important messages are derived from the above simulations with regard to tourism growth strategy:

Firstly, a policy aiming at increasing tourism multipliers (tourism-related services) and leaving unchanged the direct income injected in the sector will impact on the growth of the economy by the same percentage increase applied to the multiplier. Likewise, an increase in direct income in tourism without increasing related services will lead to the same results as an increase of the multiplier with a constant direct income. In this case (a)

policy makers can opt to strengthen direct investment in tourism or strengthen related services and still obtain the same effects.

Secondly, an increase of 10% in tourism multipliers and 7% in tourism direct income assuming that the latter is growing at the same pace as the GDP (in 2005), will have a much greater total effect on the economy than the simple aggregation of the increased percentages (17,7% > 17%) in case (b).

Thirdly, an increase of the same percentage, say 10% in each case, will give rise to a total effect which is much higher than the double of the percentage increase (21%>20%). In this case the higher the percentage increase of tourism direct income and related services will be, the greater the total effect obtained out of this growth strategy (c) will be.

More importantly, it is proved that a combined increase in both tourism and its related services give greater impact than the simple aggregate of the two percentages increase (b and c). Therefore, it is essential that any development plan aiming at boosting the impact of tourism on economic growth and on economic development should tackle both the tourism sector and its related services. To emphasise the above it can be asserted that backward and forward linkages are very important in tourism development and need to be strengthened to yield a greater impact on the rest of the economy. This is also in line with the literature explored in previous chapters indicating that tourism development should not be done in isolation but developed together with its supporting sectors.

Similar scenario cases are applied to tourism employment growth and results are displayed in the table below.

Table 7.24. Good case scenario with tourism employment growth

Scenario	Employment multiplier	Initial jobs in tourism	Total jobs created	Policy simulation - *change in growth (7%)* - *change in multiplier (10%)*
Initial situation	3.122	34 000	106 148	
(a) (10% increase and 0%)	3.4342	34 000	116 763	10%
(b) (10% and 7%)	3.4342	36 380	124 936	17.7%
(c) (10% and 10%)	3.4342	37 400	128 439	21%

For the case of tourism employment growth, the interpretation is the same as for the tourism income growth above-presented. The prediction based on employment simulations shows also that a combined growth gives rise to greater proportions of the total economic impact than a simple increase of tourism or its related services. In the next section a summary is presented and a conclusion to the chapter drawn.

7.5. Conclusion

Tourism is an economic activity which is part of the service sector with backward and forward linkages. However, given the nature of tourism, many activities that tourists get involved in are not all defined as tourism activities and therefore make tourism a difficult sector to define and to estimate its impacts. Tourism, as seen in this chapter, has a diversity of economic impacts. It contributes to income, employment, sales, profits and tax revenues in Rwanda. The most direct effects occur within the tourism and tourism-related sectors such as hotels and restaurants, leisure pursuits, transport, etc. Through indirect and induced effects tourism stimulates most sectors of the economy. Results from this study have

proved that tourism in Rwanda has a positive impact on the economy judged here by income and employment generated. As far as Hotels considered in this study are concerned, each employed above 100 workers and Rwandese employees largely outnumbered outsiders. Note that this entails only direct fulltime jobs in those tourism establishments without considering part-time, indirect and induced jobs. This is beneficial to the country as far as resolving unemployment issues and improving people's well-being are concerned. The job performed in these tourism establishments allows workers to earn income which helps them to satisfy their basic needs and fulfil their other commitments.

As revealed during the survey, income earned by workers was used for household consumption, savings, and payment of taxes, to mention just a few. However, the large proportion of their income was dedicated to household consumption. This has also indirect and induced impacts on the development of local businesses that cater for household needs. In addition, income spent on taxes contributes to increasing government revenues, therefore making government expenditures possible. Likewise, income raised in the hotels was important and beneficial to Rwandan economy, particularly to local business people in that, as has been indicated, the large portion of the tourism turnover was used to buy inputs from local markets. Therefore, investing in a dynamic sector such as tourism, which is labour-intensive is an efficient investment for a country such as Rwanda with a high rate of unemployment and with many of its people living in poverty.

Considering the size of tourism income and employment multipliers in Rwanda, the study confirms that tourism income and employment multipliers are positive. The total tourism income multiplier determined was 2.713, while the total employment multiplier was 3.122 for the year 2005. These multipliers mean that for every extra unit of income injected into tourism in Rwanda, the total income in the whole economy increased by 2.713. In addition, for every new job created in the tourism sector in Rwanda, 3.122 total jobs were generated into the economy resulting from direct, indirect and induced effects. These multipliers show the

total effects that the tourism sector in Rwanda had on the rest of the economy during the year 2005.

The importance of tourism as revealed in this chapter, and the poor consideration the sector has received as shown in the previous chapter, call for a proper investment to make use of the sector's potential to boost Rwandan economy. Furthermore it is essential that any development plan aiming at boosting the impact of tourism on economic growth and on economic development should tackle both the tourism sector and its related services.

