ESTIMATING AND FORECASTING

THE ECONOMIC IMPACT OF INTERNATIONAL TOURISM

ON KENYA

By

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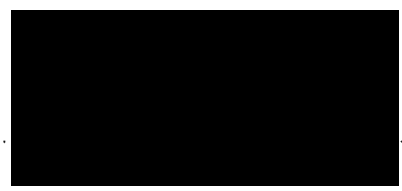
DECLARATION

I hereby certify that this thesis contains no material which has been accepted for the award of any other degree or diploma in any institute, college or university, and that, to the best of my knowledge and belief, it contains no material previously published or written by another person, except where due reference is made in the text.



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ABSTRACT

This study describes the results of a detailed analysis of the impact made by 1996 tourism expenditure on output, household income and employment in Kenya. Details of the methodology and data sources are provided and the results are analyzed. The result of an airport survey conducted in Kenya give an insight into how tourists spent their money in 1996 and disaggregates this expenditure by country of origin. This information is used to analyze the impact of tourism expenditure on various sectors of the economy. The study also forecasts tourism demand and projects the impacts of tourism expenditure on Kenya's economy up to the year 2000.

The results of this study indicate that, apart from the initial receipts from tourism expenditure, there is a flow-on effect throughout the economy, which is approximately one-and-a-half times, the initial expenditure in output and employment generation. It also reveals the sectors, such as, manufacturing and agriculture, which have strong linkages with the tourism industry. The results of this study have useful policy and marketing implications.

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To my wife Merab

and

my children Mabel, Tracy and Trevor

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ABBREVIATIONS

CBS	Central Bureau of Statistics
EATTA	East African Tourist Travel Association
EIU	Economist Intelligence Unit
GDP	Gross Domestic Product
GNP	Gross National Product
GRIMP	GRIT Impact Program
GRIT	Generation of Regional Input-Output Tables
GRP	Gross Regional Product
HABITAT	United Nations Center for Human Settlements
IMF	International Monetary Fund
IUOTO	International Union of Official Travel Organizations
K£	Kenya Pound
KAHC	Kenya Association of Hotelkeepers and Caterers
KATA	Kenya Association of Travel Agents
KATO	Kenya Association of Tour Operators
KES	Kenya Shillings
LTTE	Liberation Tigers of Tamil Ellam
NDP	National Development Plan
OPEC	Organization of Petroleum Exporting Countries
SAP	Structural Adjustment Program
SNA	United Nations System of National Accounts
TTI	Travel and Tourism Intelligence
UK	United Kingdom
UNEP	United Nations Environment Program
USA	United States of America
USD	United States Dollar
WTO	World Tourism Organization

CHAPTER 1

INTRODUCTION

1.1. Background

The Republic of Kenya, with an area of approximately 583,000 square kilometers, lies along the Equator on the eastern seaboard of Africa. Kenya is endowed with a benign climate, scenic landscapes and a rich heritage of flora and fauna. Since independence in 1963, the Kenyan government has encouraged foreign and local private investment and has provided adequate measures to safeguard private enterprise. The result has been significant growth in agriculture, agro-industry, light manufacturing, and tourism.

Kenya is a popular long-haul holiday destination, offering mainly wildlife safaris and beach holidays. This popularity can be attributed to the government's direct support for tourism, a balanced economic policy and the maintenance of political stability in the country over the years. Today, tourism plays an important role in Kenya's economy, particularly in earning foreign exchange and creating employment opportunities.

The lack of heavy industry and mineral deposits has made Kenya rely on agriculture as the main source of income and employment since independence. However, due to bad weather and fluctuating prices of agricultural produce on the world market, tourism has increasingly become an important source of foreign exchange, surpassing even coffee and tea.

Recent developments in the world, including the end of the 'cold war' between the communist 'East' and the capitalist 'West' and the end of apartheid in South Africa, have led to the opening up of the former communist (Eastern European) nations and South Africa to international tourism. Peace and changes in political and economic policy in the Eastern Africa region, in which Kenya lies, have put further pressure on Kenya's tourism. At home, communities like the Maasai and Samburu, which surround the areas, where most wildlife parks are located, are questioning the benefits of tourism despite indications by the government that it is beneficial. There is therefore a need to regularly review the performance of tourism in the economy in order to establish its merits and demerits.

Over the years, economic impact studies have been conducted for both developed and developing countries. These have included, cost-benefit studies, multiplier analysis, demand studies, and also studies of governmental intervention into business and optimal development levels for various countries worldwide (Gunn 1994:6). Witt, Brooke and Buckley (1991:151) note that the calculation of multipliers has become a major element in policy analysis for tourist destinations, which allows them to make a quantitative estimate of the benefits generated in the area.

Economic growth may bring about environmental side effects, which as a result could offset any economic gains by the tourist destination. Consequently, Kottke (1988) stresses the importance of economic impact studies being conducted to supplement environmental impact studies. The emergence of new concepts like ecotourism and the

growing awareness of the importance to conserve nature reinforce the need for tourist destinations to conduct economic impact studies.

In addition to being a useful pointer, in terms of tourism's contribution to Kenya's economy, the study will, for the first time, examine the tourist expenditure patterns and consequently measure the economic impacts of tourists by country of residence. The study will also use a tourist demand forecast to project the impact of tourism on the economy. By segregating the tourist and their expenditures and by forecasting tourism's impact on the economy, the results of this study will be useful to planners, marketers and policy makers alike in developing Kenya as a more effective tourist destination.

The study first utilizes the input-output method to calculate tourism multipliers for Kenya, which it then uses to estimate the impacts of tourist expenditure on output, income and employment on the economy. As a prerequisite to the impact estimation, a survey of departing international tourists is conducted in order to obtain the necessary information on tourist expenditure patterns. Secondly, the time series method is used in the study to forecast international tourism demand and expenditure, the results of which are used to project, using the tourism multipliers obtained beforehand, tourism's impact on the economy from 1997 to the year 2000. This period is chosen for forecasting because it corresponds with Kenya's National Development Plan period.

1.2. Objectives of the Study

The principal aim of this study is to estimate the economic impact of international tourism on Kenya's economy and to forecast the prospects and implications of tourism's future development in the country. The study also analyzes international tourist expenditure patterns by country of origin and on the basis of these results, indicates those productive sectors in which tourism expenditure yields the greatest returns.

The main objectives can be summarized as follows:

1. To develop an aggregated eleven-sector input-output table for Kenya. This will project a clearer picture of Kenya's economy.
2. To determine international tourist expenditure patterns by country of residence by conducting a sample survey of international visitors to Kenya.
3. To perform multiplier analysis in order to identify and provide estimates of tourism's economic significance to Kenya resulting from international tourist expenditure. This will be done by examining the impact of international tourism expenditure on:
    - Total output;
    - Household incomes, and
    - Employment in Kenya.
4. To determine the level of tourism demand from 1997 up to the year 2000.
5. To estimate tourism receipts (expenditures) and to forecast tourism's impacts on Kenya's economy between 1997 and the year 2000.

1.3. Thesis Framework

Chapter 2: Literature Review: This chapter reviews literature relevant to this study. It examines the concepts of tourism and economic development, especially as they affect developing countries like Kenya. It also reviews literature on the different methods used in economic impact assessment. Lastly, it examines some of the positive and negative effects tourism may have on the host country's economy.

Chapter 3: Tourism in the Kenyan Economy: The economic contribution of tourism to Kenya's economy is traced and the current performance of the industry examined. A brief description of the structure of the tourism industry is then followed by some of the social and environmental impacts resulting from the development of the tourism industry in Kenya.

Chapter 4: Methodology: This chapter focuses on the input-output technique used in the study to estimate tourism's impacts on the economy. It gives a detailed description of the input-output table, multipliers and identifies the strengths and weaknesses of the input-output technique. This is followed by a brief examination of the methodology used for primary data collection for this study.

Chapter 5: Economic Impact Assessment: An economic impact assessment is done for Kenya using multipliers calculated from input-output tables for Kenya. Data used includes primary and secondary data obtained and collected in Kenya. The various results ensuing from the impacts examined are then described in detail.

Chapter 6: Forecasting the Impacts of International Tourism: In this chapter, the time-series technique used to predict tourism demand to Kenya from 1997-2000. After international tourist expenditure is estimated, the forecasted figures and multipliers for Kenya obtained in the input-output analysis are used to project the impacts of international tourism expenditure on Kenya's economy up to the year 2000.

Chapter 7: Conclusions and recommendations: This chapter summarizes the results of the impact assessment and the tourism forecast and draws conclusions. Appropriate recommendations are then made.

1.4. Definition of Terms

The study of tourism consists of the examination of complex issues involving the interaction between supply and demand for differentiated products in a spatially differentiated setting (Carroll 1991). An examination of the economics of tourism, therefore, requires specific definitions of the subject, and its components, which are suitable for economic analysis. The definitions of the main terms used in this study are given below.

1.4.1. Tourism and Tourist

Several definitions of the terms *Tourism and tourist* exist, with various writers, institutions and governments carrying different and sometimes opposing views on what actually should be included in the definition. As a result, there is no universally accepted definition of these terms. For example, McIntosh and Goeldner (1990:4) define tourism as:

> 'The sum of the phenomena and relationships arising from the interaction of tourists, businesses, suppliers, host governments, and host communities in the process of attracting and hosting these tourists and other visitors'.

In contrast, Bull (1995) sees tourism as neither a phenomenon nor a simple set of industries but as a human activity, which encompasses human behavior, use of resources, and interaction with other people, economies and environments.

There are definitions of tourism that highlight the travelers' length of stay at the destination as being the deciding factor. Others stress the importance of the distance traveled or the purpose of travel in determining whether a person is a tourist or not

According to Harrison (1992), the World Tourism Organization (WTO) defines a tourist as someone visiting a destination for at least 24 hours but less than a year for the purposes of recreation, holidays, sport, business, meetings, conventions, study, visiting friends and relatives, health, mission work or religion. In his definition of Leisure tourism and business tourism Bull (1995) includes all of these motivations.

Despite the numerous definitions of tourism, it is generally agreed that tourism includes:

- Tourist needs and motivations.
- Travel away from home.
- Market interactions between tourists and those supplying products to satisfy tourist needs.
- Impacts on tourists, hosts, economies and environments (Bull 1995).

In this study only international tourists are considered and are defined as 'any visitor staying more than 24 hours in Kenya and who have come for holiday, recreation (leisure, sports, health) business (meetings, conventions, study), religion and to visit friends and relatives.'

1.4.2. Economic Impacts and Economic Benefits

According to Jensen and West (1986:69), one major objective of economic research is the study of impacts, where the term refers to the consequences of some actual, expected or hypothetical event or phenomenon. They define economic impact as 'the measured economic effect of, or change which is attributable to an impacting agent on the economy in question' (p.71). The impacting agent may be an actual or potential source of economic change in the economy or even an established industry (like tourism) operating in the economy.

Frechtling (1994:362) points out that an economic benefit is 'a gross increase in the wealth or income, measured in monetary terms, of people located on an area.' This increase he sees as being above the levels that would prevail in the absence of the activity under study. The terms 'impact' and 'benefits' are used interchangeably in this study to have a similar meaning, though impacts may include non-monetary benefits or costs. Jensen and West (1986) interpret impact measurement as an assessment of the current economic significance of an industry in terms of some of the important economic indicators.

In this study, all possible impacts are considered – monetary or not – but only positive economic impacts are investigated. These impacts are measured in terms of the effect of expenditure on total output, household income and employment in Kenya.

1.4.3. The Economy

Economic impact studies in travel and tourism can be conducted for individual facilities like museums, events like the Olympic games, cities, counties, towns, regions or provinces, states, or nations (Fretchling 1994). The definition and selection of the host economy, the representative tourist and the nature of the interaction [to be studied] must be established in any economic analysis of tourism (Carroll 1991).

The choice of the economy under study whether individual, regional or national etc, depends on, among other things, the availability of data for analysis, the resources and the time available for the study. In this study, Kenya's national economy is examined, mainly due to the fact that Kenya's Input-Output table and additional secondary data for the analysis was readily available from the Kenya Government. There is no data available on regional economies in the country to allow for an in-depth regional economic analysis.

1.4.4. Tourist Expenditure

A bye product of the interaction between the tourist and the host economy is expenditure, which can be estimated by considering what the visitor spends in a particular area or on a particular activity. Travel expenditures become business receipts that, in turn are used to pay wages and salaries, taxes (Fretchling 1994). They can therefore be used effectively as a measure of economic impacts on an economy. The term as it is used in this study, expenditure excludes any payment for international transport by the tourist.

The total international tourist expenditure figures for 1996 (Kenya 1997) and expenditure figures obtained from a survey conducted at Jomo Kenyatta International Airport, Nairobi and Moi International Airport, Mombasa, are used to estimate the economic impacts. As stated earlier, input-output method is used to estimate these impacts. This method of economic analysis is described in detail in chapter 4.

1.4.5. Tourism Demand and Forecasting

Business and management decisions can not be made satisfactorily without complete information on the demand of a product and the forecast for that demand. Archer (1976:3) defines demand as 'The quality of a commodity or service which a community is willing and able to buy during a given time period.' He also defines forecasting as 'The art of predicting the occurrence of events before they actually take place' (p. 4). In this study, an attempt will be made to predict the number of tourist arrivals and tourist expenditure up to the year 2000.

1.5. Summary

As the 21st Century approaches, Kenya finds itself beset by many difficult problems such as lack of food, growing unemployment, dwindling natural resources, political instability, a global economic recession and environmental degradation. Scientific innovation can be helpful in aiding the development of society. Kenya's tourism potential means that through basic research, areas can be identified through which tourism can make a contribution aimed at solving some of these problems facing the country.

The next chapter reviews literature on tourism in general, especially as it affects the economies of developing countries. A review of literature on economic impact estimation is also carried out.

CHAPTER 2

LITERATURE REVIEW

2.1. Outline

Tourism is an important source of income for most countries of the world. There is, however, considerable debate on the nature and extent of economic impacts of international tourism on the host economy, especially developing economies (Britton 1982, Summary 1987, Dieke 1995). Support for tourism as a development option for developing countries is based on its ability to increase foreign exchange, employment, income, government revenue and on the regional development potential (Dieke 1995). This view is reinforced by studies carried out on individual countries by, Archer (1985), Summary (1987), and more recently by Khan, Seng and Cheong (1990), Heng and Low (1990), and Archer and Fletcher (1996). However, due to the structure of the developing economies and their relationship with those of developed countries, many questions have been raised as to tourism's actual impact on them.

This chapter provides the background against which this study on Kenya is based. The chapter first examines literature on a wide range of issues concerning the role of tourism in developing countries. These issues include a discussion on the origin and growth of tourism; the reasons why tourism has become a popular alternative for development and the benefits and demerits of such development.

Secondly, it examines the theoretical and conceptual issues concerning economic impact measurement. The types of economic impacts, the different techniques used in impact

measurement and the practical uses of impact assessment are examined. Finally, it explores the theory and concepts behind demand forecasting.

2.2. Tourism in Developing Countries

The international tourism sector has enjoyed rapid growth globally since the end of the second-world war. However, the same cannot be said of tourism in developing countries, which as Brohman (1996) suggests, have a number of common problems linked to tourism development, which call into its usefulness as a component of development. He identifies the problems as foreign domination and dependency; socioeconomic and spatial polarization; environmental destruction; cultural alienation and loss of social control and identity among host communities. Global tourism has been described as economic colonialism, with the economically powerful countries of the North exploiting the attractive resources of the dependent South (Prosser 1994:29)

An examination of the history and structures of the economies of developing nations reveals many similarities to those of island economies as described in tourism literature. Britton (1983) suggests that the fundamental characteristics of island economies have been influenced by the intervention of colonial powers over the years. He argues that the type of economic linkages formed, the functioning of key economic sectors, export and import trades, political allegiances, class structures and national cultures of these island nations have been largely shaped by external forces firmly established by the colonial powers in question. The international tourist industry, because of the commercial power held by foreign enterprises, imposes on peripheral destinations a development mode,

which reinforces dependency on, and vulnerability to, developed countries (Britton 1982). He, therefore, concludes that the greatest commercial gains go to foreign and local elite interests leaving the majority of locals with insignificant participation and benefits from tourism activities.

According to Dieke (1995), critics of tourism-led growth strategy for developing countries point to high revenue leakage resulting from repatriation of profits and salaries or from imports, and therefore low net expenditure retention; the dominance of foreign companies and the instability of the industry as problem areas. Other criticisms mentioned include tourism's low inter-sectoral or backward linkages and insensitivity of foreign tour operators to social and cultural norms of host communities. Britton (1983) discusses these criticisms in detail in his study of tourism and underdevelopment in Fiji. Other critics are Cater (1987), Smith and Jenner (1992), and Sinclair, Alizadeh and Onunga (1992).

Therefore, the type and level of foreign involvement in the tourism industries of developing countries has an important bearing on the overall economic impacts of tourism on the economy.

2.3. Tourism's Impacts on the Host Economy

Tourism is an important export product in both industrialized and lesser-developed economies. As indicated earlier, international tourism can have both positive and negative impact on the economy.

Bull (1995) acknowledges the difficulty in estimating the value of a service sector such as tourism. This he attributes to the non-tangible nature of tourism products. He also argues that such an attempt would omit some important items such as, unpaid services; non-accounted services; balance of payments anomalies and social costs and benefits. It is therefore important to note that these factors have not been taken into consideration in the discussion on tourism's impacts given below.

2.3.1. Tourism's Contribution to Gross Domestic Product (GDP)

Gross Domestic Product (GDP) can be described as the size and value of a national economy, expressed as the total value of all goods and services produced by that economy during a specified time period, such as one year. According to Bull (1995), there are five major factors, which determine tourism's role in a county's GDP. These are:

1. The stock of resources available, including land, labor, and capital;
2. The state of technical knowledge (technology) available;
3. Social and political stability of the country;
4. Attitudes and habits of the tourist, the suppliers and the host community;
5. Level of investment in tourism.

Any lack of or negative aspect of any of these factors will reduce the chance of a destination reaping its full benefits from tourism.

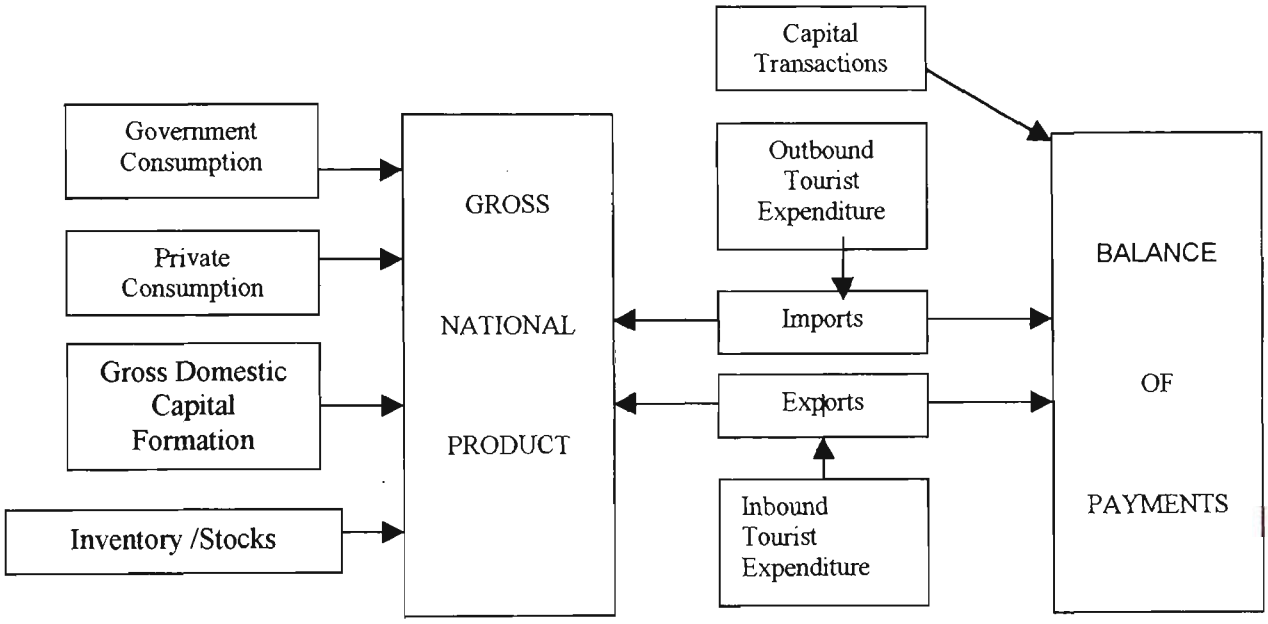
International trade in tourism occurs in the form of inbound tourists (consumers) crossing the boundary into the host country rather than goods and services going over to them.

Expenditure by international tourists can therefore, be viewed as the export of goods and services from the host country. Receipts from international tourism represent an infusion of fresh hard currency from outside the existing economy and have the same positive impact as other export earnings (Edgell 1990, Bull 1995). These receipts have become a major source of foreign exchange earnings, which Edgell (1990) sees as being particularly important for countries with deficits in merchandise trade.

According to Heng and Low (1990), records of travel expenditure can be found in national accounts relating to private consumption expenditure by non-residents as well as in the balance of payments account. In the latter, the balance of travel expenditure explicitly identifies such surplus or deficits arising from more international visitors from abroad or nationals traveling overseas, respectively. The contribution of tourist earnings in Gross National Product is conceptualized in figure 2.1.

Figure 2.1:Tourism Expenditure in Gross National Product

Adapted from Heng and Low (1990:247)



In a comparison of international tourism to GDP, Bull (1995:130) observes from Demas 1965, Britton 1980, Sathiendrakumar and Tisdell 1989) that it is much higher in smaller [developing?] economies, where few alternative industries exist, than it is in developed economies. He suggests that tourism's contribution to GDP ranges from 2-7% in developed economies, whereas it can be between 10-25% in smaller economies. The results of several studies support these findings as indicated in table 2.1 below:

Table 2.1:The Share of Tourism in GDP for Various Countries

Country	Tourism: % of GDP	Type of Economy	Authors
Seychelles	23.5%	Developing	Archer and Fletcher 1996
Singapore	12.0%	Developed	Khan *et al* 1990
Kenya	10.9%	Developing	Kenya 1994
USA	6.8%	Developed	Bull 1995
Australia	5.7%	Developed	Bull 1995
South Africa	3.2%	Developed	EIU 1994
UK	2.8%	Developed	Bull 1995

Source: various authors (see table).

There are extreme examples of countries like Japan, which has a huge and highly diversified economy to which tourism contributes less than 1% of GDP (Bull 1995). According to Archer and Fletcher (1990), in countries like the Bahamas and Antigua, tourism has a higher share (52% and 58% respectively) of GDP. Such a level of dependence is however considered relatively unhealthy because it leaves GDP vulnerable to single-sector climatic, political or trade cycles (quoted in Bull 1995:131).

2.3.2. Tourism and The Balance of Payments

Most developing countries are characterized by severe balance of payments difficulties, mainly brought about by the lack of fully developed industrial sectors and the constant fluctuation of the prices of agricultural produce on the international market. The development of tourism therefore, according to Cater (1994), provides an opportunity for these countries to capitalize on their abundant natural attractions. Edgell (1990) suggests that developing countries have a 'comparative advantage' in tourism, which helps them earn foreign exchange more rapidly and with less difficulty than for other products. While there may be no argument against this statement, what is questionable is if these countries reap the full 'comparative advantage' from tourism, as they rely on foreign capital and imported technology to develop this resource.

The fact that tourism contributes to a country's foreign exchange earnings and as a result has an effect on its balance of payments is widely accepted and documented. The magnitude of this contribution however, varies considerably. For countries like Spain, Ireland and Mexico, foreign exchange contributions rank first in their export earnings (Gamage 1978), while in Kenya, Jamaica, The Bahamas, and Mexico, tourism is considered as being amongst the top three most important foreign exchange earners (Edgell 1990, Harrison 1992, Kenya 1995).

2.3.3. Tourism and Employment

Developing countries have the highest population numbers and growth rates in the world. There is therefore, pressure on governments in these counties to find sources of employment for their citizens. Over the years, the contribution of tourism in employment generation in national and local economies has been increasingly acknowledged.

Tourism is often described as a 'labor intensive' activity. Bull (1995:156) gives as examples, front office situations in travel, lodging, restaurants, souvenirs and small-scale tourism activities as areas in the travel and tourism that are labor intensive. The results of a study by Vaughan and Long (1982) in their appraisal of tourism as a generator of employment in Great Britain indicated that in employment terms, tourism businesses performed as well as other types of businesses in the economy. However, they noted that even when indirect jobs created by tourism were taken into account during such an evaluation, not all jobs generated by tourism were included.

In a comparison between employment generation from international tourism and domestic tourism in India, Pavaskar (1982) concluded that domestic tourism created more employment in absolute terms than international tourism, and that the character of this employment created was also socially more beneficial.

As in the other economic impacts discussed in this review, there are questions on tourism's benefits to the economy as an employment generator. In her study on Kenya, Summary (1987:538) highlights the low level of employment generation and the low

wages earned by employees in the tourism sector, relative to other sectors in the economy. However, Bull (1995:157) suggests that 'labor intensity varies according to the type and stage of [the country's] development'. He also points out some of the reasons for the tourism sectors low wages when compared to other industries. These are that in tourism:

- Many jobs are unskilled or treated as unskilled by employers.
- Many employees are transitory, and labor turnover is high.
- Unionization and collective bargaining are often weak

Despite the criticisms raised, tourism is recognized as a potential employment (both direct and indirect) generator in both developed and developing countries.

2.3.4. Government Revenue

Tourism is an important source of government revenue. Basically, this revenue comes in the form of both direct taxes on tourism businesses (income tax) and on tourists (airport tax, taxes on hotel tariffs), and indirect taxes charged on various goods and services. Revenue earnings are however not as important as tourism's balance of payments contribution and its effect on employment generation.

In their critique of the benefits and costs of inbound tourism, Dwyer and Forsyth (1993) note that if a country is to maximize benefits from inbound tourism, it is essential to know how large the benefits are. However, they acknowledge the constraints on the availability of data and assessment problems for developing countries.

2.3.5. The Leakage of Foreign Exchange Earnings

The real economic benefit of tourism to any country or community is not revealed by foreign exchange earnings but by the proportion retained after deducting the foreign exchange costs of tourism or leakage. Interest charges on foreign debt incurred for tourism development; overseas promotion by the government and by individual companies; the import of materials, capital goods and consumables (food, drink, film etc) for the tourism industry all contribute to leakage of income at the tourism destination. Other causes of leakage are the employment of foreigners, the repatriation of profits by foreign companies and the depreciation in infrastructure due to tourism (Smith & Jenner 1992:53).

Developing countries are more vulnerable to tourism leakage because of their lack of adequate skilled manpower and their reliance on the developed countries for most of the manufactured products used in the industry. According to Smith and Jenner (1992:58), the World Bank estimated that, on average, 55 per cent of gross tourism revenues received by developing countries leak out.

2.4. Types of Economic Impacts

In a detailed review of the different types of economic impacts (positive and negative) and economic impact measurement, Fleming and Toepper (1990) point out the complexity of issues which need to be addressed within the context of economic impact studies. To illustrate this, they suggest that some people would view the need to build a public medical facility adjacent to a ski resort as a negative economic impact, while

others would consider it a positive economic impact. In their study, they have identified four types of economic impact, which may result from travel:

1. Direct positive economic impacts, which are basically the economic benefits accruing to an area in the form of travel related income, jobs, and taxes that result from travelers' spending money in the area.

2. Indirect and induced positive economic impacts. These are 'secondary impacts' produced by travelers when travel related industries, such as hotels, purchase goods and services from suppliers within the economic area. This results in a chain reaction of purchases and sales that continues until the traveler expenditure 'leaks' out of the economic area.

3. Direct negative economic impacts are those which are directly attributable to tourists being at the destination. They include construction and maintenance costs of providing tourism-related facilities and services (such as parks, visitor information centers, and museums), the cost of marketing and promotional programs, and the cost of security. They may also be seen as opportunity costs.

4. Indirect negative economic impacts. These indirectly result from tourism activity. For example, the constant movement of [in most cases] very well qualified personnel from economically important, but low paying jobs in the agriculture, education, and other sectors for not so important, but better paying jobs in the tourism and hospitality sector.

2.5. Methodological Issues in Economic Impact Studies

Tourism does not occur within the framework of a single commonly acknowledged industrial sector (Fletcher 1989). Its activities cut across many different product industries, which makes the measurement of its impact on the economy difficult.

Economic impact studies vary greatly in the methodological approaches utilized as well as the level of information yielded (Fleming and Toepper 1990). The final choice of methodology is, to a large extent, determined by the main purpose of the research, the resources available for the study and the time constraint imposed on the researcher and the structure of the economy in question (Fletcher 1989). In this section, some of these methods are described and a summary of the advantages and disadvantages of each method given.

2.5.1. Estimating Tourism's Primary Impacts

The economics of tourism revolves around the sale of goods and services to the destination's visitors. The revenue earned from the tourists can be used, together with an economic model, to abstract the major relationships between the different sectors. However, according to Bull (1995), measuring tourist expenditures is a major problem. He observes that, travel and tourism services, even if they can be identified as such, are sold directly to thousands and millions of individuals and it may therefore be difficult to identifying who is and who is not a tourist. In addition, similar services and goods may be sold at varying prices and records of tourist expenditure may be inaccurate, thus making it difficult to get an accurate expenditure figure.

A thorough review of the eight major approaches used to estimate tourist expenditure can be found in Frechtling (1994). They include:

- Direct observation
- Sample surveys
- Bank returns
- Residual receipt models
- Seasonal difference models
- Expenditure ratio models
- Supply-side judgmental models
- Cost-factor models

These methods rely on different techniques to arrive at the final tourist expenditure estimate. Observation, as the term suggests, relies on observing the tourists as they spend money on tourist products, while sample surveys ask the tourist to recount his/her expenditure. On the other hand, estimates on bank returns, residual receipts, seasonal difference and judgmental estimates are all available from secondary data sources. Supply side judgmental models and cost factor models are used to simulate expenditure by employing logic and algebra (Frechtling 1994: 373). In summary, he suggests that the most popular of these tourist expenditure estimation methods is the sample survey method. This is the method used to estimate tourism expenditure in this study.

2.5.2. Measuring Tourism's Secondary Economic Impacts

The expenditure by tourists on the purchase of goods and services at their destination results in primary (direct) economic impacts on the economy of the destination. These primary impacts in turn produce secondary (indirect and induced) economic effects.

The measures of secondary impacts of tourism in an area consist of the output, transactions, income, employment and tax revenues generated as businesses purchase from suppliers in order to support the sales to the tourist. Both primary and secondary impacts add to the economic well being of the community (Fletcher and Archer 1991:29)

Several researchers have devoted their studies to the techniques available for estimating secondary impacts of tourist expenditure (Kottke 1988, Fleming and Toepper 1990, Frechtling 1994). The four basic techniques available for use in economic impact estimation are:

a) Inventory/Budget method

b) The *Ad hoc* model

c) Cost - Benefit analysis, and

d) Input-Output Analysis

In addition to these methods, Kottke (1988:123) proposes using the linear programming approach, as an alternative (not substitute) method, which can be used to obtain answers to specific questions.

a) Inventory / Budget method

Kottke (1988) describes the inventory / budget method as a summary of the total value produced and the total resources used by a firm, industry, proposed project, or whatever is being evaluated. However, this simple, but crude approach only gives a partial glimpse

of the impact of tourism and may even provide information, which will lead policymakers to the wrong conclusions (Fletcher 1989).

b) The *Ad Hoc* Model

This technique concentrates on income generated in an area from the initial travel expenditure through the consumption patterns of its residents (Fletcher and Archer 1991:40). This is done by tracing the impact of expenditures of different types of travelers (e.g., business, leisure) in different types of tourism related business establishments (e.g., hotels, restaurants) through the direct and indirect income generated by each. The sum of these incomes for each type of business is divided by a measure of leakage that takes into account the marginal propensity to spend this income on consumption in the area (Frechtling 1994:386).

According to Frechtling (1994) the *ad hoc* model appears suitable for areas where building individual input-output models is too expensive or impractical. However, he points out the major disadvantages of this method as:

- It requires substantial amount of data to be collected.
- Estimates of income generated per dollar of tourist expenditure for each business, the distribution of resident consumer spending among the different types of businesses and as well as the proportion of income spent in the area by residents, must be developed. This is a hard and complicated process.
- It is not clear how the indirect income generated by expenditures in each type of business is estimated.

c) Cost-Benefit Analysis

Most impact measurement techniques allow for the measurement of economic benefits and neglect the associated incidental costs, both financial and social, such as inflation, congestion, environmental degradation and so on. There is increasing necessity for researchers to determine the actual economic benefits accruing from tourism, while considering all social and environmental costs. Fleming and Toepper (1990:37) observe that increased attention has been focused on acknowledging and addressing the negative economic impacts, which often accompany travel and tourism.

The cost-benefit analysis technique considers both the estimated costs and benefits of tourism development. This technique is applied primarily to the evaluation of development proposals (Kottke 1988). The method requires that a number of explicit and implicit assumptions be made during the process of project proposal preparation. The results can, therefore, only be as good as the researcher's insight into the extensiveness of tourism (Fletcher 1989:515).

d) Input-Output Analysis

Input-output analysis has a long history of being used for economic impact assessment. It is a method of tabulating an economic system in matrix form. In input-output analysis, the economy is disaggregated into industries and the flow of goods and services among them is examined. The amount of inputs required by an industry to produce a given output is then measured (Fleming and Toepper 1990:39).

The input-output analysis technique has a number of advantages over the other methods. The major benefits of this technique, according to Fletcher (1989: 515), are that:

1. It provides policymakers with a comprehensive view of the economy.
2. It focuses attention upon the sectoral interdependencies, which exist within the economy.
3. The flexibility of the input-output structure enables the researcher to construct a model to suit a particular purpose. For instance, those sectors that are important to tourism can be disaggregated to enable policymakers to consider the repercussions of policies and events in detail.
4. The very nature of input-output analysis makes the technique 'policy neutral' as each sector is treated in a uniform manner. The only value judgements encountered involve the aggregation specification.
5. The analysis enables the researcher to study the impact of tourism at three levels: direct, indirect and induced effects.
6. With the construction of input-output models, there is an improvement in the level and quality of data available for the economy and national accounts.

Input-output analysis has its drawbacks. It is a relatively expensive tool for analysis and most secondary data available is usually unsuitable for this method of analysis because it is rarely accurate at the level of detail needed in input-output models. In addition, inter-sectoral transaction data is usually not available at all; therefore, requiring collection of data by surveys. Finally, once data has been collected and assimilated into an input-output transactional table, a number of restrictive assumptions concerning the production

process of the various sectors and the consumption function of the household sector must be made (Fletcher 1989:516).

2.6. Tourism multipliers

As indicated earlier, travelers in an economic area produce secondary (indirect and induced) impacts over that of their original (direct) impact. Fleming and Toepper (1990) observe that indirect impacts occur when travel related industries, such as hotels, purchase goods and services from suppliers, who in turn make purchases from other suppliers, thus generating additional output or sales in the economy. This chain of purchasing and selling continues until the initial [tourist] expenditure completely 'leaks' out of the economic area through taxes, imports from outside the region, business savings and payments to employees. Induced effects on the other hand may be caused by an increase in wages and salaries, and consequently additional business turnover, income and employment (Archer 1982).

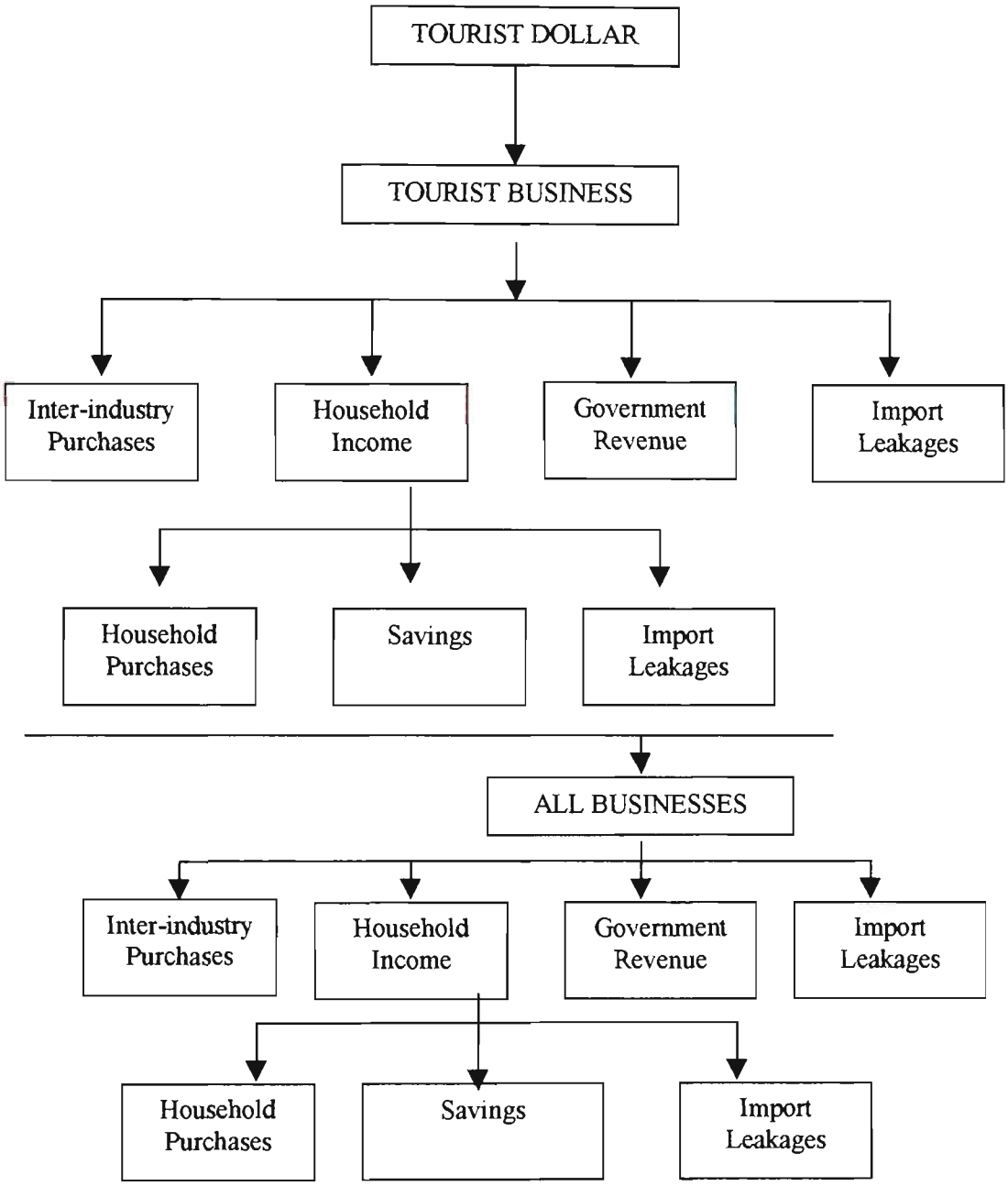
Fleming and Toepper (1990:39) define a multiplier as 'the ratio of the sum of primary output generated plus secondary output to initial expenditure.' Lipsey, Sparks and Steiner (1973), define it as 'the ratio of a change in national (or regional) income or employment etc to the initiating change in expenditure (quoted in Liu and Var 1983:8).

The multiplier measures the change in income due to an autonomous injection of expenditure into the economy through exports, foreign investment, government investment, and tourist spending. This expenditure stimulates economic activity such

that, provided there are enough resources, additional business activity, household incomes, and jobs are generated (Liu and Var 1983:12).

Edgell (1990), points out that the multiplier is a 'double edged sword' because a sudden drop in investment, export earnings or tourism receipts, reduces national income by a multiplied amount. This affects sales, profits and employment in tourism as well as in other industries, which supply the tourism industry (p. 16). Figure 2.1 below illustrates the flow of the tourist 'dollar' in an economy.

Figure 2.2:Flow of the Tourist Dollar in the Local Economy



Adapted from Liu and Var (1983:10)

Figure 2.2, demonstrates the generation of 'additional' income and output as a result of an initial expenditure by a tourist. There is a first round of spending on local inter-industry purchases, salaries and wages for employees (direct household income), taxes (local government revenue) and other non-government revenue. Imports of foreign goods by tourist businesses often result in leakage at this stage. The tourism industry employees then spend their earnings on household purchases, on savings and some amount will leak out through purchase of foreign goods. This first round of spending is followed by successive rounds of spending by all businesses that the tourist business dealt with in the initial round of spending. The first and second rounds of spending often result in other rounds, and consequently a 'ripple' or multiplier effect in the economy

A variety of multipliers can be derived from input-output analysis (Fletcher 1989). These are:

1. Output multipliers for each industry. These have limited uses from a policy point of view, except as an indicator of the degree of sectoral dependence associated with each sector.
2. Income multipliers show the amount of income created by an additional unit of tourist expenditure.
3. Government revenue multipliers show the total effect of a unit change in final demand upon government revenue from all sources (e.g., taxation, duties, licenses and fees).
4. Employment multipliers, which show the direct, indirect and induced effect of one additional unit of final demand upon the level of employment.

5. Import multipliers, which determine the amount of import 'leakage' (Khan, Seng and Cheong 1990)

2.6.1. Differential Multipliers

Gamage (1991) defines a differential multiplier as a method where the output, household income and employment multipliers are calculated by the categories of tourists visiting a region. According to Liu (1986), this method disaggregates the tourism sector, and measures the differential effects of tourism by types of tourists, tourist businesses, types of communities, level of regional aggregation and types of establishments (quoted in Gamage 1991).

According to Gamage (1991), the benefits accruing to a region [or country] by different types of tourists will vary due to their different spending patterns. He argues that money spent by tourists in motels, guesthouses and farmhouses owned by local people, for example, has a greater impact on the regional economy than tourist spending on luxury hotels. This he says is because there is considerable leakage in the form of profits and rentals to the owners of the hotels who live outside the region and also due to the high imports by the luxury hotels.

In recent studies, Gamage (1991; 1994) examined the significance of different types of tourist and their relative contribution to the economies of the states of Queensland and Victoria in Australia, by calculating differential multipliers for intrastate, interstate, international tourists and day trippers to the states. The studies revealed that there were

differences in the total differential multipliers for output, household income and employment by various types of tourists. For example, he found out that:

- The contribution of international tourism constituted only 7% to the flow-on output, household income and employment, but that amount was substantial to the balance of payments.
- In general, day trippers, domestic and international tourists whose purpose of visit was pleasure (holiday) and visiting friends and relatives, had had higher multipliers and their proportions of expenditure constituted around 70% of the total expenditure for purpose of visit.
- Female domestic tourists had higher output and household income multipliers compared to male domestic tourists, who had slightly higher employment multipliers.
- Travel groups with one adult and one or more children recorded the lowest output and income multipliers.

In his concluding remarks, he noted that decision-makers in tourism tend to overestimate the benefits accruing to an area from international tourist activities over those of domestic tourists and that day tripper activities are often underestimated or ignored.

In similar studies, Milne (1987) used the tourism multiplier model to derive differential multipliers at the sectoral and firm scale for the Cook Island tourism industry, while Liu and Var (1982) examined differential multipliers for the accommodation sector in the city of Victoria, British Columbia in Canada.

2.7. Uses of Economic Impact Studies

Both governments and the private sector businesses use economic impact studies in various ways. Some of these uses are detailed below:

2.7.1 Measuring Positive Economic Impacts

The usefulness of economic impact studies, especially those involving input-output analysis, can be judged by the proliferation of research on a diverse range of purposes. In tourism, the most popular area of study has been on national, state and regional economies. For example, Mak (1989) used it to determine the total impact of traveler expenditure on gross business sales, earnings, and employment in the United States of America. Liu and Var (1983) carried out a similar study on the economy of metropolitan Victoria, Canada. Gamage and Higgs (1996) used the input-output method to gauge the relative economic effects attributable to the Grand Prix, a sports (motor racing) event held in Melbourne, Australia annually.

There is an increasing interest in tourism's performance and impacts on developing economies. This is reflected in the increasing number of studies carried out in developing countries. For example, Archer (1985) discusses how the results of impact analysis can be used to provide useful marketing information for Mauritius. Other general studies have been carried out for Kenya (Summary 1987) and Singapore (Khan, Seng and Cheong 1990; Heng and Low 1990)

Island economies have been popular ground for research on the 'impact of leakage' on the economy, mainly due to the (small) size of their economies and their dependence on 'external sources' for most of the raw materials needed for tourism development. These factors together with the fact that islands are isolated, and therefore shielded from the direct influence of other economies, together make islands ideal 'case studies' even in other tourism impact studies. Such studies have been conducted for Fiji by Britton (1983), and more recently, for Seychelles by Archer and Fletcher (1996). Both studies examined the impact of tourism on the islands' development. Other studies include King and Gamage (1994), who measured the value of expatriate (ethnic) travelers from Australia to Sri Lanka.

2.7.2 Measuring Tourism's Negative Impacts

The end of the Cold War has been a blessing to peace worldwide and has seen the opening up of destinations once seen as impenetrable, such as the former USSR, Eastern Europe and China. The tension caused by the Cold War has however, been replaced by a new threat to the growth of tourism – regional conflicts.

Though not a new phenomenon, conflicts have apparently increased or have become more noticeable due to the absence of opposing 'world powers.' The Economist Intelligence Unit (EIU 1994) categorizes the causes of disruption to international tourism into three:

1. Fundamental, long-term disruption such as has occurred in Lebanon, Northern Ireland, Sri Lanka, Uganda and the former Yugoslavia.

2. Continuing volatility / uncertainty in tourism destinations such as in Egypt, India, Israel, Jamaica, Kenya, Peru, the Philippines and Turkey; and
3. Short-term, single event disruption such as China, Fiji, Florida, and due to occasional terrorist attacks, the United Kingdom.

In his study of liberation wars and tourism in Africa, Teye (1986:605) observes that regional instability affects tourism development. The bad image created through travel advisories and adverse publicity in the international press reduces the number of tourists willing to travel to such a region and consequently the amount of tourism expenditure in the area.

Gamage, Shaw and Ihalanayake (1997) have used the input-output method to measure the economic impact of political upheaval to Sri Lanka's economy. Their findings indicate a loss to Sri Lanka of approximately 10% of international arrivals between 1983 and 1989, at the height of insurgence by the anti-government Liberation Tigers of Tamil Ellam (LTTE) group. This drop in arrivals resulted in a loss to the country amounting to US $1,090.3 million of direct foreign exchange (tourist expenditure) during this period. In addition, approximately 15,300 direct and 22,950 indirect jobs were lost annually.

In summary, economic impact studies have been used for the various purposes indicated below:

- Traditionally, by the government and private sector, to assess impacts in the form of expenditures, income, taxes, jobs and payroll.

- As policy and planning tools, to aid both public and private sector enterprises in setting marketing goals and objectives for their [tourism] promotional programs.
- To determine the feasibility of and site selection for transportation, accommodation, amusement and recreational facilities by developers.
- To measure the costs and benefits of travel and tourism activities, such as fiscal costs in the form of additional public infrastructure and personnel and social costs, like congestion.
- To measure the multiplier effect of traveler spending within an economy.
- For forecasting and econometric simulation of travel impacts (Fleming and Toepper 1990).

According to Kottke (1988), economic growth may bring about environmental side effects, which as a result, could offset any economic benefits. Consequently, he stresses the importance of economic impact studies being conducted to supplement environmental impact studies. With the emergence of new concepts like eco-tourism, and the growing awareness of the importance to conserve nature, economic impact studies have become even more useful.

2.8. Forecasting the Impact of Tourism

A number of important strategic decisions must be made at each destination area, such as the type of attraction and accommodation, modes of transportation, and the kinds of promotion (Uysal and Crompton 1985). These major decisions and others are based at

least partially upon forecasted tourism demand. Archer (1976:10), in his pioneering work on tourism demand forecasting, defines forecasting as the art of predicting the occurrence of events before they actually take place.

Forecasts can be made using either quantitative or qualitative methods. The quantitative approaches, which require the existence of past data, can be categorized into time series, gravity and trip generation models, and multivariate regression models. Qualitative approaches, on the other hand, are designed to elicit and capture the pooled opinions of groups of experts in the tourism field.

Archer (1976), notes that the type of forecast required and the methodology used in a particular study will depend on the objectives of the research, the quantity and quality of data available and the time available for the research. He observes that there is no single method suitable for all forecasting purposes and that sound forecasting requires a sensible amalgam of exacting scientific analysis and informed practical judgement.

2.9. Summary

The findings of this review of literature on economic impact measurement reinforce the fact that tourism is increasingly becoming an important part of economic development globally. The review also highlights the fact that tourism contributes positively to GDP and the balance of payments while generating employment in the destination country's economy. However, measuring the actual effects of tourism on the economy is not easy

because of the difficulty in obtaining accurate tourist expenditure figures. Most economic impact assessments are therefore estimates.

There are several methods that can be used to assess the impact of tourism on an economy. The input-output method, which allows the linkages of tourism with other sectors in the economy to be established and which exposes the direct, indirect and induced effects of tourism in the economy is the most useful. This method is used in this study to estimate the impact of tourism in Kenya.

Following this general review of tourism in developing countries and its impacts on the host economy, the next chapter (3) highlights the developments and trends in the tourism industry in Kenya. It explores the contributions – both positive and negative – that the industry has had on the country's economy.

CHAPTER 3

THE TOURISM INDUSTRY IN KENYA

3.1. Outline

Rostow (1960) identified five successive stages of economic growth: traditional, transitional, take off, maturity and high-mass consumption. He suggested that nations could be classified according to these stages with the assumption that there was a natural path to economic growth which nations could follow.

Kenya's economic development can be traced using Rostow's growth model. Kenya's pre-colonial era (before 1900) represents the traditional stage, a period dominated by subsistence agriculture. The colonial era (1900-1963) saw Kenya's economy transformed by the British who introduced cash crops and agricultural industries, as a result, international trade. The country's economy has seen further change in the post-colonial era with the economy being diversified and an even greater level of international trade being recorded. However, the country's economy has not yet fulfilled the conditions necessary for the 'Take-off' stage such as the introduction of heavy industry. It can therefore be concluded that Kenya has passed the traditional stage of Rostow's 5-stage theory and is currently in the transitional stage. It is in the post-colonial period that tourism's contribution to Kenya's economic development is significant.

This chapter examines tourism's current role in the country's economic development. It begins with general background information about the country and the historical development of tourism. This is followed by a review of recent tourist arrival and expenditure trends and the economy in general. The study then focuses on tourism's contribution to Kenya's economy. It explores tourism's effect on economic growth,

foreign exchange earnings and employment and the constraints of tourism on economic development.

3.2. Background of the Country

Kenya is located on the East Coast of Africa, with the equator running almost straight through the middle of the country (see appendix 1). Kenya achieved its independence from Great Britain in 1963. Since independence, the country has been under a parliamentary democracy, first, under a single party system and then, from 1992, under a multi-party system. Its economic growth has been guided by capitalistic ideals with a lot of support from the western countries. Uninterrupted political stability and a pragmatic economic approach have enabled the country to develop the most sophisticated physical, financial and industrial structure in the East Africa region.

Kenya has a great diversity of physical features, including the second highest (snow-capped) mountain in Africa, Mt. Kenya, which rises to 5,199 meters (17,058ft). Kenya also boasts of two inland seas – Lake Victoria (the second largest fresh water lake in the world) and Lake Turkana – deserts, and a beautiful coastal belt, with attractive sun-baked beaches. Other features include the Great Rift Valley and the open savanna grasslands teeming with wildlife.

Nairobi, Kenya's capital, has over the years grown in size and importance, serving as the region's main commercial center and the hub for international airlines in East and Central Africa. It is also the headquarters for important international organizations such as, the

United Nations Environment Program (UNEP), United Nations Center for Human Settlements (HABITAT) and serves as a regional headquarters for several international financial and private organizations.

Kenya has only two distinct climatic seasons: the wet season (April – May & October – November) and the dry season (the rest of the year). Temperatures in Kenya are governed by the altitude of a given region, and range from 11 degrees centigrade in the central highlands, to 33 degrees centigrade at the coast and up to 47 degrees centigrade in the North.

All these factors: the relative political stability, diversity in climate and physical features and the importance of the country as a commercial and diplomatic hub in the East and Central Africa region have for a long time been Kenya's greatest touristic assets.

3.3. Historical Development of Tourism in Kenya

Ouma (1982) gives a detailed analysis of the evolution of tourism in East Africa, in which, he links the development of the industry to the British economy at the time. Kenya's tourism has passed through several phases. First, the pre-world war II phase, when the region was a wildlife hunting ground for the rich Europeans and Americans, then followed the co-operation years (1948-1965), during which tourism was closely linked to the promotional activities of the East African Tourist Travel Association (E.A.T.T.A) (Ouma 1982:8). When the E.A.T.T.A dissolved itself in 1965, each country (Kenya, Uganda Tanzania and Zanzibar) began managing tourism activities within its

own boundary. In 1966 when the Kenya government realized the potential that there was in developing tourism, it established the Ministry of Tourism and Wildlife to manage these activities.

The late 1960's and 1970's saw the formation of several government-owned institutions, founded to manage different aspects of tourism in the country. By the 1970's Kenya had become a popular tourism destination, because of the increased promotional activity and the advent of the charter flight. Recent developments in the development of the tourism industry in Kenya included the commissioning of a team to come up with a tourism master plan in 1994, the government's divestment in tourism businesses in 1995, and the formation of a tourism board in 1996.

3.4. Tourism Trends

Kenya has recorded an increase in the number of tourist arrivals over the years. The total number of visitors increased from 540,000 in 1985 (Kenya 1990:155) to 690,000 in 1995 (Kenya 1997:178). This represents an increase of 27 per cent in ten years. There was however, a decline in the number of visitor arrivals of 4 per cent between 1990 and 1992 (Kenya 1995:161). After an increase in arrivals in 1993 and 1994 (see table 3.1 below), there was another downturn from 863,000 in 1994 to 690,000 in 1995, a decline of approximately 20%. Earnings from tourism also decreased from K£1,405 million (Kenya pounds) in 1994 to K£1,250 million in 1995(Kenya 1996:172).

The Kenya government attributes the declines in arrivals in 1991, 1992 and more recently 1995 to adverse publicity in the international media, ineffective tourism promotion, over reliance upon limited tourist attractions and stiff competition from similar markets, like South Africa and Zimbabwe (Kenya 1995; 1996). This decline in the number of arrivals is reflected in Kenya's loss of market share of overseas visitors to Africa, which has dropped from 6.0 per cent in 1990 (Kenya 1994a: 23) to 4.7 per cent in 1994 (WTO 1996:28). Meanwhile, the percentage market share (Africa) for South Africa increased from 6.8% to 20% and for Zimbabwe from 4% to 6% in 1990 in 1994 respectively (WTO 1996:28). With 1,099,000 arrivals, Zimbabwe had the most tourist arrivals in the Eastern Africa region compared to Kenya's 863,000 arrivals (WTO 1996:26). However Kenya had the highest receipts from tourism (US$ 421 million) during that year (see appendix II for details). For a long time, Kenya had the highest number of arrivals in the region, until 1992 when Zimbabwe replaced it.

Table 3.1:International Tourist Arrivals by Purpose of Visit - 1992-1996 ('000s)

YEAR	HOLIDAY	BUSINESS	TRANSIT	OTHER	TOTAL
1992	606.7	109.3	50.8	14.7	**781.5**
1993	679.2	97.6	46.8	2.0	**826.2**
1994	679.2	122.6	58.1	3.5	**863.4**
1995	537.9	96.1	53.9	2.6	**690.5**
1996*	558.2	98.7	57.9	2.6	**717.4**

Source: Kenya (1995:162, 1997:178)
* Estimate

Visitors on Holiday have for a long time constituted the largest group of international travelers to Kenya, making up more than 50 % of the total number of visitors. The fraction of business travelers has fluctuated in the recent past as evident in table 3.1.

According to the figures in the table, out of the total number of visitors who came to Kenya in 1995, approximately 77 % came on holiday, while 14 % were on business trips and 9 % were either on transit or came for other purposes. This trend continued in 1996.

An analysis of the arrival figures by region in 1996, (see Table 3.2), highlights Kenya's reliance on a single region (Europe) as a source market for tourism. Europe represented 54.4 % of the total arrivals followed by Africa (29.1%), America (8.3%), Asia (6.2%) and the rest of the world (0.7%).

Table 3.2:Foreign Visitor Arrivals to Kenya by Region, 1992-1996

Region	1992	1993	1994	1995	1996
Europe	352.7	383.2	471.4	352.9	388.5
North America	51.9	58.3	71.5	54.1	59.2
Africa	181.8	193.3	244.5	189.0	207.1
Asia	46.0	40.1	53.2	40.8	44.4
Aust. & N/Zealand	8.3	9.4	11.6	8.8	9.7
Other Countries	2.7	3.0	3.7	2.9	3.1
Total	**643.3**	**687.4**	**855.9**	**648.5**	**712.0**

Source: Kenya (1991-1996) Aust. = Australia.

Amongst the European generating countries, the United Kingdom topped the list in 1996, with 107,900 arrivals into Kenya followed closely by Germany (106,000); Italy (44,900), France (40,400); Switzerland (24,000) and the Scandinavian countries (210,100). The United States of America had 56,664 residents travelling to Kenya in the same year (Kenya 1997:180).

3.5. Kenya's Economy

Kenya has followed a 'mixed' economic development model since independence. While the respective roles of the public and private sectors have evolved over time, the country has experienced remarkable continuity in terms of its economic development strategy

Since 1963, Kenya's socioeconomic development has been guided by seven National Development Plans (NDP) each outlining principal development objectives, policies and programs. In addition to the NDPs, the Sessional Paper No. 1, 1986 entitled *Economic Management for Renewed Growth*, outlines Kenya's principal long-term development objectives up to the year 2000 (Kenya 1994b:5). These objectives are:

- Renewal of economic growth: a real average annual GDP growth rate of 5.6 per cent, targeted over the period 1986 to 2000
- Acceleration of employment creation: especially for the private sector
- Increase in productivity: in all parts of the economy
- Improvement of the rural-urban balance: to ensure that the benefits of economic growth are spread widely throughout Kenya

Kenya's economy is based primarily on agriculture, with a limited amount of industrialization, based on import substitution. Since independence, the Kenya government has encouraged foreign and local private investment and has provided adequate measures to safeguard private enterprise. The result has been remarkable growth in manufacturing, agriculture, agro-industry and tourism. Traditionally, the

biggest foreign exchange earners have been coffee and tea, but horticultural produce and tourism have become increasingly important exports.

Kenya is strategically located, within easy reach of export markets in Europe, the Middle East, Asia and the rest of Africa. Major industrial exports include refined petroleum products and paper. In addition, important industrial raw materials such as soda ash and flourspar are exported in sizeable quantities. Large gains have been made in food production, chemicals, leather, rubber, plastic and metal products and sugar processing, most of which are exported to countries in the East and Central Africa region

According to the *Economic Survey* (Kenya 1995:2), the performance of Kenya's economy in 1994 was significantly better than the previous four years. This, the report attributed to the government's implementation of appropriate macro-economic reforms such as, tight monetary policy, liberalization of the foreign exchange and trade regimes, deregulation of cereal marketing and petroleum prices, augmented by favorable weather. As a result, the Kenyan economy recorded a Gross Domestic Product growth of 3 per cent and a decline in annual inflation rate from 46 per cent in 1993 to 28 per cent in 1994. Commercial bank interest rates fell by over 8 percentage points over the same period. However, the economy experienced a slow down to record a 4.6 per cent GDP growth rate in 1996, down from 4.8 recorded in 1995 (Kenya 1997:1). Table 3.3 gives a summary of the key economic indicators during this period.

Table.3.3: Key Economic Indicators for Kenya, 1992-1996

	1992	1993	1994	1995	1996
Population (million)	25.0	26.0	26.8	27.5	28.3
Growth of GDP at constant prices (%)	0.5	0.2	3.0	4.8	4.6
GDP at market prices (K£ million)	13,224	16,681	20,036	22,785	25,896
GDP per capita (K£)	452	546	632	698	773
Trade balance (K£ million)	-1,213	-1,378	-1,472	-2,891	-2,514
Balance of Payments* (K£ million)	-157	288	291	-1,031	-211
Tourism earnings (K£ million)	713	1,222	1,405	1250	1280
Wage employment ('000)	1,462	1,475	1,505	1,557	1,607
Mean Exchange rates (31st Dec.)- KES : 1USD	36.21	68.16	44.83	55.93	55.02

Source: Kenya (1997:9).
* - Current account
KES = Kenya shilling. 20 KES = 1Kenya pound (K£)

According to table 3.3, tourism earnings increased from 713 million Kenya pounds in 1992 to 1,405 million pounds in 1994. This was followed by an 11% drop in earnings in 1995 and a 2.4% increase in 1996. From the table it is also evident that there is a slight annual increase in employment and an annual population increase of 2.5 over the five-year period between 1992 and 1995. In 1993 and 1994, there was a positive balance of payments. This situation deteriorated in 1995 but improved slightly in 1996 when compared to the previous year.

In the mid-1980s, against a difficult economic background, some African countries implemented International Monetary Fund (IMF) and World Bank inspired economic recovery programs, commonly known as Structural Adjustment Programmes (SAP's) (Dieke 1995:81). The primary purpose for the SAP's was for these countries to return to a 'proper' economic development path, and to ensure that this did happen, comprehensive steps towards price liberalization and deregulation as well as privatization were undertaken (Dieke 1995).

Currently, the Structural Adjustment Program in Kenya covers a whole range of policy reforms and adjustments but it does not explicitly address the tourism sector. However, issues pertaining to the civil service reform and capacity building, and the need to reduce the government deficit may have affected the Ministry of Tourism and Wildlife in terms of employment and budgetary expansion. In addition, the liberalization of the foreign exchange market is expected to facilitate the operations of the tourism sector, which depends to some extent on imports (Kenya 1994b: 18).

3.6. Tourism Policy and Development

The Ministry of Tourism and Wildlife is responsible for the overall management and policy formulation for the tourism sector. It is assisted by four government-owned institutions, each charged with managing a specific aspect of the tourism sector. The institutions and their responsibilities are listed below:

- The Kenya Tourism Development Corporation formed in 1965 and charged with monitoring tourism investment and promotion.
- Kenya Utalii College, established in 1973 is a hotel and tourism training institution, responsible for manpower development
- The Kenya Wildlife Service, established in 1989 and responsible for wildlife conservation and management
- The Tourism Board, established recently (1996) and now responsible for marketing Kenya's tourism.

There are several tourism associations / organizations which represent tourism firms in the private sector, and which act as a liaison with the government in promotional and developmental matters. The major ones are the Kenya Association of Travel Agents (KATA), the Kenya Association of Tour Operators (KATO), and the Kenya Association of Hotelkeepers and Caterers (KAHC).

According to the interim report on National Tourism Master Plan (Kenya 1994b: 8), Kenya's general tourism strategy over the past 30 years has been to gradually increase the number of tourists, with a strong focus on both the mass tourism market segment and the coastal (sun & beach) holiday segment. The report notes that since the 1969 NDP, a shift in policy has seen concerted development efforts geared towards reducing the predominance in the spatial diversification of tourist destinations and the negative impacts of tourism. Table 3.4 below summarizes the development targets for the tourism sector in Kenya since the 1960s.

Table 3.4:Kenya's Tourism Development Policies 1969 - 1996

Year	Target No. of Tourists	Target market
Sessional Paper No. 8 of 1969	20% yearly increase	-Mass tourism -Conference tourism -Long-term, and -retirement tourists
Development Plan:1979-1983	508,000 foreign visitors in 1983	Promote tourism in: -Established markets* -Growing markets ** -New markets.***
Development Plan:1984-1988	6.2 million bed-nights in 1988	-promote tourism during low season -Promote American market
Development Plan:1989-1993	1,183,000 foreign tourists in 1993	-Less 'package tours'
Development Plan: 1994-1996	907,000 foreign tourists in 1996	-Eco-tourism -up-market tourism

Source: Adapted from Kenya (1994b: 6)
*Established market = North America & UK
**Growing market = Germany, France Italy & Holland
***New market = Australia, Japan, Middle East & Spain

Over the years, these targets in the growth of the number of visitors to Kenya have been affected negatively by several factors including:

- The lack of a Tourism Marketing Board to spearhead a concerted effort by both the government and the private sector in marketing Kenya as a tourism destination.
- The allocation of insufficient funds for financing tourism marketing activities.

In addition to the above, the annual growth in numbers has been interrupted on several occasions by uncertainty and fear of tourists' safety created by negative political events (both international and domestic) and on social strife in the country. These events are usually broadcast (and sometimes distorted) by the international media. For example,

- In 1983 there was a 5% drop in arrivals, from 392,000 visitors in 1982 to 372,000 in 1983 occasioned by an attempted military *coup d'etat* in the country in 1982.
- There were 814,000 visitor arrivals recorded in 1990, which dropped to 804,000 in 1991. This 1.2% drop in arrivals was as a result of a general slump in international travel due to the Gulf crisis.
- In 1992 there was a further drop by 2.8% in the number of arrivals attributable to the bad publicity brought about by the 1992 pre-election inter-tribal tensions and the general uncertainty caused by predictions of 'election violence and insecurity' by the international media. It is expected that this decline will be repeated in 1997 another election year.