To sum up, it can be concluded that tourism is an activity integrated into the economic system although it does not appear in the national accounts. It plays an important role in the Rwandan economy by stimulating other economic activities through its powerful multiplier effects. However, due to lack of a proper planning and accurate data on tourism, this role is not well realised and utilised in Rwanda. A good understanding of tourism's economic impacts is therefore important for the tourism industry, for government and the community as a whole. The extent to which tourism contributes to Rwandan economy goes far beyond considering only the aggregates of income and employment considered in this study.

In the next chapter, a summary, a conclusion and policy implications for this research are presented.

CHAPTER EIGHT
CONCLUDING REMARKS AND POLICY IMPLICATIONS

This study has investigated the proposition that tourism contributes significantly to Rwanda's economic development through income and employment generation. Based on a vast body of international evidence and economic theories, we have developed an analytical model which was then tested using Rwandan data. In this chapter we summarize our core findings, highlight major policy implications for Rwanda and similar economies and outline challenging questions for future research. This study proposes a refinement of the multipliers to enable better capture of the total effects of tourism on the economy.

8.1. Summary and conclusion

This study has investigated the income and employment multiplier effects of tourism in Rwanda. The main objective was to show the extent to which tourism contributes to economy. This was done by analysing existing literature on tourism and by examining the situation of tourism in Rwanda in general and by taking into consideration the case study of hotels in particular. With regard to tourism contribution to Rwandan economy in general, the findings from this study reveal that the sector's contribution has been of moderate value. This was a result of both poor tracking the records of tourism statistics as well as the poor development of the sector.

The study has explored the mechanisms through which tourism contributes towards economic growth and the macroeconomic consequences of expanding this sector over other traditional economic sectors. We have examined these dynamics in the context of underdeveloped economies, such as that of Rwanda. Traditionally, these are economies heavily dependent on their abundant natural resources. But natural resource abundance was seen to be a curse on development, retarding economic growth.

Findings reveal that tourism contributes positively to the economic development of LDCs and to income and employment. Both microeconomic and macroeconomic linkages to tourism helped the sector to perform well. Existing studies have emphasised the positive role that tourism plays in diverse economies, including LDCs. Given the comparative advantage that these countries present in terms of tourism products, it was found that opportunities offered by the tourism sector can be exploited to improve their economic wealth. While tourism has been identified as a source of foreign earnings, international trends show that the African continent receives a very little share of international tourists' arrivals and receipts compared to the rest of the world.

Furthermore, it was found that the development of the tourism sector in LDCs could lead to shrinkage of the primary export sector. However, this was likely to happen only in cases where factors of production are fully and efficiently utilised, where there is mobility of factors and where the demand for tradable and non-tradable goods is perfectly elastic. However, for most LDCs, these conditions are not found and the development of tourism could expand economic growth and contribute to development.

Based on the survey for this study, tourism in Rwanda was found to perform quite well. The findings indicate that hotels in Rwanda employ many people, skilled and low-skilled labour. Income is distributed and supports many Rwandese families, as revealed during the survey. This case study has established that tourism contributes significantly to Rwandan economy through income and employment generation.

With the input-output model from data collected in Rwanda, the results have proved that tourism has positively impacted on income and employment. For every RWF1 income injected in the tourism sector in Rwanda in 2005, there was a total income of RWF 1.749 generated in the study area as a result of direct and indirect linkages only. The total effect of tourism income multiplier was estimated

at 2.713. This means that for a change of income of RWF 1 in the tourism sector, there is a total income of RWF 2.713 generated in the local economy. This resulted from direct, indirect and induced-tourism effects with respective values of 1; 0.749; 0.964. Findings indicate also that tourism income-induced effects are more significant than indirect effects.

Moreover, the results reveal significant direct and indirect employment opportunities from the tourism industry. Those opportunities provide important sources of incomes to the households. Essentially, the tourism employment multiplier effect in Rwanda is positive. The findings reveal that for every additional job created in the tourism sector, there is a creation of 3.122 total jobs in the economy resulting from direct, indirect and induced effects. The values for these three effects are 1, 0.427 and 1.695 respectively for direct, indirect and induced employment effects. The employment induced effects are larger than direct and indirect employment effects.

Intersectoral linkages presented in this study should be interpreted with caution. The analysis is useful to provide ground for assessment of the effectiveness of development strategies that aim to strengthen intersectoral linkages such as between tourism and agriculture. The multipliers obtained represent the situation of the studied sectors at a particular time (year 2005 for this study) and should not be compared over time. The knowledge of tourism multipliers and intersectoral linkages provide important guidance on when it is most appropriate to be used.

Tourism expansion in Rwanda was seen to have potential to stimulate economic growth and contribute to the country's development. It can also contribute to poverty alleviation. It has been observed that income generated from tourism in Rwanda helps many households to satisfy their basic needs and to lift up their living conditions far above the poverty line. Furthermore, tourism in Rwanda was seen to have the capacity of accommodating both skilled and low-skilled labour. However, it was also found that if not properly controlled, the sudden development of tourism can have negative impacts such as the appreciation of the

real exchange rate and the degradation of the environment. Tourism in Rwanda can stimulate the development of important economic activities such as tour operation, curio shops, handicraft sales and cultural exhibition in addition to other tourist attractions. Tourism's strong linkages (backward and forward linkages) with other economic sectors present opportunities for small businesses that most poor people can be involved in. In conclusion, tourism can be an alternative sector to boost LDCs in general, and Rwanda in particular. Given that tourism cannot develop without the intervention of many actors, we present in what follows policy implications.