It is yet to be established what, if any, the impact has been on Kenya's tourism as a result of civil strife and the general insecurity in several countries in the East and Central Africa region. These have been as a result of civil wars in Somalia (1992), Rwanda (1993), Burundi (1996), and Congo (1997).

3.7. Tourism's Contribution to the Economy

The tourism sector plays an important role in Kenya's national economic development, because:

- It has backward and forward linkages to agricultural, food processing, beverage, transportation and tour operating sectors
- It plays an important role as a generating source of foreign exchange earnings
- It has potential for direct and indirect employment generation, and

- It has potential for improving the country's rural-urban balance (Kenya 1994b: 8).

3.7.1. Tourism and Kenya's Gross National Product

A country report on Kenya by the Travel and Tourism Intelligence journal (1996:51) indicates that tourism has achieved an increasingly prominent position in foreign exchange earnings, employment creation and contribution to Gross National Product (GNP), competing with coffee and tea in economic importance.

According to the report, tourism was the biggest single source of export revenue, in 1994, contributing almost 35 per cent of export earnings, and accounted for 11 per cent of GNP (see table 3.5).

Table 3.5:Tourism's Contribution to Kenya's Economy, 1990-1994

	1990	1991	1992	1993	1994
GNP contribution (%)					
• Agriculture	28	27	26	25	25
• Manufacturing	13	14	14	14	14
• Tourism	11	11	11	11	11
National GNP (K£ Million)	4,224	4,312	4,332	4,343	4,471
Export earnings (K£ million)	1,232	1,534	1,708	3,625	4,171
• Coffee	221	218	206	552	653
• Tea	315	382	475	934	844
• Horticulture	161	185	208	392	419
• Tourism	533	594	713	1,222	1,405
• Manufacturing	207	359	429	919	1,346

Abstracted from Travel & Tourism Intelligence, (1996:51)

The total value of output of tourism related economic activities are not identified as a whole in Kenya's national accounts. Tourism sector activities are reflected in the 'Trade, Restaurants & Hotels' 'Transport, Storage, Communication' and 'Building & Construction' chapters of the national accounting system (Kenya 1994b). Since the available statistical data and breakdowns of data do not allow for compiling and aggregating all primary, secondary and tertiary output values of the tourism sector as a whole, the 'Trade, Restaurants & Hotels' chapter of Kenya's national accounts is used as a proxy. This approach implies an underestimation of the actual size of Kenya's tourism sector (Kenya 1994b).

3.7.2. Kenya's Tourism Sector and Foreign Exchange Earnings

Realizing the enormous potential that the tourism sector has, the government has made an effort to promote it as one of the country's major foreign exchange earners. The tourism sector earned 533 million Kenya pounds (USD 466) in 1990. These earnings have grown steadily over the years to peak at 1405 million pounds (USD 508) in 1994 (see table 3.6). During 1995 however, earnings from tourism dropped from the 1,405 million Kenya pounds (USD 508) recorded in 1994 to 1,250 pounds (USD 447) in 1995. The earnings increased by 2.4% in 1996 from the 1995 amount (Kenya 1995:160; 1997:178).

Table 3.6 Tourism Arrivals and Receipts 1992 – 1996

Year	Arrivals ('000s)	Receipts: K£ (million)	Receipts: US$ (million)
1992	781	713	442
1993	826	1222	413
1994	863	1405	508
1995	690	1250	447
1996	712	1280	465

Source: Kenya (1993-1997)

3.7.3. Tourism and Employment

Gamage (1978) has stated that developing countries – excluding oil producing and exporting countries [OPEC] such as Iraq, Iran, Kuwait and Saudi Arabia - are undergoing a social and economic crisis caused by unemployment and foreign exchange problems. For the developing countries therefore, foreign tourist arrivals mean an alternative source of foreign exchange [and additional employment] and a diversification of the economy (Ankomah 1991:434).

For a country like Kenya, with a population estimated to be 28.3 million (Kenya 1997:9), and a projected figure of 30 million people by the year 2000 (Kenya 1994b: 48), the economic contribution made by tourism in generating employment cannot be ignored. Kenya's population growth rate of 32 per cent per annum (Kenya 1994a: 211) is amongst the highest in the world. This high population growth rate will affect the size and expansion of the labor force in future, and consequently the demand for basic needs and services, such as food, health services and infrastructure (Kenya 1994a: 210). The government, therefore, has to ensure that there are enough jobs for everyone.

The Kenya government in its Development Plan 1994-1996, estimated that there were 2.24 million people unemployed in 1993, and that the unemployment rate in the country at that time was between 17.8% and 23.6% (Kenya 1994a: 48; 204). Outlining the government's policy on employment, a report by the Presidential Committee on Employment, entitled *Development and Employment in Kenya*, notes that the policy is geared towards 'sufficient employment growth in the economy...which requires a transformation of the economy based on a strategy of mobilization of all available resources.' (Kenya 1994a: 203). Tourism development if properly managed, can increase significantly the number of jobs created in the country, and in so doing ease the unemployment problem.

Summary (1987:537), observes that the number of nationals employed in the tourist industry in Kenya cannot be determined from published information, however, an Economic Intelligence Unit report on Kenya (EIU 1991:79), estimated that the tourism sector contributed about 8 per cent of the country's wage earning labor force. Sindiga (1996a: 19), quoting a government report – *Sessional Paper No. 1 of 1994 on Recovery and Sustainable Development to the Year 2000* – pointed out that tourism provided over 170,000 direct jobs and another 340,000 in indirect employment. The direct jobs were broken down as further follows:

- Accommodation.....61%
- Tour operations.....16%
- Curio shops and entertainment.....11%
- Travel agencies.....6%, and
- The Ministry of Tourism and Wildlife.....6%

Sindiga (1996b: 698) goes on to say that tourism's direct employees represented 11% of the modern wage sector employment in the country, or about 1.69% of the total labor force of approximately 10 million workers.

On employment, the interim report on *The Study of Kenya's National Tourism Master Plan* (Kenya 1994b: 17) observes that:

> Between 1983 and 1993, a total of 355,000 new modern sector wage employment jobs were created, which is equivalent to a compound growth rate of 3.12% over the period per year. Over the same time frame, a total of 36,300 new wage employment jobs were created in the tourism sector, an equivalent compound growth rate of 4.05% per year. Hence employment creation in tourism sector was 0.93% per year above the trend within the modern wage employment sector as a whole.

The report concluded from the above, that 'out of every ten new jobs created in the modern wage sector, one was in the tourism sector'. Table 3.5.2 below summarizes past employment statistics for the tourism sector.

Table 3.7: Direct Employment Generated in the Tourism Sector 1989-1993

	1989	1990	1991	1992	1993
Total Population (million)	23.20	24.00	24.50	25.70	26.50
Modern sect. Employment (million)	1.36	1.40	1.44	1.46	1.47
Wage employment in Tourism* (million)	0.110	0.113	0.116	0.118	0.121
Av. share of tourism sect. Employment (%)	8.1	8.1	8.1	8.1	8.2
Growth in tourism. Sect. Employment (%)	3.6	3.2	2.4	1.4	2.2

Source: Adapted from Kenya (1994b: 17)
*Trade, Restaurants and Hotels section of national accounts treated as 'tourism'.

Harrison (1992:15) notes that some critics of tourism as a development strategy suggest that its contribution to employment in Kenya has been exaggerated. He quotes

Bachmann (1988: 185-6), who claimed that in 1979, the tourism sector accounted for 0.05% of all Kenyan workers, which Bachmann (1988) considered a modest contribution. These views are echoed by Summary (1987: 537), who argued that tourism had not '...been particularly effective in creating jobs in Kenya'.

Despite all the criticism, it should be acknowledged that tourism, especially when one considers its employment multiplier effect and the fact that it is labour intensive, has contributed positively to employment generation.

3.7.4. Other Economic Benefits of Tourism

Tourism can also benefit the economy by creating an enlarged market for local goods, speeding up urbanization and developing rural areas and by increasing the government's revenue through taxation. In addition:

> ...Tourism has multiplier effects in the economy which boost activities such as transport, farm produce and foodstuffs, the service industry (e.g. banking, insurance, accounting, etc); food processing, including drinks and beverages; hotel, catering and hospitality service industry and cultural and international entertainment (TTI 1996:51).

There is however, no statistical data to show what effect tourism has had on these items in Kenya.

3.8. Negative Economic Consequences of Tourism

Foreign exchange leakage is a major problem in most developing countries, which usually occurs when benefits from tourism, drain away via imports and factor payments abroad. Since the main purpose of exports is to earn foreign exchange, an estimation of foreign exchange leakage is necessary to determine net foreign exchange earnings (Summary 1987:531).

According to Sinclair, Alizadeh and Onunga (1992), the benefits and costs associated with tourism [as an export] are greatly influenced by the nature of the interrelationship between foreign tourism firms, and [the government and] tourism firms based in the host country. In Kenya, for example, foreign equity accounts for about 60% of hotel beds, while over 50% of the hotel capacity is under foreign ownership, control and management (Dieke 1991:283). This setup poses a big threat to the net earnings from tourism, as the earnings are repatriated to the companies' home bases abroad in the form of profits and dividends and salaries for expatriate staff.

To illustrate the effect of leakage in Kenya, Sinclair (1992:556) cites a study of inclusive tour holidays to Kenya supplied by UK based tour operators. The study analyzed Kenya's share of income from tourist expenditure as shown below:

- 14 night inclusive tour holiday

	Percentage share
If foreign airline provides flight portion of holiday	between 22% and 38%
If Kenya Airways provided the flight portion	between 77% and 88%

- 14 night safari and beach holiday

If foreign airline provided flight portion of holiday	between 55% and 66%
If Kenya Airways supplied flight portion	between 82% and 88%

Sinclair concluded that, on average, the foreign exchange retention estimates from tourist expenditure for developing countries are as follows:

> Between 40% and 45% if the flight is provided by an overseas airline.
> Between 22% and 25%, when both flight and hotel is under foreign ownership.

It is therefore important for foreign exchange leakage to be reduced to a minimum if the benefits from tourism are to be maximized

Other negative economic effects such as inflationary pressure, seasonality and development waste exist but their effect on Kenya's economy has not been studied.

3.9. Summary

In all the aspects of Kenya's economy examined in this chapter - GDP, GNP, foreign exchange earnings, and employment - tourism has apparently had a positive impact on the economy. These are however only the direct impacts and do not reveal any indirect contributions, such as secondary income and employment creation, that tourism may have had on the economy.

This review also ignores the negative economic consequences, some of which are described above, and the socio-cultural and environmental costs on the economy. These should be taken into account whenever tourism's contribution to the development of a destination is examined. The investigation of these negative impacts of tourism is however beyond the scope of this study and their effects on Kenya's economy are therefore not considered.

This study was prompted by the author's desire to establish the expenditure patterns by international tourists while in Kenya and to determine the secondary impacts of this expenditure on the country's economy. A number of techniques are available for measuring these secondary impacts, (see chapter 2), including input-output analysis and tourism multipliers. The next chapter details the methodology used to establish international tourist expenditure in Kenya. It also describes the input-output analysis technique and looks at how multipliers are used in economic impact estimation.

CHAPTER 4

RESEARCH METHODOLOGY

4.1 Outline

To estimate the economic impact of international tourism in Kenya, this study utilizes the input-output technique developed by Nobel Prize winner Wassily Leontief. The input-output technique is particularly useful because of its ability to dissaggregate the industrial sectors of the economy for inter-industry impact comparison purposes and the depth (direct, indirect and induced) and breadth (output, income, and employment) of its impact measurement.

This chapter, in the first part, describes the input-output technique, including the transaction table, the different types of economic impact and the multipliers used in this study. The limitations and suitability of the technique to this study are also stated. The second part outlines the primary (survey) data collection method. The generation of regional input-output multipliers GRIMP[1] technique developed at the Department of Economics, University of Queensland, which allows for disaggregation of sectors, is used to estimate the impacts of international tourism on Kenya.

[1] GRIMP stands for **GR**IT **Im**pact **P**rogram, where GRIT is an acronym for 'Generation of Regional Input-Output Tables, a procedure developed by Dr. R. C. Jensen at the University of Queensland for constructing hybrid or partial survey regional input-output tables (West 1986).

4.2 Input-Output Analysis

Leontief (1986:19), defines input-output analysis as 'a method of systematically quantifying the mutual interrelationships among the various sectors of a complex economic system'. In input-output analysis, the industries in the economy are grouped into primary and intermediate sectors, linked to each other in terms of their purchases and sales to each other and to a final demand sector (Khan, Seng and Cheng 1990:412). Tourist expenditures are treated as a vector of final demand, with international tourism included within the export component and domestic tourism within the consumption component of final demand. The multiplier effects (direct, indirect, and induced) of any initial increase in tourism expenditure on output, income, or employment can then be calculated using the 'Leontief inverse matrix' derived from the basic input output tables (Khan *et al* 1990).

4.3 The Input-Output Transaction Table

Through normal trading transactions, one industrial sector will sell goods and services to another industrial sector and to final demand (consumption) sectors. An input-output table represents an economy, which has been divided into these industrial sectors or commodity groups (Gamage 1994). The table describes the values of transactions in currency terms and not physical units between these [industrial] sectors for a stated period of time, for example a year. The term 'transactions' refers to the economic relationships, in total, between sectors and does not refer exclusively to financial trade or transfers such as the purchase or sale of land and buildings between sectors. Table 4.1 below illustrates the features of an input-output table.

Table 4.1 A Basic Input-Output Transaction Table

Sales to	Intermediate Demand Productive Sectors					Final demand Of goods &		(sectors) Services		
Purchases From	Industry **(Quadrant I)** 1	2	3. . . .		*m*	**(Quadrant II)** H	I	G	E	
Industry 1	X_{11}	X_{12}	X_{13}		X_{1m}	C_1	I_1	G_1	E_1	X_1
Industry 2	X_{21}	X_{22}	X_{23}		X_{2m}	C_2	I_2	G_2	E_2	X_2
Industry 3	X_{31}	X_{32}	X_{33}		X_{3m}	C_3	I_3	G_3	E_3	X_3
. .	.	.	. . . .		.	.	.	.	.	.
. .	.	.	. . . .		.	.	.	.	.	.
Industry *m*	X_{m1}	X_{m2}	X_{m3}		X_{mm}	C_m	I_m	G_m	E_m	X_m
	(Quadrant III)					**(Quadrant IV)**				
Wag & Sal	W_1	W_2	W_3		W_m	W_C	W_I	W_G	W_E	W
Prof. & Div.	P_1	P_2	P_3		P_m	P_C	P_I	P_G	P_E	P
Taxes	T_1	T_2	T_3		T_m	T_C	T_I	T_G	T_E	T
Imports	M_1	M_2	M_3		M_m	M_C	M_I	M_G	M_E	M
Total Inputs (purchases)	X_1	X_2	X_3		X_m	C	I	G	E	X

Abstracted from Fletcher (1989:522)

Where
X = Output
C = Consumption (households)
I = investment (private)
G = government expenditure
E = exports
M = imports
W = wages & salaries
P = profits & dividends
T = taxes

FINAL DEMAND SECTORS
H = household consumption sector
I = investment expenditure sector
G = government expenditure sector
E = exports sector

The rows of an input-output table indicate the flow of sales from one industrial sector to another, while the columns show the purchases of inputs, which each sector makes from other sectors. Each entry in the transactions table is therefore shown as a purchase by one sector as well as a sale by another sector, thereby corresponding to the two sides of an accounting statement (Jensen and West 1986).

According to Gamage (1994), the objectives of a study and the availability of data determine the number of sectors used in a particular input-output table. These sectors are then classified as either 'endogenous', if they are influenced by the internal structure of the economy, or 'exogenous', if the assumption is that an external force influences the sectors. Personal consumption expenditure is treated as exogenous in the standard or 'open' input-output table, but as endogenous in the 'closed' or induced consumption table. Exports, capital expenditure and government spending are usually treated as exogenous sectors.

The input-output table accounts for all non-financial transactions. There are those transactions which are intermediate in economic activity, those which are end results of economic activity and those which represent inputs absorbed by other sectors in the production process (Jensen and West 1986:9). The table is divided into quadrants. These are: -

I Intermediate

II Final demand

III Primary Inputs

IV Primary Input-to-Final demand

4.3.1 Quadrant I – Intermediate

The intermediate quadrant is a representation of the 'economic interdependence or linkages' among the producing industrial sectors of an economy (Jensen and West 1986:10). The quadrant shows, in monetary terms, the flow of goods and services between the industrial sectors, which are produced and consumed in the process of production. The intermediate quadrant, which is also known as the 'processing' or the 'inter-industry' quadrant, provides the analytical basis of the input-output technique (Gamage 1994:8).

For example: In table 4.1 the industrial sector 1 sells (in monetary terms):

X_{11} of its total output X_1 to firms in the same sector

X_{12} to firms in sector 2

X_{13} to firms in sector 3, etc.

Knowledge of the dependencies or linkages is useful to the analyst in the following situations:

- In observing the importance of one industrial sector to the productive activity of another sector.
- In measuring the effects, in output levels, of one industrial sector on the [total] output, income or employment levels of other sectors.
- In calculating first, second and subsequent rounds (multiplier effects) of inputs, such as tourist expenditure in the economy (Jensen & West 1986).

4.3.2 Quadrant II – Final Demand

This quadrant indicates sales of goods and services by each sector to final users. It includes columns relating to major types of use, such as household (private) consumption, general government consumption, gross fixed capital formation (investments) and exports.

For example: In table 4.1, Industrial-sector 1 makes:

C_1 worth of sales to household consumers as final users;

I_1 worth on investment expenditure;

G_1 worth to the government as consumption;

E_1 worth of exports.

C_2, I_2, G_2, E_2 represent consumption from (industrial) sector 2, ...etc.

4.3.3 Quadrant III – Primary Inputs

This quadrant lists the primary inputs, which originate outside the production system, into each industrial sector (Jensen & West 1986). These inputs are not purchases from other industrial sectors within the local economy. Normally included in this quadrant are rows for depreciation, indirect taxes, wages and salaries (household income), gross operating surplus (profits & dividends), imports and other value-added items (Gamage 1994).

For example: In table 4.1, sector (column) 2 spends, in monetary terms:

W_1 worth of primary inputs in the form of household labor (wages & salaries);

P_1 on profits and dividends

T_1 on taxes, and

M_1 on imports.

W_2, P_2, T_2, and M_2 represent expenditure by industrial sector 2 ... etc.

4.3.4 Quadrant IV – Primary Input-to-Final Demand

According to Jensen and West (1986), this quadrant shows those transactions, which directly link the primary inputs and the final demand quadrant without transmission through the production system (intermediate quadrant). For example, it records in monetary terms:

M_E in the form of imports designated as re-exports;

M_I as imported capital goods for capital formation purposes, etc.

Gamage (1994) indicates that the transactions table provides a concise, descriptive snapshot of the economy at a point in time, with the final demand components equivalent to measures of Gross National Product (GNP) or Gross Regional Product (GRP) on the expenditure side and primary inputs on the receipts side.

In summary, the four quadrants of an input-output table distinguish between four types of transactions:

- Those which show the linkages or inter-industry reaction paths of the production system – Intermediate quadrant;
- Those which are determined by economic forces external to the economy represented by the table – Final Demand quadrant;
- Those which show the usage of inputs which are primary to the region – Primary Inputs quadrant, and;
- Those which are not directly linked with the regional production system – Primary Input-to-Final Demand.

Together, they provide a classification of transactions, which is logical in economic terms, consistent with national accounts, and which provides a basis for powerful analysis of the economy through input-output analysis (Jensen & West 1986).

4.4. The Mathematical Structure of the Input-Output Table

The input-output (transactions) table is simply an accounting statement pertaining to a particular economy for a particular period of time and has limited analytical application. For proper analysis, the table has to be transformed into an input-output model (or coefficient table). The transformation involves the calculation of the coefficients, which provide the analytical base for the input-output model (Jensen & West 1986). The model can then be used to derive output, income and employment multipliers for each sector in the economy. A simple mathematical structure can be applied to illustrate this procedure.

The transactions table may be represented by a series of equations, thus:

$$X_1 = X_{11} + X_{12} + X_{13} + \ldots + X_{1m} + Y_1$$
$$X_2 = X_{21} + X_{22} + X_{23} + \ldots + X_{2m} + Y_2$$
$$\ldots$$
$$X_m = X_{m1} + X_{m2} + X_{m3} + \ldots + X_{mm} + Y_m$$

In algebraic form it may be described as:

$$X_i = \sum X_{ij} + Y_i$$

Where, X_i = total output of the *i* th sector (row total)

X_{ij} = Output of sector *i* purchases by sector *j* (or sales of sector *i* to sector *j*)

Y_i = total final demand for the output of sector *I*

In order to convert the input-output table into an operational model, it is necessary to modify Quadrant I and III of the transaction table. This is done by dividing all entries in each sector's column (each cell) by the corresponding column totals (gross output for the industry) to derive coefficients which represent more clearly, the purchasing pattern of each sector. These coefficients, variously termed 'direct' or 'input-output' coefficients or less appropriately 'technical coefficients', are noted as a_{ij}, and represent the direct or first round requirement from the output of each sector following an increase in output of any sector (Gamage 1994).

In terms of an equation, the model becomes:

$$X_1 = a_{11}X_1 + a_{12}X_2 + a_{13}X_3 + \ldots + a_{1m}X_m + Y_1$$

$$X_2 = a_{21}X_1 + a_{22}X_2 + a_{23}X_3 + \ldots + a_{2m}X_m + Y_2$$

$$\ldots$$

$$X_m = a_{m1}X_1 + a_{m2}X_2 = a_{m3}X_3 + \ldots + a_{mm}X_m + Y_m$$

In algebraic form it may be described as:

$$X_i = \sum a_{ij}X_i + Y_i$$

Where, $A_{ij} = X_{ij} / X_j$

When a_{ij} is the input-output coefficient, it may be represented in matrix terms as:

$$X = AX + Y \qquad (1)$$

Where

$A = [a_{ij}]$, the matrix of input-output coefficients (Gamage 1994:11) in equation 1 above.

4.4.1 The Leontief Inverse

Having constructed the coefficients table from quadrants I and III, it is necessary to transform it again into what is referred to as the Leontief inverse, or the inverted technology matrix (Vu 1995). This is a table, which shows the direct plus indirect effect of a change in any category of final demand.

Using simple matrix algebra:

Let

I = the identity matrix (equivalent to 1 in simple algebra)

A = am x m (matrix of technical coefficients)

X = am x 1 (vector of output of all industrial sectors)

Y = am x 1 (final demand vector)

Then, equation (1) above, can be extended to:

$(I - A)X = Y$ (1)

Where, $(I - A)$ represents the Leontief matrix.

4.4.2 Input-Output Inverse Matrices (or "General Solutions")

According to Jensen and West (1986:48), the coefficient [Leontief] matrix shows the direct or first round purchases made by each sector from all other intermediate sectors per dollar (or other unit of currency) of output. In addition to these first-round purchases, there will be a series of indirect purchases as waves of second, third, and subsequent round effects make their way throughout the local economy. As these 'ripple' effects spread through the economy, each succeeding round becomes smaller and less significant, and eventually becomes too small to be of any analytical interest.

Jensen and West (1986) continue their discussion by indicating that an important part of input-output analysis is the construction of a table, which shows both the direct and indirect effect of changes in output of each sector. They argue that the full table of

second round effects can be calculated by multiplying the coefficient matrix by itself, i.e. obtaining the A^2 matrix. Similarly, the third round effect can be calculated by obtaining the A^3 matrix and so on.

The equation $(I - A)X = Y$ above, still shows Y as the dependent variable. In order to express the model with output (X) as the dependent variable, it is necessary to transfer the Leontief matrix (I – A) to the right. The equation can then be written as:

$$X = (I - A)^{-1} Y$$

Where $(I - A)^{-1}$ = the Leontief inverse matrix, or the 'general solution' (or simply the inversed matrix of the open model).

Now let Δ represent a change in a variable.

The equation can demonstrate the full effect (direct plus indirect) of a change in final demand (Y) on output (X):

$$\Delta X = (I - A)^{-1} \Delta Y \qquad (2)$$

According to Fletcher and Snee (1989), equation (2) can be interpreted as:

> The change in final output (Δ X) will be equal to the Leontief inverse matrix $(I - A)^{-1}$ multiplied by the change in final demand (Δ Y).
> (Quoted in Vu 1995:67).

Gamage (1994) suggests that the general solution of Leontief's input-output technique be represented by:

$$Z = (I - A)^{-1} = (Z_{ij})$$

Where Z = multiplier

In other words (Gamage & Wise 1993:54):

$$(I - A)^{-1} = I + A + A^2 + A^3 + A^4 + \ldots + A^m$$

This is the structural basis of the input-output model. In order to estimate the impact of tourist expenditure changes on output, income and employment in the economy, a column vector of changes in the tourist expenditure is multiplied by the inverse of the matrix.

4.4.3 Open and Closed Input-Output Models

In open input-output models, household consumption is located in the final demand portion of the table, and its accompanying row comprising wages, salaries and other household income is included with primary inputs. Alternatively, the input-output table may be closed with respect to household by inserting the household row and column into the endogenous matrix (Gamage 1994:9).

4.5 Input-Output Multipliers

Wanhil (1994:281) defines a tourism multiplier as a measure of the intensity of tourism's linkages with the rest of the economy as the tourist dollar [or other currency] works its

way through the trading relationships established between the various sectors. It is therefore 'a measurement of economic stimulus in the economy' (Gamage 1994:13). This is perhaps the reason why it is popularly used in economic impact assessments (Fletcher 1989).

Multipliers are usually expressed in terms of the effects [impacts] on the output, income, and employment of a unit of change in final demand expenditures. In each case, the effects can be subdivided into direct, indirect and induced effects (Khan *et al* 1990:412). The following section gives a brief description of the various types of impacts and the types of multipliers used in this study.

4.5.1 The Initial Impact (or Direct Effect)

The initial impact of a change in tourist expenditure is felt by those sectors in the economy, which directly receive the money spent by the international tourist. It refers to an assumed monetary increase in sales and, as Gamage (1994) suggests, is the 'stimulus' or the cause of the economic impacts. Associated directly with this monetary increase in output is an own-sector increase in household incomes (wages and salaries, etc.) used in the production of the output and expressed as a household coefficient; and an own-sector increase in employment, represented by size of the sectors employment coefficient (Gamage 1994).

4.5.2 The First-Round Effect

This impact occurs as a result of the need of an industrial sector to make additional purchases from other industries within the host economy and refers to the effect of the

first round of purchases by the sector providing the additional monetary output (Gamage 1994). The disaggregated effects are shown individually as elements (a_{ij}) and as first-round effects by the sum of all elements (a_{ij}'s) or $\sum a_{ij}$.

4.5.3 The Industrial Support Effects

Also known as 'second' and 'subsequent round' effects, these occur in the economy as successive waves of output increases, which according to Gamage (1994) provide industrial support as a response to the initial monetary increase in sales to final demand. He points out that the industrial support output requirements must be calculated as elements of the columns of the Z [or Leontief] inverse $(I - A)^{-1}$, less the initial monetary stimulus and the first round effects. The first-round and industrial support effects are together termed as production – induced effects (Gamage 1994) or indirect effects.

4.5.4 The Consumption – Induced Effect

These are impacts on the economy by increased household income, associated with the original monetary stimulus in the output. They are calculated on the assumption that the household sector is an endogenous component of the economy (Jensen and West 1994).

The consumption-induced output effects are calculated in disaggregated form as the difference between corresponding elements of the open and closed inverse $Z^*_{ij} - Z_{ij}$ (Gamage 1994).

The equations for the four kinds of effects are summarized in table 4.2 below. Note that employment multipliers are calculated by substituting the employment coefficient (h_i) in the table.

Table 4.2:General Case Equations for Different Categories of Economic Impact

	Type of impact	Output Multiplier	Income Multiplier
(i)	Initial Impact	1	H_I
(ii)	First-Round Effect	$\sum_i a_{ij}$	$\sum_i a_{ij} h_I$
(iii)	Industrial Support Effect	$\sum_i Z_{ij} - 1 - \sum_i a_{ij}$	$\sum_i Z_{ij} h_I - h_i - \sum_i a_{ij} h_i$
(iv)	Consumption-Induced Effect	$\sum_i Z_{ij} - \sum_I Z_{ij}$	$\sum_i Z^*_{ij} h_i - \sum_I Z_{ij} h_i$
(v)	Flow on Effect	$\sum Z^*_{ij} - 1$	$\sum_j Z^*_{ij} h_i - h_I$
	Total Effect	$\sum Z^*_{ij}$	$\sum_i Z^*_{ij} h_I$

Adapted from Gamage (1994:16)

4.6 Types of Tourism Multipliers

A variety of multipliers can be derived from input-output analysis. However, the following section pays particular attention to three major categories –output, income and employment- as these are used in this study to estimate the impacts of international tourism expenditure on Kenya's economy.

4.6.1 The Output Multiplier

The output multiplier is the ratio of direct, indirect and induced changes in total output, throughout the host economy, to the initial change in the level of tourist expenditure (Fletcher 1994). It relates a unit of tourist expenditure to the resultant increase in the level of output in the economy.

Output multipliers have an important use in applied planning, since they allow estimates of expected reaction on every sector in the economy to a proposed change in final demand of one sector in that economy, to be determined (Jensen and West 1986).

4.6.2 The Income Multiplier

The income multiplier measures the increase –direct, indirect and induced- in income (wages, salaries and profits, etc.), which occurs throughout the economy as a result of a change in either the level or distribution of tourist expenditure.

In order to establish a relationship between initial or own-sector income effects and flow-on income effects, income-output analysts calculate ratios commonly termed as Type I and Type II multipliers (Jensen and West 1986). Gamage (1994:18) summarizes these in the following formulae:

$$\text{Type I income multiplier} = \frac{\text{Initial + Production-Induced Effects (IP)}}{\text{Initial Effects}}$$

$$\text{Type II income multiplier} = \frac{\text{Initial + IP + Consumption-Induced Effects (IPC)}}{\text{Initial Effects}}$$

4.6.3 Employment Multipliers

These describe either the ratio of the direct and secondary employment generated by additional tourism expenditure to the direct employment, or the amount of employment [generally] created by a given amount of tourist spending (Archer 1982). The multiplier shows the change in the number of full-time equivalent job opportunities associated with the change in tourist expenditure (Gamage 1994).

The various types of multipliers are intrinsically linked. For example (Archer 1982:238): An additional tourist expenditure of £1 million may generate

- £2.5 million of output within an economy;
- £0.5 million of direct and secondary income [to the host community];
- 200 extra (direct) jobs and perhaps 180 secondary jobs.

The following impacts may then result:

- An output multiplier of 2.5
- An income multiplier of 0.5, and
- An employment multiplier of 1.9 (380/200) or 3.8 (i.e. 3.8 jobs) per £10,000 of tourist expenditure.

4.7 Limitations of the Input-Output Method

The input-output model has two major limitations, namely static and linearity assumptions (Gamage 1994). Commenting on these limitations, Fletcher (1989) notes that the model yields a static picture of an economy and therefore requires updating

periodically. Briassoulis (1991:486) explains that the linear homogeneous production functions for each sector translate into assumptions of 'constant technical coefficients, absence of economies or diseconomies of scale. She points out that there is no substitution among inputs, and stability of trade patterns among sectors and between them and the rest of the world.'

West and Gamage (1997), point out that the assumption of linearity implies a strict proportional relationship between input coefficients and output. This, they conclude leads to an overestimation of the flow-on (multiplier) effects. To overcome this criticism, West (1994) used an integrated input-output econometric model of Queensland, which replaces the average coefficient of the household sector in the conventional input-output model with a set of marginal econometric relationships. He derived a value-added multiplier for total tourism expenditure that is 96.1% of the conventional input-output multiplier. Similarly, West and Gamage (1997), use the marginal coefficient model, which models changes in household income and employment using more realistic marginal functions of output or value added.

Despite these limitations, the suitability of the input-output technique for economic impact analysis is summarized by Briassoulis (1991). First she makes note of its comprehensiveness, which enables the analyst to identify interrelationships among economic sectors. She then comments on its flexibility – depending on the level of detail desired in an application and the available resources, any economic sector can be disaggregated, and its relationships to other sectors traced and studied in detail. Lastly,

she argues that the assumption of homogeneous production functions and constant technical coefficients of input-output analysis is not seriously violated because 'tourism is labor intensive and is characterized by stable production functions' (quoting Archer and Fletcher 1988).

4.8 Data Collection

Zikmund (1994:170; 171) defines primary data as that '...which is gathered and assembled specifically for the research project on hand' secondary data as that 'which has been previously collected for some project other than the one at hand. Data on Kenya's tourism industry are usually collected and published by the government's Central Bureau of Statistics (CBS) and the Ministry of Tourism and Wildlife, but they can also be obtained from the industry's private sector. In Kenya, regularly published data on tourism usually includes the tourist arrival and departure figures, total foreign exchange earnings, hotel occupancy and the number of visitors to national parks and reserves. However, data are not published on expenditure by [individual] visitors, or by different nationalities of visitors (EIU 1991b: 60). It was therefore necessary to conduct a visitor survey to collect this information for the purposes of this study.

Table 4.3 summarizes the sources of data used in this study

Table 4.3:Sources of Data for the Study

	Data type	Source	Use in the study
Primary data	Tourist expenditure	Sample survey	-Estimating initial tourist impacts
Secondary data	Input-output tables for Kenya – 1976	Kenya Government	-Estimating multiplier effects
Secondary data	Tourism arrival & expenditure figures 1973-1995	Kenya Government	-Forecasting impacts

4.8.1 Estimating International Tourist Expenditure

As stated earlier, one of the aims of this study is to determine the expenditure pattern by tourists in Kenya. This will make it possible to trace and estimate the economic impacts of such expenditure on various 'industries' of the economy. According to Summary (1987), the International Union of Official Travel Organizations (IUOTO) gave a breakdown of tourist expenditure in Kenya in 1970 as follows:

- Accommodation, meals and drinks 46%
- Local transportation 17%
- Souvenirs 23%
- Other 14%
- Total 100%

No other analysis of tourist expenditure has been done since then and no breakdown of expenditure by country of origin has ever been attempted.

In the absence of this vital data on recent tourist expenditure patterns in Kenya, it was found necessary to conduct a visitor survey in order to establish:

- Average expenditures per tourist
- A breakdown of average expenditure per tourist by country of origin
- An analysis of what products or services this expenditure is used on.

Unlike other estimation methods described in the previous chapter - observation, bank returns, residual receipts, etc, - surveys provide a quick, inexpensive, efficient and accurate means of assessing information about a population (Zikmund 1994:170). The survey method was selected to gather the required information on international tourist expenditure in Kenya for this study mainly because of these attributes.

With the help of staff from the Kenya Airport Authority's Facilitation Department and Kenya Airways Traffic Department, data was collected from surveys conducted at Jomo Kenyatta International Airport, Nairobi and at Moi Airport, Mombasa on different days (picked at random) between 2nd February 1997 and 3rd March 1997.

A total of 400 questionnaires (appendix V) were distributed to departing passengers, selected at random, in the airport departure lounge and the completed questionnaires collected from them just before their departure from Kenya.

A breakdown of the number of questionnaires distributed and the response is given in table 4.4 below.

Table 4.4:Survey of International Tourists in Kenya, 1997 (Sample Size)

Location / airport	Number of questionnaires	Number of responses	Response rate (%)
Jomo Kenyatta, Nairobi	300	184	61
Moi, Mombasa	100	14	14
	400	**198**	**49.5**

It should be noted however, that out of the 198 respondents, only 193 were considered for analysis. The 5 cases omitted were either nationals or expatriate residents in Kenya and therefore did not qualify as tourists.

Question 9 of the questionnaire (see appendix V) requested the respondents to estimate the amount of money, in US dollars, they spent on their trip while in Kenya, excluding any pre-paid amounts spent before their trip started. The author decided to exclude monies paid in advance (usually in a foreign country) from this analysis because he felt it would be difficult to compute the actual amount remitted to Kenya or to calculate the amount leaked out. The impacts measured in this study are therefore based on the international tourists' expenditures while in the country.

Question 10 asked the respondents to estimate, out of the total amount of money spent in Kenya, how much they spent on various goods and services, which were grouped into the following categories:

a) Airfares within Kenya

b) Ground transport (taxis, buses, car hire, public transport, etc)

c) Accommodation

d) Meals (food and drink in restaurants, cafes, supermarkets, etc)

e) Shopping (souvenirs, clothes, etc)

f) Entertainment (nightclubs, recreation, etc)

g) Day tours

h) Other expenses

According to Archer and Fletcher (1996:37), it is necessary to obtain a breakdown of tourist expenditures '...in order to mesh it into the relevant sectors of the economy and avoid to use heavily aggregated sectors...' in the impact analysis. In addition, the author wanted to estimate the expenditure patterns for each tourists' country of origin.

4.8.2 Limitations of the Survey

A number of factors limited the scope and outcome of this survey. These were:

- The questionnaire distributed was in English and could have only been completed by English-speaking tourists. This cut off many would-be respondents who could not complete the questionnaires. It is therefore difficult to claim total representativeness of the sample.

- Resource constraints and lack of time prevented the translation of the questionnaire into other languages such as French, German, Italian and Japanese.
- Questions relating to expenditure proved to be sensitive. As a result, most respondents omitted these questions when completing the questionnaire thereby reducing the accuracy of the expenditure estimates.
- No pilot-test was conducted for the questionnaire. There was therefore no way design faults in the questionnaire could be detected and rectified.

Despite the above limitations, it is assumed that the survey sample is a comprehensive representation of the international tourists to Kenya. Although the tourist expenditure patterns were obtained from the 1997 visitor survey, the economic impact analysis was done based on the international arrival figures for 1995. It is therefore assumed that expenditure patterns for foreign tourists were similar in 1995 and 1997.

The findings of the visitor survey relating to tourist expenditure are reported in chapter 5. A complete summary of the findings appears in appendix V.

4.8.3. The Input-Output Tables for Kenya

The input-output tables for Kenya (see appendix III) were compiled by the Central Bureau of Statistics, Ministry of Economic Planning and Community Affaires in 1979 with the technical assistance from the Chr. Michelsen Institute of Bergen, Norway. Since then, no other tables have been compiled. The analysis in this study, therefore, is done using these tables, as there are no other tables available.

The input-output tables for Kenya (1979) contains three tables, namely;

a) The basic table at producer's prices (total dimension);

b) The basic table at producer's prices (domestic / import dimension), and

c) The end use analysis of imports.

Technical coefficients and full input coefficients for the basic tables (total dimension and domestic / import dimension) are also published. This study utilizes the basic table measured in producer's prices (total dimension) to estimate the economic impacts of international tourism in the country.

In the table, details on the intermediate use, primary imports and the various end uses for each sector are derived from Kenya's National accounts. The concepts used in the preparation of the national accounts are those stated in the United Nations System of National Accounts (SNA) manual.

Kenya's 1976 basic input-output table (total dimension) consists of 37 intermediate sectors, 7 primary input sectors and 5 final demand sectors. Using GRIMP, the sectors in this table are aggregated into 11-intermediate sectors and 5-primary input sectors, with the 5 final demand sectors remaining intact. This 'new' transaction table is then used to extract the multipliers used in estimating the economic impact of international tourism in Kenya.

According to Jensen and West (1986:115), the decision regarding an appropriate level of aggregation has to be considered in both the construction stage of the table and in the impact analysis. They point out that the aggregation of large tables, such as national or state tables, into more 'workable' smaller tables for the purpose of analytical convenience is acceptable. They argue that the aggregated multiplier effects derived from the smaller table should be accurate ... 'as long as the industry in question is accurately represented by a sector in the table.

The titles of the 11-sectors, their new sector numbers and the original sector numbers in the input-output tables for Kenya (1979) are given below:

Table 4.5:The Sectors in the 11-Sector Input-Output Table for Kenya

Sector Number	Title	Original sector(s) number[2]
1	Restaurant & Hotel Services	27
2.	Transport and Communications	20, 25, & 26,
3.	Wholesale and Retail Trade	24
4.	Financial & Business Services	29, 30 & 36
5.	Agriculture, Fishing and Forestry	1, 2, 3 & 37
6.	Manufacturing	5 – 19
7.	Government Services	31, 32, 33, 34 & 35
8.	Electricity and Water Supply	21 & 22
9.	Building and Construction	23
10.	Mining	4
11.	Ownership of dwellings	28

[2] See appendix III for the original sector names.

The primary input sectors were aggregated into the following 5 sectors:

New sector number	Title	Original sector name & row
H-Hold	House-Hold	Wages & Salaries (2)
PI 2	Depreciation	Depreciation (1)
PI 3	Profits	Profits (3), Subsidies (5), Interest paid (6)
PI 4	Indirect Taxes	Indirect Taxes (4)
PI 5	Imports	Imports: including duties (7)

The titles for the final demand sectors remained the same, although the first and second columns were inter-changed.

New sector number	Title	Original sector column
H-Hold	Private Consumption	2
FD 2	Exports	1
FD 3	Changes in stocks	3
FD 4	General Government Consumption	4
FD 5	Gross Capital Formation	5

The interchange between the row representing wages and salaries and the row representing depreciation in the primary input quadrant, as well as that between the private consumption column and exports sectors column is necessary. This is because, according to West (1986:4), the household sector must be the row and column adjacent to the intermediate quadrant since in the GRIMP computer package, the household sector is inserted by default.

4.9 Summary

In order to estimate the economic impact of international tourism it was necessary to conduct a visitor survey. This was done in order to determine the average expenditures per tourist; the average expenditures per tourist by country of origin and to analyze the pattern of expenditure by international tourists to Kenya. The 49.5% response rate obtained in this survey was considered adequate for this purpose.

The input-output table for Kenya, which originally contained 37 sectors, was aggregated into a smaller, more manageable 11-sector table for this study. This aggregation does not in any way affect the results obtained in the analysis. Both tables do not contain a separate 'tourism' sector and the Restaurant and Hotel Services sector was therefore used to represent the tourism sector in the analysis.

Input-output technique together with the GRIMP procedure described in this chapter are 'user friendly' analysis methods, which can be used with great success for economic impact analysis in developing countries. However, regular updating of the input-output tables and frequent surveys to establish tourist expenditure is necessary in order to keep track of the trends in the economy for more accurate analysis. This data can then be easily manipulated using the technique in order to obtain a variety of useful information for proper planning and management of the tourism industry.

Chapter 5 presents the results of the 1997 international tourist expenditure survey and examines the impact this expenditure had on the total output and on household income and employment in Kenya, using the input output technique.

CHAPTER 5

ECONOMIC IMPACT ASSESSMENT

5.1 Outline

In this chapter, the GRIMP technique is used to estimate the impact of international tourist expenditure on total output and household income in Kenya's economy. Before the impact analysis, tourist expenditure patterns are estimated from the results of the survey conducted in Kenya. The expenditure types are then allocated to four sectors of the 11-sector aggregated input-output table for Kenya, which are directly involved in the initial receipt and distribution of tourism expenditure.

The effects of each of the four sectors on total output and household income are then analyzed. This is followed by a comparison of inter-industry impacts resulting from tourism expenditure. Lastly, the economic impact of tourist expenditure on employment in Kenya is computed using, as an example, the estimation of Sri Lanka's employment generation from tourism. This is done because there are no employment coefficients in Kenya's input-output tables to allow for analysis using the GRIMP computer package.

5.2 Tourist Expenditure Estimates

The Economic Survey (Kenya 1997:180) gives the figures for the total number of departing tourists in 1996 as 712,000 and the total receipts as K£ 1280 million. Whereas the departure figures are broken down according to the tourists' countries of origin, the same is not done for the tourism receipts. One of the aims of this study is to compare the impact of tourist expenditure from Kenya's different source markets. In order to do that, the tourism total receipts by country of origin have to be established.

Previous studies reveal that accommodation constitutes the largest proportion of tourist expenditure in the East African region. For example, the percentages for the accommodation portion of tourist expenditure were estimated as 46% in Kenya (Summary 1987:534), 69% in the Seychelles (Archer & Fletcher 1996:38), and 60% in Mauritius (Archer 1985:52). In addition, a more recent report by the Travel and Tourism Intelligence (1996:56) estimates that accommodation and meals constitute 59% of the price of a package holiday to Kenya.

Figures for the total number of bed-nights by country of (tourist) origin are published (Kenya 1997:181), and from these, the percentage contribution by each country can be calculated (see table 5.1).

Table 5.1: Share of Tourist Hotel Bed-Nights by Country of Origin, 1996.

Country	Number of bed-nights ('000)*	Percentage share
Germany	1,275.6	25.2
UK	934.1	18
USA	232.7	4.6
Italy	174.6	3.4
France	278.0	5.5
Others – Europe	565.5	11.2
Others – World	1600.7	31.6
Total	5061.2	100

* Source: Kenya (1997:181)

Assuming that accommodation constitutes a large proportion of Kenya's tourism receipts, then the bed-night percentage calculated above for each country could be considered as the corresponding share of the total international tourism receipts.

The average expenditure figures by country of origin are given in table 5.2.

Table 5.2: Estimated Average and Total International Tourist Expenditures – 1996

Country	Average Expenditure (K£ '000s)	Total departures	Total expenditure K£ millions)
Germany	2,989	107,900	322.5
UK	2,234	106,000	236.8
USA	1,205	48,900	58.9
Italy	969	44,900	43.5
France	1,743	40,400	70.4
Other – Europe	3,550	40,400	143.4
Others	1,251	323,500	404.5
World	1798	712,000	1280.0

Source: Author's own calculations.

As indicated earlier, a sample survey was conducted in Nairobi in order to estimate the average international tourist expenditure by country of origin and type of expenditure. Of the 193 responses that qualified for expenditure analysis, the majority were by respondents from the United Kingdom (57 cases), United States of America (44 cases) and France (14 cases). The other nationalities had fewer than 10 responses each.

In 1996, Europe and North America regions together constituted approximately 55% of the total departing tourists from Kenya. The results of the survey conducted by the author reveal that 152 (or 79%) of the 193 eligible respondents were either from Europe or North America. Taking into consideration the limitations of this survey, it is assumed that the results reveal a true picture of the international tourist expenditure patterns in Kenya.

5.2.1 International Tourist Expenditure Profile

Out of the 193 eligible respondents to the 1997 Survey of International Visitors, 164 respondents (or 85%) responded to question 9 and 10, which requested for an estimate of their total expenditure while in Kenya on the following items:

a) Airfares (within Kenya only)
b) Transport (taxis, buses, car-hire, etc)
c) Accommodation
d) Food and drink
e) Shopping (souvenirs, clothes, etc)
f) Entertainment / entrance fees to parks, museums, nightclubs, etc
g) Day tours
h) Miscellaneous expenses

A breakdown of this expenditure into the various uses by the tourists reveals the expenditure pattern given in table 5.3.

Table 5.3 Expenditure Profile Estimates by Country of Origin - 1996 (Percentages)

Expense	Germany	UK	USA	Italy	France	Other – Europe	Others	Overall
Accomm. & Food	70	56	41	40	69	50	43	69
Transport	16	30	17	2	18	19	-	9
Shopping	7	5	29	18	5	11	48	11
Recreation / Tours	7	6	7	9	5	15	6	7
Miscellaneous	-	3	6	31	3	5	3	4
Total	100	100	100	100	100	100	100	100

Source: Airport Survey, 1997

The results of the survey summarized in table 5.3 above reveal a tourist expenditure pattern in Kenya similar to that obtained by the IUOTO in 1970. Both results indicate that accommodation takes the largest share of the tourist's expenditure followed by shopping (souvenirs) and transportation.

The main expenditure types have been combined to fit into one of four sectors of the consolidated 11-sector input-output table, which are relevant to tourist expenditure, to allow for appropriate impact analysis. The four sectors and their corresponding expense types are hotel and restaurant services (accommodation & food), transport & communications (transport), wholesale & retail (shopping), and financial & business services (recreation & tours and miscellaneous expenditure).

The airport survey results indicate that the largest share of total expenditure by the respondents was 69% on accommodation, 11% on shopping, 9% on transport and 7% on recreation and tours.

Based on the estimates obtained in tables 5.2 and 5.3 and the four sectors mentioned above, table 5.4 gives a summary of the sectoral distribution of initial tourist expenditures per country.

Table 5.4: Distribution of Initial Tourist Expenditure by Sector and by Country of Origin, 1996

	Sector 1		Sector 2		Sector 3		Sector 4		Total
	%	K£ mil.	%	K£ mil.	%	K£ mil.	%	K£ mil.	K£ mil.
Germany	70	226	16	52	7	23	7	22	323
UK	56	133	30	71	5	12	9	21	237
USA	41	24	17	10	29	17	13	8	59
Italy	40	17	2	1	18	8	40	17	43
France	69	48	18	13	5	4	8	6	71
Oth.- Euro	50	72	19	27	11	16	20	28	143
Others	43	174	3	12	48	194	6	24	404
Total		694		186		274		126	1280

Source: Airport Survey, 1997.

5.3 The Impact of International Tourist Expenditure on Total Output

Before the impact of tourist expenditure on total output are examined, it is necessary to establish the multiplier coefficients resulting in first-round, industrial support and consumption induced effects in the economy. These are then multiplied by the initial expenditures from tourism in order to compare the initial impact with the flow-on effects resulting from the different sectors of the economy. Table 5.5 shows the total output and flow-on multipliers for the four sectors affected directly by tourism expenditure.

Table 5.5:Total Output Multipliers for Kenya, (K£'s)

	Sector 1	Sector 2	Sector 3	Sector 4
Initial impact	**1.0000**	**1.0000**	**1.0000**	**1.0000**
First round	0.5843	0.5190	0.3164	0.2558
Industrial support	0.4824	0.4353	0.2012	0.1580
Consumption induced	0.5086	0.5856	0.7967	0.8869
Total	**2.5754**	**2.5398**	**2.3143**	**2.3007**
Flow-on effect	1.5754	1.5398	1.3143	1.3007

The output multipliers in table 5.5, refer to the initial (direct) and flow-on (indirect) effects of one initial Kenya pound (equivalent to twenty Kenya shillings) of output or sale

calculated for each sector - hotel and restaurant (1), transport and communication (2), wholesale and retail trade (3), and financial and business services (4).

For example, each Kenya pound of output of the hotel and restaurant sector can be expected to result in KES[3]11.6 in direct or first round output effects in all sectors; KES 9.6 in industrial support output effects; KES 10.2 in consumption-induced output effects, giving a total multiplier of KES 51.4 (K£ 2.57) or a flow on effect from the initial pound of KES 31.4 (K£1.57). Table 5.6 below summarizes the multipliers in Kenya shillings.

Table 5.6 Total Output Multipliers in Kenya Shillings

	Sector 1	Sector 2	Sector 3	Sector 4
Initial impact	20.00	20.00	20.00	20.00
First round	11.60	10.35	6.30	5.10
Industrial support	9.60	8.70	4.05	3.15
Consumption-induced	10.20	11.70	15.90	17.70
Total	51.40	50.75	46.25	45.95
Flow-on effects	31.40	30.75	26.25	25.95

Applying the total output multipliers (table 5.5) to the total initial tourist expenditure in 1995 (table 5.4) results in an estimate of the economic impact of this expenditure on total output in Kenya, which is summarized in table 5.7.

[3] KES = Kenya Shilling
KES 20 = K£ 1

Table 5.7:Estimated Economic Impact of Tourist Expenditure on Total Output in Kenya, 1996. (K£ Million)

(Selected groups of tourists)

Sector	Germany	UK	USA	France	Others	Total
Hotel & Restaurant						
Initial expenditure	226	133	24	48	263	694
Flow-on effects	356	209	38	76	414	1093
Total sector 1	**582**	**342**	**62**	**124**	**677**	**1787**
Transport & Comm						
Initial expenditure	52	71	10	13	40	186
Flow-on effects	80	109	15	20	62	286
Total sector 2	**132**	**180**	**25**	**33**	**102**	**472**
Wholesale & Retail						
Initial expenditure	23	12	17	4	218	274
Flow-on effects	30	16	22	5	287	360
Total sector 3	**53**	**28**	**39**	**9**	**505**	**634**
Financial & Business						
Initial expenditure	22	21	8	6	69	126
Flow-on effects	29	27	10	8	89	163
Total sector 4	**51**	**48**	**18**	**14**	**158**	**289**
Total (expenditure)	**323**	**237**	**59**	**71**	**590**	**1280**
Total (flow-on)	**495**	**361**	**85**	**109**	**852**	**1902**
Total impact (1+2+3+ 4)	**818**	**598**	**144**	**180**	**1442**	**3182**

Source: Author's own calculation.

It is evident from table 5.7 that Germany, with the largest number of visitors and bed-nights in 1996, contributed the highest initial tourist expenditure amount (K£323 million) and as a result had the largest (K£ 495 million) flow-on effect on the economy in terms of total output. The United Kingdom, United States and France each contributed K£361, K£85 and K£109 respectively. Together, the four countries contributed 55% of the total impact on output. The per capita contribution (initial and flow-on) for the four countries was, Germany (K£ 7,581), United Kingdom (K£ 5,641), United States (K£ 2,944) and France (K£ 4,455).

From the initial K£ 1280 spent by tourists in Kenya in 1996, a flow-on amount of K£ 1,902 was generated and added to the total output in economy by first round and induced activities of the industries in the different sectors of the economy. The hotel and restaurant sector had the largest initial expenditure owing to the very high level of direct contact made by tourists with firms in this sector. The sector also contributed the highest overall impact of K£ 1,787 million (or 56%) on the total output in the economy. The transport and communications, wholesale and retail and the finance and business sectors contributed 14%, 20% and 10% of the total impact respectively, which amounted to 3,182 million pounds

5.4 Inter-Industry Output Linkages

The ranking of sectors (industries) based on the percentage distribution of output flow-on allows the researcher to determine which sectors of the economy benefit indirectly from tourist expenditure sequentially. In the following section, the different sectors in Kenya's aggregated 11-sector input-output table are ranked based on their share of flow-on output earned from the main sectors in which, for purposes of this study, it is assumed initial tourist expenditure occurred.

Table 5.8: Ranked Flow-On Effects of the Hotel and Restaurant Services Sector on Other Sectors

Flow-on amount = K£ 1851 million					
Rank	Sector name / No.	Percentage	Flow-on (K£ mil.)	Flow-on multiplier	Actual impact (K£ million)
1	Manufacturing (6)	58.81	1088	0.9265	1008.56
2	Agriculture, Fish & Forestry (5)	14.00	259	0.2206	57.16
3	Finance & Business Services (4)	7.19	133	0.1132	15.06
4	Mining (10)	5.93	110	0.0935	10.26
5	Transport & Communication (2)	4.69	87	0.0738	6.40
6	Wholesale & Retail Trade (3)	4.17	77	0.0657	5.07
7	Electricity & Water Supply (8)	1.44	27	0.227	0.60
8	Ownership of Dwellings (11)	1.29	24	0.0203	0.48
9	Hotel & Restaurant Services (1)	1.28	23	0.0202	0.47
10	Building & Construction (9)	0.73	13	0.0114	0.15
11	Government Services (7)	0.48	9	0.0075	0.06
	Total	100.00	1851	1.5754	1104.27

Table 5.8 shows that the manufacturing sector benefited most from output flow-on, which accrued from the hotel and restaurant sector, earning an additional K£ 1008 million of output in the course of business. This sector constitutes a combination of industries manufacturing among other items, bakery products, beverages, tobacco, textiles, wood products and petroleum products (see appendix IV), all of which are used in large quantities in hotels and restaurants. The agriculture, fisheries and forestry sector, which supplies food and agricultural produce other to the hotel and restaurants, was second to manufacturing, earning K£ 259 million in output flow-on, which resulted in an actual impact of K£ 57.16 million.

It is evident from table 5.8 that the hotel and restaurant services sector has very strong linkages with the manufacturing, agriculture and the finance and business sectors, which

absorb 80% of the total output flow-on, while it has very weak linkages with government services and building and construction sectors.

Table 5.9:Ranked Flow-On Output Effects of the Transport and Communication Sector on Other Sectors

Flow-on amount = K£ 429 million					
Rank	Sector name / No.	Percentage	Flow-on (K£ mil.)	Flow-on multiplier	Actual impact (K£ million)
1	Manufacturing (6)	35.37	153	0.5503	84.35
2	Transport & Communication (2)	26.55	114	0.4089	46.57
3	Agriculture, Fish. & Forestry (5)	12.29	53	0.1892	9.97
4	Finance & Business Services (4)	9.91	43	0.1527	6.49
5	Wholesale & Retail Trade (3)	4.91	21	0.0756	1.59
6	Mining (10)	3.62	16	0.0557	0.86
7	Hotel & Restaurant Services (1)	2.80	12	0.0431	0.51
8	Electricity & Water Supply (8)	1.66	7	0.0255	0.18
9	Ownership of Dwellings (11)	1.52	7	0.0234	0.15
10	Government Services (7)	0.56	2	0.0086	0.02
11	Building & Construction (9)	0.44	1	0.0068	0.01
	Total	100.00	429	1.5398	150.7

The ranking pattern resulting from output flow-on effects in the transport and communication, wholesale and retail trade and finance and business services sectors is similar with the linkage between them and industries in the manufacturing, agriculture, transport and communications; finance and business services; and wholesale and retail trade industries dominating the top five ranks, (see tables 5.9, 5.10, 5.11 and 5.12). These industries together earn more than 60% of the output flow-on in each situation.

According to table 5.9, the own-sector output flow-on effect in the transport and communications sector is very high resulting in an additional K£ 46 million worth of

output for firms in the sector. Firms represented in this sector, and which are affected by tourist expenditure include airlines, taxis, car-hire, and telecommunications companies, all of which are used extensively by tourists.

Table 5.10:Ranked Flow-On Output Effects of the Wholesale and Retail Trade Sector on Other Sectors

Flow-on amount = K£ 601 million					
Rank	Sector name / No.	Percentage	Flow-on (K£ mil.)	Flow-on multiplier	Actual impact (K£ million)
1	Manufacturing (6)	34.39	207	0.4519	93.40
2	Agriculture Fish. & Forestry (5)	17.34	104	0.2279	23.75
3	Finance & Business Services (4)	17.06	103	0.2242	22.98
4	Transport & Communications (2)	14.88	89	0.1956	17.49
5	Wholesale & Retail Trade (3)	5.31	32	0.0698	2.22
6	Mining (10)	3.50	21	0.0460	0.96
7	Hotel & Restaurant Services (1)	2.44	15	0.0321	0.47
8	Ownership of Dwellings (11)	2.42	14	0.0318	0.46
9	Electricity & Water Supply (8)	1.32	8	0.0173	0.13
10	Government Services (7)	0.85	5	0.0111	0.05
11	Building & Construction (9)	0.50	3	0.0065	0.01
	Total	100.00	601	1.3143	161.92

The agriculture, fisheries and forestry sector features prominently in the output flow-on resulting from the wholesale and retail trade sector, with an additional K£ 23 million accruing to farmers and other firms in this sector. Being the only sector unaffected by the high incidence of foreign ownership, this output benefits the Kenyan citizen directly. It is followed closely by the finance and business sector, which earned an additional K£ 22 million in output.

Table 5.11:Ranked Flow-On Output Effects of the Finance and Business Services Sector on Other Sectors

Flow-on amount = K£ 213 million					
Rank	Sector name / No.	Percentage	Flow-on (K£ mil.)	Flow-on multiplier	Actual impact (K£ million)
1	Manufacturing (6)	37.23	79	0.4843	38.40
2	Agriculture, Fish. & Forestry (5)	19.35	41	0.2517	10.37
3	Finance & Business Services (4)	15.23	33	0.1981	6.42
4	Transport & Communications (2)	10.50	23	0.1366	3.05
5	Wholesale & Retail Trade (3)	4.78	10	0.0621	0.63
6	Mining (10)	3.80	8	0.0494	0.39
7	Hotel & Restaurant Services (1)	3.20	7	0.0417	0.28
8	Ownership of Dwellings	2.72	6	0.0354	0.20
9	Electricity & Water Supply (8)	1.50	3	0.0195	0.06
10	Government Services	0.97	2	0.0126	0.02
11	Building & Construction	0.72	1	0.0093	0.01
	Total	100.00	213	1.3007	59.83

Output flow-on from the finance and business services sector is dominated by firms in the manufacturing (37% of flow-on), Agriculture (195%), transport and communication (10%). The own-sector flow-on effect of the finance and business sector (17%) is second only to the 26% of the transport and communications sector.

5.5 The Impact of International Tourist Expenditure on Household Income

Household income multipliers derived from Kenya's aggregated 11-sector input-output tables show the expected impact of an assumed Kenya pound of output of each sector on household income. The household income multipliers calculated for Kenya are shown in table 5.12

Table 5.12 Total Household Income Multipliers for Kenya

	Sector 1	Sector 2	Sector 3	Sector 4
Initial impact	0.1533	0.1526	0.2941	0.3627
First round	0.0530	0.0830	0.0760	0.0608
Industrial support	0.0498	0.0593	0.0311	0.0232
Consumption-induced	0.0557	0.0641	0.0872	0.0971
Total	0.3119	0.3591	0.4885	0.5438
Flow-on effect	0.1586	0.2065	0.1944	0.1811
Type I ratio	1.6707	1.9326	1.3644	1.2315
Type II ratio	2.0339	2.3527	1.6610	1.4993

These multipliers show the income effects of an output change. For example, each pound of hotel and restaurant sales results in KES[4] 3.00 (K£ 0.15) in income within the same sector; KES 1.05 in industries affected by first round purchases; KES 1.00 in industries affected by industrial support effects; KES 1.10 in industries affected by consumption-induced effects, leading to a total income effect of KES 6.20 per pound. Of this amount, KES 3.10 occurs as a result of flow on output effects in the various sectors of the economy.

Table 5.13 shows the expected impact of tourist expenditure on incomes in the hotel and restaurant (1), the transport and communications (2), the wholesale and retail (3) and the Financial and Business (4) sectors in Kenya shillings.

[4] KES 20 = 1K£

Table 5.13:Household Income Multipliers in Kenya Shillings

	Sector 1	Sector 2	Sector 3	Sector 4
	KES	KES	KES	KES
Initial impact	3.05	3.05	5.90	7.25
First round	1.05	1.65	1.50	1.20
Industrial support	1.00	1.20	0.60	0.45
Consumption induced	1.10	1.25	1.75	1.95
Total	6.20	7.15	9.75	10.85
Flow-on effect	3.15	4.10	3.85	3.60

From table 5.13, it is evident that the highest initial impact of tourist expenditure is in the finance and business sector with an initial impact of KES 7.25, while the hotel and restaurant and transport/communications sectors have the lowest impact of KES 3.05 each. The finance and business sector also has the highest total income effect (KES 10.85) followed by wholesale and retail (KES 9.75), transport and communications (KES 7.15) and hotel and restaurants (KES 6.20) respectively. The transport and communications sector has the highest flow-on effect (KES 4.10).

Income multipliers as described above refer to changes in income per (Kenya) pound of initial output. Income multipliers can be converted to a 'per unit' measurement by calculating the type I and type II multipliers. In this form, they help establish the relationship between initial or own-sector income effects and flow-on income effects.

For example, in table 5.12, the type IA multiplier illustrates that for each pound of initial income effect (as a result of increased output) in sector 1, associated first round effects are K£0.35 (or KES 7.00); when industrial support effects are included (type IB),

associated flow-on income effects become K£ 0.67 (or KES 13.40); and lastly, when consumption induced effects are included (type II), associated flow-on income is doubled by K£ 1.03 (or KES 20.67).

When the household income multipliers (table 5.12) are applied to the international tourist expenditures for 1996, the total impact of tourism on Kenya's economy can be observed. The impacts are summarized in table 5.14

Table 5.14:Estimated Impact of Tourist Expenditure on Household Income in Kenya, 1996 (K£ Millions)

Sector	Germany	UK	USA	France	Others	Total
Hotel & Restaurant						
Initial expenditure	226	133	24	48	263	694
Own-sector effects	35	20	4	7	40	106
Flow-on effects	35	21	4	8	42	110
Total sector 1	**70**	**41**	**8**	**15**	**82**	**216**
Transport & Comm						
Initial expenditure	52	71	10	13	40	186
Own-sector effects	8	11	1	2	6	28
Flow-on effects	11	14	2	3	8	38
Total sector 2	**19**	**25**	**3**	**5**	**14**	**66**
Wholesale & Retail						
Initial expenditure	23	12	17	4	218	274
Own-sector effects	7	3	5	1	64	80
Flow-on effects	4	3	3	1	42	53
Total sector 3	**11**	**6**	**8**	**2**	**106**	**133**
Financial & Business						
Initial expenditure	22	21	8	6	69	126
Own-sector effects	8	7	3	2	26	46
Flow-on effects	4	4	2	1	12	23
Total sector 4	**12**	**11**	**5**	**3**	**38**	**69**
Total (expenditure)	**323**	**237**	**59**	**71**	**590**	**1280**
Total (own-sector)	**58**	**41**	**13**	**12**	**136**	**260**
Total (flow-on)	**54**	**42**	**11**	**13**	**104**	**224**
Total impact (1+2+3+ 4)	**112**	**83**	**24**	**25**	**240**	**484**

The pattern for the impact of tourist expenditure on household income was the same as that for total output, with the bulk of the household income having been generated by the hotel and restaurant sector. A total of K£224 million was generated as a result of flow-on effects in the economy, of which the hotel and restaurant sector contributed 49% of the total. The total impact (own-sector and flow-on) resulting from the initial K£ 1280 million was K£ 484 million. On average, each tourist who visited Kenya contributed K£ 679 to household income, from their initial expenditure and the resultant flow-on effects in the economy. The per person averages for the four leading generating markets were: K£ 1,037 per German, K£ 783 per Briton, K£ 490 per US citizen and K£ 618 per Frenchman.