8.2. Policy implications

This study examined the role of tourism in Rwanda through income and employment multipliers. Generally, the findings indicate that tourism has the potential to improve Rwandan economic growth. It also has a strong potential to reduce poverty and unemployment. However, there are policy issues that need to be addressed for tourism to efficiently achieve its goals. These issues are the following:

1. Given the potential that the tourism sector in Rwanda has, it needs to be developed and promoted together with its related industries. It was found that a combined development policy dealing with tourism and its related services was a better strategy than developing singly the tourism sector.
2. In order to benefit more from tourism, the use of local products should be promoted and possible leakages resulting from imports of goods and services to serve tourists should be controlled. Equally important is to encourage the production of local goods which are similar in standard and quality to international goods that tourists are attracted to. This has the double benefit of satisfying tourist needs and of increasing sales for local products.
3. In order for tourism to develop in Rwanda, there is an imperative need to know where the sector stands. In this regard, tourism needs to be considered as a separate sector and research needs to be done on a regular basis to have a clear picture of the sector in order to develop it correctly. Statistical data needs to be

made available regularly, and tourism intersectoral linkages with other economic sectors provided.

4. Given that genocide has left a very bad image of Rwanda as an unsafe place, there is a need to engage in a general campaign to address this issue as it can seriously destroy tourism efforts.

5. Tourism development and environmental conservation need to be dealt with together. The development of tourism should not be done separately but together with that of conservation and sustainable development.

6. Tourism products in Rwanda need to be diversified and need to include all the attractions that the country is endowed with. These include, among others, the rich cultural exhibition. People including the poor should be encouraged to exhibit goods and services of their rich cultural heritage. This is particularly beneficial to the poor because it requires less skill and rewards directly its producer, the poor in this case.

8.3. Recommendations

The development of tourism is not only a policy issue but one where private investors should also be encouraged to explore and exploit this opportunity. In this section recommendations for private investors and future research are formulated.

To private investors, the following recommendations apply:

(a) Tourism in Rwanda presents much potential that could benefit people who invest in it. These range from investments in the building of tourists' facilities such as hotels and guests houses of international standard close to tourism natural attractions; in the improvements of the communication and transportation sector to the diversification of products offered.

(b) Private investors should be aware of what is happening around the world and inform people who are interested in travel, what they are offering. In this regard it is important to know that the tourism business, like any other, needs good

advertising aimed at its target market. Modern technology, such as the use of internet facilities, should help this process enormously.

(c) The use of locally-produced goods to satisfy tourist needs has a triple benefit. Firstly, it gives tourists a chance to have new experiences. Secondly, it benefits private investors because they will buy local products at relatively cheaper rates than the cost of importing these products from abroad. Thirdly, it will impact directly on the local people, who sell the products to private investors, therefore, increasing their income. In addition, by the multiplier effects, the impact can go further and improve many people's lives.

(d) Product differentiation is also important. There should be a variety of products to attract the attention of tourists and stimulate their demands.

(e) Tourist satisfaction and needs should be regularly assessed. This can be done by getting feedback from tourists on the services offered. This will help the tourism business owners to improve and expand their businesses.

(f) Tourism activity can develop in places where there were previously no initial tourist attractions through the use of good advertising techniques. For instance, a special village characteristic of one region can be displayed in another area. A particular vegetation of one place can be imported and developed in another area. This will not only show the diversity of these tourists' attractions, but will also benefit owners of such projects.

For further research:

This study was limited to the analysis of income and employment multiplier effects of tourism in Rwanda. The study focused on a case study of hotels as major tourism components. For future research, the following area could be researched:

(a) Economic intersectoral linkages of the tourism sector in Rwanda. It is recommended that there be integration of other aggregates such as government revenue and that the economic intersectoral linkages with all sectors be considered. It would also be of interest to research the economic impacts of tourism in general and not only isolated cases. Although this would involve high costs, it will provide a holistic picture

of tourism in Rwanda. This research however can only be carried out easily at a national level and not by individual researchers for their own academic purposes given its requirements in time and money.

(b) Under which circumstances could tourism development lead to Dutch Disease? To induce the Dutch Disease, the magnitude of tourism must be big. It is important therefore to determine the threshold for tourism development, especially in case of LDCs with segmented tourism sectors for tourism to induce the shrinkage of other primary sectors.

To sum up, it can be said that this study has made an empirical contribution to the literature of tourism income and employment multiplier effects. This study has established evidence to suggest some contribution to a better understanding of the tourism sector, particularly in Rwanda. A light is shed on the understanding of macro and micro level linkages in the sector. Therefore, the study contribution lies in providing particular experience of tourism multiplier effects in Rwanda as well as in the understanding of the need for refinement of the multiplier to better capture the effects of tourism on the economy.