5.6 Inter-Industry Income Linkages

Flow-on effects resulting from increased wages and salaries (household income) brought about by an increase in expenditure by international tourists to Kenya are analyzed in the following section. The four sectors in which initial tourist expenditure is assumed to have taken place –hotel and restaurant services, transport and communication, wholesale and retail and finance and business services- had household income flow-on amounts of K£ 110, K£ 38, K£ 53 and K£ 23 million respectively.

Table 5.15 Ranked Flow-On Household Income Effects of Hotel and Restaurant Services Sector on Other Sectors

Flow-on amount = K£ 110 million					
Rank	Sector name / No.	Percentage	Flow-on (K£ mil.)	Flow-on multiplier	Actual impact (K£)
1	Manufacturing (6)	32.35	36.0	0.0513	1,820,000
2	Finance and Business Services (4)	25.90	28.0	0.0411	1,170,900
3	Agriculture, Fish. & Forestry (5)	12.25	13.0	0.0194	261,400
4	Wholesale & Retail Trade (3)	12.18	13.0	0.0193	258,500
5	Transport & Communication (2)	7.11	8.0	0.0113	88,300
6	Government Services (7)	3.13	4.0	0.0050	17,200
7	Electricity & Water Supply (8)	2.59	3.0	0.0041	11,600
8	Hotel & Restaurant Services (1)	1.95	2.0	0.0031	6,600
9	Building & Construction (9)	1.67	2.0	0.0026	4,700
10	Mining (10)	0.87	1.0	0.0014	1,300
11	Ownership of Dwellings (11)	0.00	0.00	0.0000	0
	Total	100.00	110.0	0.1585	3,646,000

The manufacturing sector had the biggest economic impact resulting from persons employed in the hotel and restaurant sector, gaining approximately K£ 2million in income flow-on. The finance and business services sector followed closely with K£ 1 million, while the agriculture and wholesale and retail trade sectors earned just over K£ 25,000 in income flow-on (see table 5.15).

Table 5.16 Ranked Flow-On Household Income Effects of the Transport and Communications Sector on Other Sectors

Flow-on amount = K£ 38 million					
Rank	Sector name / No.	Percentage	Flow-on (K£ mil.)	Flow-on multiplier	Actual impact (K£)
1	Transport & Communications (2)	30.22	12.0	0.0624	716,570
2	Finance & Business Services (4)	26.82	10.1	0.0554	564,610
3	Manufacturing (6)	14.75	5.6	0.0305	170,950
4	Wholesale & Retail Trade (3)	10.77	4.0	0.0222	90,850
5	Agriculture, Fish. & Forestry (5)	8.07	3.0	0.0167	51,210
6	Hotel & Restaurant Services (1)	3.20	1.2	0.0066	8,025
7	Government Services (7)	2.75	1.0	0.0057	5,956
8	Electricity & Water Supply (8)	2.23	0.8	0.0046	3,898
9	Building & Construction (9)	0.77	0.2	0.0016	468
10	Mining (10)	0.40	0.1	0.0008	121
11	Ownership of Dwellings (11)	0.00	0.0	0.0000	0
	Total	100.00	38.0	0.2064	1,612,658

According to table 5.16, the transport and communications sector had an own-sector income flow-on effect resulting from tourist expenditure in the sector, higher than any other sector in the economy. It earned for itself an additional K£ 716,570 in the process. The finance and business services, manufacturing and wholesale and retail trade sectors also benefited from flow-on effects from the transport and communications sector handling K£ 19 million of the K£ 38 million flow-on and earning themselves K£ 826,000 worth of household income.

Table 5.17:Ranked Flow-On Household Income Effects of the Wholesale and Retail Sector on Other Sectors

Flow-on amount = K£ 53 million					
Rank	Sector name / No.	Percentage	Flow-on (K£ mil.)	Flow-on multiplier	Actual impact (K£)
1	Finance & Business Services (4)	41.83	22.2	0.0813	1,802,412
2	Transport & Communications (2)	15.35	8.1	0.0298	242,437
3	Manufacturing (6)	12.87	6.8	0.0250	170,527
4	Wholesale & Retail Trade (3)	10.56	5.6	0.0205	114,734
5	Agriculture, Fish. & Forestry (5)	10.33	5.5	0.0201	110,045
6	Government Services (7)	3.80	2.0	0.0074	14,903
7	Hotel & Restaurant Services (1)	2.53	1.3	0.0049	6,570
8	Electricity & Water Supply (8)	1.61	0.8	0.0031	2,645
9	Building & Construction (9)	0.78	0.5	0.0015	620
10	Mining (10)	0.35	0.2	0.0007	129
11	Ownership of Dwellings (11)	0.00	0	0.0000	0
	Total	100.00	53	0.1944	2,465,022

A large percentage of the household income flow-on from the wholesale and retail sector went mainly to the finance and business sector, which handled K£ 22 million, earning itself K£ 1.8 million in the process (table 5.17). This was more earnings than all the other sectors combined.

Table 5.18: Ranked Flow-On Household Income Effects of the Finance and Business Services Sector on Other Sectors

Flow-on amount = K£ 23 million					
Rank	Sector name / No.	Percentage	Flow-on (K£ mil.)	Flow-on multiplier	Actual impact (K£)
1	Finance & Business Services (4)	39.68	9.1	0.0719	656,188
2	Manufacturing (6)	14.80	3.4	0.0268	91,227
3	Agriculture, Fishing. & Forestry (5)	12.24	2.8	0.0222	62,497
4	Transport & Communications (2)	11.51	2.6	0.0208	55,063
5	Wholesale & Retail Trade (3)	10.09	2.3	0.0183	24,468
6	Government Services (7)	4.61	1.1	0.0084	8,906
7	Hotel & Restaurant Services (1)	3.53	0.8	0.0064	5,196
8	Electricity & Water Supply (8)	1.94	0.5	0.0035	1,561
9	Building & Construction (9)	1.19	0.3	0.0022	602
10	Mining (10)	0.40	0.1	0.0007	64
11	Ownership of Dwellings (11)	0.00	0	0.0000	0
	Total	100.00	23	0.1811	905,772

The Finance and business sector, with a total income flow-on of K£ 23 million had the lowest amount of flow-on. However, from this amount, it had the greatest effect, earning itself more than K£ 0.6 million in additional income (table 5.18).

5.7 The Impact of International Tourist Expenditure on Employment

Usually, the employment multiplier is calculated by multiplying the appropriate inverse matrices by the relevant employment coefficients obtained from the input-output table. Since the employment coefficients relating to the input-output table for Kenya are not available, the impact of international tourist expenditure on employment for this study are determined using a calculation for employment generation in Sri Lanka by King and Gamage (1994). According to them, one direct job and one-and-a-half indirect jobs

resulted from each 12 additional international visitor in Sri Lanka. The economies of Sri Lanka and Kenya being similar, it is assumed that this formula is also true for Kenya.

Using the 1996 tourist departure figures (Kenya 1997:), the following employment generation estimates are arrived at for the different generating countries (see table 5.9 below) based on the calculation for employment generation by King and Gamage (1994).

Table 5.19 Estimated Employment Generation from International Tourism, 1996

Country	Departures*	Direct jobs	Indirect jobs	Total	%
Germany	107,900	8,991	13,486	22,477	16.4
UK	106,000	8,833	13,249	22,082	16.1
USA	48,900	4,075	6,112	10,187	7.4
Italy	40,800	3,400	5,100	8,500	6.2
France	40,400	3,366	5,049	8,415	6.1
Other – Europe	40,400	3,366	5,049	8,415	6.1
Others	274,600	22,883	34,324	57,207	41.7
Total	712,000	54,914	82,369	137,283	100

*Source: Kenya, 1997

Table 5.19 indicates that there were 54,914 direct employment positions and a further 82,369 indirect positions created in Kenya to meet the initial tourist expenditure by international tourists in 1996. The total impact of approximately 137,283 positions from direct and indirect employment generation reflects tourism's labor intensiveness and highlights its importance to the economy in terms of employment generation.

The results in table 5.19 also indicate that with an initial tourist expenditure of K£ 1280 million in 1996, 54,194 jobs were created directly, or 1 job for every K£ 23,310 of initial tourist expenditure (see calculation shown below):

Jobs created = initial output / initial employment

= K£1280 mil. / 54,914

= K£0.0233091 mil. or K£ 23,310

Based on the above output / employment ratio, the employment opportunities created by each tourism related sector can be estimated and are shown in table 5.18 below.

Table 5.20: Estimated Economic Impact on Employment by Sectors Receiving Tourism Expenditure Directly

	Estimated No. of jobs created		
Sector name / No.	Direct	Indirect	Total
Hotel & Restaurant services (1)	29,774	46,891	76,665
Transport & Communications (2)	7,980	12,270	20,250
Wholesale & Retail Trade (3)	11,755	15,445	27,200
Finance & Business Services (4)	5,405	6,993	12,398
Total	54914	81599	136,513

5.8 Summary

The following are highlights of the 1997 visitor survey and the economic impact assessment conducted for this study:

a) The estimated average tourist expenditures for the five leading generating markets for Kenya's tourism were obtained.

b) A breakdown of expenditure by tourists based on the amount spent on accommodation & food, transport, shopping, recreation & tours and miscellaneous items was calculated.

c) Total output multipliers, household income multipliers and employment multipliers for Kenya were derived from the input-output table. These were then used to calculate the initial and flow-on effects of the tourist expenditure on the economy.

The analysis concluded above has revealed:

1. That Germany and The United Kingdom dominate Kenya's tourism generating countries in terms of their contribution towards the initial and flow-on output and income effects on the economy.
2. That, among the sectors directly involved in earnings from and later distribution of tourism expenditure, the contribution of the hotel and restaurant sector in the initial and flow-on output and household income is highest, followed by the wholesale and retail trade, transport and communications and finance and business sectors respectively.
3. That, the manufacturing sector gained mostly from output flow-on resulting from initial expenditure, while the finance and business sector benefited from income flow-on.

The attractiveness of tourism as a generator of employment, income, tax collections and foreign exchange earnings has led many developing countries to enter into competition. To be an effective competitor, a destination country must be able to make appropriate strategic and operational decisions. The ability to forecast tourism demand in the face of changing environment can be very beneficial in this decision making process (Calantone, Di Beneditto, and Bojanic 1987).

The next chapter forecasts tourism demand and expenditure up to the year 2000. The tourism multipliers obtained earlier are then used, together with the projected tourism expenditure, to estimate the (projected) economic impact on the economy.

CHAPTER 6

FORECASTING INTERNATIONAL TOURISM TO KENYA AND IT'S CONSEQUENT ECONOMIC EFFECTS

6.1 Outline

According to Archer (1994), forecasting is an essential element in the process of management. He sees the aim of tourism demand forecasting as the prediction of 'the most probable level of demand that is likely to occur in the light of known circumstances...to show what different levels of demand may be achieved (p.105).

Tourism demand forecasts are required [by destination governments] to plan, in detail, for the long-run development of the tourism industry. Such forecasts can be used to enable estimates to be made of future foreign exchange earnings, the contribution that tourism might make to national income, and the social and cultural impact that tourism might have on the country (Archer 1994).

In this chapter tourism demand is forecast for the period 1997-2000, which as mentioned earlier, covers the official development plan period for Kenya. The demand forecast is followed by an estimation of tourism receipts for the same period. The output and income multipliers obtained from the input-output method are used, together with the forecasted arrivals and receipts, to estimate the impact of international tourism for the forecasted period.

6.2 Methodology

Secondary data were assembled regarding tourist arrivals for the period 1973-1995[5]. A time series analysis[6] was used to estimate the annual tourist arrivals to Kenya for the period 1997 to 2000, based on these historic data.

According to Uysal and Crompton (1985:8), a time series consists of statistical data, which are collected, or observed, over successive increments of time. They define a time series model as a specification of the forces which contribute to movements in the series, as well as an analysis of the manner in which these factors interact in influencing the series direction and magnitude. Time series models attempt to determine underlying trends and other patterns in the data and extrapolate the trend to obtain forecasts (Calantone, Benedetto and Bojanic 1987:32).

The principal reason for selecting the time series method for this study was that only limited data was available on tourism demand to Kenya. In addition, Uysal and Crompton (1985) note its suitability for short-term forecasts. Gamage, Shaw and Ihalanayake (1997) observes that one of the shortcomings of a pure time series analysis is its inability to address hypothetical questions or optional scenarios related to the situation being forecast. However, alternative methods for forecasting tourism demand, such as multiple regression analysis were unsuitable for this study due to the lack of detailed data for the analysis.

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[5] Source: Economic Survey issues, 1974 – 1996.

[6] See appendix VI for details.

6.3 Tourism Demand Trends

Kenya (1995:161) shows that international tourism arrivals to Kenya grew at an average rate of 3% per year to increase from 397,000 in 1973 to 712,000 in 1996. Tourist receipts on the other hand increased from K£ 26 million to K£ 1280 million during the same period. The increase in arrivals during this period was however punctuated by a 22% drop in numbers in 1977 and other smaller declines in 1983 and 1992. The drastic drop in 1977 was as a result of the closure of the Kenya-Tanzania border, which resulted in a decline in cross-border tourist traffic between the two countries. The downturns in 1983 and 1992 were mainly as a result of an attempted *coup d'etat* in 1982 and the Gulf crisis in 1991.

Between 1983 and 1990, there was a steady and uninterrupted increase in the number of arrivals in the country, which resulted in a total increase of 444,000 tourists (or an estimated 119% increase) during this period. 1995 saw another big drop in arrivals (20%), this time the result of a combination of factors, among them – bad publicity due to political unrest in the country, ineffective tourism promotion and stiffer competition from similar destinations (Kenya 1995). Unlike the arrivals, tourism receipts have increased steadily over the years, except for a 19% drop in 1995.

6.4 Forecast Results

Table 6.1 shows the projected number of International tourist arrivals and the estimated receipts from tourism between 1997 and the year 2000.

Table 6.1: Projected Tourist Arrivals and Receipts, 1997-2000

Year	Arrivals	Receipts (K£ mil.)	Av. Exp. (K£)*
1997	878,100	1,500	1,708
1998	902,700	1,800	1,994
1999	926,000	2,160	2,332
2000	951,900	2,592	2,723

The results of the forecast indicate that international tourist arrivals to Kenya will increase from 690,000 in 1995 to 951,000 in the year 2000, an increase of 38%, with the average growth rate estimated to be 3% per annum. The receipts from tourism are estimated to increase at an average annual rate of 20% from K£ 1500 in 1997 to K£2592 in the year 2000.

6.5 Projected Impact of Tourism on Kenya's Economy, 1997 to 2000

Tables 6.2 and 6.3 detail the anticipated impact of international tourism expenditure on Kenya's economy for the period 1997 to 2000. To calculate the impacts, the projected receipts from tourism were divided into the four sectors used in the study (see chapter 4) The estimated tourist expenditures arrived at for each sector were then multiplied by the output and income multipliers for Kenya.

Table 6.2 Projected Economic Impact of Tourist Expenditure on Total Output, 1997 - 2000 (K£ Millions)

Sector	Multiplier	1997	1998	1999	2000
Hotel & Restaurant					
Initial expenditure	1.0000	810	972	1166	1400
Flow-on effects	1.5754	1276	1532	1837	2205
Total sector 1	**2.5754**	**2086**	**2504**	**3003**	**3605**
Transport & Comm					
Initial expenditure	1.0000	225	270	324	388
Flow-on effects	1.5398	346	416	499	597
Total sector 2	**2.5398**	**571**	**686**	**823**	**985**
Wholesale & Retail					
Initial expenditure	1.0000	315	378	454	544
Flow-on effects	1.3143	414	497	597	715
Total sector 3	**2.3143**	**729**	**875**	**1051**	**1259**
Financial & Business					
Initial expenditure	1.0000	150	180	216	260
Flow-on effects	1.3007	195	234	281	338
Total sector 4	**2.3007**	**345**	**414**	**497**	**598**
Total (expenditure)		**1500**	**1800**	**2160**	**2592**
Total (flow-on)		**2231**	**2679**	**3214**	**3855**
Total impact (1+2+3+ 4)		**3731**	**4479**	**5374**	**6447**

Table 6.2 indicates that the additional output resulting from first round, industrial support and consumption induced effects on the anticipated revenues in 1997, 1998, 1999 and 2000 will be K£2231 million, K£2679 million, K£3214 million and K£3855 million respectively.

Table 6.3:Projected Economic Impact of Tourist Expenditure on Household Income, 1997 - 2000, (K£ Millions)

Sector	Multiplier	1997	1998	1999	2000
Hotel & Restaurant					
Initial expenditure		**810**	**972**	**1166**	**1400**
Own-sector effects	0.1533	124	149	179	215
Flow-on effects	0.1586	128	154	185	222
Total sector 1	**0.3119**	**252**	**303**	**364**	**437**
Transport & Comm					
Initial expenditure		**225**	**270**	**324**	**388**
Own-sector effects	0.1526	34	41	50	59
Flow-on effects	0.2065	46	56	67	80
Total sector 2	**0.3591**	**80**	**97**	**117**	**139**
Wholesale & Retail					
Initial expenditure		**315**	**378**	**454**	**544**
Own-sector effects	0.2941	93	111	134	160
Flow-on effects	0.1944	61	73	88	106
Total sector 3	**0.4885**	**154**	**184**	**222**	**266**
Financial & Business					
Initial expenditure		**150**	**180**	**216**	**260**
Own-sector effects	0.3627	55	65	78	94
Flow-on effects	0.1811	27	33	39	47
Total sector 4	**0.5438**	**82**	**98**	**117**	**141**
Total (expenditure)		**1500**	**1800**	**2160**	**2592**
Total (own-sector)		**306**	**366**	**441**	**528**
Total (flow-on)		**262**	**316**	**379**	**455**
Total impact (1+2+3+ 4)		**568**	**682**	**820**	**983**

According to table 6.3, household income as a result of own-sector effects in the hotel & restaurant, transport & communications, wholesale & retail and finance & business sectors will be K£306 million, K£366 million, K£441 million, and K£528 million respectively. The estimated total flow-on household incomes for each of these sectors are K£262 million, K£316 million, K£379 million and K£455 million in 1997, 1998,1999 and 2000 respectively.

From the figures given above, it is estimated that the total (additional) household income created as a result of the expected receipts from tourism will be K£568 million in 1997, K£682 million in 1998, K£820 million in 1999 and K983 million in the year 2000.

As stated earlier, King and Gamage (1994) indicated that one direct job and one-and-a half-indirect jobs resulted from each additional 12 visitors to Sri Lanka. Using this formula, 15,392 additional (direct and indirect) jobs will be created between 1997 and 2000 (see table 6.4 below) or an average of 5,000 jobs each year.

Table 6.4: Projected Employment Generation, 1997 - 2000

Year	Arrivals	Direct jobs	Indirect jobs	Total	Additional jobs
1997	878,106	73,175	109,763	182,938	
1998	902,736	75,228	112,842	188,070	5,132
1999	926,071	77,172	115,758	192,930	4,860
2000	951,990	79,332	118,998	198,330	5,400

6.6 Summary

The predicted arrival figures to Kenya from 1997 to 2000 and the estimated receipts are summarized in table 6.1. Projected economic impacts of these receipts on output, household income and employment are also estimated in this chapter.

The forecast shows positive growth in both arrivals and revenue. However, it should be noted that the forecast is based on the assumption that any economic, social and political changes that will occur during this period will be minimal and will therefore not affect

the tourists' demand and expenditure patterns. Given such growth, it is possible that the economic impact will be similarly positive.

The next chapter reviews the study and gives a summary of the economic impact assessment conducted. It highlights some policy implications resulting from the observations made in the study and makes recommendations and suggestions for further research.

CHAPTER 7

CONCLUSION

7.1 A Review of the Study

Kenya like any other country in the world has many economic goals all dedicated to improving the welfare and standard of living of its citizens. The government has the responsibility to look into the best ways of utilizing the country's resources both natural and human, in order to achieve these goals.

Tourism is one of the best options available to Kenya for rapid economic development, mainly because of the abundance of natural attractions on which the industry is based and the benefits that accrue from it. This study examined and discussed in detail the economic benefits attributable to tourism, of which increased national and household income (foreign exchange, economic output, wages and salaries, etc) and increased employment were the most important.

There are economic costs involved in any 'industrial' development like tourism, which should be deducted when evaluating benefits of such an industry in the economy in order to arrive at a 'net' benefit. A major economic cost for tourism is the leakage of earnings away from the economy. This negative impact was not taken into account during the analysis largely because it was difficult to determine from the data available for the study. In addition, any cost-benefit study requires plenty of time and financial resources, none of which were available. The results presented in this study are therefore 'gross' estimates, as no economic costs are deducted.

7.2 Summary of the Impact Assessment

The principal aim of the study was to estimate the economic impact of international tourism on Kenya and to forecast the impacts from 1997 to the year 2000. In order to estimate the impacts, the following analysis were carried out:

1. An airport survey was carried out to determine the amount and patterns of tourist expenditure in Kenya. The results were then analyzed to obtain the total expenditure ratios for accommodation, transport, shopping and entertainment according to the tourists' country of residence.

2. The economic significance of tourism in Kenya was determined by calculating the tourism multipliers using the GRIMP technique. These multipliers were used together with the total tourist expenditure to estimate Tourism's effect on total output and income. The input-output method, which was the basis for the whole impact study, highlighted the chain effects resulting from the injection of tourist expenditure into the economy. Using the multipliers for the sectors that directly receive the initial tourist expenditure it was possible to determine the inter-sectoral linkages resulting from tourist expenditure. A formula used in King and Gamage (1994) to estimate employment in Sri Lanka was used to estimate tourism's impact on employment.

3. The number of tourist arrivals was forecast for the period 1997 to 2000. The predicted arrivals were used, together with the multipliers obtained earlier, to estimate impacts of tourism on output and household incomes in Kenya for the forecast period.

The output, income and employment multipliers, which cover the direct and indirect effects of international tourism, are presented in table 7.1. They illustrate the relative importance of international tourism to Kenya.

Table 7.1: Average Output, Income, and Employment Multipliers for Kenya

	Total	Flow-on
Output multiplier	2.43	1.43
Income multiplier	0.42	0.18
Employment multiplier	2.50*	1.50

* = Ratio of total (direct & indirect) employment to direct employment

The results shown in table 7.1 suggest that the employment multiplier for Kenya (2.50) is higher than the income multiplier (2.43). The table also indicates that tourism has a greater flow-on effect on output than on income.

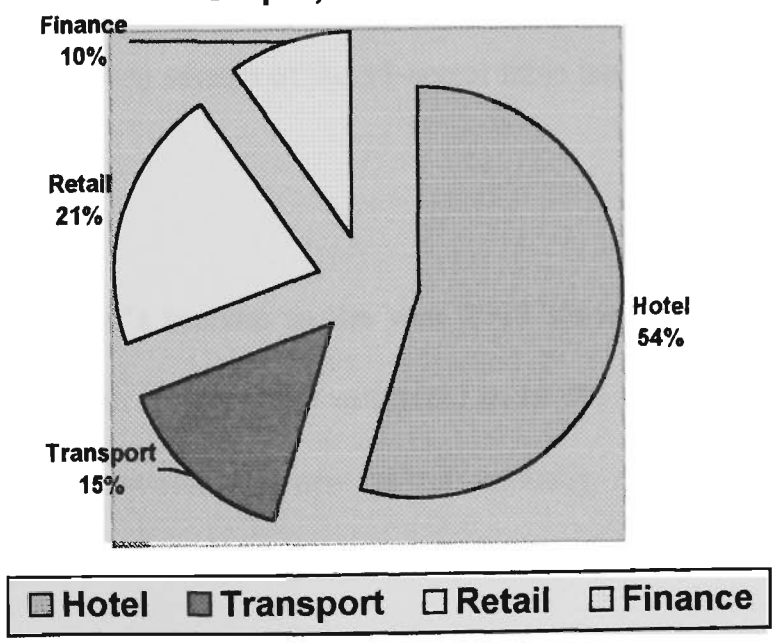
In 1996, Kenya earned K£ 1280 million from 712,000 tourists. The aggregate (direct & indirect) output, income and employment effects of tourism spending in the hotel & restaurant (sector 1), Transport & Communication (sector 2), wholesale & retail (sector 3) and finance & business (sector 4) for this year, obtained by multiplying the initial expenditure by the multipliers, are shown in table 7.2.

Table 7.2: Aggregate Effects of Spending, 1996

	Hotel /Restaurant	Transport/ Comm.	Wholesale/ Retail.	Finance/ Business	Total
Total expenditure (K£	694	186	274	126	1,280
Flow-on output (K£ mil.)	1,093	286	360	163	1,902
Flow-on input (K£ mil.)	216	66	133	69	484
Total impact (K£ mil.)	2,003	538	767	358	3,666
Employment (persons)	76,665	20,250	27,200	12,398	136,513

From the estimates shown above, it is evident that the hotel & restaurant sector generated the most income and employment followed by the wholesale & retail, transport & communication and finance & business services sectors respectively. The tourism industry contributed a total of K£ 3666 into the economy, of which K£ 2386 was as a result of multiplier (or flow-on) effects alone. The industry also generated 136,513 employment positions into the country's labor force. Figure 7.1 shows the percentage contribution of the hotel, transport, retail and finance sectors.

Figure 7.1: Percentage Impact on Total Output, 1996



In evaluating tourism's impacts on the economy, its linkages with other sectors in the economy should be established. Table 7.3 gives a summary of the flow-on effects in the top five sectors, resulting from expenditure in the hotel & restaurant (1), transport & communications (2), wholesale & retail (3) and finance & business (4) sectors of the economy in ranking order.

Table 7.3 Ranked Flow-on Output Effects in all Sectors (K£'s millions)

	Initial expenditure sector amount			
Rank	Sector 1 (K£ 1851)	Sector 2 (K£ 429)	Sector 3 (K£ 601)	Sector 4 (K£ 213)
1	Manuf. (1088)	Manuf.(153)	Manuf. (207)	Manuf. (79)
2	Agriculture (259)	Transport (114)	Agriculture (104)	Agriculture (41)
3	Finance (133)	Agriculture (53)	Finance (103)	Finance (33)
4	Mining (110)	Finance (43)	Transport (89)	Transport (23)
5	Transport (87)	W/Retail (21)	W/Retail (32)	W/Retail (10)

According to table 7.3, the tourism sector has very strong linkages with the manufacturing sector as approximately 49% of the total flow-on output are generated in this sector. The linkages with the agriculture, Finance and transport sectors is moderate, with 14%, output generated in agriculture and 10% each in the finance and transport sectors. The other seven sectors of the 11-sector table have relatively weak linkages with tourism.

Projections for Kenya's tourism to the year 2000 show a positive growth trend. The average annual growth in arrivals is estimated to be 3% between 1997 and 2000, which will see arrivals almost reaching one million annually at the end of the century. The growth in revenue is also expected, but at an annual average rate of 20%. Assuming

these estimates to be correct, the projected impact of tourism on total output, household income and employment is shown in figure 7.4.

Table 7.4 Projected Impact of Tourism on Kenya's Economy, 1997-2000

	1997	1998	1999	2000	Total
Initial revenue K£ million)	1500	1800	2160	2592	8052
Flow-on output (K£ million)	2231	2679	3214	3855	1197
Flow-on income (K£ million)	568	682	820	983	3053
Total irnpact (K£ million)	4299	5161	6194	7430	12302
Employment (persons)	878,106	902,736	926,071	951,990	

The results of the forecast (table 7.4) show that the total contribution of tourism towards output and household income will increase from K£4299 in 1997 to K£7430 in 2000. The forecasts are based on the assumption that the tourist expenditure patterns will not change significantly within the forecast period. These amounts may however change if the actual expenditure by tourists in Kenya increases, especially on items such as shopping, entertainment and day tours, since these items have a very low leakage factor. From the projected employment figures, an estimated 5,000 jobs will be added to the workforce annually, which is a significant contribution in a country with a major unemployment problem.

7.3. Limitations of the Study

The study is restricted to an assessment of the positive economic impacts of tourism on Kenya's economy since it does not take into consideration the effects of negative economic impacts like leakage on the economy. In addition, the following factors limited the scope and outcome of the study:

- Due to the limited time available for the study, the visitor survey questionnaires were distributed during the peak season (in February 1997) only. The results do not therefore include expenditure profiles for the low-season (April-July).
- The questionnaire distributed was in English and could have only been completed by English-speaking tourists. This cut off many would-be respondents who could not complete the questionnaire. It is therefore difficult to claim total representativeness of the sample.
- Resource constraints and lack of time prevented the translation of the questionnaire into other languages such as French, German, Italian and Japanese.
- Questions relating to expenditure proved to be sensitive. As a result, most respondents omitted these questions when completing the questionnaire thereby reducing the accuracy of the expenditure estimates.
- No pilot-test was conducted for the questionnaire. There was therefore no way design faults in the questionnaire could be detected and rectified.
- Although the tourist expenditure patterns were obtained from the 1997 visitor survey, the economic impact analysis was done, based on the international arrival figures for 1995. It is therefore assumed that expenditure patterns for foreign tourists were similar in 1995 and 1997.
- The study used the 1976 input-output tables for Kenya. The multipliers obtained do not reflect any major structural changes that may have taken place in the economy since then.

- Despite the above limitations, the results of the 1997 visitor survey show expenditure patterns similar to those obtained by the IUOTO (Summary 1987). In addition, it can be assumed that there haven't been any major structural changes in Kenya's economic set-up that may have affected the results of the input-output analysis. Viewed in this context, the limitations simply mean that the research findings are less definitive than might otherwise have been.

7.4. Policy Implications and Recommendations

Based on the results of the airport survey and the findings of this study, the author has observed:

1. That, there is a need for regular and detailed data on the tourism sector. The data that is available currently, like the total revenue from tourism, does not provide enough detail for proper planning. A breakdown of the revenue according to the visitors' country of residence, for example, may be more useful to marketers, researchers and academics in various studies geared at improving tourism's performance. A comprehensive database, which includes data on employment, taxes, business ownership, etc, should be established and made available for research. It is, therefore recommended that an autonomous tourism research division or bureau be established and be charged with the compilation of a database for the industry.

2. That, the result of the airport survey (see appendix V) indicates that most tourists visiting Kenya participate in almost the same activities. These activities are usually centered around traditional wildlife safari and the beach holiday packages. There is need to diversify Kenya's tourism product in order to give the tourists a wider choice and encourage them to spend more money while in the country. As the findings of this study indicate, an increase in the amount of money spent in the country will have a big impact on the economy through multiplier effects and as a result the enormous flow-on income and employment benefits.

3. That, the airport survey results are based on a sample of 197 respondents the majority of whom are British and United States citizens. Since the questionnaire was in English, the sample excluded many would be (non-English speaking) respondents. In a subsequent research, a larger sample and a multi-lingual questionnaire should be used.

4. That, although international tourism is attractive because of its foreign exchange earning capacity, promoting and developing alternatives like regional and domestic tourism may be more beneficial in the long run. For example, Pavaskar (1982) has noted that domestic tourism generates more employment than international tourism. Data on Kenya's regional and domestic tourism, should therefore be collected and analyzed to find out what impacts these 'tourists' have on the economy and to figure out how these impacts can be improved.

5. That, Kenya's input-output tables have not been updated since 1976. These tables are very useful tools, especially for analyzing a section, a region or even an industry in the economy. Although it is an expensive undertaking, the benefits derived from such an update may surpass such expenditure.

The findings and recommendations of this study will contribute to the planning and general development of the tourism industry in Kenya.

7.5. Suggestions for Further Research

Regular economic impact studies are vital for any tourist destination to gauge, amongst other things, the extent of visitor spending within the economy. The findings obtained may have important implications in the planning and policy direction taken by the authorities. For Kenya, the rapidly changing international market place and the emergence of stiff competition in the Africa region from countries like South Africa, Zimbabwe and Tanzania mean that alternative products and strategies have to be looked for. The author therefore suggests that further research be carried out in the following areas:

a) The Input-Output tables for Kenya should be updated in order to enable researchers obtain a clearer 'picture' of the economy. These researchers can use the information obtained to carry out research at both the macro-level and the micro-level of the economy.

b) Regular surveys be carried out, for both international and domestic tourists, in order to obtain information on demographics, expenditure patterns, motivations, movements, etc. Such statistics will be useful for different kinds of studies on the tourism industry.

The data collected from these two studies can be used in conducting the following studies:

i. Regional economic impact analysis, covering areas such as the coast region, Central Kenya, Northern Kenya, etc. These studies will help provide information for the proper formulation of detailed regional development policies and plans.

ii. Economic impact studies based on domestic tourist expenditure data. This will be a useful tool in exploring the extent of domestic tourism in Kenya and its effect on the economy. The results obtained may also be useful for the formulation of a domestic tourism policy.

iii. Finally, studies should be carried out to examine the 'negative' economic impacts of tourism. Such studies can explore topics such as the impacts of economic leakage on Kenya's economy and the impacts of foreign ownership (and domination) of Kenya's tourism enterprises on the economy.

Though only estimates, findings from such economic impact studies can be used successfully by both the government and individual private sector investors in the planning and development of the tourism industry, especially in areas such as marketing. The findings can also be used in conjunction with environmental impact assessment and other feasibility studies for infrastructure and superstructure development.

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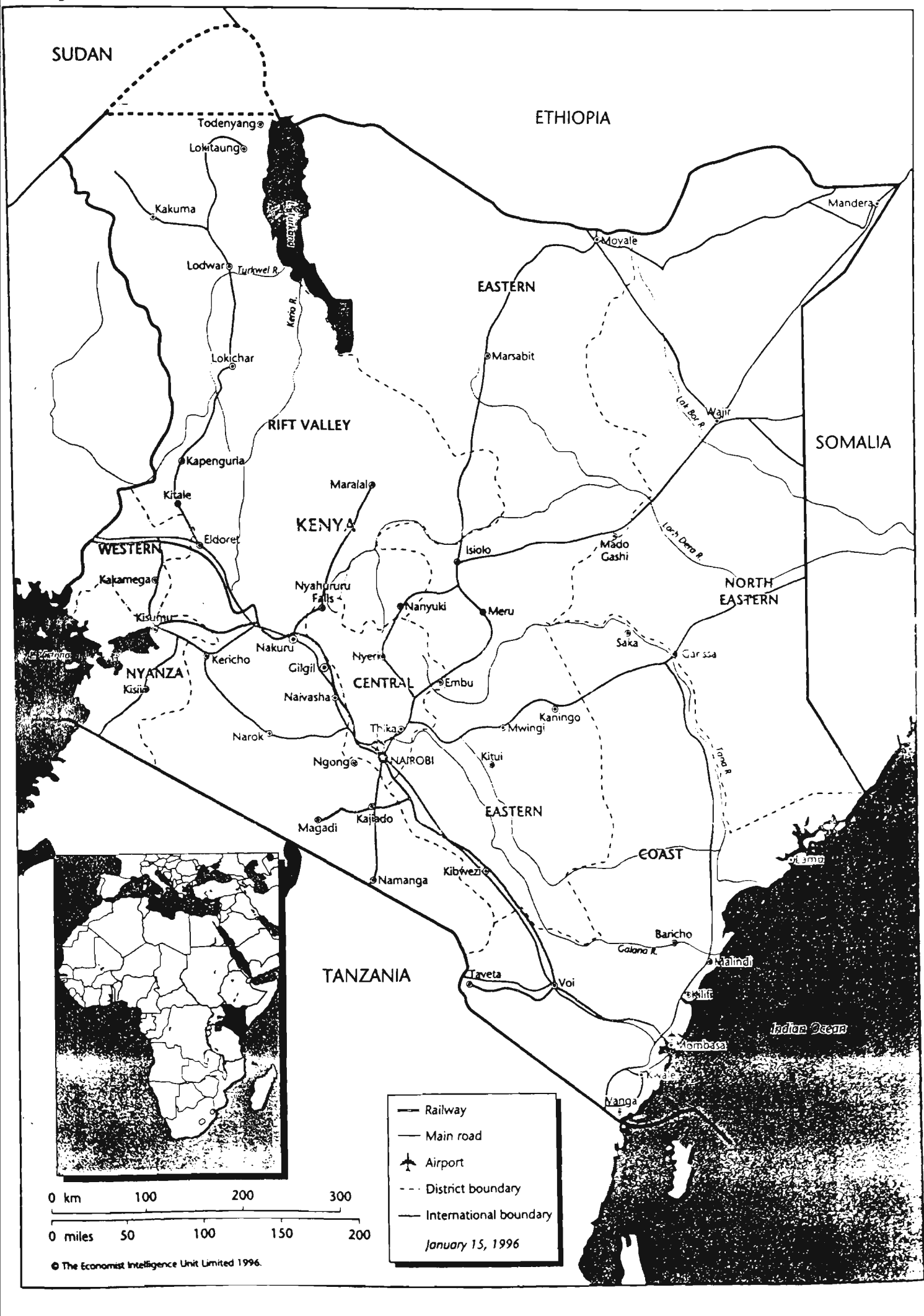
APPENDIX I

KENYA

Location (map)

Kenya



APPENDIX II

INTERNATIONAL TOURIST ARRIVALS AND RECEIPTS:

EASTERN AFRICA

Table A2.1: Trends of Tourist Arrivals and Receipts: East Africa

	Arrivals (thousands)		Receipts (US$ million)	
Country	1993	1994	1993	1994
Burundi	75	29	3	3
Comoros	24	27	8	9
Djibouti	25	22	13	10
Ethiopia	93	98	20	28
Kenya	826	863	413	421
Madagascar	55	66	41	54
Malawi	153	154	7	5
Mauritius	375	401	301	356
Reunion	242	263	---	---
Rwanda	2	1	2	2
Seychelles	116	110	116	103
Somalia	20	15		
Uganda	103	119	50	61
Tanzania	230	262	147	192
Zambia	157	153	44	43
Zimbabwe	943	1099	138	153
Total: Eastern Africa	18,071	18,260	1,303	1,440

Source: WTO, Yearbook of Tourism Statistics

Table A2.2: International Visitor Arrival and Expenditure for Kenya:

1980 – 1996

Year	Arrivals ('000s)	Earnings (K£ millions)
1980	393.3	82.5
1981	365.2	90.0
1982	392.1	118.0
1983	372.3	122.0
1984	462.2	152.0
1985	540.6	197.0
1986	614.2	248.0
1987	661.3	292.0
1988	694.9	349.0
1989	734.7	432.0
1990	814.4	533.0
1991	804.6	594.0
1992	781.5	713.0
1993	826.2	1222.0
1994	863.4	1405.0
1995	690.5	1250.0
1996	712.0	1280.0

Source: Economic Survey, various years

APPENDIX III

THE 1976 INPUT-OUTPUT TABLES FOR KENYA

INPUT/OUTPUT TABLES FOR KENYA

1976

CENTRAL BUREAU OF STATISTICS
MINISTRY OF ECONOMIC PLANNING AND COMMUNITY AFFAIRS

OCTOBER 1979

TABLE 1: BASIC INPUT/OUTPUT TABLE AT PRODUCER'S PRICES

TOTAL DIMENSION

DELIVERING SECTORS \ RECEIVING SECTORS
1 TRADITIONAL ECONOMY
2 AGRICULTURE
3 FISHING & FORESTRY
4 PROSPECTING, MINING & QUARRYING
5 M. OF FOOD PREPARATIONS
6 M. OF BAKERY PRODUCTS, CHOCOLATE & SWEETS
7 M. OF BEVERAGES & TOBACCO
8 M. OF TEXTILE RAW-MATERIALS, ROPE & TWINE
9 M. OF FINISHED TEXTILES
10 M. OF GARMENTS, KNITWEAR & MADE-UP TEXTILES
11 M. OF FOOTWEAR, LEATHER & FUR PRODUCTS
12 M. OF WOOD PRODUCTS INCL. FURNITURE
13 M. OF PAPER & PAPERPRODS., PRINTING & PUBLISHING
14 M. OF PETROLUM PRODUCTS
15 M. OF RUBBER PRODUCTS
16 M. OF PAINT, DETERGENT & SOAP
17 M. OF OTHER CHEMICALS
18 M. OF MISC. NON-METALLIC MINERAL PRODUCTS
19 M. OF METAL PRODUCTS, MACHINERY & MISC.
20 BUILDING & REPAIR OF TRANSPORT EQUIPMENT
21 ELECTRICITY SUPPLY
22 WATER SUPPLY
23 BUILDING & CONSTRUCTION
24 WHOLESALE & RETAIL TRADE
25 TRANSPORT & SERVICES ALLIED TO TRANSPORT
26 COMMUNICATION
27 RESTAURANT & HOTEL SERVICES
28 OWNERSHIP OF DWELLINGS
29 FINANCIAL SERVICES
30 MISC. SERVICES (EXCL. GOVERNMENT SERVICES)
31 GOVT. SERVICES, PUBL. ADM. & DEFENCE
32 " EDUCATION
33 " HEALTH
34 " AGRICULTURAL
35 " OTHER
36 OWNERSHIP OF BUSINESS PREMISES
37 UNSPECIFIED (INCL. HUNTING)
TOTAL INTERMEDIATE INPUTS
DEPRECIATION
WAGES & SALARIES
PROFITS
INDIRECT TAXES (EXCL. IMPORT DUTIES)
SUBSIDIES
INTEREST PAID
GROSS VALUE ADDED
GROSS OUTPUT
IMPORT CIF
IMPORT DUTIES
IMPORT INCL. DUTIES
TOTAL SUPPLY OF RESOURCES

"M." SHORT FOR: MANUFACTURING

1	2	3	4	5	6	7	8	9	10	11	12
8600	0	0	0	0	0	0	0	0	0	0	0
0	21272	0	0	103894	30	1123	2108	0	279	754	24
1361	0	13	0	166	0	2	0	0	0	0	864
0	79	0	1016	432	0	194	0	0	0	0	7
0	6036	0	0	61106	10962	9225	0	0	0	2492	0
0	0	0	0	100	1	0	0	0	0	0	0
0	0	0	0	0	0	2975	0	0	0	0	0
0	117	504	328	901	0	0	321	1829	47	12	262
0	0	0	0	0	0	0	12	1735	11905	253	510
0	2734	1	3	25	0	5	3	1	1454	2	20
0	0	0	2	17	0	2	3	0	0	819	0
2531	0	3	18	23	0	76	2	2	4	3	4757
0	61	0	350	10754	167	1006	86	256	1199	745	167
0	5012	447	1276	3977	84	1341	185	325	348	66	2416
0	150	38	67	151	5	58	6	5	24	534	143
0	0	2	11	119	0	10	0	0	0	0	150
0	13918	2	404	10141	44	1074	225	2684	302	1252	1518
2241	0	2	521	283	12	364	5	10	6	0	70
1803	982	10	509	8265	30	1279	382	345	1315	176	2983
0	172	136	311	935	25	262	29	33	141	13	623
0	1002	0	208	2200	31	455	142	367	284	124	290
0	155	0	59	290	19	450	4	102	32	7	18
0	0	0	294	990	8	190	66	43	95	13	127
814	8529	68	403	13789	121	3044	317	854	2501	512	1976
0	762	11	1083	1411	2	1021	26	45	73	18	13
0	65	0	21	399	4	84	25	61	110	12	60
0	0	0	23	131	1	28	0	25	45	0	5
0	0	0	0	0	0	0	0	0	0	0	0
0	430	0	700	5123	99	1085	382	949	2742	82	1451
0	3256	0	281	999	11	283	9	86	199	159	164
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	181	0	139	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	308	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	156	547	111	124	10	51	241	100	296
0	22	0	554	1388	90	228	65	65	1600	122	93
17350	65062	1257	8595	229279	11957	26127	4393	9873	24944	8270	19150
0	27090	490	715	5207	314	1800	510	795	935	228	767
970	51404	6235	1854	11703	1165	6618	1125	2151	3755	1130	3760
68840	376385	1875	314	10153	447	12068	220	-469	1980	1039	1304
0	2720	49	141	8275	536	33686	69	3862	2943	1122	1197
0	-346	-15	0	0	0	0	0	0	0	0	0
0	8816	0	526	3234	84	589	240	873	640	67	246
69810	466069	8634	3550	38572	2546	54761	2164	7212	10253	3586	7274
87160	531131	9890	12146	267852	14403	80890	6557	17085	35196	11855	26424
0	10570	404	94318	14551	104	1943	1019	14935	9959	1713	1654
0	370	53	18674	1955	20	1996	201	5458	3444	648	247
0	10940	457	112992	16506	124	3939	1220	20393	13403	2361	1901
87160	542071	10347	125138	284358	14527	84829	7777	37478	48599	14216	28325

13	14	15	16	17	18	19	20	21	22	23	24
0	0	0	0	0	0	0	0	0	0	0	0
0	0	234	0	6421	0	152	0	0	0	0	0
0	0	0	16	47	5	0	0	0	0	0	0
0	109964	32	14	123	2443	429	0	0	42	6906	0
0	0	0	8030	4607	0	578	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
70	0	0	0	81	27	408	0	0	0	101	892
83	0	253	0	8	0	70	78	0	0	0	0
5	2	3	1	3	7	17	19	4	7	23	3
3	0	0	0	3	3	28	3	0	0	9	0
13	15	0	0	213	40	270	196	28	5	4226	64
1695	72	111	778	1048	863	1673	590	399	8	1078	2684
444	585	286	318	705	4419	2262	1982	3111	594	15027	3820
31	0	2255	8	36	104	130	913	50	27	1084	684
0	0	0	63	69	15	548	466	9	2	2295	0
2359	1006	1023	2882	12583	218	7369	311	0	96	2808	105
3	23	11	48	574	2059	988	636	31	78	13939	0
1469	638	513	251	1668	1880	46060	5900	1134	363	25446	1372
141	0	132	46	182	470	606	16913	258	127	2331	948
303	488	157	51	286	1317	970	618	1458	41	824	505
25	71	26	33	47	77	100	19	29	1526	224	240
359	1583	28	7	177	407	601	114	0	0	19313	0
2486	250	438	570	2484	1204	5773	2546	565	157	7615	2838
373	0	124	375	566	1191	756	2	218	120	2746	10785
356	51	39	49	133	84	344	308	230	55	306	2959
47	0	0	6	35	31	167	151	470	79	1833	84
0	0	0	0	0	0	0	0	0	0	0	0
1942	697	408	314	1661	564	4069	1810	1202	103	4817	19166
439	248	45	248	653	146	871	269	191	22	438	640
0	0	0	0	0	0	0	0	0	0	0	0
0	322	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
551	0	91	101	262	113	681	1335	204	79	760	7150
495	228	263	22	78	1385	363	341	367	316	1875	2202
35712	116223	6477	14238	34713	19072	76283	35520	9958	3849	116024	57191
2165	896	543	1125	1466	1789	2393	1900	1864	276	6049	7596
7405	807	1129	2213	5133	3524	11840	10170	1480	3750	37820	53160
3085	3207	1254	3310	5155	5036	6509	994	3620	1371	1353	50994
2617	6522	1027	2542	3495	846	14770	7231	444	29	434	2514
0	0	0	0	0	0	0	0	0	-10	0	0
1991	225	127	233	744	852	987	3486	886	953	978	7457
17263	11657	4080	9423	15993	12047	36499	23781	8294	6369	46634	121721
52975	127880	10557	23661	50706	31120	112780	59302	18254	10219	162654	178911
10490	8386	3733	987	46110	3551	120834	33649	473	44	1000	1856
1552	587	473	295	3556	738	15465	9741	0	0	0	0
12042	8973	4206	1282	49666	4289	136299	43390	473	44	1000	1856
65017	136853	14763	24943	100372	35409	249079	102692	18727	10263	163654	180767

KE'000

25	26	27	28	29	30	31	32	33	34	35	36
0	0	0	0	0	0	0	0	0	0	0	0
15	0	510	0	0	0	0	114	73	44	217	0
0	0	108	0	0	0	0	3	2	0	6	0
3	0	0	0	0	0	0	0	0	0	0	0
1264	0	26385	0	0	139	5944	4541	2766	2034	2245	0
14	0	89	0	0	0	0	15	6	1	24	0
682	0	11275	0	0	1026	12	0	0	1	4	0
542	0	0	0	0	0	19	0	0	0	3	0
32	0	76	0	0	0	59	26	22	15	2	0
104	0	25	0	0	4	215	105	42	35	76	0
7	0	4	0	0	7	58	20	12	16	6	0
0	776	277	0	100	7	16	11	6	24	1	0
1499	463	210	0	803	2127	445	3377	80	717	112	0
24010	41	628	0	568	1608	2319	729	296	1420	200	0
1639	0	47	0	102	180	77	58	44	77	490	0
30	0	307	0	0	4	40	5	19	0	5	0
231	0	249	0	0	613	0	263	1095	469	0	0
178	0	133	0	0	3	0	17	12	17	5	0
2789	3301	235	0	1325	535	1283	499	470	281	231	0
17254	0	153	0	220	556	470	71	58	189	596	0
774	206	395	0	133	338	491	253	151	21	258	0
1643	73	286	0	129	357	343	146	130	16	244	0
20	74	300	4978	260	61	10186	1480	747	914	1229	0
4399	487	832	0	205	593	1138	589	295	123	27	0
36840	2621	96	0	679	2300	6491	848	487	93	1404	0
4303	6884	107	0	956	543	704	177	99	22	89	0
5064	0	33	0	1267	36	2496	274	170	317	287	0
0	0	0	0	0	0	0	0	0	0	0	0
15164	0	631	0	11198	2349	0	0	142	0	0	0
821	6	187	0	140	1611	466	175	14	221	924	0
0	40	0	0	0	15	134	0	0	34	9	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	17	2	0
0	28	0	0	0	24	15	0	0	18	13	0
3460	448	3295	0	2096	3230	5251	2131	1136	1105	1367	0
340	592	38	0	459	1920	1742	472	368	358	443	0
123121	16040	46911	4978	20640	20186	40414	16399	8742	8504	10519	0
10823	893	2588	0	1717	2633	671	80	167	617	292	0
35960	5240	12310	0	32071	25821	52041	82597	17264	10736	20159	0
9574	1564	9769	49837	4011	133	0	0	0	0	0	0
838	41	1551	6564	2388	785	196	73	127	41	75	0
-19	0	0	0	0	-367	0	0	0	0	-13	0
4649	447	583	0	30225	2976	0	75	0	7	0	0
61825	8185	26801	56401	70412	31981	52908	82825	17558	11401	20513	0
184945	24225	73711	61379	91052	52170	93321	99224	26298	19905	31032	0
22140	2600	6572	544	6718	9523	5	6174	21	0	0	130
0	0	0	0	0	22	0	0	0	0	0	0
22140	2600	6572	544	6718	9545	5	6174	21	0	0	130
207085	26825	80283	61923	97770	61715	93326	105398	26319	19905	31032	130

37	TOTAL INTERMEDIATE USES	EXPORT	PRIVATE CONSUMPTION	CHANGES IN STOCKS	GENERAL GOVERNMENT CONSUMPTION	GROSS FIXED CAPITAL FORMATION	TOTAL USE OF RESOURCES	SECTOR NOS.
0	8600	0	55546	0	0	23014	87160	1
0	137264	139137	250339	10080	0	5251	542071	2
0	2593	2041	4502	1212	0	0	10347	3
0	121684	2518	953	-16	0	0	125138	4
0	148354	31581	102368	2057	0	0	284358	5
0	250	326	13840	111	0	0	14527	6
0	15975	1244	66880	731	0	0	84829	7
0	6464	625	646	42	0	0	7777	8
0	15139	1173	21049	116	0	0	37478	9
0	4948	3799	39623	228	0	0	48599	10
0	1022	2252	10851	91	0	0	14216	11
0	13707	4603	6730	422	0	2864	28325	12
0	57623	5216	7390	-5213	0	0	65017	13
0	80849	46881	10955	-1830	0	0	136853	14
0	9217	596	5658	-706	0	0	14763	15
0	4169	2348	18715	-269	0	0	24943	16
0	65244	17561	18299	-735	0	0	100372	17
0	22269	8194	4164	748	0	34	35409	18
0	115654	9009	36288	-3718	0	91848	249079	19
0	44403	4329	15283	0	0	38680	102692	20
0	15141	259	3326	0	0	0	18727	21
0	6920	208	3134	0	0	0	10263	22
0	44524	0	0	424	0	118707	163654	23
0	68217	49953	53177	88	0	9330	180767	24
0	74840	70460	61784	0	0	0	207085	25
0	19659	1500	5668	0	0	0	26825	26
0	13105	18896	48282	0	0	0	80283	27
0	0	2704	59219	0	0	0	61923	28
0	79280	8391	10101	0	0	0	97770	29
0	14122	10312	36577	0	0	702	61715	30
0	232	26	2542	0	90526	0	93326	31
0	642	871	10065	0	93820	0	105398	32
0	0	104	5160	0	21055	0	26319	33
0	327	0	668	0	18910	0	19905	34
0	98	0	1454	0	29480	0	31032	35
0	36482	150	-36502	0	0	0	130	36
23380	42734	4290	-45057	0	0	0	1970	37
23380	1291748	451557	909676	3843	253791	290430	3201045	

0	87394
0	524500
-23380	611052
49	109799
0	-770
0	73196
-23831	1405171
49	2696919
1657	438367
264	65759
1921	504126
1970	3201045

APPENDIX IV

GRIMP ANALYSIS

OF

THE ELEVEN SECTOR

INPUT-OUTPUT TABLE FOR KENYA

The Sectors in the 11-Sector Input-Output Table for Kenya

a) The 37-Intermediate sectors were aggregated into the following 11-sectors:

Sector Number	Title	Original sector(s) number[1]
1	Restaurant & Hotel Services	27
2.	Transport and Communications	20, 25, & 26,
3.	Wholesale and Retail Trade	24
4.	Financial & Business Services	29, 30 & 36
5.	Agriculture, Fishing and Forestry	1, 2, 3 & 37
6.	Manufacturing	5 – 19
7.	Government Services	31, 32, 33, 34 & 35
8.	Electricity and Water Supply	21 & 22
9.	Building and Construction	23
10.	Mining	4
11.	Ownership of dwellings	28

b) The 7-Primary Input sectors were aggregated into the following 5 sectors:

New sector number	Title	Original sector name & row
H-Hold	House-Hold	Wages & Salaries (2)
PI 2	Depreciation	Depreciation (1)
PI 3	Profits	Profits (3), Subsidies (5), Interest paid (6)
PI 4	Indirect Taxes	Indirect Taxes (4)
PI 5	Imports	Imports: including duties (7)

[1] See appendix III for the original sector names.

c) The 5-Final Demand sectors remained the same, although the first and second columns were inter-changed.

New sector number	Title	Original sector column
H-Hold	Private Consumption	2
FD 2	Exports	1
FD 3	Changes in stocks	3
FD 4	General Government Consumption	4
FD 5	Gross Capital Formation	5

GRIMP -- Micro Version 5.00.00
Filename: A:kenya.TBL Date: 08-04-1997

Transactions Table: AGGREG. IN-OUTPUT TBLS kENYA 1997, ($'000)

Sector	1	2	3	4	5	6
1	33	5215	84	1303	0	521
2	356	85125	14692	5254	1146	12726
3	832	7432	2888	798	9431	35919
4	4113	23313	26956	20624	3686	29307
5	656	1288	2202	2379	55148	122564
6	39940	48696	9624	9151	36594	307874
7	0	68	0	39	308	642
8	681	3333	745	957	1157	8766
9	300	208	0	321	0	4654
10	0	3	0	0	79	113638
11	0	0	0	0	0	0
TOTAL I	46911	174681	57191	40826	107549	636611
H-Hold	12310	51370	53160	57892	58609	63458
PI 2	2588	13616	7596	4350	27580	20933
PI 3	10352	20714	58451	37345	455976	65432
PI 4	1551	8091	2514	2806	2457	83509
PI 5	6572	68130	1856	16393	13315	276604
TOTAL P	33373	161921	123577	118786	557937	509936
TOTAL	80284	336602	180768	159612	665486	1146547
Employ.	0	0	0	0	0	0

GRIMP -- Micro Version 5.00.00
Filename: A:kenya.TBL Date: 08-04-1997

Transactions Table: AGGREG. IN-OUTPUT TBLS kENYA 1997, ($'000)

Sector	7	8	9	10	11	TOTAL I
1	3544	549	1833	23	0	13105
2	11798	1010	5383	1412	0	138902
3	2177	722	7615	403	0	68217
4	12932	1801	6015	1137	0	129884
5	3842	683	1875	554	0	191191
6	33534	5946	66036	3489	0	560884
7	242	0	0	0	0	1299
8	2053	3054	1048	267	0	22061
9	14456	0	19313	294	4978	44524
10	0	42	6906	1016	0	121684
11	0	0	0	0	0	0
TOTAL I	84578	13807	116024	8595	4978	1291751
H-Hold	182797	5230	37820	1854	0	524500
PI 2	1827	2122	6049	715	0	87376
PI 3	82	6830	2331	840	49837	708190
PI 4	499	463	434	141	6564	109029
PI 5	6200	517	1000	112992	544	504123
TOTAL P	191405	15162	47634	116542	56945	1933218
TOTAL	275983	28969	163658	125137	61923	3224969
Employ.	0	0	0	0	0	0

GRIMP -- Micro Version 5.00.00 Page
Filename: A:kenya.TBL Date: 08-04-199

Transactions Table: AGGREG. IN-OUTPUT TBLS kENYA 1997, ($'000)

Sector	H-Hold	FD 2	FD 3	FD 4	FD 5	TOTAL F
1	48282	18896	0	0	0	67178
2	82735	76289	0	0	38680	197704
3	53177	49953	88	0	9330	112548
4	10176	18853	0	0	702	29731
5	265390	145468	11292	0	28265	450415
6	363456	135408	-7945	0	94746	585665
7	19889	1001	0	253791	0	274681
8	6460	467	0	0	0	6927
9	0	0	424	0	118707	119131
10	953	2518	-16	0	0	3455
11	59219	2704	0	0	0	61923
TOTAL I	909737	451557	3843	253791	290430	1909358
H-Hold	0	0	0	0	0	0
PI 2	0	0	0	0	0	0
PI 3	0	0	0	0	0	0
PI 4	0	0	0	0	0	0
PI 5	0	0	0	0	0	0
TOTAL P	0	0	0	0	0	0
TOTAL	909737	451557	3843	253791	290430	1909358

GRIMP -- Micro Version 5.00.00 Page
Filename: A:kenya.TBL Date: 08-04-199

Transactions Table: AGGREG. IN-OUTPUT TBLS kENYA 1997, ($'000)

Sector	TOTAL
1	80283
2	336606
3	180765
4	159615
5	641606
6	1146549
7	275980
8	28988
9	163655
10	125139
11	61923
[illegible]	[illegible]
H-Hold	524500
PI 2	87376
PI 3	708190
PI 4	109029
PI 5	504123
TOTAL P	1933218
TOTAL	5134327

GRIMP -- Micro Version 5.00.00 Page 1
Filename: A:kenya.TBL Date: 08-04-1997

Direct Coefficients Table: AGGREG. IN-OUTPUT TBLS kENYA 1997

Sector	1	2	3	4	5	6
1	0.0004	0.0155	0.0005	0.0082	0.0000	0.0005
2	0.0044	0.2529	0.0813	0.0329	0.0017	0.0111
3	0.0104	0.0221	0.0160	0.0050	0.0142	0.0313
4	0.0512	0.0693	0.1491	0.1292	0.0055	0.0256
5	0.0082	0.0038	0.0122	0.0149	0.0829	0.1069
6	0.4975	0.1447	0.0532	0.0573	0.0550	0.2685
7	0.0000	0.0002	0.0000	0.0002	0.0005	0.0006
8	0.0085	0.0099	0.0041	0.0060	0.0017	0.0076
9	0.0037	0.0006	0.0000	0.0020	0.0000	0.0041
10	0.0000	0.0000	0.0000	0.0000	0.0001	0.0991
11	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
TOTAL I	0.5843	0.5190	0.3164	0.2558	0.1616	0.5552
H-Hold	0.1533	0.1526	0.2941	0.3627	0.0881	0.0553
PI 2	0.0322	0.0405	0.0420	0.0273	0.0414	0.0183
PI 3	0.1289	0.0615	0.3233	0.2340	0.6852	0.0571
PI 4	0.0193	0.0240	0.0139	0.0176	0.0037	0.0728
PI 5	0.0819	0.2024	0.0103	0.1027	0.0200	0.2412
TOTAL P	0.4157	0.4810	0.6836	0.7442	0.8384	0.4448
TOTAL	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Sector	7	8	9	10	11	TOTAL I
1	0.0128	0.0190	0.0112	0.0002	0.0000	0.068
2	0.0427	0.0349	0.0329	0.0113	0.0000	0.506
3	0.0079	0.0249	0.0465	0.0032	0.0000	0.181
4	0.0469	0.0622	0.0368	0.0091	0.0000	0.584
5	0.0139	0.0236	0.0115	0.0044	0.0000	0.282
6	0.1215	0.2053	0.4035	0.0279	0.0000	1.834
7	0.0009	0.0000	0.0000	0.0000	0.0000	0.002
8	0.0074	0.1054	0.0064	0.0021	0.0000	0.159
9	0.0524	0.0000	0.1180	0.0023	0.0804	0.263
10	0.0000	0.0014	0.0422	0.0081	0.0000	0.151
11	0.0000	0.0000	0.0000	0.0000	0.0000	0.000
TOTAL I	0.3065	0.4766	0.7089	0.0687	0.0804	4.033
H-Hold	0.6623	0.1805	0.2311	0.0148	0.0000	2.194
PI 2	0.0066	0.0733	0.0370	0.0057	0.0000	0.324
PI 3	0.0003	0.2358	0.0142	0.0067	0.8048	2.551
PI 4	0.0018	0.0160	0.0027	0.0011	0.1060	0.278
PI 5	0.0225	0.0178	0.0061	0.9029	0.0088	1.616
TOTAL P	0.6935	0.5234	0.2911	0.9313	0.9196	6.966
TOTAL	1.0000	1.0000	1.0000	1.0000	1.0000	11.000
Employ.	0.0000	0.0000	0.0000	0.0000	0.0000	0.000

GRIMP -- Micro Version 5.00.00 Page 3
Filename: A:kenya.TBL Date: 08-04-1997

Direct Coefficients Table: AGGREG. IN-OUTPUT TBLS kENYA 1997

Sector	H-Hold	FD 2	FD 3	FD 4	FD 5	TOTAL F
1	0.0531	0.0418	0.0000	0.0000	0.0000	0.0949
2	0.0909	0.1689	0.0000	0.0000	0.1332	0.3931
3	0.0585	0.1106	0.0229	0.0000	0.0321	0.2241
4	0.0112	0.0418	0.0000	0.0000	0.0024	0.0554
5	0.2917	0.3221	2.9383	0.0000	0.0973	3.6495
6	0.3995	0.2999	-2.0674	0.0000	0.3262	-1.0418
7	0.0219	0.0022	0.0000	1.0000	0.0000	1.0241
8	0.0071	0.0010	0.0000	0.0000	0.0000	0.0081
9	0.0000	0.0000	0.1103	0.0000	0.4087	0.5191
10	0.0010	0.0056	-0.0042	0.0000	0.0000	0.0025
11	0.0651	0.0060	0.0000	0.0000	0.0000	0.0711
TOTAL I	1.0000	1.0000	1.0000	1.0000	1.0000	5.0000
H-Hold	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
PI 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
PI 3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
PI 4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
PI 5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
TOTAL P	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
TOTAL	1.0000	1.0000	1.0000	1.0000	1.0000	5.0000

GRIMP -- Micro Version 5.00.00 Page 4
Filename: A:kenya.TBL Date: 08-04-1997

Direct Coefficients Table: AGGREG. IN-OUTPUT TBLS kENYA 1997

Sector	TOTAL
1	0.1631
2	0.8992
3	0.4056
4	0.6401
5	3.9318
6	0.7926
7	1.0264
8	0.1674
9	0.7826
10	0.1535
11	0.0711
TOTAL I	9.0334
H-Hold	2.1949
PI 2	0.3242
PI 3	2.5519
PI 4	0.2789
PI 5	1.6166
TOTAL P	6.9666
TC	