The study has established that, although there is a growing literature on tourism in the area of development economics, empirical studies are limited to regional studies. This literature deals with broad issues such as tourist arrivals and tourism contribution to GDP. This study has filled the empirical gap by considering a single country, Rwanda, at the macro level and by exploring the objectives at the micro level of hotels. The study has contributed to the understanding of tourism multiplier effects in Rwanda. The study demonstrates that through its powerful intersectoral linkages, tourism contributes and improves the economic wealth of many developing countries, including Rwanda. The study also analysed the macroeconomic consequences of the expansion of the service sector. In this line, it has extended the Dutch Disease theory and natural resource curse by looking at the service sector and by internationalising it. Tourism was regarded as an export sector given the foreign earnings it generates. Analysing the above economic theories in the case of tourism expansion, this study finds that the sudden

development of the sector can be accompanied by the shrinkage of the primary export sector (agriculture in many developing economies), therefore inducing the Dutch Disease. However, Rwanda will take a couple of years before experiencing the Dutch Disease given the nature of the tourism it practises.

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APPENDICES

Appendix A

Questionnaire for tourism business establishments (Pilot study)

I. Identification of respondent

1.1. What is your main activity?

1	Hotel/Motel	
2	Restaurant	
3	Transport	
4	Foreign exchange	
5	Other (specify)	

1.2. Do you have a tourism certificate or registration?

1	Yes	
2	No	

1.3. When did you start your business?

1	Before 1994	
2	After 1994	

1.4. Nationality of owner

1	Rwandese	
2	Other	

II. Information regarding income sales

2.1. For the year 2005, how much income sales (per quarter) did your business generate (in Rwandan Francs)?

Amount \ Quarter	Q1	Q2	Q3	Q4
< 100 000				
100 000- 500 000				
500 000-1000 000				
> 1000 000				

2.2. How do you spend the income generated from your business?

1	Import inputs	
2	Buy inputs from local markets	
3	Savings	
4	Household consumption	
5	Taxes	
6	Wages	
7	Other (specify	

2.3. Which percentage of your income is spent on the following items?

Items \%	1-25	26-50	51-75	76-100
1. Import of inputs				
2. Inputs from local market				
3. Savings				
4. Household consumptions				
5. Taxes				
6. Wages				
7. Other (specify)				

III. Information on employment

3.1. How many workers do you employ in your business?

1	1 - 50	
2	51 - 100	
3	101 - 150	
4	151 - 200	
5	> 200	

3.2. Which percentage of your workers are nationals?

1	1 - 25	
2	26 -50	
3	51 -75	
4	76 -100	

3.3. Which % of national workers occupies the following position?

Position\%	1- 25	26-50	51-75	76-100
1.High position				
2. Middle position				
3. Low position				

3.4. Which % of national workers fulfil full time job?

1	1 - 25	
2	26 -50	
3	51 -75	
4	76 -100	

3.5. How many people depend on your income, including domestic workers?

1	1 – 3	
2	4 – 6	
3	7 – 9	
4	10 - 12	
5	13 - 15	
6	> 15	

Appendix B

Questionnaire for workers (pilot study)

I. Identification of respondent

1.1. Age group

1	11 – 15	
2	16 – 20	
3	21 – 25	
4	26 – 30	
5	31 – 35	
6	36 – 40	
7	41 – 45	
8	46 – 50	
9	> 50	

1.2. Gender

1	Female	
2	Male	

1.3. Marital status

1	Single	
2	Married	
3	Divorced	
4	Widowed	

1.4. Educational level

1	Primary	
2	Secondary	
3	Tertiary	
4	Other (specify)	

1.5. Nationality

1	Rwandese	
2	Other	

II. Information on employment

2.1. In which tourism business establishment do you work?

1	Hotel/Motel	
2	Restaurant	
3	Transport	
4	Foreign exchange	
5	Other (specify)	

2.2. Which position do you occupy?

1	High position	
2	Middle position	
3	Low position	

2.3. Are you part time or full time worker?

1	Full time	
2	Part time	

2.4. For how long have you been working in this establishment?

1	1 – 5 years	
2	6 – 10 years	
3	11 – 15 years	
4	16 - 20 years	
5	> 20 years	

III. Information on income

3.1. For the last six months of 2005, which range corresponds to your monthly salary (in Rwandan Francs)?

1	< 25 000	
2	25 000 -50 000	
3	50 000 -75 000	
4	75 000 -100 000	
5	> 100 000	

3.2. Which % of your income do you spend on the following items?

Item\%	1 - 25%	26-50%	51-75%	76-100%
1. Household consumption				
2. Taxes				
3. Savings				
4. Other (specify)				

3.3. How many people including domestic workers depend on your income?

1	1 – 3	
2	4 – 6	
3	7 – 9	
4	10 – 12	
5	13 – 15	
6	> 15	

Appendix C

Questionnaire for tourism business establishments (after pilot study)