GRIMP -- Micro Version 5.00.00 Date: 08-04-1997
RUN I.D.: Filename: A:kenya.TI

Open Inverse Matrix: AGGREG. IN-OUTPUT TBLS kENYA 1997, ($'000) Page

Sector	1	2	3	4	5	6	7	8
1	1.0024	0.0226	0.0042	0.0106	0.0003	0.0020	0.0156	0.0234
2	0.0271	1.3551	0.1224	0.0551	0.0069	0.0323	0.0704	0.0683
3	0.0369	0.0425	1.0247	0.0119	0.0190	0.0494	0.0217	0.0437
4	0.0914	0.1275	0.1900	1.1601	0.0138	0.0564	0.0752	0.1061
5	0.0954	0.0451	0.0318	0.0334	1.1013	0.1671	0.0463	0.0744
6	0.7161	0.3081	0.1224	0.1175	0.0885	1.4087	0.2399	0.3644
7	0.0005	0.0005	0.0002	0.0004	0.0006	0.0009	1.0011	0.0003
8	0.0171	0.0191	0.0085	0.0097	0.0032	0.0137	0.0125	1.1231
9	0.0080	0.0029	0.0011	0.0033	0.0005	0.0071	0.0609	0.0022
10	0.0719	0.0309	0.0123	0.0119	0.0090	0.1411	0.0266	0.0382
11	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

GRIMP -- Micro Version 5.00.00 Date: 08-04-1997
RUN I.D.: Filename: A:kenya.TB

Open Inverse Matrix: AGGREG. IN-OUTPUT TBLS kENYA 1997, ($'000) Page

Sector	9	10	11
1	0.0154	0.0007	0.0012
2	0.0758	0.0176	0.0061
3	0.0801	0.0057	0.0064
4	0.0917	0.0148	0.0074
5	0.0978	0.0109	0.0079
6	0.6825	0.0475	0.0549
7	0.0005	0.0000	0.0000
8	0.0164	0.0032	0.0013
9	1.1376	0.0030	0.0915
10	0.1166	1.0131	0.0094
11	0.0000	0.0000	1.0000

GRIMP -- Micro Version 5.00.00 Date: 08-04-1997
RUN I.D.: Filename: A:kenya.TB

Closed Inverse Matrix: AGGREG. IN-OUTPUT TBLS kENYA 1997, ($'000) Page

Sector	1	2	3	4	5	6	7	8
1	1.0202	0.0431	0.0321	0.0417	0.0083	0.0117	0.0673	0.0440
2	0.0738	1.4089	0.1956	0.1366	0.0278	0.0578	0.2061	0.1222
3	0.0657	0.0756	1.0698	0.0621	0.0320	0.0651	0.1054	0.0770
4	0.1132	0.1527	0.2242	1.1981	0.0236	0.0683	0.1386	0.1314
5	0.2206	0.1892	0.2279	0.2517	1.1574	0.2353	0.4099	0.2191
6	0.9265	0.5503	0.4519	0.4843	0.1827	1.5234	0.8508	0.6075
7	0.0075	0.0086	0.0111	0.0126	0.0037	0.0047	1.0214	0.0084
8	0.0227	0.0255	0.0173	0.0195	0.0057	0.0168	0.0288	1.1296
9	0.0114	0.0068	0.0065	0.0093	0.0020	0.0090	0.0709	0.0062
10	0.0935	0.0557	0.0460	0.0494	0.0186	0.1528	0.0891	0.0630
11	0.0203	0.0234	0.0318	0.0354	0.0091	0.0111	0.0590	0.0235
H-Hold	0.3119	0.3591	0.4885	0.5438	0.1398	0.1701	0.9057	0.3605

GRIMP -- Micro Version 5.00.00 Date: 08-04-1997
RUN I.D.: Filename: A:kenya.TBL

Closed Inverse Matrix: AGGREG. IN-OUTPUT TBLS kENYA 1997, ($'000) Page 2

Sector	9	10	11	H-Hold
1	0.0421	0.0028	0.0034	0.0695
2	0.1461	0.0230	0.0117	0.1824
3	0.1234	0.0090	0.0099	0.1124
4	0.1245	0.0173	0.0100	0.0852
5	0.2859	0.0255	0.0230	0.4888
6	0.9986	0.0719	0.0803	0.8212
7	0.0110	0.0009	0.0009	0.0274
8	0.0249	0.0038	0.0020	0.0219
9	1.1428	0.0034	0.0919	0.0135
10	0.1490	1.0156	0.0120	0.0840
11	0.0305	0.0024	1.0025	0.0792
H-Hold	0.4687	0.0362	0.0377	1.2174

GRIMP -- Micro Version 5.00.00 Date: 08-04-1997
RUN I.D.: Filename: A:kenya.TBL

TOTAL OUTPUT MULTIPLIERS: AGGREG. IN-OUTPUT TBLS kENYA 1997, ($'000)

SECTOR	INITIAL	FIRST	INDUST	CONS'M	TOTAL	TYPE 1A	TYPE 1B	TYPE 2A	TYPE 2B
1	1.0000	0.5843	0.4824	0.5086	2.5754	1.5843	2.0667	2.5754	1.5754
2	1.0000	0.5190	0.4353	0.5856	2.5398	1.5190	1.9542	2.5398	1.5398
3	1.0000	0.3164	0.2012	0.7967	2.3143	1.3164	1.5176	2.3143	1.3143
4	1.0000	0.2558	0.1580	0.8869	2.3007	1.2558	1.4138	2.3007	1.3007
5	1.0000	0.1616	0.0815	0.2279	1.4710	1.1616	1.2431	1.4710	0.4710
6	1.0000	0.5552	0.3235	0.2774	2.1561	1.5552	1.8787	2.1561	1.1561
7	1.0000	0.3065	0.2637	1.4771	3.0473	1.3065	1.5702	3.0473	2.0473
8	1.0000	0.4766	0.3673	0.5879	2.4318	1.4766	1.8440	2.4318	1.4318
9	1.0000	0.7089	0.6054	0.7645	3.0788	1.7089	2.3143	3.0788	2.0788
10	1.0000	0.0687	0.0478	0.0590	1.1755	1.0687	1.1165	1.1755	0.1755
11	1.0000	0.0804	0.1057	0.0615	1.2475	1.0804	1.1860	1.2475	0.2475

GRIMP -- Micro Version 5.00.00 Date: 08-04-1997
RUN I.D.: Filename: A:kenya.

DISAGGREGATED OUTPUT MULTIPLIER, 1: AGGREG. IN-OUTPUT TBLS kENYA 1997,

SECTOR	INITIAL	FIRST	INDUST	CONS'M	TOTAL	FLOW-ON
1	1.0000	0.0004	0.0019	0.0178	1.0202	0.0202
2	0.0000	0.0044	0.0227	0.0467	0.0738	0.0738
3	0.0000	0.0104	0.0265	0.0288	0.0657	0.0657
4	0.0000	0.0512	0.0402	0.0218	0.1132	0.1132
5	0.0000	0.0082	0.0872	0.1252	0.2206	0.2206
6	0.0000	0.4975	0.2186	0.2104	0.9265	0.9265
7	0.0000	0.0000	0.0005	0.0070	0.0075	0.0075
8	0.0000	0.0085	0.0086	0.0056	0.0227	0.0227
9	0.0000	0.0037	0.0043	0.0035	0.0114	0.0114
10	0.0000	0.0000	0.0719	0.0215	0.0935	0.0935
11	0.0000	0.0000	0.0000	0.0203	0.0203	0.0203
TOTAL	1.0000	0.5843	0.4824	0.5086	2.5754	1.5754

INITIAL OUTPUT LEVEL	80284.00
OUTPUT FLOW-ON	126477.31
TOTAL OUTPUT EFFECT	206761.31

GRIMP -- Micro Version 5.00.00 Date: 08-04-1997
RUN I.D.: Filename: A:kenya

DISAGGREGATED OUTPUT MULTIPLIER, 2: AGGREG. IN-OUTPUT TBLS kENYA 1997,

SECTOR	INITIAL	FIRST	INDUST	CONS'M	TOTAL	FLOW-ON
1	0.0000	0.0155	0.0071	0.0205	0.0431	0.0431
2	1.0000	0.2529	0.1022	0.0538	1.4089	0.4089
3	0.0000	0.0221	0.0204	0.0332	0.0756	0.0756
4	0.0000	0.0693	0.0583	0.0251	0.1527	0.1527
5	0.0000	0.0038	0.0413	0.1442	0.1892	0.1892
6	0.0000	0.1447	0.1634	0.2422	0.5503	0.5503
7	0.0000	0.0002	0.0003	0.0081	0.0086	0.0086
8	0.0000	0.0099	0.0092	0.0065	0.0255	0.0255
9	0.0000	0.0006	0.0022	0.0040	0.0068	0.0068
10	0.0000	0.0000	0.0309	0.0248	0.0557	0.0557
11	0.0000	0.0000	0.0000	0.0234	0.0234	0.0234
TOTAL	1.0000	0.5190	0.4353	0.5856	2.5398	1.5398

INITIAL OUTPUT LEVEL	336602.00
OUTPUT FLOW-ON	518308.38

GRIMP -- Micro Version 5.00.00 Date: 08-04-1997
RUN I.D.: Filename: A:kenya

DISAGGREGATED OUTPUT MULTIPLIER, 3: AGGREG. IN-OUTPUT TBLS KENYA 1997,

SECTOR	INITIAL	FIRST	INDUST	CONS'M	TOTAL	FLOW-ON
1	0.0000	0.0005	0.0037	0.0279	0.0321	0.0321
2	0.0000	0.0813	0.0411	0.0732	0.1956	0.1956
3	1.0000	0.0160	0.0087	0.0451	1.0698	0.0698
4	0.0000	0.1491	0.0409	0.0342	0.2242	0.2242
5	0.0000	0.0122	0.0196	0.1961	0.2279	0.2279
6	0.0000	0.0532	0.0692	0.3295	0.4519	0.4519
7	0.0000	0.0000	0.0002	0.0110	0.0111	0.0111
8	0.0000	0.0041	0.0044	0.0088	0.0173	0.0173
9	0.0000	0.0000	0.0011	0.0054	0.0065	0.0065
10	0.0000	0.0000	0.0123	0.0337	0.0460	0.0460
11	0.0000	0.0000	0.0000	0.0318	0.0318	0.0318
TOTAL	1.0000	0.3164	0.2012	0.7967	2.3143	1.3143

INITIAL OUTPUT LEVEL	180768.00
OUTPUT FLOW-ON	237583.72
TOTAL OUTPUT EFFECT	418351.69

GRIMP -- Micro Version 5.00.00 Date: 08-04-1997
RUN I.D.: Filename: A:kenya

DISAGGREGATED OUTPUT MULTIPLIER, 4: AGGREG. IN-OUTPUT TBLS KENYA 1997,

SECTOR	INITIAL	FIRST	INDUST	CONS'M	TOTAL	FLOW-ON
1	0.0000	0.0082	0.0025	0.0311	0.0417	0.0417
2	0.0000	0.0329	0.0222	0.0815	0.1366	0.1366
3	0.0000	0.0050	0.0069	0.0502	0.0621	0.0621
4	1.0000	0.1292	0.0309	0.0381	1.1981	0.1981
5	0.0000	0.0149	0.0185	0.2183	0.2517	0.2517
6	0.0000	0.0573	0.0601	0.3668	0.4843	0.4843
7	0.0000	0.0002	0.0001	0.0122	0.0126	0.0126
8	0.0000	0.0060	0.0037	0.0098	0.0195	0.0195
9	0.0000	0.0020	0.0013	0.0060	0.0093	0.0093
10	0.0000	0.0000	0.0119	0.0375	0.0494	0.0494
11	0.0000	0.0000	0.0000	0.0354	0.0354	0.0354
TOTAL	1.0000	0.2558	0.1580	0.8869	2.3007	1.3007

INITIAL OUTPUT LEVEL	159612.00
OUTPUT FLOW-ON	207606.05
TOTAL OUTPUT EFFECT	367218.03

GRIMP -- Micro Version 5.00.00 Date: 08-04-1997
RUN I.D.: Filename: A:keny

RANKED OUTPUT FLOW-ONS, 1: AGGREG. IN-OUTPUT TBLS kENYA 1997, ($'000)

RANK	SECTOR	PERCENT	FLOW-ON MULTIPLIER	FLOW-ON OUTPUT	TOTAL OUTPUT
1	6	58.81	0.9265	74382.29	74382.29
2	5	14.00	0.2206	17709.71	17709.71
3	4	7.19	0.1132	9090.09	9090.09
4	10	5.93	0.0935	7502.98	7502.98
5	2	4.69	0.0738	5927.09	5927.09
6	3	4.17	0.0657	5271.20	5271.20
7	8	1.44	0.0227	1825.76	1825.76
8	11	1.29	0.0203	1629.82	1629.82
9	1	1.28	0.0202	1618.75	81902.75
10	9	0.73	0.0114	918.44	918.44
11	7	0.48	0.0075	601.17	601.17
TOTAL		100.00	1.5754	126477.31	206761.30

GRIMP -- Micro Version 5.00.00 Date: 08-04-1997
RUN I.D.: Filename: A:kenya

RANKED OUTPUT FLOW-ONS, 2: AGGREG. IN-OUTPUT TBLS kENYA 1997, ($'000)

RANK	SECTOR	PERCENT	FLOW-ON MULTIPLIER	FLOW-ON OUTPUT	TOTAL OUTPUT
1	6	35.73	0.5503	185217.47	185217.47
2	2	26.55	0.4089	137621.36	474223.38
3	5	12.29	0.1892	63696.72	63696.72
4	4	9.91	0.1527	51388.61	51388.61
5	3	4.91	0.0756	25459.04	25459.04
6	10	3.62	0.0557	18757.79	18757.79
7	1	2.80	0.0431	14512.21	14512.21
8	8	1.66	0.0255	8599.74	8599.74
9	11	1.52	0.0234	7867.28	7867.28
10	7	0.56	0.0086	2886.34	2886.34
11	9	0.44	0.0068	2301.78	2301.78
TOTAL		100.00	1.5398	518308.31	854910.50

GRIMP -- Micro Version 5.00.00 Date: 08-04-1997
RUN I.D.: Filename: A:kenya

RANKED OUTPUT FLOW-ONS, 3: AGGREG. IN-OUTPUT TBLS kENYA 1997, ($'000)

RANK	SECTOR	PERCENT	FLOW-ON MULTIPLIER	FLOW-ON OUTPUT	TOTAL OUTPUT
1	6	34.39	0.4519	81693.70	81693.70
2	5	17.34	0.2279	41201.16	41201.16
3	4	17.06	0.2242	40531.93	40531.93
4	2	14.88	0.1956	35354.16	35354.16
5	3	5.31	0.0698	12613.28	193381.28
6	10	3.50	0.0460	8316.64	8316.64
7	1	2.44	0.0321	5794.36	5794.36
8	11	2.42	0.0318	5747.91	5747.91
9	8	1.32	0.0173	3133.08	3133.08
10	7	0.85	0.0111	2014.09	2014.09
11	9	0.50	0.0065	1183.38	1183.38
TOTAL		100.00	1.3143	237583.67	418351.62

GRIMP -- Micro Version 5.00.00 Date: 08-04-1997
RUN I.D.: Filename: A:kenya

RANKED OUTPUT FLOW-ONS, 4: AGGREG. IN-OUTPUT TBLS kENYA 1997, ($'000)

RANK	SECTOR	PERCENT	FLOW-ON MULTIPLIER	FLOW-ON OUTPUT	TOTAL OUTPUT
1	6	37.23	0.4843	77298.95	77298.95
2	5	19.35	0.2517	40174.52	40174.52
3	4	15.23	0.1981	31622.20	191234.19
4	2	10.50	0.1366	21795.37	21795.37
5	3	4.78	0.0621	9917.15	9917.15
6	10	3.80	0.0494	7888.69	7888.69
7	1	3.20	0.0417	6650.58	6650.58
8	11	2.72	0.0354	5649.91	5649.91
9	8	1.50	0.0195	3105.62	3105.62
10	7	0.97	0.0126	2012.32	2012.32
11	9	0.72	0.0093	1490.74	1490.74
TOTAL		100.00	1.3007	207606.02	367218.03

GRIMP -- Micro Version 5.00.00
RUN I.D.:

Date: 08-04-1997
Filename: A:kenya

TOTAL DISAGGREGATED SECTORS

INITIAL OUTPUT LEVEL	340380.00
OUTPUT FLOW-ON	445189.75
TOTAL OUTPUT EFFECT	785569.75

RANKED OUTPUT FLOW-ONS

RANK	SECTOR	PERCENT	FLOW-ON
1	6	35.71	158992.66
2	5	18.28	81375.67
3	4	16.21	72154.13
4	2	12.84	57149.53
5	3	5.06	22530.43
6	10	3.64	16205.33
7	1	2.80	12444.93
8	11	2.56	11397.81
9	8	1.40	6238.70
10	7	0.90	4026.41
11	9	0.60	2674.12
TOTAL		100.00	445189.72

GRIMP -- Micro Version 5.00.00 Date: 08-04-1997
RUN I.D.: Filename: A:kenya.TBL

TOTAL INCOME MULTIPLIERS: AGGREG. IN-OUTPUT TBLS kENYA 1997, ($'000)

SECTOR	INITIAL	FIRST	INDUST	CONS'M	TOTAL	TYPE 1A	TYPE 1B	TYPE 2A	TYPE 2B
1	0.1533	0.0530	0.0498	0.0557	0.3119	1.3458	1.6707	2.0339	1.0339
2	0.1526	0.0830	0.0593	0.0641	0.3591	1.5438	1.9326	2.3527	1.3527
3	0.2941	0.0760	0.0311	0.0872	0.4885	1.2585	1.3644	1.6610	0.6610
4	0.3627	0.0608	0.0232	0.0971	0.5438	1.1676	1.2315	1.4993	0.4993
5	0.0881	0.0174	0.0093	0.0250	0.1398	1.1976	1.3035	1.5868	0.5868
6	0.0553	0.0487	0.0357	0.0304	0.1701	1.8796	2.5240	3.0728	2.0728
7	0.6623	0.0498	0.0318	0.1617	0.9057	1.0752	1.1232	1.3674	0.3674
8	0.1805	0.0706	0.0449	0.0644	0.3605	1.3910	1.6400	1.9965	0.9965
9	0.2311	0.0861	0.0678	0.0837	0.4687	1.3728	1.6661	2.0283	1.0283
10	0.0148	0.0090	0.0059	0.0065	0.0362	1.6057	2.0061	2.4423	1.4423
11	0.0000	0.0186	0.0124	0.0067	0.0377	0.0000	0.0000	0.0000	1.4423

GRIMP -- Micro Version 5.00.00 Date: 08-04-1997
RUN I.D.: Filename: A:kenya

DISAGGREGATED INCOME MULTIPLIER, 1: AGGREG. IN-OUTPUT TBLS kENYA 1997,

SECTOR	INITIAL	FIRST	INDUST	CONS'M	TOTAL	FLOW-ON
1	0.1533	0.0001	0.0003	0.0027	0.1564	0.0031
2	0.0000	0.0007	0.0035	0.0071	0.0113	0.0113
3	0.0000	0.0030	0.0078	0.0085	0.0193	0.0193
4	0.0000	0.0186	0.0146	0.0079	0.0411	0.0411
5	0.0000	0.0007	0.0077	0.0110	0.0194	0.0194
6	0.0000	0.0275	0.0121	0.0116	0.0513	0.0513
7	0.0000	0.0000	0.0003	0.0046	0.0050	0.0050
8	0.0000	0.0015	0.0016	0.0010	0.0041	0.0041
9	0.0000	0.0009	0.0010	0.0008	0.0026	0.0026
10	0.0000	0.0000	0.0011	0.0003	0.0014	0.0014
11	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
TOTAL	0.1533	0.0530	0.0498	0.0557	0.3119	0.1585

INITIAL INCOME LEVEL	12310.00
INCOME FLOW-ON	12727.66
TOTAL INCOME EFFECT	25037.66

GRIMP -- Micro Version 5.00.00 Date: 08-04-1997
RUN I.D.: Filename: A:kenya

DISAGGREGATED INCOME MULTIPLIER, 2: AGGREG. IN-OUTPUT TBLS kENYA 1997,

SECTOR	INITIAL	FIRST	INDUST	CONS'M	TOTAL	FLOW-ON
1	0.0000	0.0024	0.0011	0.0031	0.0066	0.0066
2	0.1526	0.0386	0.0156	0.0082	0.2150	0.0624
3	0.0000	0.0065	0.0060	0.0098	0.0222	0.0222
4	0.0000	0.0251	0.0211	0.0091	0.0554	0.0554
5	0.0000	0.0003	0.0036	0.0127	0.0167	0.0167
6	0.0000	0.0080	0.0090	0.0134	0.0305	0.0305
7	0.0000	0.0001	0.0002	0.0053	0.0057	0.0057
8	0.0000	0.0018	0.0017	0.0012	0.0046	0.0046
9	0.0000	0.0001	0.0005	0.0009	0.0016	0.0016
10	0.0000	0.0000	0.0005	0.0004	0.0008	0.0008
11	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
TOTAL	0.1526	0.0830	0.0593	0.0641	0.3591	0.2064

INITIAL INCOME LEVEL	51370.00
INCOME FLOW-ON	69489.05
TOTAL INCOME EFFECT	120859.05

GRIMP -- Micro Version 5.00.00 Date: 08-04-1997
RUN I.D.: Filename: A:keny

DISAGGREGATED INCOME MULTIPLIER, 3: AGGREG. IN-OUTPUT TBLS kENYA 1997

SECTOR	INITIAL	FIRST	INDUST	CONS'M	TOTAL	FLOW-ON
1	0.0000	0.0001	0.0006	0.0043	0.0049	0.0049
2	0.0000	0.0124	0.0063	0.0112	0.0298	0.0298
3	0.2941	0.0047	0.0026	0.0133	0.3146	0.0205
4	0.0000	0.0541	0.0148	0.0124	0.0813	0.0813
5	0.0000	0.0011	0.0017	0.0173	0.0201	0.0201
6	0.0000	0.0029	0.0038	0.0182	0.0250	0.0250
7	0.0000	0.0000	0.0001	0.0073	0.0074	0.0074
8	0.0000	0.0007	0.0008	0.0016	0.0031	0.0031
9	0.0000	0.0000	0.0003	0.0012	0.0015	0.0015
10	0.0000	0.0000	0.0002	0.0005	0.0007	0.0007
11	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
TOTAL	0.2941	0.0760	0.0311	0.0872	0.4885	0.1944

INITIAL INCOME LEVEL	53160.00
INCOME FLOW-ON	35140.81
TOTAL INCOME EFFECT	88300.81

GRIMP -- Micro Version 5.00.00 Date: 08-04-1997
RUN I.D.: Filename: A:kenya

DISAGGREGATED INCOME MULTIPLIER, 4: AGGREG. IN-OUTPUT TBLS kENYA 1997,

SECTOR	INITIAL	FIRST	INDUST	CONS'M	TOTAL	FLOW-ON
1	0.0000	0.0013	0.0004	0.0048	0.0064	0.0064
2	0.0000	0.0050	0.0034	0.0124	0.0208	0.0208
3	0.0000	0.0015	0.0020	0.0148	0.0183	0.0183
4	0.3627	0.0469	0.0112	0.0138	0.4346	0.0719
5	0.0000	0.0013	0.0016	0.0192	0.0222	0.0222
6	0.0000	0.0032	0.0033	0.0203	0.0268	0.0268
7	0.0000	0.0002	0.0001	0.0081	0.0084	0.0084
8	0.0000	0.0011	0.0007	0.0018	0.0035	0.0035
9	0.0000	0.0005	0.0003	0.0014	0.0022	0.0022
10	0.0000	0.0000	0.0002	0.0006	0.0007	0.0007
11	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
TOTAL	0.3627	0.0608	0.0232	0.0971	0.5438	0.1811

INITIAL INCOME LEVEL	57892.00
INCOME FLOW-ON	28903.27
TOTAL INCOME EFFECT	86795.27

GRIMP -- Micro Version 5.00.00 Date: 08-04-1997
RUN I.D.: Filename: A:kenya

RANKED INCOME FLOW-ONS, 1: AGGREG. IN-OUTPUT TBLS kENYA 1997, ($'000)

RANK	SECTOR	PERCENT	FLOW-ON MULTIPLIER	FLOW-ON INCOME	TOTAL INCOME
1	6	32.35	0.0513	4116.84	4116.84
2	4	25.90	0.0411	3297.02	3297.02
3	5	12.25	0.0194	1559.69	1559.69
4	3	12.18	0.0193	1550.15	1550.15
5	2	7.11	0.0113	904.55	904.55
6	7	3.13	0.0050	398.19	398.19
7	8	2.59	0.0041	329.62	329.62
8	1	1.95	0.0031	248.20	12558.20
9	9	1.67	0.0026	212.24	212.24
10	10	0.87	0.0014	111.16	111.16
11	11	0.00	0.0000	0.00	0.00
TOTAL		100.00	0.1585	12727.66	25037.66

GRIMP -- Micro Version 5.00.00 Date: 08-04-1997
RUN I.D.: Filename: A:kenya

RANKED INCOME FLOW-ONS, 2: AGGREG. IN-OUTPUT TBLS kENYA 1997, ($'000)

RANK	SECTOR	PERCENT	FLOW-ON MULTIPLIER	FLOW-ON INCOME	TOTAL INCOME
1	2	30.22	0.0624	21002.88	72372.88
2	4	26.82	0.0554	18638.88	18638.88
3	6	14.75	0.0305	10251.24	10251.24
4	3	10.77	0.0222	7486.96	7486.96
5	5	8.07	0.0167	5609.74	5609.74
6	1	3.20	0.0066	2225.17	2225.17
7	7	2.75	0.0057	1911.77	1911.77
8	8	2.23	0.0046	1552.58	1552.58
9	9	0.77	0.0016	531.92	531.92
10	10	0.40	0.0008	277.91	277.91
11	11	0.00	0.0000	0.00	0.00
TOTAL		100.00	0.2064	69489.05	120859.04

GRIMP -- Micro Version 5.00.00 Date: 08-04-1997
RUN I.D.: Filename: A:kenya

RANKED INCOME FLOW-ONS, 3: AGGREG. IN-OUTPUT TBLS kENYA 1997, ($'000)

RANK	SECTOR	PERCENT	FLOW-ON MULTIPLIER	FLOW-ON INCOME	TOTAL INCOME
1	4	41.83	0.0813	14701.12	14701.12
2	2	15.35	0.0298	5395.52	5395.52
3	6	12.87	0.0250	4521.51	4521.51
4	3	10.56	0.0205	3709.29	56869.30
5	5	10.33	0.0201	3628.56	3628.56
6	7	3.80	0.0074	1334.03	1334.03
7	1	2.53	0.0049	888.45	888.45
8	8	1.61	0.0031	565.64	565.64
9	9	0.78	0.0015	273.47	273.47
10	10	0.35	0.0007	123.22	123.22
11	11	0.00	0.0000	0.00	0.00
TOTAL		100.00	0.1944	35140.81	88300.81

GRIMP -- Micro Version 5.00.00 Date: 08-04-1997
RUN I.D.: Filename: A:kenya

RANKED INCOME FLOW-ONS, 4: AGGREG. IN-OUTPUT TBLS kENYA 1997, ($'000)

RANK	SECTOR	PERCENT	FLOW-ON MULTIPLIER	FLOW-ON INCOME	TOTAL INCOME
1	4	39.68	0.0719	11469.52	69361.52
2	6	14.80	0.0268	4278.27	4278.27
3	5	12.24	0.0222	3538.15	3538.15
4	2	11.51	0.0208	3326.27	3326.27
5	3	10.09	0.0183	2916.42	2916.42
6	7	4.61	0.0084	1332.86	1332.86
7	1	3.53	0.0064	1019.74	1019.74
8	8	1.94	0.0035	560.68	560.68
9	9	1.19	0.0022	344.50	344.50
10	10	0.40	0.0007	116.88	116.88
11	11	0.00	0.0000	0.00	0.00
TOTAL		100.00	0.1811	28903.27	86795.27

GRIMP -- Micro Version 5.00.00 Date: 08-04-1997
RUN I.D.: Filename: A:kenya

TOTAL DISAGGREGATED SECTORS

INITIAL INCOME LEVEL	174732.00
INCOME FLOW-ON	146260.80
TOTAL INCOME EFFECT	320992.78

RANKED INCOME FLOW-ONS

RANK	SECTOR	PERCENT	FLOW-ON
1	4	32.89	48106.53
2	2	20.94	30629.22
3	6	15.84	23167.86
4	3	10.71	15662.82
5	5	9.80	14336.13
6	7	3.40	4976.84
7	1	3.00	4381.56
8	8	2.06	3008.52
9	9	0.93	1362.13
10	10	0.43	629.17
11	11	0.00	0.00
TOTAL		100.00	146260.80

GRIMP -- Micro Version 5.00.00 Date: 08-04-1997
Table: AGGREG. IN-OUTPUT TBLS kENYA 1997, ($'000) Filename: A:kenya.TBI

OPEN DIRECT COEFFICIENT MATRIX: COLUMN OUTPUT LINKAGES

SECTOR	TOTAL	MEAN	STANDARD DEVIATION	COEFFICIENT VARIATION	BACKWARD LINKAGE	BACKWARD SPREAD
1	0.5843	0.0531	0.1481	2.7882	1.5936	1.4893
2	0.5190	0.0472	0.0813	1.7225	1.4153	0.9201
3	0.3164	0.0288	0.0480	1.6674	0.8628	0.8906
4	0.2558	0.0233	0.0393	1.6916	0.6976	0.9036
5	0.1616	0.0147	0.0278	1.8954	0.4407	1.0124
6	0.5552	0.0505	0.0820	1.6236	1.5143	0.8672
7	0.3065	0.0279	0.0367	1.3173	0.8358	0.7036
8	0.4766	0.0433	0.0626	1.4452	1.2998	0.7719
9	0.7089	0.0644	0.1174	1.8209	1.9335	0.9726
10	0.0687	0.0062	0.0082	1.3054	0.1873	0.6973
11	0.0804	0.0073	0.0242	3.3166	0.2192	1.7715

APPENDIX V

THE 1997 AIRPORT SURVEY

The 1997 Airport Survey: Nairobi & Mombasa, Kenya

1. Objectives

The 1997 airport survey aims at obtaining the following information on international visitors to Kenya:

- Demographic profiles
- Length of travel and travel patterns
- Package tour use
- Tourism expenditure and expenditure patterns

The data obtained are utilized for the preparation of this thesis.

2. Methodology

(1) Sampling Method

Samples for the survey were international tourists visiting Kenya. Since the survey aims at obtaining information on tourists, Kenyan residents and visitors from East African countries (Tanzania and Uganda) and transit passengers were not targeted during the survey.

The respondents were chosen by a random sampling method. Questionnaires were prepared in English and the respondents were asked to fill the questionnaire themselves. The survey was conducted at the departure lounges of Jomo Kenyatta International Airport, Nairobi and the Moi International Airport in Mombasa between the 2nd February and 3rd March, 1997.

3. The Questionnaire.

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VICTORIA UNIVERSITY OF TECHNOLOGY

19th November 1996

TO WHOM IT MAY CONCERN

Patrick Mulindi is currently undertaking the Master of Business in Tourism Development programme at this University. As a part of his research work, he will be visiting Kenya in December to gather data and to interview key informants. This letter is by way of introduction to Patrick and to urge your assistance. Patrick's work assessing the economic impact of tourism on Kenya will be of great value to tourism researchers and policy-makers. To undertake this work, he will however be dependent on the goodwill and assistance of managers such as yourself.

Thank you, in anticipation for your assistance.

Signed, [redacted]

Associate Professor Brian King PhD,
Postgraduate Studies Co-ordinator,
Department of Hospitality and Tourism Management

VICTORIA UNIVERSITY OF TECHNOLOGY
MELBOURNE, AUSTRALIA.

Dear Visitor,

The following questionnaire is part of an educational research project being carried out by the author to investigate the economic impact of tourism on Kenya. The project is part of a Master of Business in Tourism Development course at Victoria University.

Your assistance in completing this project will be highly appreciated. Please complete the details as indicated and return the questionnaire to your host. In order to ensure anonymity and confidentiality of the information you will provide, do not indicate your name on the questionnaire

Thank you for your co-operation.

Patrick Mulindi
Victoria University
Melbourne, Australia.

****

1997 SURVEY OF INTERNATIONAL VISITORS TO KENYA

Please answer the questions by placing a tick ( )in the correct box (es) or completing the blank spaces.

Q1. Where do you come from? (Country of residence). .....

Q2. How did you first learn about Kenya as a tourist destination country?

( ) Word of mouth ( ) Travel agent ( ) Media

(.)Other (specify).....

Q3. What was your main reason for visiting Kenya?