I. Identification of respondent

1.1. What is your main activity?

1	Hotel/Motel	
2	Restaurant	
3	Transport	
4	Foreign exchange	
5	Other (specify)	

1.2. Do you have a tourism certificate or registration?

1	Yes	
2	No	

1.3. When did you start your business?

1	Before 1994	
2	After 1994	

1.4. Nationality of owner

1	Rwandese	
2	Other	

II. Information regarding income sales

2.1. For the year 2005, how much income sales (per quarter) did your business generate (in thousand of RWF)?

Amount \ Quarter	Q1	Q2	Q3	Q4
1 – 1000				
1001- 2000				
2001 – 3000				
3001 – 4000				
4001 – 5000				
> 5000				

2.2. How do you spend the income generated from your business?

1	Import inputs	
2	Buy inputs from local markets	
3	Savings	
4	Household consumption	
5	Taxes	
6	Wages	
7	Other (specify)	

2.3. Which percentage of your income is spent on the following items?

Items \%	1-25	26 -50	51-75	76 -100
1. Import of inputs				
2. Inputs from local market				
3. Savings				
4. Household consumptions				
5. Taxes				
6. Wages				
7. Other (specify)				

III. Information on employment

3.1. How many workers do you employ in your business?

1	1 – 50	
2	51 – 100	
3	101 - 150	
4	151 - 200	
5	> 200	

3.2. Which percentage of your workers are nationals?

1	1 – 25	
2	26 -50	
3	51 -75	
4	76 -100	

3.3. Which % of national workers occupies the following position?

Position\%	1 – 25	26 – 50	56 - 75	76 - 100
1.High position				
2. Middle position				
3. Low position				

3.4. Which % of national workers fulfil full time job?

1	1 – 25	
2	26 -50	
3	51 -75	
4	76 -100	

Appendix D

Questionnaire for workers (after pilot study)

I. Identification of respondent

1.6. Age group

1	11 – 15	
2	16 – 20	
3	21 – 25	
4	26 – 30	
5	31 – 35	
6	36 – 40	
7	41 – 45	
8	46 – 50	
9	> 50	

1.7. Gender

1	Female	
2	Male	

1.8. Marital status

1	Single	
2	Married	
3	Divorced	
4	Widowed	

1.9. Educational level

1	Primary	
2	Secondary	
3	Tertiary	
4	Other (specify)	

1.10. Nationality

1	Rwandese	
2	Other	

II. Information on employment

2.1. In which tourism business establishment do you work?

1	Hotel/Motel	
2	Restaurant	
3	Transport	
4	Foreign exchange	
5	Other (specify)	

2.2. Which position do you occupy?

1	High position	
2	Middle position	
3	Low position	

2.3. Are you part time or full time worker?

1	Full time	
2	Part time	

2.4. For how long have you been working in this establishment?

1	1 – 5 years	
2	6 – 10 years	
3	11 – 15 years	
4	16 - 20 years	
5	> 20 years	

III. Information on income

3.1. For the last six months of 2005, which range corresponds to your monthly salary (in Thousand of Rwandan Francs)?

1	1 – 50	
2	51 - 100	
3	101 - 150	
4	151 - 200	
5	201 - 250	
6	251 - 300	
7	301 - 350	
8	351 - 400	
9	401 - 450	
10	451 - 500	
11	501 - 550	
12	551 - 600	
13	601 - 650	
14	651 -700	
15	701 - 750	
16	751 - 800	
17	801 - 850	
18	851 - 900	
19	901 - 950	
20	951 - 1000	

3.2. Which % of your income do you spend on the following items?

Item\%	1 - 25%	26 - 50%	51 - 75%	76 - 100%
1. Household consumption				
2. Taxes				
3. Savings				
4. Other (specify)				

3.3. How many people including domestic workers depend on your income?

1	1 – 3	
2	4 – 6	
3	7 – 9	
4	10 – 12	
5	13 – 15	
6	> 15	

Appendix E

Questionnaire aux Entreprises commerciales à caractère touristique

I. Identification du répondant

1.1. Quelle est votre activité principale?

1	Hotel/Motel	
2	Restaurant	
3	Transport	
4	Bureau de change	
5	Autre (indiquer)	

1.2. Etes-vous enregistré dans le registre de commerce du tourisme?

1	Oui	
2	Non	

1.3. Quand avez-vous commencé votre activité commerciale?

1	Avant 1994	
2	Après 1994	

1.4. Indiquez la nationalité du propriétaire

1	Rwandaise	
2	Autre	

II. Information sur les revenus

2.1. Quel est le chiffre d'affaire par trimestre que vous avez réalisé en 2005 (en millier de Franc Rwandais)?

Montant \ Trimestre	1er	2ème	3ème	4ème
1 – 1000				
1001- 2000				
2001 – 3000				
3001 – 4000				
4001 – 5000				
> 5000				

2.2. Comment utilisez-vous le chiffre d'affaire réalisé de votre activité commerciale?

1	Importation des intrants	
2	Achat des intrants aux marchés locaux	
3	Epargne	
4	Consommation des ménages	
5	Taxes	
6	Salaires	
7	Autre (indiquer)	

2.3. Quel pourcentage de votre chiffre d'affaire dépensez-vous sur les rubriques suivantes?

Rubrique \Pourcentage	1-25	26-50	51-75	76-100
1. Importation des intrants				
2. Acquisition des intrants aux marchés locaux				
3. Epargne				
4. Consommation des ménages				
5. Taxes				
6. Salaires				
7. Autre (indiquer)				