( ) Holiday ( ) Business ( ) Conference ( ) Visiting friends and relatives

( ) Other (specify).....

Q4. (a) How many people have come in your travel party to Kenya? (Total).....

(b) Who did you travel with?

( ) spouse ( )spouse & children ( ) parent ( ) friends

( ) alone ( ) tour group.

Q5. (a) Are you travelling with a pre-paid organized group tour?

( ) No

( ) yes. Which group / tour operator? .....

(b) Name of airline used to travel to Kenya. .....

Q6. Tick ALL ACTIVITIES that you or any member of your party engaged in while in Kenya.

Visit friends and relatives	( )
Shopping	( )
Restaurants / dinning out	( )
Visit to a museum / historic site	( )
Visit an art gallery / craft center	( )
Attend festival / special or sport event	( )
Go to nightclub / disco / nightlife	( )
Gambling / Casino / gaming machines	( )
Visit an animal / wildlife park	( )
Swimming / Surfing / Diving	( )
Sailing / Boating	( )
Fishing	( )
Playing sport (golf, tennis, etc.)	( )
Water skiing	( )
Adventure activity (rafting, horse riding etc.)	( )
Organized tour / group activity	( )

Other (please specify) .....

Q7. How many nights did you stay

- in a major city? (Nairobi, Mombasa, etc).....
- at the coast? .....
- in a wildlife reserve? .....

Q8. Which of the following types of accommodation did you use while in Kenya?

( ) Hotel

( ) Hotel & Lodge / Tented camp

( ) Guest house

( ) Guest house & Lodge / Tented camp

( ) Friends & relatives

( ) Friends & relatives and lodge / tented camp

( ) Other (specify).....

In our examination of the economic impact of tourism on Kenya, we would like to know your expenditure patterns. Please answer the following questions.

Q9. How much money, in US DOLLARS, have you and your travel party spent on your whole trip while in Kenya? If you cannot recall exactly, please estimate and write in whole amounts. Do not include any pre-paid expenditure you paid in advance before your trip started.

Total spent on **whole trip** .US $ ----------

Q10. And how much of this amount have you paid for:

Activity	Amount in US $
(a) Airfares (within Kenya only)	$
(b) Transport (petrol, taxis, bus, rented vehicle, public transport, etc)	$
c) Accommodation	$
(d) Food and drink (incl. restaurants, cafes, supermarkets, etc)	$
(e) Shopping (clothes, souvenirs, etc)	$
(f) Entertainment / entrance fees (such as parks, museums, nightclubs, recreation, etc)	$
(g) Day Tours	$
(h) Other activity (specify).....	$

Could you now answer these final questions to complete the questionnaire.

Q11. You are a ( ) male ( ) female

Q12. What age group do you belong to?

( ) 18-24 ( ) 25-34 ( ) 35-44

( ) 45-54 ( ) 55-64 ( ) 65 and over

Q13. What is your occupation?.....

Q14. Please indicate your annual household income in US dollars (tick one).

( ) up to 10,000

( ) 10,001 - 30,000

( ) 30,001 - 50,000

( ) 50,001 and over.

Q15. (a) What date did you arrive in Kenya?.....

(b) What is the date of the last day of your trip to Kenya?.....

(c) Airport of departure?.....

Thank you for your valuable time in completing this questionnaire.

This survey is being conducted by a Master of Business (Tourism Development) student of Victoria University, Melbourne, Australia

4. Survey Results

4. Result of the Airport Survey

Q1. Where do you come from (country of residence)?

Country	**No. of cases**
Australia	1
Belgium	2
Canada	2
Denmark	3
France	14
Germany	6
Hong Kong	1
Ireland	1
Italy	6
Japan	5
Korea	1
Netherlands	3
Norway	5
Portugal	2
Saudi Arabia	4
Spain	1
Sweden	5
Switzerland	1
United Kingdom	57
United States of America	44
Total	**193**

Q2. How did you first learn about Kenya as a tourist destination country?

INFSOURC Source of information on Kenya as destin

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Word of mouth	1	74	38.3	39.6	39.6
Travel gent	2	40	20.7	21.4	61.0
Media	3	48	24.9	25.7	86.6
Other	4	23	11.9	12.3	98.9
	5	1	.5	.5	99.5
	33	1	.5	.5	100.0
	.	6	3.1	Missing	
	Total	193	100.0	100.0	

Valid cases 187 Missing cases 6

Q3. What was your main reason for visiting Kenya?

24 Apr 97 SPSS for MS WINDOWS Release 6.0

MOTIVE What's yr main reason for visiting Kenya

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Holiday	1	145	75.1	75.9	75.9
Business	2	18	9.3	9.4	85.3
Conference	3	1	.5	.5	85.9
VFR	4	14	7.3	7.3	93.2
Other	5	13	6.7	6.8	100.0
	.	2	1.0	Missing	
	Total	193	100.0	100.0	

Valid cases 191 Missing cases 2

- -

Q4. (a) How many people have come in your travel party to Kenya?

24 Apr 97 SPSS for MS WINDOWS Release 6.0

PAXSIZE How many people were in yr trvl grp?

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	1	28	14.5	15.1	15.1
	2	79	40.9	42.7	57.8
	3	12	6.2	6.5	64.3
	4	17	8.8	9.2	73.5
	5	5	2.6	2.7	76.2
	6	4	2.1	2.2	78.4
	8	3	1.6	1.6	80.0
	9	2	1.0	1.1	81.1
	10	1	.5	.5	81.6
	11	1	.5	.5	82.2
	12	3	1.6	1.6	83.8
	13	1	.5	.5	84.3
	14	1	.5	.5	84.9
	15	3	1.6	1.6	86.5
	20	13	6.7	7.0	93.5
	22	1	.5	.5	94.1
	27	5	2.6	2.7	96.8
	28	3	1.6	1.6	98.4
	30	2	1.0	1.1	99.5
	36	1	.5	.5	100.0
	.	8	4.1	Missing	
	Total	193	100.0	100.0	

Valid cases 185 Missing cases 8

(b) Who did you travel with?

24 Apr 97 SPSS for MS WINDOWS Release 6.0

TRVLMATE Who did you travel with?

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Spouse	1	67	34.7	35.1	35.1
Spouse & children	2	18	9.3	9.4	44.5
Parent	3	6	3.1	3.1	47.6
Friends	4	54	28.0	28.3	75.9
Alone	5	30	15.5	15.7	91.6
Tour group	6	16	8.3	8.4	100.0
	.	2	1.0	Missing	
	Total	193	100.0	100.0	

Valid cases 191 Missing cases 2

Q5. (a) Are you travelling with a pre-paid organised group tour?

( ) No

( ) yes, Which group / tour operator? .....

(b) Name of airline used to travel to Kenya. .....

24 Apr 97 SPSS for MS WINDOWS Release 6.0

CARRIER Airline used to travel to/from Kenya.

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Kenya Airways	1	61	31.6	31.6	31.6
Foreign carrier	2	113	58.5	58.5	90.2
unknown	3	19	9.8	9.8	100.0
	Total	193	100.0	100.0	

Valid cases 193 Missing cases 0

Q6. Tick ALL ACTIVITIES that you or any member of your party engaged in while in Kenya.

24 Apr 97 SPSS for MS WINDOWS Release 6.0

ACTVISFR Activity: visited friends & relatives

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Yes	1	51	26.4	26.8	26.8
No	2	139	72.0	73.2	100.0
	.	3	1.6	Missing	
	Total	193	100.0	100.0	

Valid cases 190 Missing cases 3

24 Apr 97 SPSS for MS WINDOWS Release 6.0

ACTSHOP Activity: Did shopping?

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Yes	1	163	84.5	85.8	85.8
No	2	27	14.0	14.2	100.0
	.	3	1.6	Missing	
	Total	193	100.0	100.0	

Valid cases 190 Missing cases 3

- -

ACTSPORT Activity: Played sport (golf, tennis e.t

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Yes	1	12	6.2	6.3	6.3
No	2	178	92.2	93.7	100.0
	.	3	1.6	Missing	
	Total	193	100.0	100.0	

Valid cases 190 Missing cases 3

- -

ACTSWIM Activity: Went swimming / surfing / divi

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Yes	1	93	48.2	48.9	48.9
No	2	97	50.3	51.1	100.0
	.	3	1.6	Missing	
	Total	193	100.0	100.0	

Valid cases 190 Missing cases 3

24 Apr 97 SPSS for MS WINDOWS Release 6.0

ACTFES Activity: Attended festival / special sp

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Yes	1	7	3.6	3.7	3.7
No	2	183	94.8	96.3	100.0
	.	3	1.6	Missing	
	Total	193	100.0	100.0	

Valid cases 190 Missing cases 3

- -

ACTFISH Activity: Went fishing?

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Yes	1	20	10.4	10.6	10.6
No	2	169	87.6	89.4	100.0
	.	4	2.1	Missing	
	Total	193	100.0	100.0	

Valid cases 189 Missing cases 4

- -

ACTGALL Activity: Visited art gallery / craft ce

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Yes	1	77	39.9	40.5	40.5
No	2	113	58.5	59.5	100.0
	.	3	1.6	Missing	
	Total	193	100.0	100.0	

Valid cases 190 Missing cases 3

24 Apr 97 SPSS for MS WINDOWS Release 6.0

ACTNITE Activity: Went to night-club / disco?

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Yes	1	27	14.0	14.3	14.3
No	2	162	83.9	85.7	100.0
	.	4	2.1	Missing	
	Total	193	100.0	100.0	

Valid cases 189 Missing cases 4

- -

ACTOTHER Participated in other activity?

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Yes	1	22	11.4	11.6	11.6
No	2	168	87.0	88.4	100.0
	.	3	1.6	Missing	
	Total	193	100.0	100.0	

Valid cases 190 Missing cases 3

- -

ACTSAIL Activity: Went sailing / boating?

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Yes	1	40	20.7	21.1	21.1
NO	2	150	77.7	78.9	100.0
	.	3	1.6	Missing	
	Total	193	100.0	100.0	

Valid cases 190 Missing cases 3

24 Apr 97 SPSS for MS WINDOWS Release 6.0

ACTGAMB Activity: Gambled / visited a casino?

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Yes	1	14	7.3	7.4	7.4
No	2	175	90.7	92.6	100.0
	.	4	2.1	Missing	
	Total	193	100.0	100.0	

Valid cases 189 Missing cases 4

ACTHIST Activity: Visited museum / historic site

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Yes	1	96	49.7	50.5	50.5
No	2	94	48.7	49.5	100.0
	.	3	1.6	Missing	
	Total	193	100.0	100.0	

Valid cases 190 Missing cases 3

ACTADVEN Activity: Adventure (Foot safaris, rafti

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Yes	1	14	7.3	7.4	7.4
No	2	176	91.2	92.6	100.0
	.	3	1.6	Missing	
	Total	193	100.0	100.0	

Valid cases 190 Missing cases 3

ACTDINE Activity: Restaurants/ Dinning out?

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Yes	1	144	74.6	75.8	75.8
No	2	46	23.8	24.2	100.0
	.	3	1.6	Missing	
	Total	193	100.0	100.0	

Valid cases 190 Missing cases 3

Q7. How many nights did you stay

- in a major city? (Nairobi, Mombasa, etc).....

- at the coast? .....

- in a wildlife reserve? .....

N_CITY Number of nights spent in city.

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	37	19.2	20.3	20.3
	1	24	12.4	13.2	33.5
	2	41	21.2	22.5	56.0
	3	22	11.4	12.1	68.1
	4	13	6.7	7.1	75.3
	5	13	6.7	7.1	82.4
	6	7	3.6	3.8	86.3
	7	6	3.1	3.3	89.6
	8	4	2.1	2.2	91.8
	9	1	.5	.5	92.3
	10	2	1.0	1.1	93.4
	12	2	1.0	1.1	94.5
	14	5	2.6	2.7	97.3
	16	1	.5	.5	97.8
	20	1	.5	.5	98.4
	30	1	.5	.5	98.9
	40	1	.5	.5	99.5
	60	1	.5	.5	100.0
	.	11	5.7	Missing	
	Total	193	100.0	100.0	

Valid cases 182 Missing cases 11

24 Apr 97 SPSS for MS WINDOWS Release 6.0

N_COAST

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	94	48.7	51.9	51.9
	1	2	1.0	1.1	53.0
	2	3	1.6	1.7	54.7
	3	7	3.6	3.9	58.6
	4	6	3.1	3.3	61.9
	5	11	5.7	6.1	68.0
	6	8	4.1	4.4	72.4
	7	12	6.2	6.6	79.0
	8	2	1.0	1.1	80.1
	9	1	.5	.6	80.7
	10	7	3.6	3.9	84.5
	11	4	2.1	2.2	86.7
	12	3	1.6	1.7	88.4
	13	2	1.0	1.1	89.5
	14	6	3.1	3.3	92.8
	15	1	.5	.6	93.4
	17	1	.5	.6	93.9
	18	1	.5	.6	94.5
	19	4	2.1	2.2	96.7
	21	5	2.6	2.8	99.4
	35	1	.5	.6	100.0
	.	12	6.2	Missing	
	Total	193	100.0	100.0	

Valid cases 181 Missing cases 12

Q8. Which of the following types of accommodation did you use while in Kenya?

( ) Hotel

( ) Lodge / Tented camp

( ) Guest house

( ) Friends & relatives

( ) Other (specify)...

24 Apr 97 SPSS for MS WINDOWS Release 6.0

ACCOMTYP What type of accom. did you use?

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Hotel only	1	27	14.0	14.4	14.4
Hotel & lodge / camp	2	118	61.1	63.1	77.5
Guest house	3	9	4.7	4.8	82.4
guest house & lodge	4	11	5.7	5.9	88.2
Friends & relatives	5	5	2.6	2.7	90.9
Friends & relatives	6	12	6.2	6.4	97.3
Other	7	5	2.6	2.7	100.0
	.	6	3.1	Missing	
	Total	193	100.0	100.0	

Valid cases 187 Missing cases 6

- -

Q9. How much money, in US DOLLARS, have you and your travel party spent on your whole trip while in Kenya? If you cannot recall exactly, please estimate and write in whole amounts. Do not include any pre-paid expenditure you paid in advance before your trip started.

25 Jun 97 SPSS for MS WINDOWS Release 6.0

- - Description of Subpopulations - -

Summaries of TOTALEXP Total expenditure in US$ on trip (kenya
By levels of ORIGIN Where do you come from?

Variable	Value	Label	Sum	Cases
For Entire Population			213300	164
ORIGIN	Australi		2050	1
ORIGIN	Belgium		370	2
ORIGIN	Canada		4700	2
ORIGIN	Denmark		3430	3
ORIGIN	France		25255	14
ORIGIN	Germany		7200	6
ORIGIN	Hong Kon		280	1
ORIGIN	Ireland		300	1
ORIGIN	Italy		18600	6
ORIGIN	Japan		1140	5
ORIGIN	Korea		350	1
ORIGIN	Netherla		10400	3
ORIGIN	Norway		5435	5
ORIGIN	Portugal		1200	2
ORIGIN	Saudi Ar		2350	4
ORIGIN	Spain		1800	1
ORIGIN	Sweden		9850	5
ORIGIN	Switzerl		6500	1
ORIGIN	UK		82420	57
ORIGIN	USA		29670	44

Total Cases = 193
Missing Cases = 29 or 15.0 Pct

25 Jun 97 SPSS for MS WINDOWS Release 6.0

- - Description of Subpopulations - -

Summaries of TRANSEXP Expenditure on transport in US$ (within
By levels of ORIGIN Where do you come from?

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			240.0943	460.8317	53
ORIGIN	Canada		200.0000	.	1
ORIGIN	Denmark		125.0000	106.0660	2
ORIGIN	France		834.0000	1000.6398	5
ORIGIN	Germany		70.0000	41.2311	5
ORIGIN	Ireland		20.0000	.	1
ORIGIN	Italy		20.0000	.	1
ORIGIN	Netherla		60.0000	56.5685	2
ORIGIN	Norway		300.0000	470.8326	4
ORIGIN	Sweden		800.0000	989.9495	2
ORIGIN	Switzerl		500.0000	.	1
ORIGIN	UK		208.4375	377.5081	16
ORIGIN	USA		73.8462	65.5475	13

Total Cases = 193
Missing Cases = 140 or 72.5 Pct

25 Jun 97 SPSS for MS WINDOWS Release 6.0

- - Description of Subpopulations - -

Summaries of ACCOMEXP Total expenditure on accomodation in US$
By levels of ORIGIN Where do you come from?

Variable	Value	Label	Sum	Cases
For Entire Population			47785	50
ORIGIN	Canada		1600	1
ORIGIN	Denmark		300	1
ORIGIN	France		14940	9
ORIGIN	Germany		3160	5
ORIGIN	Netherla		2080	3
ORIGIN	Norway		2370	5
ORIGIN	Sweden		3380	4
ORIGIN	Switzerl		2000	1
ORIGIN	UK		14230	13
ORIGIN	USA		3725	8

Total Cases = 193
Missing Cases = 143 or 74.1 Pct

25 Jun 97 SPSS for MS WINDOWS Release 6.0

- - Description of Subpopulations - -

Summaries of MEALEXP Expenditure on food and drink in US$..
By levels of ORIGIN Where do you come from?

Variable	Value	Label	Sum	Cases
For Entire Population			146980	141
ORIGIN	Australi		1000	1
ORIGIN	Belgium		60	1
ORIGIN	Canada		1100	2
ORIGIN	Denmark		960	3
ORIGIN	France		3905	10
ORIGIN	Germany		1110	6
ORIGIN	Hong Kon		80	1
ORIGIN	Ireland		60	1
ORIGIN	Italy		735	3
ORIGIN	Japan		40	2
ORIGIN	Korea		200	1
ORIGIN	Netherla		1800	2
ORIGIN	Norway		1210	5
ORIGIN	Portugal		620	2
ORIGIN	Saudi Ar		900	4
ORIGIN	Sweden		2715	5
ORIGIN	Switzerl		400	1
ORIGIN	UK		122970	51
ORIGIN	USA		7115	40

Total Cases = 193
Missing Cases = 52 or 26.9 Pct

Summaries of SHOPEXP Expenditure on souvenirs, clothes e.t.c.
By levels of ORIGIN Where do you come from?

Variable	Value	Label	Sum	Cases
For Entire Population			30060	132
ORIGIN	Australi		800	1
ORIGIN	Belgium		270	2
ORIGIN	Canada		400	2
ORIGIN	Denmark		700	2
ORIGIN	France		1395	12
ORIGIN	Germany		400	3
ORIGIN	Hong Kon		200	1
ORIGIN	Ireland		140	1
ORIGIN	Italy		340	2
ORIGIN	Japan		100	2
ORIGIN	Korea		150	1
ORIGIN	Netherla		200	1
ORIGIN	Norway		340	4
ORIGIN	Portugal		480	2
ORIGIN	Saudi Ar		1250	4
ORIGIN	Sweden		620	2
ORIGIN	Switzerl		1200	1
ORIGIN	UK		11365	46
ORIGIN	USA		9710	43

Total Cases = 193
Missing Cases = 61 or 31.6 Pct

25 Jun 97 SPSS for MS WINDOWS Release 6.0

- - Description of Subpopulations - -

Summaries of RECREXP Expenditure on entertainment and recreat
By levels of ORIGIN Where do you come from?

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			169.6552	247.5474	58
ORIGIN	Canada		150.0000	70.7107	2
ORIGIN	Denmark		700.0000	.	1
ORIGIN	France		118.5714	105.2661	7
ORIGIN	Germany		100.0000	.	1
ORIGIN	Italy		20.0000	.	1
ORIGIN	Netherla		400.0000	424.2641	2
ORIGIN	Norway		51.2500	34.2479	4
ORIGIN	Portugal		100.0000	.	1
ORIGIN	Saudi Ar		100.0000	.	1
ORIGIN	Sweden		150.0000	.	1
ORIGIN	Switzerl		500.0000	.	1
ORIGIN	UK		244.7727	328.3925	22
ORIGIN	USA		46.4286	46.0530	14

Total Cases = 193
Missing Cases = 135 or 69.9 Pct

25 Jun 97 SPSS for MS WINDOWS Release 6.0

- - Description of Subpopulations - -

Summaries of TOUREXP Expenditure on day tours in US$.
By levels of ORIGIN Where do you come from?

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			254.7000	414.8954	50
ORIGIN	Australi		200.0000	.	1
ORIGIN	Canada		250.0000	70.7107	2
ORIGIN	Denmark		500.0000	.	1
ORIGIN	France		120.0000	123.2883	4
ORIGIN	Germany		150.0000	70.7107	2
ORIGIN	Italy		75.0000	49.4975	2
ORIGIN	Netherla		1800.0000	.	1
ORIGIN	Norway		100.0000	.0000	2
ORIGIN	Saudi Ar		20.0000	.	1
ORIGIN	Switzerl		400.0000	.	1
ORIGIN	UK		290.2000	471.4925	25
ORIGIN	USA		116.2500	132.1458	8

Total Cases = 193
Missing Cases = 143 or 74.1 Pct

Expenditure Summary

	mean	sn	min	max	sum	obs		
PACKEXP	$ 4,334.78	$ 1,758.77	$1,000	$10,000	99700	23	Pre-paid package amount for trip.	
TOTALEXP	$ 1,300.61	$ 1,618.19	$50	$10,000	213300	164	Total expenditure in US$ on trip (	
DOMFARE	$ 610.00	$ 454.08	$30	$1,500	12810	21	Domestic airfares paid in US$.	4%
TRANSEXP	$ 240.09	$ 460.83	$10	$2,550	12725	53	Expenditure on transport in US$ (w	4%
ACCOMEXP	$ 955.70	$ 1,142.59	$75	$6,000	47785	50	Total expenditure on accomodation	17%
MEALEXP	$ 1,042.41	$ 8,411.22	$10	100100	146980	141	Expenditure on food and drink in U	51%
SHOPEXP	$ 227.73	$ 218.20	$5	$1,200	30060	132	Expenditure on souvenirs, clothes	11%
RECREXP	$ 169.66	$ 247.55	$15	$1,000	9840	58	Expenditure on entertainment and r	3%
TOUREXP	$ 254.70	$ 414.90	$10	$2,000	12735	50	Expenditure on day tours in US$.	4%
MISCEXP	$ 310.73	$ 344.97	$20	$1,300	12740	41	Miscellaneous expenditure in US$.	4%
				TOTAL	285675			100%

Q12. What age group do you belong to

24 Apr 97 SPSS for MS WINDOWS Release 6.0

AGEGRP Respondent's age group.

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
18 - 24	1	18	9.3	9.6	9.6
25 - 34	2	33	17.1	17.6	27.3
35 - 44	3	38	19.7	20.3	47.6
45 - 54	4	45	23.3	24.1	71.7
55 - 64	5	27	14.0	14.4	86.1
65 plus	6	26	13.5	13.9	100.0
	.	6	3.1	Missing	
	Total	193	100.0	100.0	

Valid cases 187 Missing cases 6

Q14. Please indicate your annual household income in US dollars

24 Apr 97 SPSS for MS WINDOWS Release 6.0

INCOME Respondent's annual household income.

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
up to $10,000	1	14	7.3	7.5	7.5
$10,001 - $30,000	2	31	16.1	16.6	24.1
$30,001 - $50,000	3	52	26.9	27.8	51.9
$50,001 and over	4	66	34.2	35.3	87.2
unknown	5	11	5.7	5.9	93.0
	7	13	6.7	7.0	100.0
	.	6	3.1	Missing	
	Total	193	100.0	100.0	

Valid cases 187 Missing cases 6

- -

Q15. (a) What date did you arrive in Kenya?.....

(b) What is the date of the last day of your trip to Kenya?.....

24 Apr 97 SPSS for MS WINDOWS Release 6.0

LENSTAY Respondent's lengh of stay in Kenya (day

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	1	1	.5	.5	.5
	2	3	1.6	1.6	2.2
	4	7	3.6	3.8	6.0
	5	6	3.1	3.3	9.3
	6	2	1.0	1.1	10.4
	7	24	12.4	13.2	23.6
	8	9	4.7	4.9	28.6
	9	5	2.6	2.7	31.3
	10	7	3.6	3.8	35.2
	11	7	3.6	3.8	39.0
	12	8	4.1	4.4	43.4
	13	4	2.1	2.2	45.6
	14	37	19.2	20.3	65.9
	15	11	5.7	6.0	72.0
	16	6	3.1	3.3	75.3
	17	6	3.1	3.3	78.6
	18	6	3.1	3.3	81.9
	19	1	.5	.5	82.4
	20	3	1.6	1.6	84.1
	21	11	5.7	6.0	90.1
	22	4	2.1	2.2	92.3
	23	2	1.0	1.1	93.4
	24	1	.5	.5	94.0
	26	3	1.6	1.6	95.6
	29	1	.5	.5	96.2
	30	3	1.6	1.6	97.8
	32	1	.5	.5	98.4
	39	1	.5	.5	98.9
	40	1	.5	.5	99.5
	87	1	.5	.5	100.0
	.	11	5.7	Missing	
	Total	193	100.0	100.0	

Valid cases 182 Missing cases 11

(c) Airport of departure?.

DEPAPT Respondent's airport of departure from K

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	.	5	2.6	2.6	2.6
	Mombasa	16	8.3	8.3	10.9
	Nairobi	172	89.1	89.1	100.0
	Total	193	100.0	100.0	

Valid cases 193 Missing cases 0

APPENDIX VI

TOURIST DEMAND FORECAST

1997 – 2000

Tourist Demand Forecast

1. Objectives

The tourist demand forecast aims at predicting the number of tourist arrivals to Kenya from 1997 to the year 2000. The data obtained are then used, together with estimates of tourist receipts, to project the economic impact of international tourism on Kenya for the same period.

2. Methodology

According to Firth (1977), time series like other quantitative forecasting methods is based on the premise that there is some pattern in the historical time series of the variable under consideration. Time series models are constructed using sequential historical recordings of the factor being forecast and establishing a pattern over time. Having established the pattern, it is projected into the future in relation to time.

In this study, historical data on quarterly international tourist arrivals to Kenya were obtained from past issues of *The Economic Survey*, an annual government publication. These are shown in table A6.1 below.

Firth (1977:29) suggests that a seasonal pattern, most likely related to the four seasons of the year, may be created when the time series is significantly and consistently influenced by a seasonal factor. On the other hand, he observes, trend patterns may exist when there is some general growth or decline in the variable over

time. Seasonal patterns are often subsets of long term trends. Table A6.1 below tabulates quarterly visitor arrival figures to Kenya between 1973 and 1995.

Table A6.1: Quarterly Arrival Trends, 1973 - 1995

Year	Quarter	No. of Visitors (000s)	t
1973	1	**101.9**	**1**
	2	**83.4**	**2**
	3	**106.5**	**3**
	4	**107.8**	**4**
1974	1	**108.6**	**5**
	2	**82.6**	**6**
	3	**104.8**	**7**
	4	**91.7**	**8**
1975	1	**111.5**	**9**
	2	**72.6**	**10**
	3	**111.3**	**11**
	4	**111.7**	**12**
1976	1	**125.7**	**13**
	2	**90.9**	**14**
	3	**112.8**	**15**
	4	**116.6**	**16**
1977	1	**105**	**17**
	2	**65.8**	**18**
	3	**80.2**	**19**
	4	**95.6**	**20**
1978	1	**100.5**	**21**
	2	**69.1**	**22**
	3	**90.4**	**23**
	4	**100.6**	**24**
1979	1	**103.6**	**25**
	2	**70.2**	**26**
	3	**102.5**	**27**
	4	**110.7**	**28**
1980	1	**108.4**	**29**
	2	**97.5**	**30**
	3	**85.1**	**31**
	4	**102.3**	**32**
1981	1	**95.5**	**33**
	2	**68.2**	**34**
	3	**102.9**	**35**
	4	**98.6**	**36**

1982	1	**108.1**	**37**
	2	**80.4**	**38**
	3	**94.4**	**39**
	4	**109.2**	**40**
1983	1	**109.9**	**41**
	2	**68.6**	**42**
	3	**89.9**	**43**
	4	**103.8**	**44**
1984	1	**138.3**	**45**
	2	**93.6**	**46**
	3	**104.4**	**47**
	4	**125.9**	**48**
1985	1	**148.2**	**49**
	2	**104.2**	**50**
	3	**134.7**	**51**
	4	**153.5**	**52**
1986	1	**162.9**	**53**
	2	**120.1**	**54**
	3	**154.6**	**55**
	4	**176.6**	**56**
1987	1	**173.2**	**57**
	2	**131.1**	**58**
	3	**168**	**59**
	4	**189**	**60**
1988	1	**191.1**	**61**
	2	**131.6**	**62**
	3	**187**	**63**
	4	**167.2**	**64**
1989	1	**215.6**	**65**
	2	**145.8**	**66**
	3	**179.3**	**67**
	4	**194**	**68**
1990	1	**218.9**	**69**
	2	**183.1**	**70**
	3	**219.1**	**71**
	4	**193.3**	**72**
1991	1	**176**	**73**
	2	**173.5**	**74**
	3	**256.3**	**75**
	4	**198.8**	**76**
1992	1	**219.2**	**77**
	2	**184.2**	**78**
	3	**240.5**	**79**
	4	**137.6**	**80**

1993	1	**108.6**	**81**
	2	**245.4**	**82**
	3	**241.8**	**83**
	4	**230.4**	**84**
1994	1	**236.6**	**85**
	2	**222.9**	**86**
	3	**220**	**87**
	4	**183.9**	**88**
1995	1	**170.8**	**89**
	2	**167.4**	**90**
	3	**179.1**	**91**
	4	**173.2**	**92**

The quarterly visitor arrival figures in table A6.1 were used to calculate moving averages in order to establish a time series pattern. These were then used to calculate seasonal indices for each quarter. The pattern of ratios and the seasonal indices obtained from Kenya's quarterly visitor arrival figures from 1973 to 1995 are shown in table A6.2 below.

Table A6.2 Summary of Ratios

	Quarter			
Year				
73			1.057	1.062
74	1.074	0.835	1.077	0.951
75	1.162	0.731	1.075	1.038
76	1.142	0.820	1.036	1.130
77	1.094	0.737	0.932	1.112
78	1.147	0.772	0.998	1.105
79	1.117	0.735	1.053	1.092
80	1.057	0.981	0.880	1.119
81	1.061	0.743	1.108	1.027
82	1.121	0.831	0.961	1.126
83	1.157	0.732	0.931	1.005
84	1.278	0.830	0.894	1.055
85	1.191	0.791	0.983	0.090
86	1.121	0.797	0.998	1.121
87	1.079	0.800	1.003	1.113
88	1.109	0.765	1.085	0.944
89	1.212	0.809	0.974	1.026
90	1.101	0.899	1.105	1.008
91	0.902	0.865	1.241	0.932
92	1.031	0.907	1.325	0.785
93	0.593	1.259	1.086	0.977
94	1.028	1.006	1.060	0.956
95	0.947	0.962	1.184	2.666
Total	23.724	18.607	24.046	24.44
Average*	1.078	0.846	1.045	1.063

* = Seasonal indices for each quarter

3. Forecast results

3.1 LINEAR TREND:

The trend factor is determined by computing the simple linear regression equation for the moving averages. The equation is of the form:

$$\mathbf{Y = (a + b)t}$$

Where **Y** = forecast arrivals

a = constant coefficient*

b = time coefficient*

t = time period

*= Calculated using SHAZAM computer program.

From the above equation, forecasts were calculated for the year 1997 – 2000 as shown below.

$Y = (a + b)\, t$

$Y = (67.346 + 1.527)\, t$

1997 $Q1 = (67.346 + [1.527 \times 98]) \times 1.078 = 232{,}271$

$Q2 = (67.346 + [1.527 \times 99]) \times 0.846 = 183{,}575$

$Q3 = (67.346 + [1.527 \times 100]) \times 1.045 = 228{,}352$

$Q4 = (67.346 + [1.527 \times 101]) \times 1.063 = 233{,}908$

Total = 878,106

Table A6.3. below gives a summary of the quarterly and annual visitor arrival forecast for Kenya for the period 1997 to 2000.

Table A6.3: Arrival Forecast for the Period 1997 - 2000

Year	Quarter	Forecast
1997	Q1	232,271
	Q2	183,575
	Q3	228,352
	Q4	233,908
	TOTAL	**878,106**
1998	Q1	238,856
	Q2	188,743
	Q3	243,735
	Q4	240,402
	TOTAL	**902,736**
1999	Q1	245,440
	Q2	192,618
	Q3	241,118
	Q4	246,895
	TOTAL	**926,071**
2000	Q1	252,025
	Q2	199,077
	Q3	247,501
	Q4	253,387
	TOTAL	**951,990**