III. Information sur l'emploi

3.1. Combien de travailleurs utilisez-vous dans votre entreprise?

1	1 – 50	
2	51 – 100	
3	101 – 150	
4	151 – 200	
5	> 200	

3.2. De tous vos employés, combien sont-ils des nationaux?

1	1 – 25	
2	26 -50	
3	51 -75	
4	76 -100	

3.3. Quel est le % des travailleurs nationaux occupant les positions suivantes?

Position\%	1-25	26-50	51-75	76-100
1.Haute position				
2. Position moyenne				
3. Basse position				

3.4. De vos travailleurs nationaux, quel est le pourcentage de ceux qui travaillent à temps plein?

1	1- 25	
2	26 -50	
3	51 -75	
4	76 -100	

Appendix F

Questionnaire aux travailleurs

I. Identification du répondant

1.11. Groupe d'âge

1	11 – 15	
2	16 – 20	
3	21 – 25	
4	26 – 30	
5	31 – 35	
6	36 – 40	
7	41 – 45	
8	46 – 50	
9	> 50	

1.12. Genre

1	Féminin	
2	Masculin	

1.13. Etat civil

1	Célibataire	
2	Marié(e)	
3	Divorcé(e)	
4	Veuf (ve)	

1.14. Niveau d'étude

1	Primaire	
2	Secondaire	
3	Universitaire	
4	Autre (indiquer)	

1.15. Nationalité

1	Rwandaise	
2	Autre	

II. Information sur l'emploi

2.1. Dans quelle entreprise commerciale à caractère touristique travaillez-vous?

1	Hotel/Motel	
2	Restaurant	
3	Transport	
4	Bureau de change	
5	Autre (indiquer)	

2.2. Quelle position occupez-vous?

1	Haute position	
2	Position moyenne	
3	Basse position	

2.3. Travaillez-vous à temps plein ou à temps partiel?

1	Temps plein	
2	Temps partiel	

2.4. Quelle est votre expérience professionnelle au sein de cette entreprise?

1	1 – 5 ans	
2	6 – 10 ans	
3	11 – 15 ans	
4	16 – 20 ans	
5	> 20 ans	

III. Information sur le revenu

3.1. Indiquez la case correspondant à votre rémunération mensuelle pour les six derniers mois de l'année 2005 (en millier de Franc Rwandais)

1	1 – 50	
2	51 – 100	
3	101 – 150	
4	151 – 200	
5	201 – 250	
6	251 – 300	
7	301 – 350	
8	351 – 400	
9	401 – 450	
10	451 – 500	
11	501 – 550	
12	551 – 600	
13	601 – 650	
14	651 – 700	
15	701 – 750	
16	751 – 800	
17	801 – 850	
18	851 – 900	
19	901 – 950	
20	951 – 1000	

3.2. Quel pourcentage de votre revenu dépensez-vous sur les rubriques suivantes?

Rubrique\Pourcentage	1-25%	26-50%	51-75%	76-100%
1.Consommation de ménages				
2. Taxes				
3. Epargne				
4. Autre (indiquer)				

3.3. Combien de gens dépendent de votre revenu, y compris vos domestiques?

1	1 – 3	
2	4 – 6	
3	7 – 9	
4	10 – 12	
5	13 – 15	
6	> 15	

Appendix G

Ibibazo bigenewe abakozi

I.Umwirondoro w'usubiza

1.16. Ikiciro cy'imyaka

1	11 – 15	
2	16 – 20	
3	21 – 25	
4	26 – 30	
5	31 – 35	
6	36 – 40	
7	41 – 45	
8	46 – 50	
9	> 50	

1.17. Igitsina

1	Gore	
2	Gabo	

1.18. Irangamimerere

1	Ingaragu	
2	Arubatse	
3	Yaratandukanye	
4	Umupfakazi	

1.19. Amashuri wize

1	Abanza	
2	Ayisumbuye	
3	Amakuru	
4	Ayandi(Yavuge)	

1.20. Ubwenegihugu

1	Umunyarwanda	
2	Ubundi bwenegihugu	

II.Amakuru yerekeranye n'akazi

2.1.Ukora mu kihe kigo cy'ubucuruzi, kijyanye n'ubukerarugendo?

1	Inzu y'amacumbi	
2	Inzu y'uburiro	
3	Gutwara abantu n'ibintu	
4	Ibiro by'ivunjisha	
5	Ahandi (havuge)	

2.2. Uri mu ruhe rwego mu kazi ukora?

1	Mu rwego rwo hejuru	
2	Mu rwego rwo hagati	
3	Mu rwego rwo hasi	

2.3. Ukora mu buryo bw'akazi gahoraho cyangwa nk'ikiraka?

1	Akazi gahoraho	
2	Ikiraka	

2.4. Ufite uburambe mu kazi bungana iki muri icyo kigo ukoramo?

1	Umwaka 1- Imyaka 5	
2	Imyaka 6 - Imyaka 10	
3	Imyaka11- Imyaka 15	
4	Imyaka16 - Imyaka20	
5	Hejuru y'imyaka 20	

III. Amakuru yerekeranye n'imari

3.1. Ni mu kihe kiciro muri ibi bikurikira,umushahara wawe ku kwezi uherereyemo, mu mezi atandatu ya nyuma y'umwaka w'ibihumbi bibiri na gatanu (2005) mu amafaranga y'u Rwanda

1	1 000 – 50 000	
2	51 000 – 10 000	
3	101 000 – 150 000	
4	151 000 – 200 000	
5	201 000 – 250 000	
6	251 000 – 300 000	
7	301 000 – 350 000	
8	351 000 – 400 000	
9	401 000 – 450 000	
10	451 000 – 500 000	
11	501 000 – 550 000	
12	551 000 – 600 000	
13	601 000 – 650 000	
14	651 000 – 700 000	
15	701 000 – 750 000	
16	751 000 – 800 000	
17	801 000 – 850 000	
18	851 000 – 900 000	
19	901 000 – 950 000	
20	951 000 – 1000 000	

3.2. Ni mu kihe kiciro cy'ijanisha umushahara wawe ukoreshwamo muri ibi bice by'ingezi bikurikira?

Ibice by'ingenzi\Ijanisha	1-25%	26-50%	51-75%	76-100%
1.Ibitunga urugo				
2. Ibijyanye n'imisoro				
3. Ibijyanye no kuzigama				
4. Ibindi (Bivuge)				

3.3. Umushahara wawe utunze abantu bangana iki harimo n'abakozi bo mu rugo?

1	1 – 3	
2	4 – 6	
3	7 – 9	
4	10 – 12	
5	13 – 15	
6	> 15	

Appendix H

GLOSSARY

Tourism: According to the World Tourism Organisation (WTO, n.d), tourism comprises the activities of persons travelling from their usual places to outside their environment for not more than one consecutive year for different purposes (leisure, business and other) excluding purposes connected to a remunerated activity within the visited area. For tourism activity to happen there must be a displacement of an individual by any means of transport, foot travel included. However, any travel is not tourism, but any tourism activity involves travelling with specific purpose mentioned above.

Multiplier: an additional activity generated as a result of one form of economic activity is described as a multiplier (Song 2002, Stynes *et al.,* 2000). Multipliers communicate the degree of interdependency between sectors in a country's economy and therefore vary significantly across sectors.

Income multiplier in tourism: Income multipliers as suggest Cooper et al. (1998) and Song (2002) are multipliers that measure the additional income injected in the economy as a result of an increase in tourist spending.

Employment multiplier in tourism: Employment multiplier in tourism, measures the total amount of job created by an additional unit of tourist expenditure. It is also a ratio of the total employment generated by this same spending to the direct employment alone (Baaijens, Nijkamp, and Van Montfort, 1997; Yusaku, 2002).

Direct effects in tourism: According to Carstensen, (2003); Burress, (2003); Pao, (2005), direct effects represent changes in the economic activity resulting from the first round of spending in the tourism industry.

Indirect effects in tourism: Indirect effects in tourism represent changes in sales, income and employment within industries that have backward linkages (supplying goods and services) with tourism businesses (Pao, 2005).

Induced effects in tourism: Induced effects in the tourism sector reflect increased sales in local industries as a result of households spending of the income earned in tourism and connected industries (Burress, 2003).

Total effect: Total effect is the sum of direct, indirect and induced effects.

Appendix I

TABLES RELATED TO CHAPTER TWO

Table 2.2. GDP by Kind of Activity (in constant 2001 prices in billion of RWF)

	1999	2000	2001	2002	2003	2004	2005
Agriculture	**238.2**	**254.5**	**276.9**	**318.3**	**303.5**	**303.8**	**318.5**
Food crop	202.8	218.2	237.6	277.9	263.8	259.2	275.7
Export Crop	7.9	7.5	8.5	8.7	7.1	11.2	8.5
Livestock	15.8	16.5	17.6	18.1	18.6	19.1	19.6
Fisheries	2.6	2.6	2.9	2.9	3.0	3.1	3.2
Forestry	9.2	9.6	10.4	10.7	11.0	11.2	11.5
Industry	**91.6**	**93.1**	**105.0**	**110.4**	**113.7**	**127.8**	**136.8**
Mining and quarrying	1.5	2.1	5.6	4.3	3.4	5.0	6.6
Manufacturing	46.7	46.6	51.3	56.3	56.4	60.0	62.3
Of which: Food, beverages, & tobacco	30.2	29.2	32.0	35.1	32.8	35.9	38.7
Textiles and clothing	3.0	3.5	3.6	3.6	3.5	3.7	3.7
Wood, paper and printing	1.3	1.3	1.4	1.7	2.1	2.1	2.6
Chemicals, rubber, plastics	2.8	2.8	3.0	3.3	3.6	3.8	3.9
Non metallic minerals	4.2	4.5	5.6	6.4	6.8	6.8	6.6
Furniture and other	5.2	5.4	5.7	6.3	7.7	7.7	6.9
Electricity, gas, & water	4.2	3.7	3.3	3.8	4.2	3.5	4.1
Construction	39.2	40.7	44.8	46.0	49.8	59.3	63.9
Services	**266.7**	**297.3**	**317.4**	**345.2**	**360.9**	**389.3**	**424.9**
Wholesale & retail trade	61.2	69.2	73.6	80.1	78.1	84.3	92.0
Restaurants & hotels	6.4	6.6	6.9	6.8	7.8	7.9	9.0
Transport, storage, communication	32.5	37.8	43.1	47.5	47.5	53.1	58.8
Finance, insurance	17.2	21.1	22.0	23.0	29.9	35.0	38.7
Real estate, business services	67.8	70.0	72.3	75.9	80.1	82.5	89.4
Public administration	50.1	52.9	55.0	56.0	60.2	61.5	64.1
Education	19.3	22.8	25.6	35.4	33.4	39.6	46.5
Health	11.0	11.2	12.7	13.7	16.1	17.1	16.3
Other personal services	1.1	5.8	6.1	6.8	7.9	8.3	10.1
Adjustments	36.1	39.0	42.5	49.1	47.3	47.9	50.7
Less: Imputed bank service charge		- 10.8	-11.7	-12.5	-12.0	-13.9	-16.5
Plus: VAT and other taxes on products	46.9	50.7	55.0	61.0	61.2	64.4	69.0
Gross domestic Product	**632.5**	**683.8**	**741.8**	**823.0**	**825.4**	**868.8**	**931.0**

Source: National Institute of Statistics of Rwanda, 2007

Table 2.3. Household income by main income category and source (%)

Main Household Income Category	Agriculture	Non-Agricultural Self-Employment	Non-Labour income	Agricultural Wages	Non-Agricultural Wages	ALL
Agriculture	84	3	7	4	2	**100**
Non-Agricultural Self Employment	15	75	5	2	3	**100**
Non-Labour Income	20	3	71	2	4	**100**
Agricultural wage Labour	25	1	7	66	1	**100**
Non-Agricultural wage Labour	14	2	7	1	76	**100**

Source: adapted from EICV2

Table 2.4. Revenue Declared at the RRA by the Service Sector

Rwf billion	2003	2004	% change
Banking and Insurance	22.03	25.39	15.3%
Clearing Agency	1.10	1.43	29.2%
Consultancy and Advocate	2.01	2.08	3.7%
Electronic Service	3.08	3.49	13.1%
Garage	1.99	2.39	20.0%
General Commerce	93.43	105.62	13.0%
Hotel and Snack Bar	8.06	8.60	6.7%
Other Services	11.33	13.39	18.2%
Pharmacy	3.64	4.84	33.2%
Post and Telecoms	21.81	26.00	19.2%
Premises Renting	0.58	0.73	26.5%
Printary, Stationary and Book Shop	3.82	4.17	9.2%
Transport	6.46	7.31	13.1%
Total	179.33	205.43	13.1%

Source: RRA

Table 2.5. Number of Tourists arrivals in Rwanda National Parks for the period 1987 to 2004

Year	VNP	ANP	NNP	Total
1987	5356	13728	-	**19084**
1988	5282	14540	441	**20263**
1989	6952	13850	2896	**23698**
1990	2726	0	2658	**5384**
1991	1781	0	900	**2681**
1992	1011	0	941	**1952**
1993	1111	0	2299	**3410**
1994	61	0	-	**61**
1995	1663	0	-	**1663**
1996	2653	823	149	**3625**
1997	1192	589	38	**1819**
1998	0	687	210	**897**
1999	417	1143	374	**1934**
2000	1313	1709	777	**3799**
2001	2155	3164	646	**5965**
2002	5575	3677	840	**10092**
2003	7305	7388	1785	**16478**
2004	8542	16476	1980	**26998**

Source: ORTPN, 2005

Table 2.6. Number of tourists who visited Rwanda National Parks and their origin

	1994	1997	1998	2001	2002	2003	2004	2005
Total	**64**	**1,115**	**892**	**5,766**	**10,092**	**16,088**	**24,305**	**22,669**
Rwanda	4	150	281	1981	2857	5908	12558	7906
North Africa	0	2	5	21	4	23	46	19
West Africa	0	18	2	6	28	27	81	36
Central Africa	1	70	10	56	136	28	42	
East Africa		29	5	31	252	351	242	286
Europe	17	375	504	2314	4363	6441	7695	9073
North America	14	235	47	706	1303	2119	3012	4617
Latin America	0	13	10	1	23	25	52	
Central America					5			
East America								
West America								
Western Asia	0	0	0	10	265	111		
Other Asian Countries	2	44	28	196		113		
Oceania	6	179	0	353	856		577	
Non identify	20	0	0	91		942		

Source: ORTPN

Table 2.7. Tourism receipts from National parks for year 2003 and 2004 (in US$)

National park\Year	**2003**	**2004**	**Change (%)**
Volcano National Park	1 377 665	2 213 383	60.7
Akagera National Park	19 736	101 316	413.4
Nyungwe National Park	1 844	40 909	2118.5
TOTAL	**1 399 245**	**2 355 608**	**68.3**

Source: ORTPN, 2005